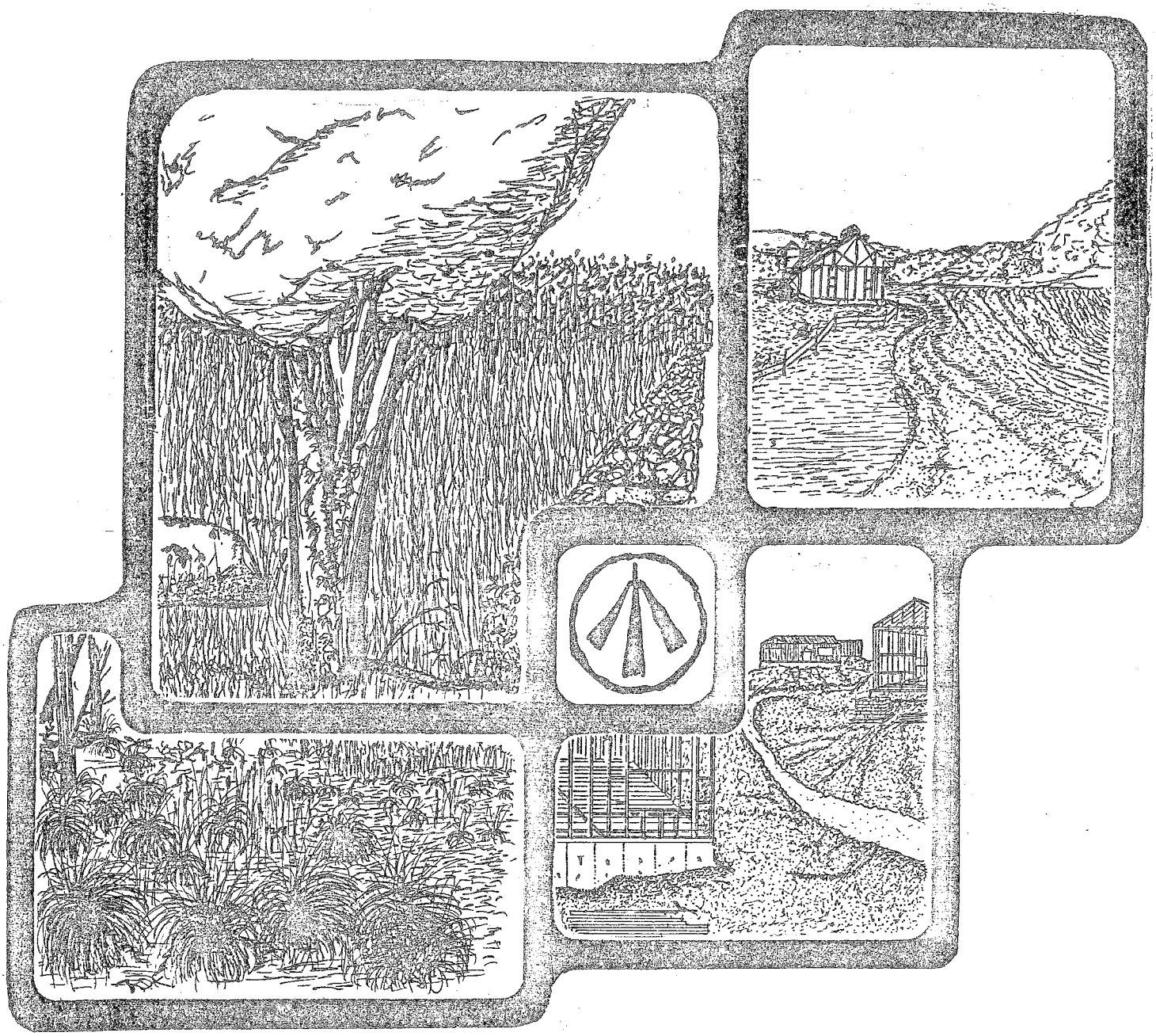
ENVIRONMENTAL REVIEW TEAM REPORT



SOUTHWESTERN CONNECTICUT
GIRL SCOUT CAMPS

KING'S MARK
RESOURCE CONSERVATION & DEVELOPMENT AREA

KING'S MARK
ENVIRONMENTAL REVIEW TEAM REPORT

SOUTHWESTERN CONNECTICUT
GIRL SCOUT CAMPS

MARCH 1982

King's Mark Resource Conservation and Development Area
Environmental Review Team
Sackett Hill Road
Warren, Connecticut 06754

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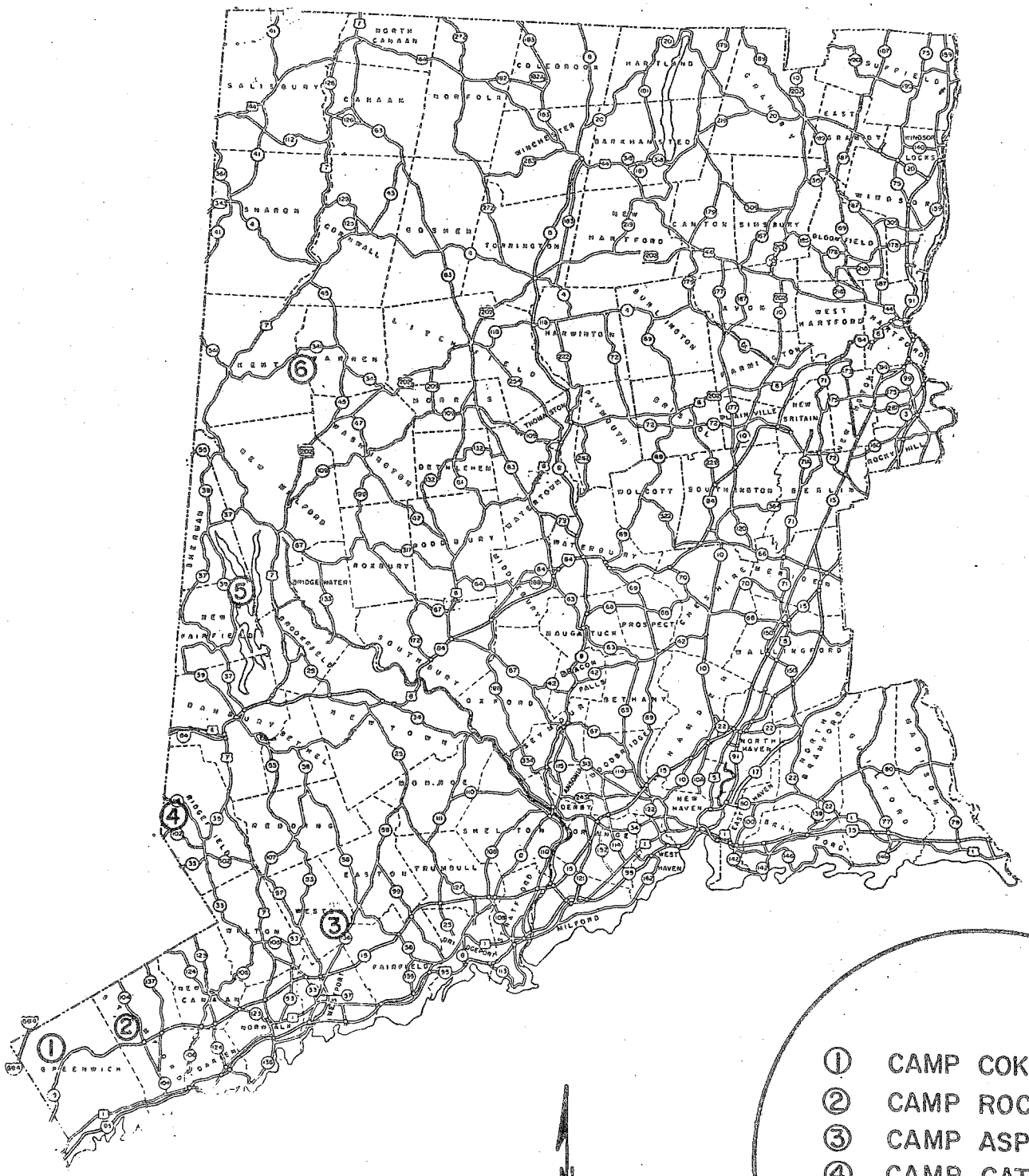
SOUTHWESTERN CONNECTICUT GIRL SCOUT CAMPS



ENVIRONMENTAL REVIEW TEAM REPORT

ON

SOUTHWESTERN CONNECTICUT GIRL SCOUT CAMPS

a. INTRODUCTION

The Southwestern Connecticut Girl Scout Council requested the King's Mark Environmental Review Team to perform an environmental review of the Council's six camps. The six camps include:

1) Camp Cokamong, Greenwich. ±11 acres located in the northwestern quarter of town off Mahoney Lane.

2) Camp Rocky Craig, Stamford. ±25 acres located in the nrothwestern quarter of town off Guinea Road and just north of the Merritt Partway.

3) Camp Aspetuck, Weston. ±16 acres located in the southeastern corner of town off Judges Hollow Road.

4) Camp Catoonah, Ridgefield. ±72 acres located in the northwestern portion of town off Rte. 102 and Oreneca Road.

5) Camp Candlewood, New Fairfield. ±90 acres located in the northeastern quarter of town off Bogus Road.

6) Camp Francis, Kent. ±260 acres located astride the Kent and Warren town line off Route 341 and Kent Hollow Road.

The location of the six camps is shown in Figure a.

The Girl Scout Council is in the process of developing a Long Range Master Plan for the six camps. The Council requested this environmental review to learn more about the environmental characteristics of the six camps. Specifically, the Team was asked to: 1) provide a natural resources inventory of the properties, and 2) discuss the opportunities and limitations of the camps for expanded recreational use, forest management, and wildlife management. The King's Mark Executive Committee considered the Council's request, and approved the project for review by the Team.

The ERT met and field reviewed the properties on November 10th and 17th, and on December 21, 1981. Team members participating on this project included:

Brant Burz	Wildlife Biologist	Ct. Department of Environmental Protection
Rob Rocks	Forester	Ct. Department of Environmental Protection
Carl Stamm	Recreation Specialist	Ct. Department of Environmental Protection
Dave Thompson	District Conservationist	U.S.D.A.Soil Conservation Servic
Mike Zizka	Geohydrologist	Ct. Department of Environmental Protection

This report presents the team's findings. Following a discussion of general vegetation and recreation considerations, each of the camps is discussed separately. The natural resource base of each camp is presented together with a discussion of opportunities and limitations for land management. The Appendix of this report contains a Soils Limitation Chart which rates each of the soil types at the various camps according to their limitations for recreational development.

The Team wishes to emphasize that all conclusions and final decisions with regard to future land use rest with the Southwestern Connecticut Girl Scout Council. It is hoped the information contained in this report will assist the Council in making environmentally sound decisions. If any additional information is required, please contact Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, Sackett Hill Road, Warren, Connecticut 06754.

* * * * *

b. GENERAL RECREATION CONSIDERATIONS

The expansion of present types of structural facilities will not be significantly limited because of soil properties at any of the camps. There are excessively steep areas with limited feasibility, and there are wet areas where simple logic will dispel any use considerations, but these are small in comparision to the total camp areas.

Steeply sloping areas should be viewed as being restricted in terms of facilities' expansion, not prohibitive. These areas, with the exception of the east slope of Camp Candlewood, are not uniformly steep. Careful inspection will reveal potential troop camp sites on natural terraces and shelves. These will be enhanced by their unique settings and by the topographic diversity.

The construction techniques used to level the newer "A" frames has made it possible to utilize sloping sites, and will continue to be useful in neutralizing slope limitations.

The wetland areas are out of the question without a commitment to intensive alterations and substantial expenditures. Care should be exercised in locating sanitary facilities to protect the integrity of these wetlands and watercourses.

The too steep and the wetland areas are not without great value in the planning process, and should not be considered worthless. Their buffering capability and educational potential are very important.

The Table below illustrates, based on extensive inventory data, the degree to which each of the camp sites are restricted by slope and limited by wetlands.

Camp	% Wetland	%Steep Slopes	%Total	Total Acres	Total Camp Acreage
Cokamong	0	18	18	2	11
Rocky Craig	13	0	13	3	25
Aspetuck	13	31	43	7	16
Catoonah	4	14	18	13	72
Candlewood	11	22	33	30	90
Francis	2	50	52	135	260

The most essential element in the success of any endeavor is a plan. A comprehensive land use plan, tailored to site specific resources and their allocation to achieve optimum use and the ultimate in the camping experience, is needed for each of the Girl Scout Camps. A land use plan can provide the insight to prioritize the potential of each camp.

The second most essential element for success is coordination in executing the plan. This demands unbiased dedication and systematic monitoring. The same is required in practicing maintenance functions on established improvements.

There is little evidence that these two elements have been emphasized at the various camps. Although construction standards are generally exemplary, structure siting is not predicated on a facilities plan. Maintenance is not uniform in application or quality and utilization of each camp is progressing indeterminantly.

Along with development plans, there is a need for a commitment to develop a highly structured program to guide development activities and to standardize maintenance activities.

There are a number of needed improvements which are more or less common to all six camp areas.

Access Paths to Unit sites and the various facilities at each camp are in poor condition and are a safety hazard. Removal of high stones and stumps with a mattock & crowbar and graveling the 3-4 ft. wide paths with a 4 inch depth of medium processed gravel will improve the safety of use and avert erosion of the wearing surface. The installation of a few railroad tie steps in the steeper areas to serve as waterbars will assist in the prevention of trail erosion.

As previously mentioned, Facility Development at each camp apparently has been done on an unplanned basis over a period of many years. Before any further major development is undertaken, each camp's present development should be mapped and the future use and development planned. Perhaps the assistance of the U.S.D.A. Soil Conservation Service or the National Girl Scout Council planning service could assist in this procedure. The present latrine, wash areas and shower buildings of each camp are generally poorly designed and located. In addition, it appears that their size and numbers are inadequate for the number of persons they serve. Planning in this area is encouraged. Investigation of various camp buildings for fall and winter camping use, in addition to the primary summer use, should also be investigated. Some minor renovations of the existing structures may be necessary before this could become a reality.

One last recommendation would be to include a Senior Girl Scout camper as a member of the Council's Camp Committee, if this is not now being done. This may provide some excellent suggestions, and an idea of how different proposals will be received by the girls who will be using the facilities.

C. GENERAL VEGETATION CONSIDERATIONS

The Southwestern Connecticut Girl Scout Council Camps are made up of a wide variety of vegetation types. The difference between these vegetation types reflect: soil and water conditions; natural factors such as past weather conditions, insect and disease infestation, and fire; past use and abuse by man; and the availability of seed sources. Descriptions of the various vegetation types and their locations are arranged by camp and discussed in subsequent sections of the report.

Generally, the Southwestern Connecticut Girl Scout Council Camps have excellent potential for forest management. As used in this report, forest management refers to the manipulation of forest vegetation, usually through the cutting of trees or the planting of trees, to bring about, maintain, or improve certain desirable forest conditions.

When properly prescribed and executed, forest management practices will increase the production of forest products, reduce hazards, improve wildlife habitat, improve forest aesthetics and enhance the overall condition of the woodland. Without sound management and planning, there is no control over the quality of these conditions. General management opportunities are outlined for each vegetation type within each camp. Where no management practices are discussed, the vegetation is either healthy as is, or management is not feasible due to poor site conditions, poor access or poor operability. It should be noted that areas that are healthy at present, or that have received management, should be re-evaluated for future management needs at approximately 10 year intervals.

Large numbers of poor quality and damaged trees (many with large dead branches) are present within each of the camps. These trees represent an extremely hazardous condition when near camp sites, tent platforms, buildings, trails, roads, or any other high use area. Even if no other management practices are implemented within the camps, these trees should be removed.

Heavy gypsy moth infestation throughout the camps was observed during the field investigation. It is possible for a single defoliation in hemlock or two successive defoliations of deciduous trees to severely stress trees allowing secondary insect and disease infestation to cause mortality. Thinnings in areas which are over-stocked or becoming over-stocked should help to reduce the crowded conditions and help trees to become healthier and more vigorous, lessening the chances of wide spread mortality started by gypsy moth infestation. Even with such thinnings, loss of the oak and hemlock components may occur.

Uneven-aged management resulting in a healthy forest made up of a variety of tree species in all size classes would probably provide the greatest aesthetic appeal and best wildlife habitat over an extended period of time for the camps. To reach the goal of an uneven-aged forest, some forest management would be advisable.

Improvement thinnings are prescribed in stands where trees are declining in health and vigor due to over crowding. These thinnings are designed to reduce competion between resident trees for space, sunlight, water and nutrients. Only trees that are of poor quality, damaged, or in direct competion with high quality trees should be removed during these thinnings. Stands once thinned should become more stable, healthy and less susceptible to damage caused by insects, disease and adverse weather conditions.

When commercial thinnings of sawtimber-size trees are recommended, it would be desirable from an aesthetic and fire prevention standpoint to have the remaining tops removed and utilized as fuelwood.

The "crop tree selection method" of thinning is recommended in many areas. Under this method, 100 of the highest quality trees in each acre should be identified (trees spaced about 20' x 20' will equal 100 trees per acre), and one, two, or three trees that are in direct competition with each of those identified should be removed. The 100 trees per acre that are selected as crop trees should be healthy, large crowned, and show little or no signs of damage. Trees which are not competing with the 100 selected trees should not be removed, unless they are severely damaged. The fuelwood produced by these thinnings will vary with individual stands, but should range between 5 and 8 cords per acre.

Stands once treated with the initial improved harvests would benefit from inspection by a public service forester or private forester every 10 years, and probably benefit from cutting a size range of trees within intervals of twenty-five years. Revenues generated through the years by these thinnings could be used for other short and long term improvements to the properties.

Areas between almost all of the camping sites at each camp could be underplanted with a combination of eastern hemlock and perhaps eastern white pine to screen individual camp areas from one another. These same trees will also act as a windbreak and provide quality cover for wildlife during the winter months.

The small open fields which are present throughout these parcels are highly valuable from a recreation standpoint. Periodic mowing will be necessary to keep woody vegetation from becoming established. Many of these fields could be expanded by the removal of the woody vegetation which has already been established around their edges.

Several species of flowering trees and shrubs including mountain laurel, flowering dogwood, shadbush and apple trees are present in the various vegetation types throughout these tracts. The aesthetic value of these areas could be enhanced by releasing selected groups of these trees and shrubs. Allowing increased direct sunlight to reach these species will stimulate their production of flowers. This can be accomplished by removing the trees in the overstory which are blocking the sunlight.

Areas such as the hardwood swamp and oak ridges which have little or no potential for forest management are also noted in the forest vegetation type descriptions for each camp. These areas are unable to provide the quality wood products which make management feasible.

Other conditions which limit the implementation of management practices include poor access and poor operability, which may include excessively steep slopes and extreme rockiness. These areas are depicted in the vegetation type map for each parcel.

To upgrade and maintain the quality of the gravel roads and trails which are present, periodic maintenance is essential. At least once a year all the trails throughout these properties should be inventoried for erosion problems and dead and dying trees which represent a potential hazard. Erosion problem spots should be eliminated through the proper placement of water diversions, or relocation of the trails to avoid existing problem areas. Trees that are potentially hazardous should be promptly felled and used for fuelwood. For assistance in trail design and maintenance, the USDA SCS office in Bethel (743-5453) should be contacted.

CAMP COKAMONG

I. CAMP COKAMONG, GREENWICH

Camp Cokamong measures about 11 acres in size and is located in the northern portion of town off Mahoney Lane. A small parking lot is present at the entrance to the property. In addition to numerous A-frame structures, the property contains a kitchen, several storage sheds, a council fire, and a small open field. Byram River forms the southern boundary of the site.

A. Topography and Geology

The Camp Cokamong parcel has an irregular topography with several knolls and ridges of bedrock or very thin soils over bedrock. A few small, relatively level areas are scattered about the site, but most of the parcel is moderately to steeply sloping. An extremely steep slope is found along the southwestern boundary of the site, adjacent to Byram River (see Figure 1.1).

The bedrock cropping out on and underlying the site consists of gneisses and schists. "Gneiss" is a term given to metamorphic (geologically altered) rocks in which thin bands of elongate or flaky minerals are separated by layers of granular minerals. "Schist" is a term given to metamorphic rocks in which elongate or flaky minerals are predominant and aligned, giving the rocks a distinctly layered structure. The major mineral components observed in the bedrock on the site were quartz, feldspar, biotite, and muscovite. The proportions of these minerals vary throughout the rock. Lesser mineral components include hornblende, garnet, staurolite, and kyanite.

A generally thin (less than 10 feet thick) layer of till covers bedrock in most parts of the site (see Figure 1.2). Till consists of varying proportions of clay, silt, sand, gravel, and boulders. The individual components were collected and redeposited by glacier ice without substantial sorting. Consequently, till may range in texture from sandy and loose to silty and very compact. Stones and boulders are usually more common in the upper five to ten feet of a till deposit. Since the till on the site is thin, it is probable that the typical texture is sandy and very stony. The bedrock surface underlying the till deposit is irregular, with basins adjoining ridges and knobs of rock. The till deposit smoothed out these irregularities to a minor extent. As a result, relatively deep pockets of till may be scattered among the bedrock exposures on the property.

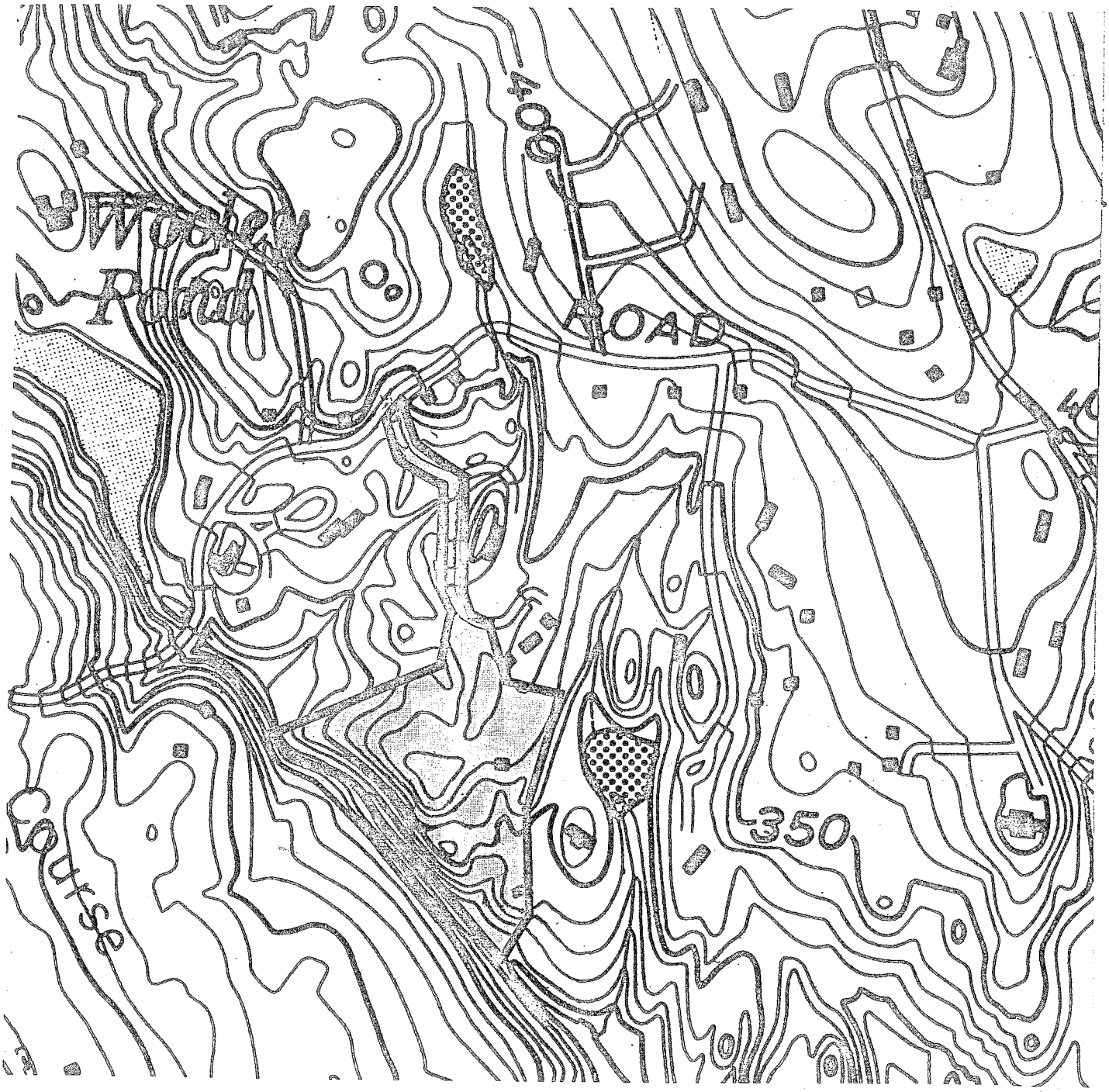
Substantial development of this site would be restricted by the shallow soil conditions and rough topography. Expansion of the camp's residential facilities may be possible in a few places, but the options are limited by the terrain.

B. Hydrology

The Camp Cokamong parcel borders and drains into Byram River. The river flows through an attractive, deep ravine along the southwestern boundary of the property. Unfortunately, access to the river is very difficult because of the steep, rocky slopes. One potential trail route exists near the western end of the site's "field", but it is not an ideal access. The driveway into the site crosses a minor tributary of the river.

FIGURE 1.1

TOPOGRAPHIC MAP



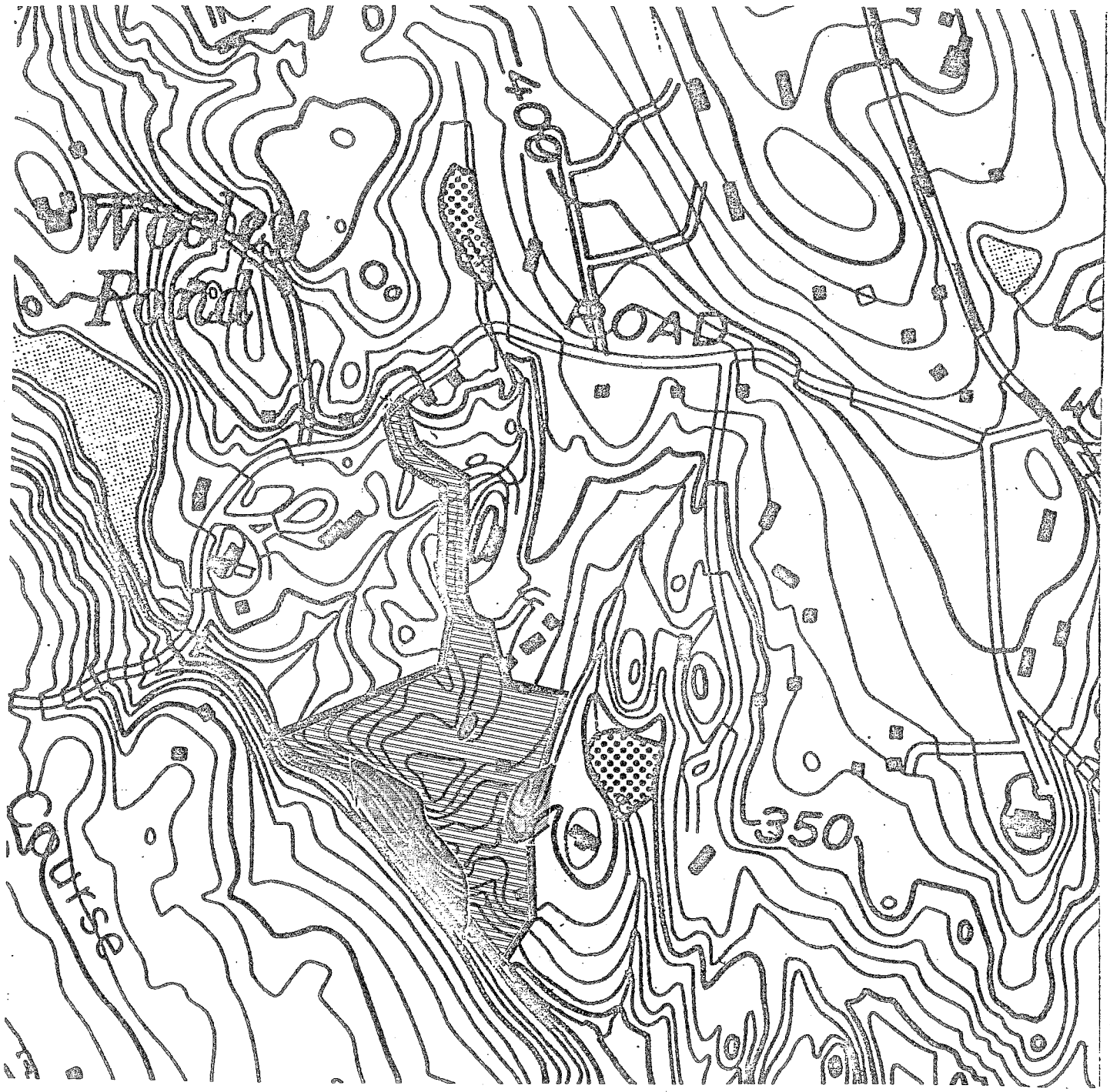
SCALE: 1" = 500'

0 1/8 1/4 mile

0 500' 1000' 1500'

FIGURE 1.2

SURFICIAL GEOLOGY



EXPLANATION

Areas of bedrock outcrops and very thin till.

Till and small, scattered rock outcrops. Average thickness of till is less than 10'.

N

SCALE: 1" = 500'

0 1/8 1/4 mile

0 500' 1000' 1500

Bedrock is the only aquifer of significance on the site. Bedrock is ordinarily capable of supplying small but reliable yields of groundwater. A survey of selected bedrock-based wells in southwestern Connecticut showed that 90 percent of the wells that were drilled through 350 feet or less of uncased saturated bedrock yielded 1 gallon per minute or more. Only 29 percent yielded 10 gpm or more. Although these yeilds are relatively small, they would be adequate for most recreational or single-family residential purposes.

Water moves thorugh metamorphic rocks chiefly by way of fractures. The success of a well drilled at any specific location depends upon the number and size of water-bearing fractures that the well intersects. Since fractures are distributed irregularly in bedrock, there is no practical way to predict the suitability of a particular location for a drilled well. It is known, however, that the probability of obtaining additional water from a drilled well decreases with depth. If no water has been obtained after drilling 150 feet into the bedrock, it may be more fruitful to attempt drilling in a different location.

Because the soils on the site are generally thin, there is a relatively high risk of groundwater pollution from wastewater discharges, particularly septic effluent. Shallow-soil limitations may be overcome by appropriate engineering techniques, but great care must be used in the design and installation of sanitary facilities. Pit toilets used only infrequently during the year do not pose a serious hazard as long as they are kept the required distances away from water-supply sources.

C. Vegetation

As shown in Figure 1.3, Camp Cokamong consists of two basic vegetation types.

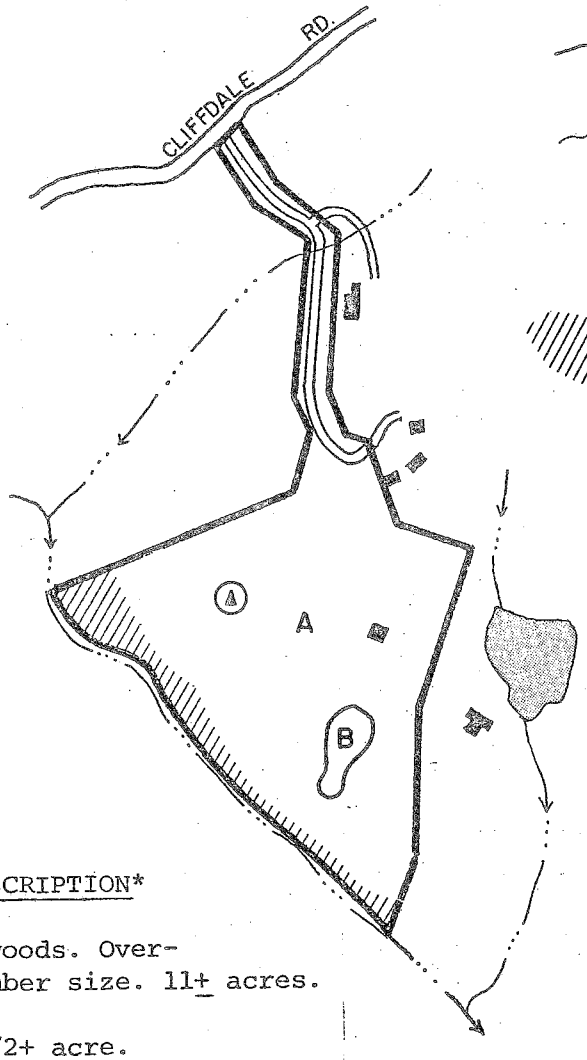
TYPE A. SOFTWOODS/HARDWOODS. This 11± acre over-stocked stand is made up of sawtimber size eastern hemlock, blackbirch, red oak, black oak, red maple, American beech and occasional tulip tree. The understory consists of hemlock seedlings, witchhazel, sassafras, maple leaved viburnum and patches of mountain laurel. Christmas fern, evergreen wood fern, Canada mayflower, striped pipsissewa and clubmoss form the ground cover vegetation in this area.

Many of the trees in this vegetation type are unhealthy and growing very slowly. This is primarily due to their crowded condition, however defoliation by gypsy moth larva and vandalism has compounded the problem. A commercial thinning removing sawtimber size trees would be feasible in this area. This thinning would, however, have to be light, so as not to increase the chances of windthrow. The windthrow hazard is relatively high in this area due to shallow to bedrock soils. Selected patches of mountain laurel could be released to stimulate flower production. Dead and damaged trees which represent a hazard to the camping areas and buildings which are present should be removed.

TYPE B. OPEN FIELD. This small open field which totals less than one acre is vegetated with grasses and goldenrod. Around its perimeter, raspberry, graystemmed dogwood, arrowwood, red alder and pussy willow are becoming well established. This area could be slightly expanded if the invasion of weed and wood species were controlled. Periodic mowing will be necessary if this area is to be utilized for recreational activities.

FIGURE 1.3

VEGETATION TYPE MAP



LEGEND

- Road
- Property boundary
- Vegetation type boundary
- Stream
- Buildings
- (A) Tents and A-Frames
- Areas where management practices limited by steep slopes. 2± acres.

VEGETATION TYPE DESCRIPTION*

TYPE A Softwoods/hardwoods. Overstocked, sawtimber size. 11± acres.

TYPE B Open field. 1/2± acre.

*Seedling size - trees less than 1" in diameter at 4½' above the ground (d.b.h.)
Sapling size - trees 1" to 5" in d.b.h.
Pole size - trees 5" to 11" in d.b.h.
Sawtimber size - trees 11" and greater in d.b.h.

N

SCALE: 1" = 500'

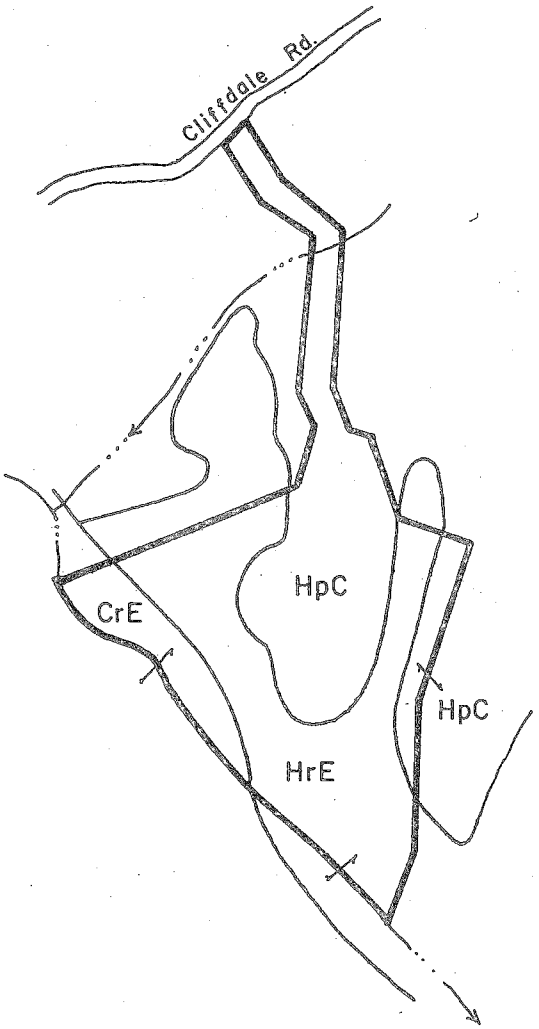
0 1/8 1/4 mile

0 500' 1000' 1500'

FIGURE I.4

SOILS MAP

* ADAPTED FROM FAIRFIELD COUNTY SOIL SURVEY, U.S.D.A. – S.C.S.



SCALE: 1" = 500'

0 1/8 1/4 mile

0 500' 1000' 1500'

D. Wildlife

Three major wildlife habitat types are present at Camp Cokamong. These include woodland, open land, and streambelt. Due to the comparatively small size of Camp Cokamong and the fairly heavy use of the Camp, there is not great potential for managing this area for wildlife. Together with the surrounding lands, however, this property does offer a home for a variety of wildlife including deer, ruffed grouse, woodcock, raccoon, and a variety of small mammals, songbirds, and amphibians. The land can best be managed for wildlife by keeping the open field cleared, and implementing the aforementioned tree thinnings.

E. Soils and Recreation Potential

As shown in Figure 1.4, three soil types have been identified at Camp Cokamong. These soils are generally steep and shallow to bedrock. Although the steep slopes do limit development potential, they do not exclude all development opportunities. In fact, the topographic diversity may allow for some additional unique and highly attractive camp sites at Cokamong.

Based upon a preliminary analysis by the Team, it appears the present number of camp units could be doubled if necessary. Use of this camp for day camp programs with Spring and Fall weekend troop camping is recommended. The present building may have some potential for winter weekend camping and activities.

To ensure the safe recreational use of this Camp, the hazardous trees should be removed as mentioned in the vegetation section of this report. A commercial thinning of the property is also encouraged to enhance the long term health of the forest at this camp.

Although Camp Cokamong is comparatively small in size, it has much natural beauty and can offer a pleasant and rewarding camping experience. The Camp is well buffered from surrounding land uses which enhances the camping atmosphere.

* * * * *

CAMP ROCKY CRAIG

II. CAMP ROCKY CRAIG, STAMFORD

Camp Rocky Craig is approximately 25 acres in size. It is located in the northwestern quarter of town off Guinea Road and just north of the Merritt Parkway. The land supports several camping areas, a small camping shelter, a meadow, a large wetland area and a small pond.

A. Topography and Geology

The eastern half of the camp parcel consists of a series of rocky knolls ringing a flat field (see Figure 2.1). Further west, the knolls merge into a moderately sloping hillside, which drops down to a flat wetland area with ponds and swamps. The knolls could probably serve as sites for individual tents or small groups of tents, but the central hillside appears to offer a better opportunity for the establishment of additional facilities.

The bedrock observed on the site consisted largely of gneisses* and gneissic granites. The granites, which may be recognized by their pink hue, are composed primarily of quartz and potash feldspar with lesser amounts of biotite and muscovite. The gneisses tend to have a higher percentage of plagioclase, rather than potash, feldspar. Garnet, hornblende, and other minerals are present in some places.

Till* covers the bedrock in most areas. In the knobby topography of the eastern section of the site, the till is probably less than 5 feet thick on the average. On the hillside to the west, the till increases in thickness, but it probably averages less than 15 feet. The field in the center of the ring of bedrock knolls contains an unknown amount of fill. Before the fill was added, the field used to be a small wetland basin. Swamp sediments overlie till in the northwestern section and along the western boundary of the parcel. These sediments consist of clay, silt, sand, and partly decomposed organic materials. These sediments are probably less than 10 feet thick.

B. Hydrology

Drainage from the site flows into a minor tributary of Mianus River. The tributary flows northwestward along the western boundary of the property, and then curves northeastward, flowing into a series of ponds. At least one of the ponds lies within the parcel. A flat area all along the course of the tributary is swampy. Jev's Meadow, the field in the center of the ring of rocky knolls, is a filled, formerly wet basin. Drainage from the Meadow can still be seen emerging from the pile of boulders near its southern end. A reddish-brown discoloration was noted in this drainage, probably a result of the movement of water through the fill.

The pond in the northwestern portion of the property appears to be less than 5 feet deep. It is attractive from an aesthetic viewpont, but it probably has little recreational potential.

The wetlands bordering the tributary of Mianus River serve several natural functions. They provide flood storage capacity for the tributary, decreasing peak storm flows and thereby reducing the potential flooding and erosion problems downstream. They serve as natural filters for surface water, trapping

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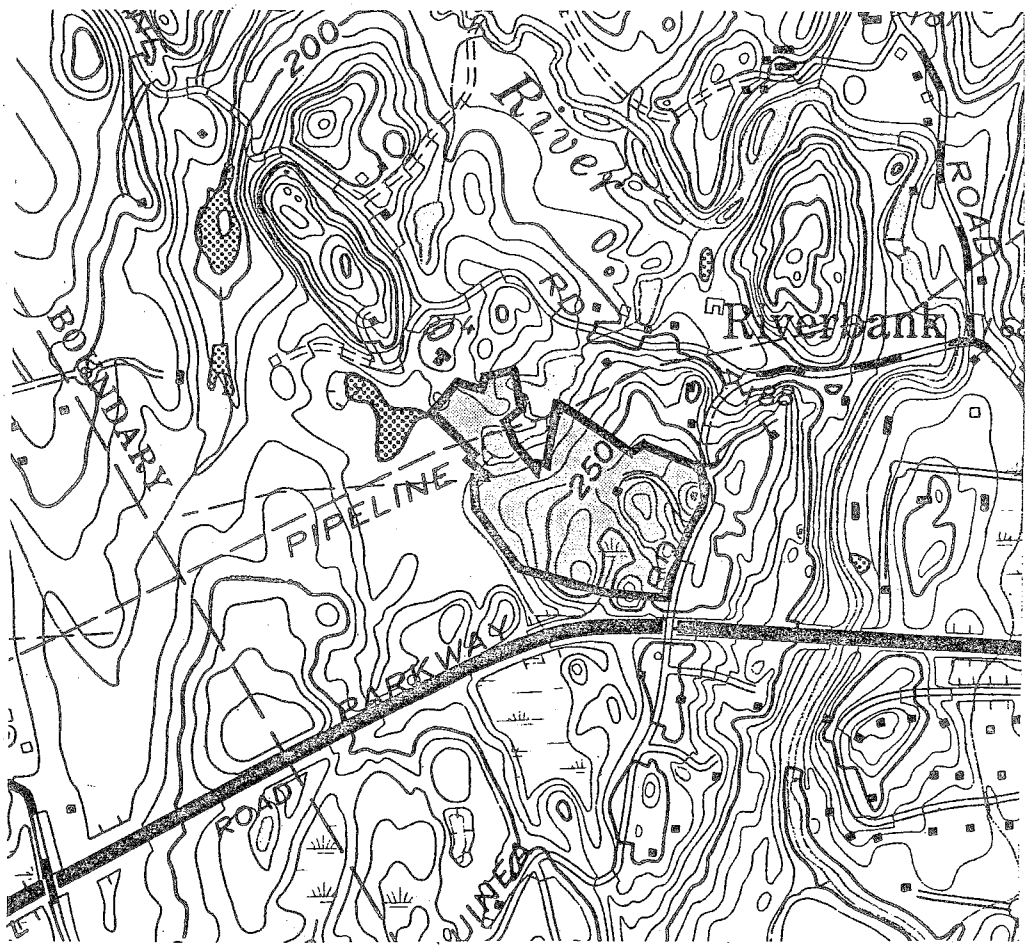
*See Camp Cokamong report for definition.

FIGURE 2.1

TOPOGRAPHIC MAP



N

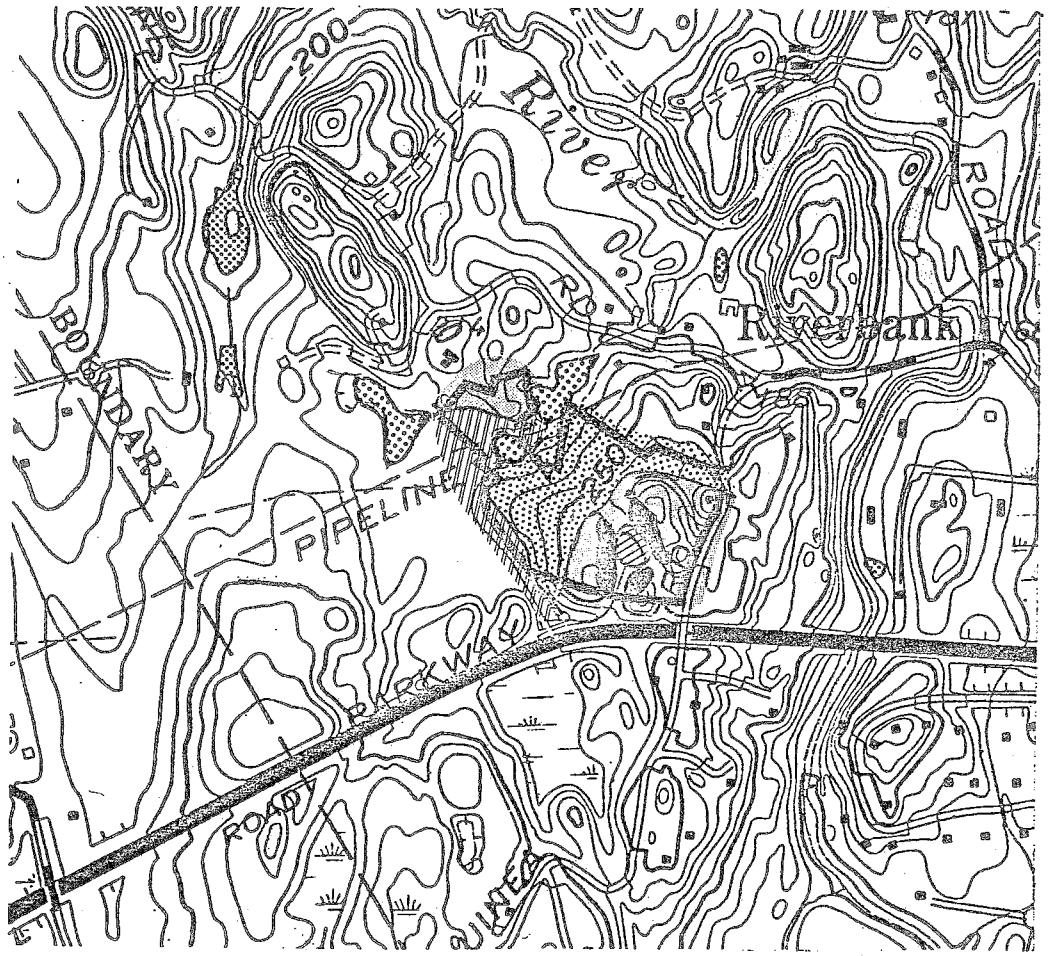
SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

FIGURE 2.2

SURFICIAL GEOLOGY



EXPLANATION

Till. Thickness is generally 5-10 feet.

Thin till and small, scattered bedrock outcrops. Till is generally less than 5' thick.

Individual rock outcrops.

Swamp and floodplain sediments. Sand, silt, and clay mixed with decayed organic materials.

Artificial fill.

Pond

N

SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000

and recycling contaminants. They are also valuable in an ecological sense, providing habitat and sustenance for a variety of plants and animals. The wetlands on the property could form the focus of an environmental program for the scouts.

Bedrock is the only important aquifer on the site. A general discussion of bedrock aquifers is contained in the Camp Cokamong report.

C. Vegetation Type Descriptions

Three vegetation types are present within "Camp Rocky Craig". These include mixed hardwoods, 19± acres; hardwood swamp, 4± acres; and open fields, 2± acres. The location of these three types is shown in Figure 2.3.

VEGETATION TYPE A. MIXED HARDWOODS. This 19± acre over-stocked stand is made up of pole to small sawtimber size red maple, white oak, black oak, black birch, yellow birch, shagbark hickory, pignut hickory and scattered American beech. The understory in this stand is dominated by witchhazel, blue beech, ironwood, maple leaved viburnum, arrowwood, sassafras, flowering dogwood, azalea, spice bush and occasional shadbush. Ground cover vegetation consists of Pennsylvania sedge, aster, greenbrier, raspberry, round leaved hepatica, club moss, Christmas fern and evergreen wood fern. A thinning following the "crop tree selection method" (see page 6) would help reduce the crowded condition of this stand, allowing residual trees to respond by improved growth and stability. Poor quality and damaged trees near the camp sites and buildings should be removed to reduce potential hazards. Selected flowering shrubs should be selected and released to help improve the aesthetic value of the area. Hemlock and eastern white pine could be planted as a buffer zone or barrier between camps.

TYPE B. HARDWOOD SWAMP. Sapling to pole-size red maple dominate this 4± acre under-stocked stand. In some places the understory which includes spice bush, sweet pepper bush, winterberry, elderberry and highbush blueberry is very dense. Herbaceous vegetation which is present within this area includes tussock sedge, skunk cabbage, greenbrier, sensitive fern, phragmities and spirea. The potential for windthrow of trees is quite high in this area. Many of the dead trees which are present have cavities suitable for nesting wildlife and therefore should not be removed.

TYPE C. OPEN FIELD. Approximately two acres of former wetlands have been filled, drained and converted to open fields suitable for recreational use within this tract. This open field area is vegetated with a variety of grasses. Raspberry and maple leaved viburnum are becoming established around its edges. Periodic mowing, liming and fertilization will be needed to retain a high quality playing field.

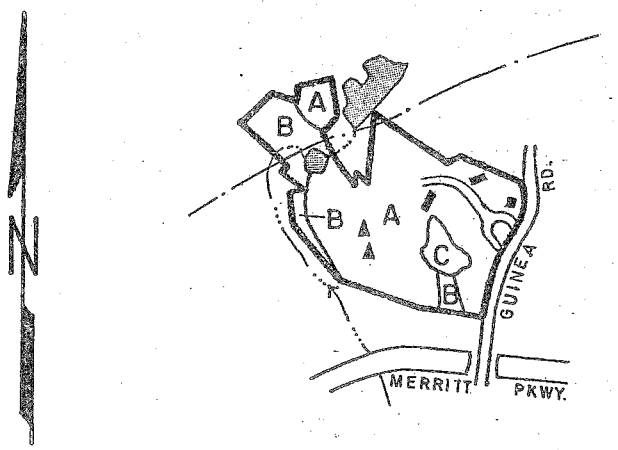
D. Wildlife

Three wildlife habitat types are present at Camp Rocky Craig. These include woodland, wetland, and open land. The distribution of these habitat types at the Camp is good and the area offers a valuable home for wildlife.

A thinning of the woodland habitat, as presented in the preceeding section, would be beneficial for wildlife. This thinning would help to encourage the

FIGURE 2.3

VEGETATION TYPE MAP



LEGEND

- Road
- Property boundary
- Vegetation type boundary
- Stream
- Buildings
- Pond
- Utilities
- Tent site

SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

VEGETATION TYPE DESCRIPTION*

TYPE A Mixed hardwoods. Over-stocked, pole to sawtimber size, 19± acres.

TYPE B Hardwood swamp. Under-stocked, sapling to pole size. 4± acres.

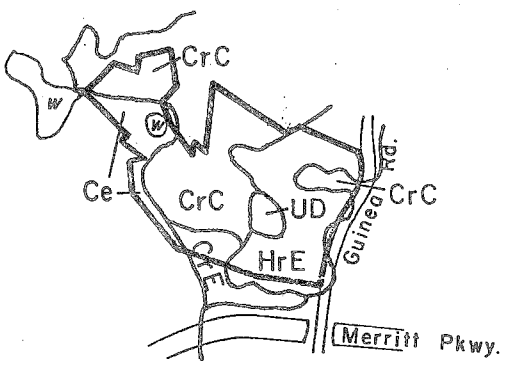
TYPE C Open field. 2± acres.

*Seedling size - trees less than 1" in diameter at 4½' above the ground (d.b.h.)
Sapling size - trees 1" to 5" in d.b.h.
Pole size - trees 5" to 11" in d.b.h.
Sawtimber size - trees 11" and greater in d.b.h.

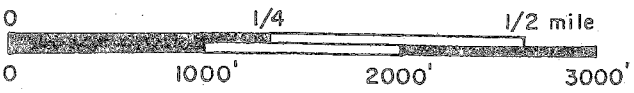
FIGURE 2.4

SOILS MAP

* ADAPTED FROM FAIRFIELD COUNTY SOIL SURVEY, U.S.D.A. - S.C.S.



SCALE: 1" = 1000'



flowering trees and shrubs on this property. The wetland habitat could be improved by installing wood duck boxes and planting some conifers for "escape" cover. To maintain the diversity of habitat at this Camp, the open field should be mowed periodically.

A variety of wildlife could be expected to utilize this camp. Rabbits, pheasants, woodchucks, and a variety of small birds and mammals could be expected to use the open field. Grouse, woodcock, raccoon, deer, songbirds, and small mammals could likely be found utilizing the woodland. A healthy variety of reptiles and amphibians plus the aforementioned species could be expected to utilize the wetland habitat at this Camp.

The most valuable wildlife areas of this Camp are the areas where two or more habitat types meet. The greatest diversity of wildlife species can be expected to be found in these "edge" areas.

E. Soils and Recreation Potential

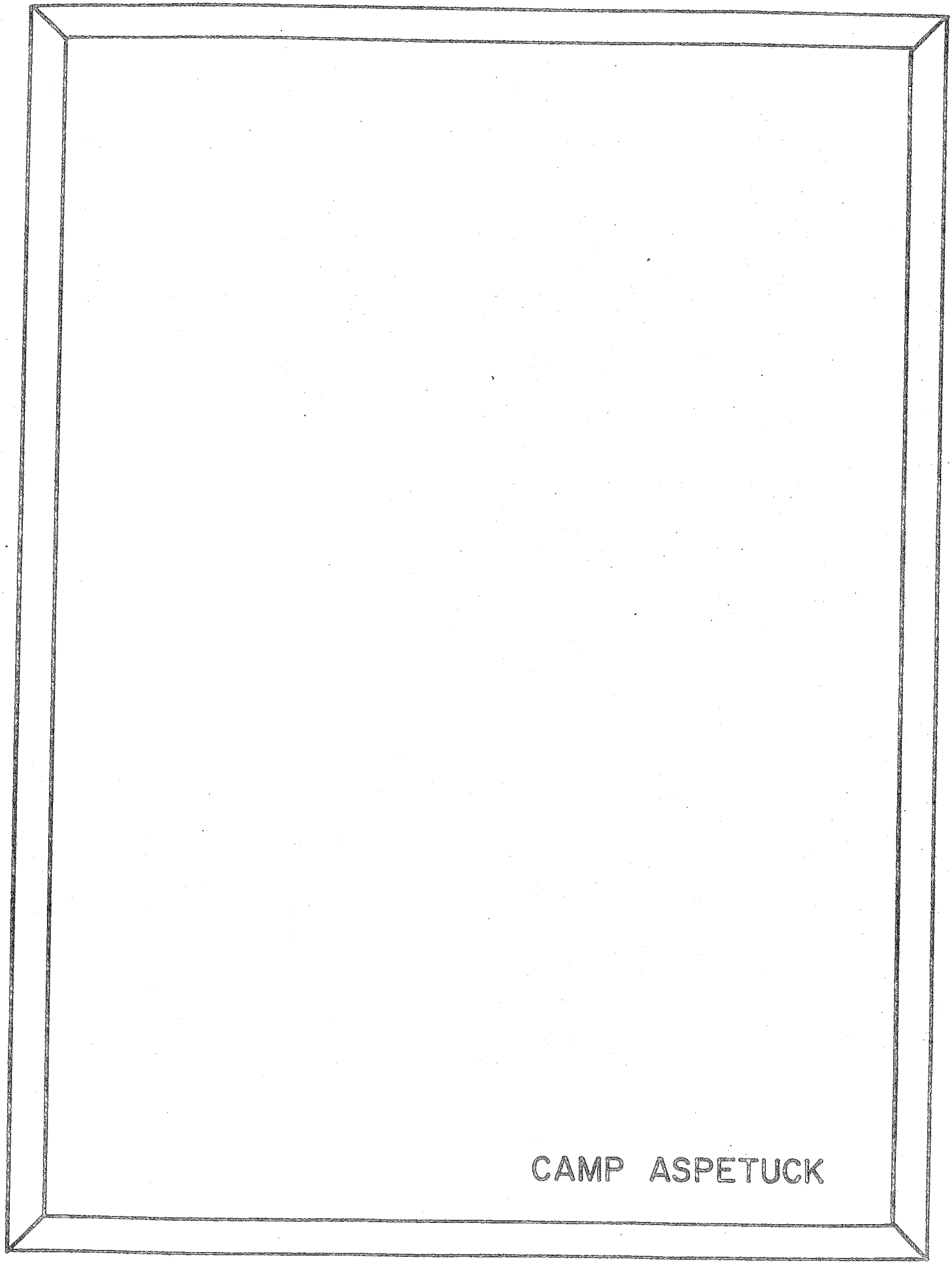
Figure 2.4 shows the soil types which have been identified on this property. The land is characterized by a wetland on its western border (Ce), moderately sloping wooded land in its interior, and steeply sloping rocky land in the eastern edge. As previously noted, a small meadow (UD) exists in the central portion of the property.

There does not appear to be great potential for expanding the camping facilities at this Camp. Much of the undeveloped land is either steep and rocky or wet. There is potential, however for upgrading the tent areas by constructing A-frame shelters if so desired.

Camp Rocky Craig is quite suited to summer day camp activities, although no swimming is available. Addition of a few small cabins for cold weather camping is a possibility if such a need exists. The area does have an excellent shelter, and a resident caretaker who provides supervision and security to this area.

It should be noted that this Camp is conveniently located to urban areas and its use by the urban population should be encouraged. Despite its proximity to the Merritt Parkway, the Camp is well screened from surrounding land uses.

* * * * *


CAMP ASPETUCK

III. CAMP ASPETUCK, WESTON

Camp Aspetuck is ± 16 acres in size and located in the northeastern corner of Weston off Judges Hollow Road. A sizeable parking lot services the Camp at its southern border. The camp contains a lodge, outdoor kitchen, a playing field, two pools, a cabin, and several camping areas. The facilities are well maintained and attractive. Surrounding land use is residential.

A. Topography and Geology

Camp Aspetuck consists of three hillocks and a central basin (see Figure 3.1). South-facing slopes on the site are steep or moderately steep; other slopes tend to be gentler. The basin is oval-shaped, flat, and wet. The largest continuous area of dry soils and moderate grades is located in the southwestern section of the parcel, in the vicinity of the open field. This area comprises about 3 acres.

Bedrock outcrops are largely confined to the central section of the property, just southwest of the basin, but at least one outcrop is present in the northeastern section of the site. The bedrock observed by the Team consisted largely of gneisses*. Major mineral components were quartz, feldspar, muscovite, biotite, and hornblende; garnet, staurolite, kyanite, and other minerals may be locally prominent.

Till* overlies bedrock in most places (see Figures 3.2). The till is generally sandy, stony, and friable but it may become quite compact at depths of 5 feet or more. The thickness of the till is probably less than 10 feet in most areas, but there may be small pockets of thicker till. The most likely area for thick till deposits is the southwestern section of the site. This is also the most easily developable area.

Swamp sediments less than 10 feet thick overlie till in the central portion of the basin. These sediments consist of silt, sand, clay, and partly decomposed organic materials.

B. Hydrology

The Camp Aspetuck parcel lies within the watershed of Aspetuck River. The northern two-thirds of the property drains to a small tributary that passes through the basin near the center of the site. The tributary joins another tributary approximately 1000 feet east of the site, and then flows 500 feet south into Aspetuck River. The southern third of the property drains toward a man-made pond 400 feet south of the site. The pond's outlet stream flows 250 feet east into another pond and then 50 feet further east into Aspetuck River.

The wetland on the site serves several natural functions, including storm-water storage and peak-flow reduction, filtration and chemical buffering of surface water, and the preservation of ecological habitat. The water purification

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* See definition in Camp Cokamong report.

FIGURE 3.1

TOPOGRAPHIC MAP

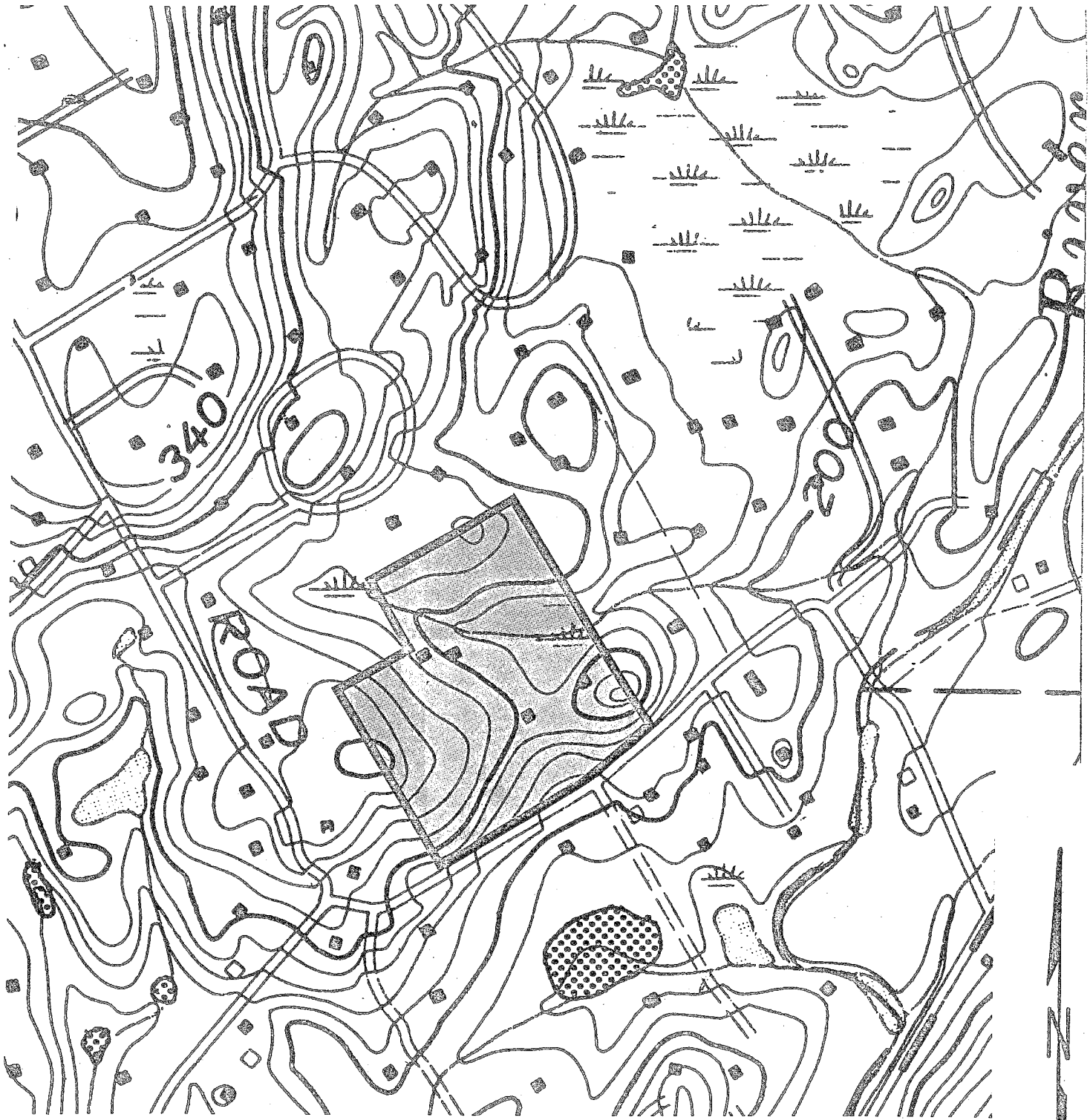
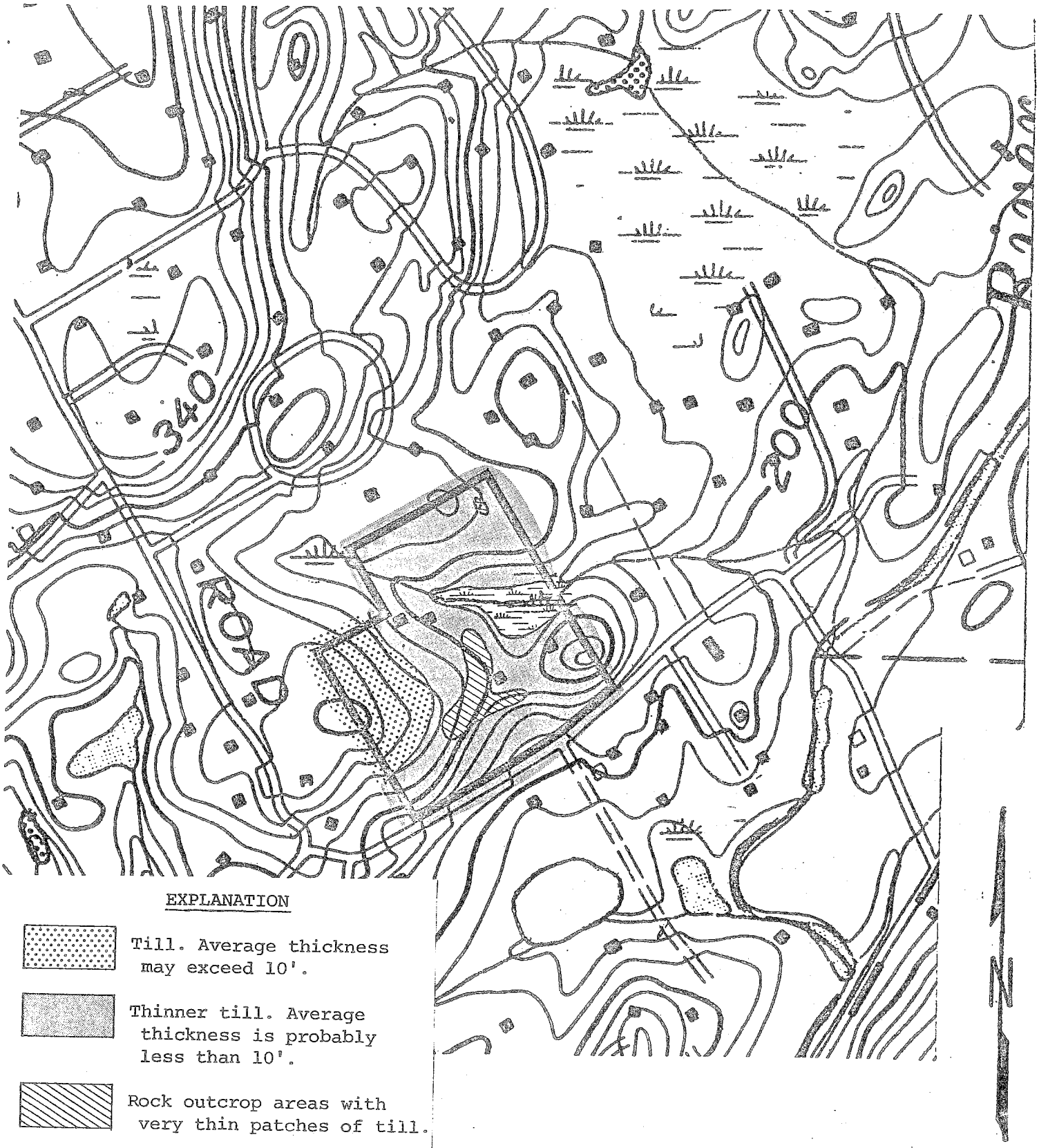


FIGURE 3.2

SURFICIAL GEOLOGY



EXPLANATION

Till. Average thickness may exceed 10'.

Thinner till. Average thickness is probably less than 10'.

Rock outcrop areas with very thin patches of till.

Swamp and floodplain sediments. Sand, silt, and clay mixed with decayed organic material.

SCALE: 1" = 500'

0 1/8 1/4 mile

0 500' 1000' 1500'

potential of this wetland may be particularly important because a stratified drift deposit is located a short distance downstream. Stratified drift, which consists of rock materials that were sorted and deposited by glacial meltwater, is often a highly productive source of groundwater. The stratified drift downstream from the site does not appear to be thick enough to provide a source for very high sustainable groundwater yields (i.e. more than 100 gallons per minute per well), but it may have potential for the establishment of relatively high-yielding wells (for example, 50 gallons per minute).

No substantial groundwater sources are located within the site. Bedrock is the most important aquifer. A general discussion of bedrock aquifers is contained in the Camp Cokamong report.

The southern third of the parcel is not likely to be used for development since the slopes in that area are particularly steep and rocky. Nevertheless, if some development is planned for that section, care should be taken to avoid excessive runoff and erosion onto Judges Hollow Road. Runoff or erosion from this section is more likely to affect an abutting landowner than it would be if it emanated from a different section.

C. Vegetation

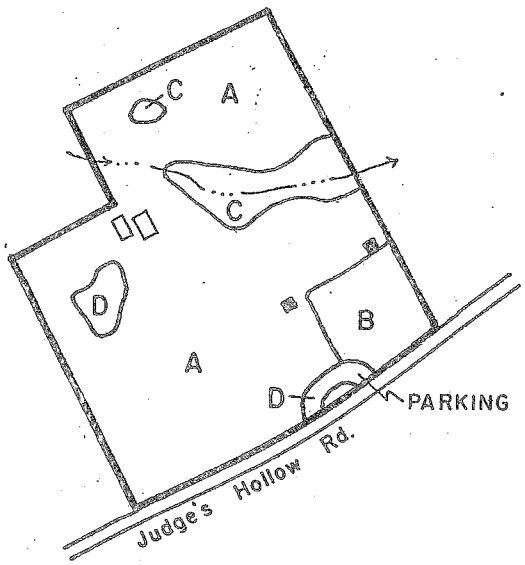
Camp Aspetuck may be divided into four vegetation types. These include mixed hardwoods, 13± acres; old field 1.5± acres; hardwood swamp, 1.5 acre; and open field, 1± acre. Each vegetation type is described below.

TYPE A. MIXED HARDWOODS. Pole to sawtimber-size black oak, white oak, red oak, black birch, American beech, Shagbark hickory, bitternut hickory and red maple are present in this 13± acre over-stocked stand. Understory vegetation includes American chestnut seedlings, flowering dogwood, alternate leaved dogwood, hazelnut, maple leaved viburnum and witch hazel. Green brier, poison ivy, Virginia creeper, Pennsylvania sedge, club moss, striped pipsissewa, aster, Christmas fern and hayscented fern form the ground cover vegetation in this stand. The trees in this stand would benefit by receiving a fuelwood thinning which removes between 1/3 and 2/5 of the trees in the overstory. This thinning should be focused on the removal of damaged and poor quality trees, especially trees which represent a hazard to area users and buildings. It should be noted that many of the poor quality trees which are in the heavy use areas have nails and wire in them. Extreme caution should be used while removing these trees.

TYPE B, OLD FIELD. This 1.5± acre fully-stocked stand is made up of sapling to pole-size eastern red cedar, gray birch, black cherry, black birch, black oak and occasional poor quality apple trees. Gray stemmed dogwood, flowering dogwood, maple leaved viburnum and highbush blueberry are present in the understory. Grasses, goldenrod, Japanese honeysuckle, poison ivy, green brier, fox grape, and Canada mayflower form this area's ground cover. In the future the red cedar and gray birch will lose their position in the overstory, while the black cherry, black birch and black oak become dominant. This change is part of the natural transition from an old field area to a true mixed hardwood stand. The highest quality apple trees and flowering dogwood which are present could be selected and released to improve their overall condition and stimulate their production of flowers.

FIGURE 3.3

VEGETATION TYPE MAP



LEGEND

- Road
- Property boundary
- Vegetation type boundary
- Stream
- Buildings
- Pool

VEGETATION TYPE DESCRIPTION*

TYPE A — Mixed hardwoods. Over-stocked, pole to sawtimber size. 13± acres.

TYPE B — Old field. Fully-stocked, sapling to pole size, 1.5± acres.

TYPE C — Hardwood swamp. Under-stocked, pole to small sawtimber, 1.5± acres.

TYPE D — Open fields. 1± acre.

*Seedling size - trees less than 1" in diameter at 4½' above the ground (d.b.h.)
Sapling size - trees 1" to 5" in d.b.h.
Pole size - trees 5" to 11" in d.b.h.
Sawtimber size - trees 11" and greater in d.b.h.

N

SCALE: 1" = 500'

0 1/8 1/4 mile

0 500' 1000' 1500'

TYPE C. HARDWOOD SWAMP. Approximately 1.5 acres of hardwood swamp is present within this tract. This area is under-stocked with poor to medium quality pole to small sawtimber-size red maple, and occasional American elm, white ash and yellow birch. The dense understory which is present is made up of spice bush, sweet pepper bush, and highbush blueberry. Ground cover consists of poison ivy, green brier, swamp dewberry, cinnamon fern, sensitive fern, skunk cabbage, false hellebore, sphagnum moss and tussock sedge. This area has little potential for management and would be best left as is, with the exception of the removal of the dead trees which are near the trails running through this area. Windthrow is a potential hazard in this area because trees are unable to become well anchored in the soils which are seasonally saturated.

TYPE D. OPEN FIELD. Approximately one acre of open fields is present within Camp Aspetuck. The open field on the western portion of the site is vegetated with grasses is well maintained and utilized primarily for recreational activities. Periodic mowing is needed to control the unwanted establishment of woody vegetation in this area. The small parking lot off Judges Hollow Road can also be classified as open field.

D. Wildlife

Three distinct major wildlife habitats exist at the Camp Aspetuck property. These are woodland, wetland, and upland field habitat types.

The excellent composition of these habitat types makes this area very beneficial for wildlife.

The woodland habitat type could be improved for wildlife by a fuelwood thinning as discussed in the vegetation section of this report. Creating a few upland clearings within the forestland along with selective thinning practices will encourage sprouting, which will in turn increase food supply for wildlife. Gray squirrels were observed utilizing existing mast trees with occasional nests also observed.

The wetland habitat type could be improved by installing wood duck boxes and underplanting conifers.

The upland field habitat types should be manipulated to set back succession to a herbaceous stage for maximum benefit to wildlife.

The apple trees on the property should be encouraged.

Rabbits, pheasants, woodchucks, and a variety of birds and small mammals (found in the fields); grouse, woodcock, raccoon, deer, and a variety of birds and small mammals (found in woodlands with openings); and waterfowl, various furbearers, rails, herons, and a variety of small birds and mammals (found in wetlands) would be found living and/or utilizing lands within the Camp Aspetuck property.

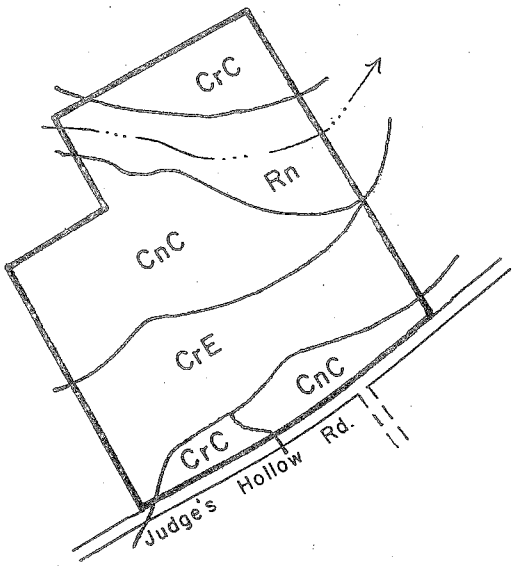
E. Soils and Recreation Considerations

Figure 3.4 shows the major soil types on the property (see Soils Limitation Chart in Appendix for soil names and characteristics). The wetland

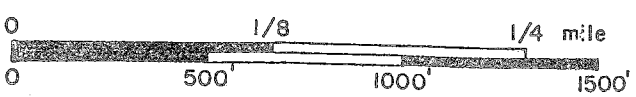
FIGURE 3.4

SOILS MAP

* ADAPTED FROM FAIRFIELD COUNTY SOIL SURVEY, U.S.D.A. – S.C.S.



SCALE: 1" = 500'



corridor on the propety is mapped as "Rn" in Figure 3.4. On either side of this wetland the soils are generally well-drained and moderately to steeply sloping, with shallowness to bedrock in certain areas.

Steep slopes and wet soils limit the opportunities for additional facility development at Camp Aspetuck. The best soil areas have already been developed.

Camp Aspetuck has a number of desirable features: a large parking lot, two swimming pools, an open play field for activities, and a cabin and lodge for staff and winter activities. The Camp is used extensively as a day camp and has a busy fall and spring troop camp program. The camp may have potential as a residential camp, if the demand is there, however the small size of the camp may make this economically infeasible.

The Camp Aspetuck property is highly attractive, however it is not as well buffered from surrounding residential land uses as are the other camps.

* * * * *

CAMP CATOONAH

IV. CAMP CATOONAH, RIDGEFIELD

Camp Catoonah is about 72 acres in size and is located in the northwestern portion of Ridgefield off Rte. 102 and Oreneca Road. The site contains a sizeable parking area, a pool, a staff cabin, several camping areas (some with A-frames) and a large field. Land use surrounding the Camp is largely woodland (with the exception of a private home near the swimming pool) which enhances the wilderness atmosphere of the Camp.

A. Topography and Geology

The Camp Catoonah property is a rocky, rugged parcel with steep slopes and attractive vistas. Three major ridges, each oriented northwest-southwest, cut across the property. Each ridge contains numerous, occasionally striking outcrops of bedrock, a few of which have short but precipitous drop-offs. The trail from the end of Oreneca Road follows the swale between the northern and central ridges. A new paved driveway to the "Ramapoo Village" lean-tos follows the swale between the central and southern ridges. Each of the ridges and swales contains small areas of relatively gently sloping land alternating with steeper, less easily developable land. The Scouts have already taken advantage of the hospitable westcentral section of the site , but there is probably much room for expansion. Two particularly attractive areas for future development are the southern ridge and the small, bowl-shaped basin along the trail between the field and the swimming pools.

The bedrock that dominates the higher elevations of the site is a banded light and dark gray gneiss*. The banding forms intricate swirls within the rock outcrops, testifying to the powerful upheavals that have shaped Connecticut's geology. Quartz, microcline, oligoclase, and biotite are the primary mineral constituents. Muscovite, hornblende, and garnet are locally present. A few layers of marble and of mica schist* may be intersperesed with the dominant gneisses on the parcel.

Till* overlies bedrock in most parts of the property (see Figure 4.2). The average thickness of the till is probably less than 10 feet. Thicker pockets of till may occur in some places, particularly in the northeastern and southern sections of the property. The texture of the till is generally sandy, very stony, and friable, but compact till may be found in some areas.

The shallow-to-bedrock soils and steep slopes on the property would obviously limit any intensive development. On the other hand, there seems to be considerable room on this site for recreational facilities that would be useful to the Girl Scouts. The three ridges present an excellent opportunity for the development or improvement of loop trails.

B. Hydrology

Camp Catoonah is located within the Hudson River basin. Runoff from the site flows in several directions, but all of the runoff is ultimately captured by streams flowing westward into New York. There are no perennial streams on the site itself.

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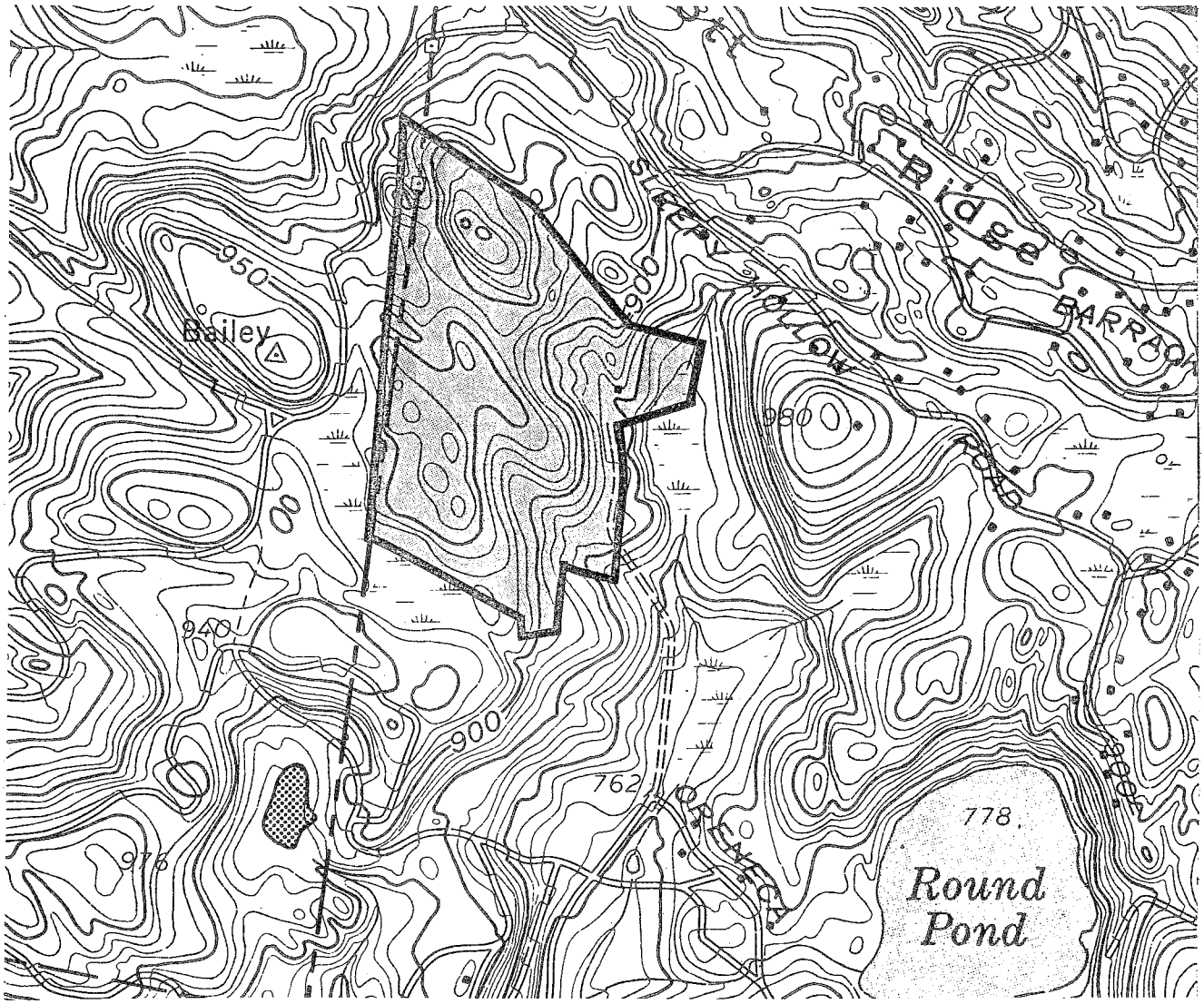
* Defined in the Camp Cokamong report.

FIGURE 4.1

TOPOGRAPHIC MAP



N

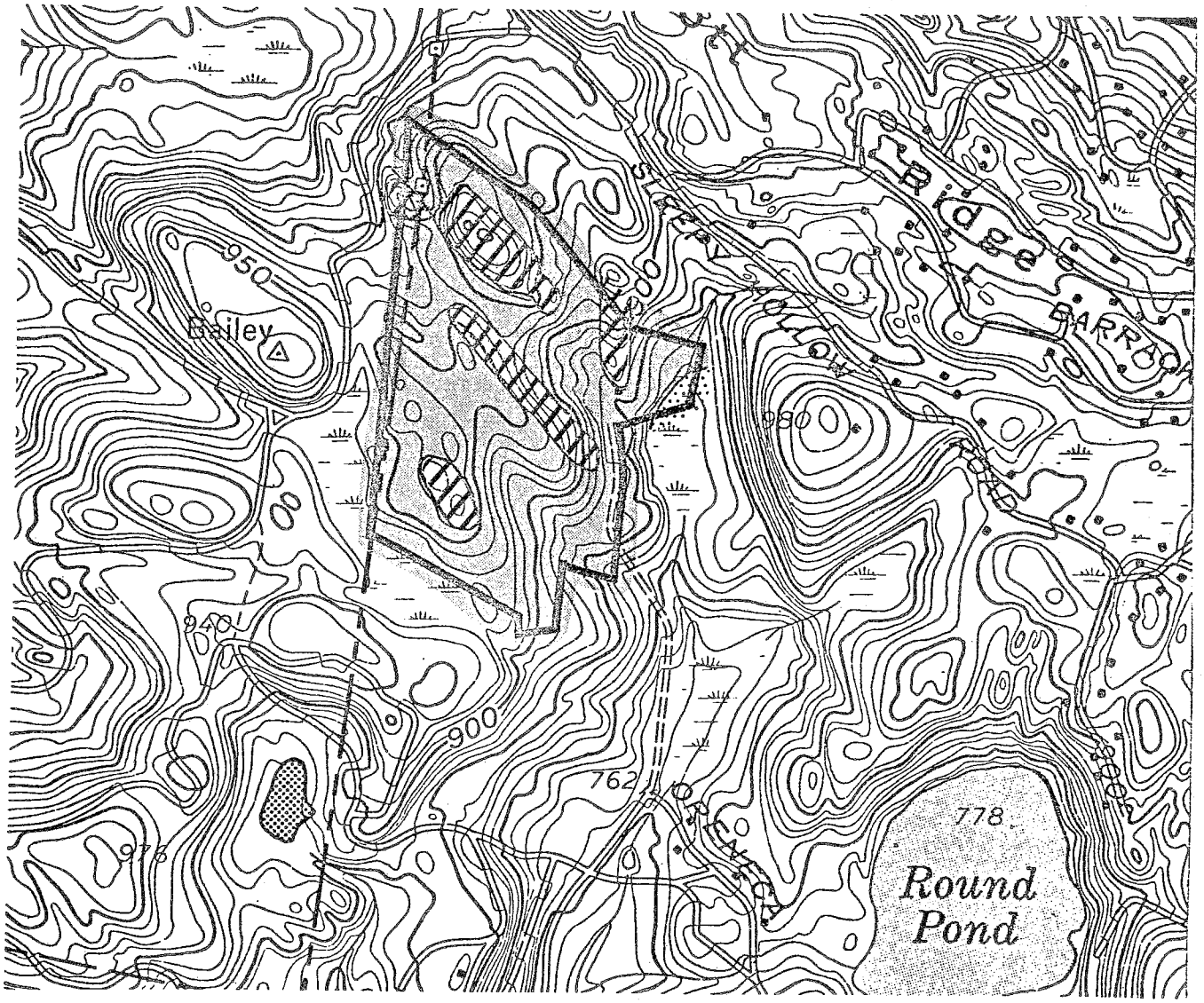
SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

FIGURE 4.2

SURFICIAL GEOLOGY



EXPLANATION

Till and small, scattered bedrock outcrops. Average till thickness is less than 10'.

Areas of numerous rock outcrops and thin patches of till.

Swamp sediments. Silt, sand, and clay mixed with decayed organic material.

N

SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

Bedrock is the principal aquifer on the site. The general properties of bedrock aquifers are discussed in the Camp Cokamong report.

There is a risk of groundwater pollution if sanitary facilities are established on shallow soils. The thinness of the soil would prevent septic leachate from being adequately purified. Although engineering techniques may overcome the limitations of shallow soils, these techniques may be costly. For this reason, the Team recommends that particular care be used in siting any new facilities. There are undoubtedly some places on the parcel that would be naturally suitable for sewage disposal without engineering.

Wells should be located ar far as practicable from any sewage-dispoal facilities. The location of a bedrock-based well is much more flexible than the location of a leaching field; essentially, any chosen location for a new well has as good a chance of producing acceptable quantities of groundwater as any other location.

C. Vegetation

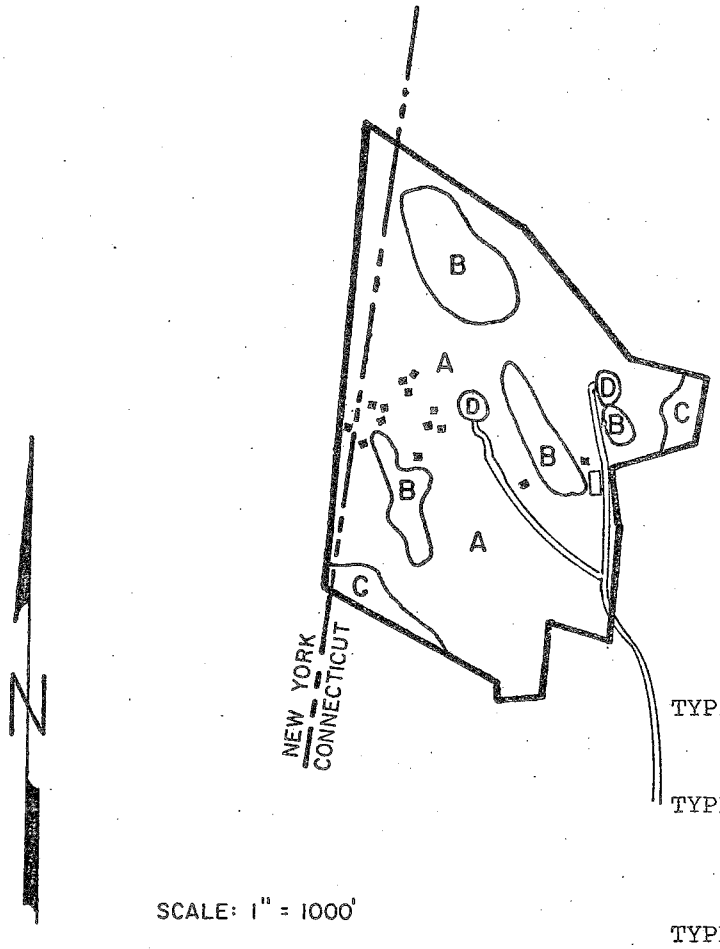
Camp Catoonah, which totals approximately 72 acres, may be divided into four vegetation types. These are described below.

TYPE A. MIXED HARDWOODS. This 58± acre stand was recently harvested of all its merchantable sawtimber-size trees. The trees which were left in the residual stand are either poor quality sawtimber-size or medium quality pole-size black oak, white oak, red maple, black birch, shagbark hickory, American beech and tulip tree. At present this stand is fully stocked. Hardwood tree seedlings, witch hazel, mountain laurel, sassafras, maple leaved viburnum and azalea are included in this stands understory. In places where large openings in the overstory were made, and also along main haul roads, raspberry and green brier have become very dense. Ground cover throughout this area consists of Christmas fern, brachen fern, evergreen wood fern, Pennsylvania sedge, striped pipsissewa, club moss and Canada may flower. Management of the vegetation in this area should be focused on the removal of the poor quality trees and damaged trees which represent an immediate hazard to the heavily used camp areas and trails. These trees could be used as fuelwood for camp fires. Conifer trees such as hemlock or eastern white pince could be underplanted in areas between camps, or areas designated for different uses, to eventually provide a buffer. These conifers will improve the aesthetic quality of the area by increasing vegetation variety. They will also provide quality cover for wildlife. Specific patches of mountain laurel could be released to improve their aesthetic appeal by stimulating their flower production.

TYPE B. MIXED HARDWOODS/OAK RIDGE. Poor quality pole to sawtimber size chestnut oak, black oak, white oak, red maple, black birch and American beech are present in this 10± acre understocked stand. Harvest operations were not conducted in these areas because the trees which are present have little or no commercial value. The understory is made up of mountain laurel, witch hazel, maple leaved viburnum and huckle berry. Ground cover consists of evergreen wood fern, rock polypody, haircap moss, barberry, Pennsylvania sedge and aster. The potential for windthrow in this stand is high because trees are unable to become securely anchored in the shallow to bedrock soils. The low growth potential and low commercial value of the trees which are present prevent cost efficient management of this area.

FIGURE 4.3

VEGETATION TYPE MAP



SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

LEGEND

- Road
- Property boundary
- Vegetation type boundary
- Building
- Swimming pool

VEGETATION TYPE DESCRIPTIONS*

TYPE A	Mixed hardwoods. Fully-stocked, pole size, 58± acres.
TYPE B	Mixed hardwoods/oak ridge. Under-stocked, pole to saw timber size, 10± acres.
TYPE C	Hardwood swamp. Over-stocked, sapling to pole size, 3± acres.
TYPE D	Open field. 1± acres.

*Seedling size - Trees less than 1" in diameter at 4½' above the ground (d.b.h.).
Sapling size - Trees 1" to 5" in d.b.h.
Pole size - Trees 5" to 11" in d.b.h.
Sawtimber size - Trees 11" and greater in d.b.h.

TYPE C. HARDWOOD SWAMP. These over-stocked hardwood swamp areas total approximately 3 acres and are made up of predominantly sapling to pole-size red maple with occasional yellow birch. These trees are growing extremely slowly because of poor soil aeration and the crowded conditions which prevail. The understory which is composed of spice bush, sweet pepperbush and high bush blueberry is very dense. The dominant herbaceous vegetation which is present includes tussock sedge, cinnamon fern, skunk cabbage and in the driest areas, club moss. Management of these areas for timber or fuelwood production is not feasible due to poor growth conditions, poor access and poor operability.

TYPE D. OPEN FIELDS. Two open areas which total approximately one acre are present within this parcel. These areas are not true open fields. They were cleared and used as yarding areas for the recent harvest and are presently vegetated with raspberry, green brier, grasses, goldenrod and assorted weed and wildflower species. Prerequisits for upgrading these areas for recreational use would be vegetation clearing and removal, grading to provide a suitable base, re-spreading of top soil, and the application of lime, seed and fertilizer. USDA Soil Conservation Service guidelines should be followed to produce a quality field suitable for recreational activities.

D. Wildlife

Three major wildlife habitat types are present within Camp Catoonah. These include Woodland habitat, Wetland habitat and Open land-upland habitat. For a description of the vegetation present and location of these habitat types, please see the preceeding vegetation type descriptions and vegetation type map.

The woodland habitat type is dominated by mixed hardwoods and has been heavily thinned out. Sprouting of understory vegetation has occurred, which is of high value to wildlife such as deer. Any future cuttings should consider leaving more "mast" trees for wildlife. Mast trees include hickories, oaks, and beech trees which, when mature, produce mast (acorns and nuts) for a variety of wildlife species. At least 5 to 7 snag trees should also be left per acre of woodland for cavity nesting wildlife.

Throughout the woodland, and elsewhere on the Camp Catoonah property, small randomly scattered brush piles could be created for various small mammals to utilize.

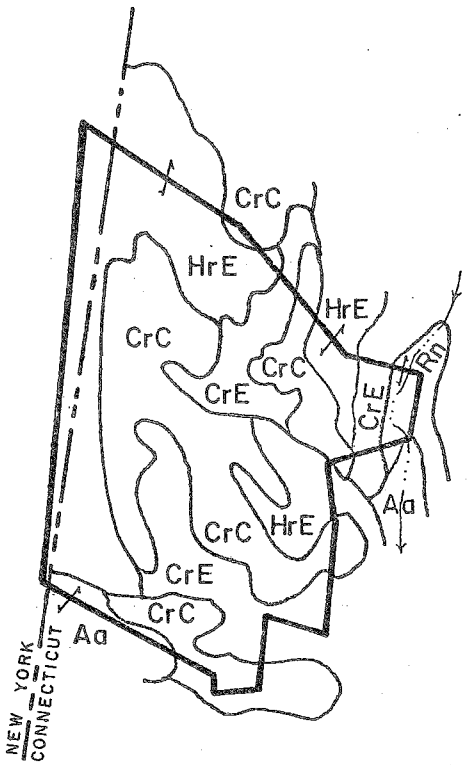
Although only a cottontrail rabbit, gray squirrel, nuthatch, pileated woodpecker and deer signs were observed, wildlife such as white-tailed deer, owls, woodpeckers, an occasional ruffed grouse and woodcock, furbearers, and various small mammals and birds will utilize forestlands like those offered by Camp Catoonah.

The upland-open land habitat type is made up of a play field and scattered very small limited brushy openings. From a wildlife standpoint, it would be desirable to create additional openings of 1/4 to 1/2 acre throughout the woodland habitat type. Openings should be long, narrow irregular clearings to create the greatest "edge" potential. Openings should also contain different age classes; that is, from herbaceous vegetation to the seedling-sapling stage. The greater the vegetation diversity, the better the habitat for a variety of wildlife.

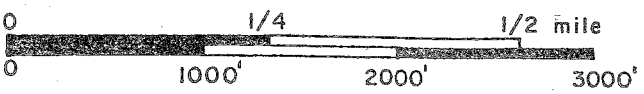
FIGURE 4.4

SOILS MAP

• ADAPTED FROM FAIRFIELD COUNTY SOIL SURVEY, U.S.D.A. – S.C.S.



SCALE: 1" = 1000'



On a 72 acre parcel such as Camp Catoonah, it would be advisable to create the following if maximum benefit to wildlife is to be realized:

- 2% of the land in openings of permanent grass-legume plots
- 5% in permanent openings maintained to encourage early succession, and native vegetation.

It should be noted that some important evergreen cover is found on the Camp Catoonah property. Most of the cover is at the border between the wetland and woodland habitats. A good rule of thumb to follow for a 72 acre parcel is to maintain/plant 10% of the wooded acreage in small (2 to 5 acre) conifer patches. Trees such as pine, spruce or hemlock could be planted.

Pheasants, doves, foxes, hawks and owls, deer, rabbits, songbirds, and numerous small mammals and birds can be expected to utilize open field habitat types.

The wetland habitat type is small but provides excellent habitat for wildlife. The evergreen cover that borders both wetland areas provides sufficient cover. It would be highly desirable to maintain these two small wetlands in their natural form.

During the ERT's field review, a red fox and a white-tailed deer were observed utilizing the border of the wetland. Occasional ducks, beaver, muskrat, mink, woodcock, and other small mammals and birds can also be expected to utilize this wetland habitat.

E. Soils and Recreation Considerations

As shown in Figure 4.4, a number of soil types are present at Camp Catoonah (see Soils Limitation Chart in Appendix for soil names and characteristics). Basically, this site consists of moderately to steeply sloping soils which are very rocky (CrC, CrE, HrE) and two small wetland areas (Rn, As). As previously mentioned, there is much potential for expansion at this Camp.

The sloppy and inappropriate commercial logging operation that was implemented on this site underscores the importance of professional supervision of such an operation. To enhance the aesthetics of the woodland, it would be desirable to salvage the remaining tops left in the woods and use them as firewood. Damaged and unsafe trees should also be removed as previously discussed.

The sizeable pool complex at this site is a real plus. During the ERT's field review, representatives of the Council indicated some interest in moving the pool to a more central location within the Camp. Although this would be desirable from a design standpoint and would make the pool more easily accessible, it obviously is a very expensive proposition. Prior to pursuing this idea, it would be worthwhile to undertake a detailed study of the present pool complex--its condition, maintenance costs, and expected life. This will provide a basis for future decision making.

* * * * *

CAMP CANDLEWOOD

IV. CAMP CANDLEWOOD

Camp Candlewood is ± 90 acres in size and located on the western shore of Lake Candlewood in the Town of New Fairfield. Access to the Camp is available from Bogus Hill Road.

Camp Candlewood is an attractive Camp with over 1/4 mile of lake frontage. Facilities at the Camp include boat docks, swimming docks, a boat house, parking lots, kitchen, several shelters, and numerous camping sites. The Camp is well buffered from surrounding land uses.

A. Topography and Geology

Camp Candlewood is located on a high, broad hilltop overlooking both Lake Candlewood and Squantz Pond (see Figure 5.1). The eastern slope, adjoining Lake Candlewood, is extremely steep but surprisingly free from ledge. Nevertheless, the very steepness of the slope indicates that bedrock is not far below the surface. Only in the northeastern corner of the property does the toe of the slope become gentler, and the Scouts have established a beach and boat house to take advantage of this.

Rock outcrops appear in profusion at the top of the steep slope. The topography becomes very knobby and irregular as the shape of the underlying bedrock surface controls the overall shape of the land. At 650± feet, this knobby area is the highest portion of the property. Further west, the land slopes into a shallow ravine, through which the paved access drive winds. The land then rises to a flatter, less irregular hilltop near the western boundary of the site. Few outcrops were seen in this area.

Bedrock found on the site includes biotite-quartz gneiss with variable amounts of garnet, microcline, plagioclase, and sillimanite; feldspathic mica quartzite or gneiss composed of biotite, quartz, and plagioclase, granite; and pegmatite. The term "gneiss" is defined in the Camp Cokamong report. Granite and pegmatite are silica-rich rocks dominated by quartz and feldspar. In pegmatite, the individual feldspar or quartz crystals may be very large. Both the granite and the pegmatite in the local bedrock are thought to be intrusive; that is, they were formed by the injection of molten rock or very hot liquids into the older gneissic rocks.

Till, which is also defined in the Camp Cokamong report, covers bedrock in most parts of the site. The till is probably less than 10 feet thick in most of the eastern half of the parcel, but it is generally thicker in the western half, particularly in the northwestern section. The thinner till and the upper 3 to 5 feet of the thicker till are typically sandy, stony, and friable, but the lower portions of the thicker till are generally compact and siltier. The compact till restricts groundwater movement and can therefore cause problems for septic systems or other facilities requiring good subsurface drainage.

The northwestern section of Camp Candlewood could be easily developed, and much land (more than 10 acres) is available. Because the topography is so even, however, the aesthetic attractiveness of camp facilities in this area may not be as great as that of the established camp buildings and structures in the knobby eastern upland area. If a major new facility requiring a septic system is desired, it probably should be placed in the northwestern section.

FIGURE 5.1

TOPOGRAPHIC MAP

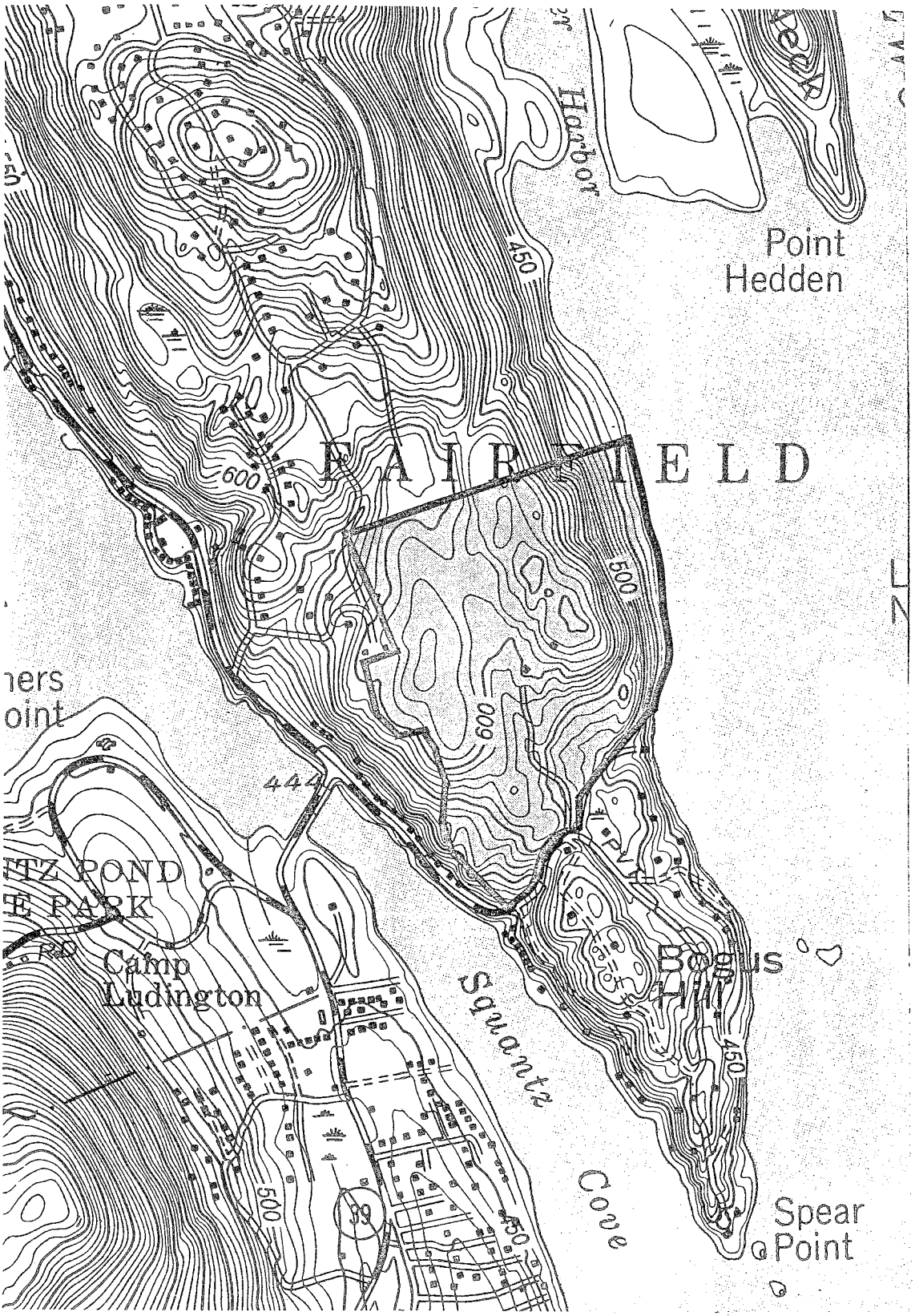
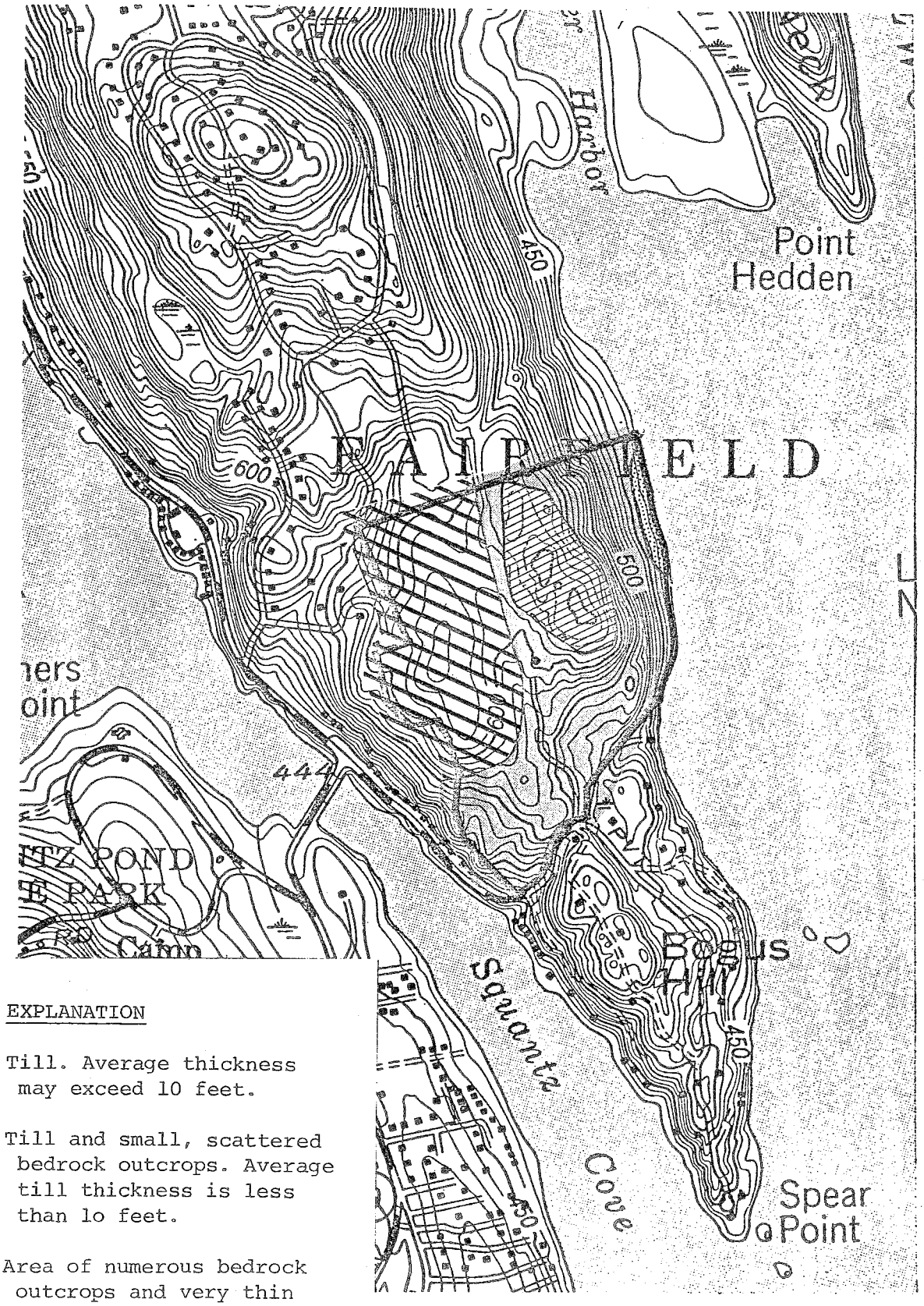


FIGURE 5.2

SURFICIAL GEOLOGY



EXPLANATION

Till. Average thickness may exceed 10 feet.

Till and small, scattered bedrock outcrops. Average till thickness is less than 10 feet.

Area of numerous bedrock outcrops and very thin patches of till.

Beach area.

SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000

B. Hydrology

Most runoff from Camp Candlewood flows directly into Lake Candlewood. Gullying has occurred in the beach sands as a result of concentrated runoff from the lower driveway. Corrective efforts should be undertaken. A narrow strip of land along the western boundary of the site and the southwestern corner of the parcel drain directly into Squantz Pond or Squantz Cove.

Bedrock is the site's most important aquifer. A description of bedrock aquifers may be found in the Camp Cokamong report.

If further development occurs on the site, the developer should take precautions to prevent additional erosion problems from concentrated runoff. The steep slopes and central ravine are particularly susceptible to erosion and gullying. Efforts should also be made to minimize the risk of groundwater contamination from septic systems. Shallow soils should be avoided unless the developer is willing to finance corrective engineering measures. Wells should be located as far as is practicable from leaching areas.

C. Vegetation

Camp Candlewood may be divided into four major vegetation types. These include softwoods/hardwoods, 59± acres; hemlock, 14± acres; mixed hardwoods, 7± acres; and open field, 1± acre. Steep slopes preclude the implementation of timber management practices on approximately 12 acres along side Lake Candlewood.

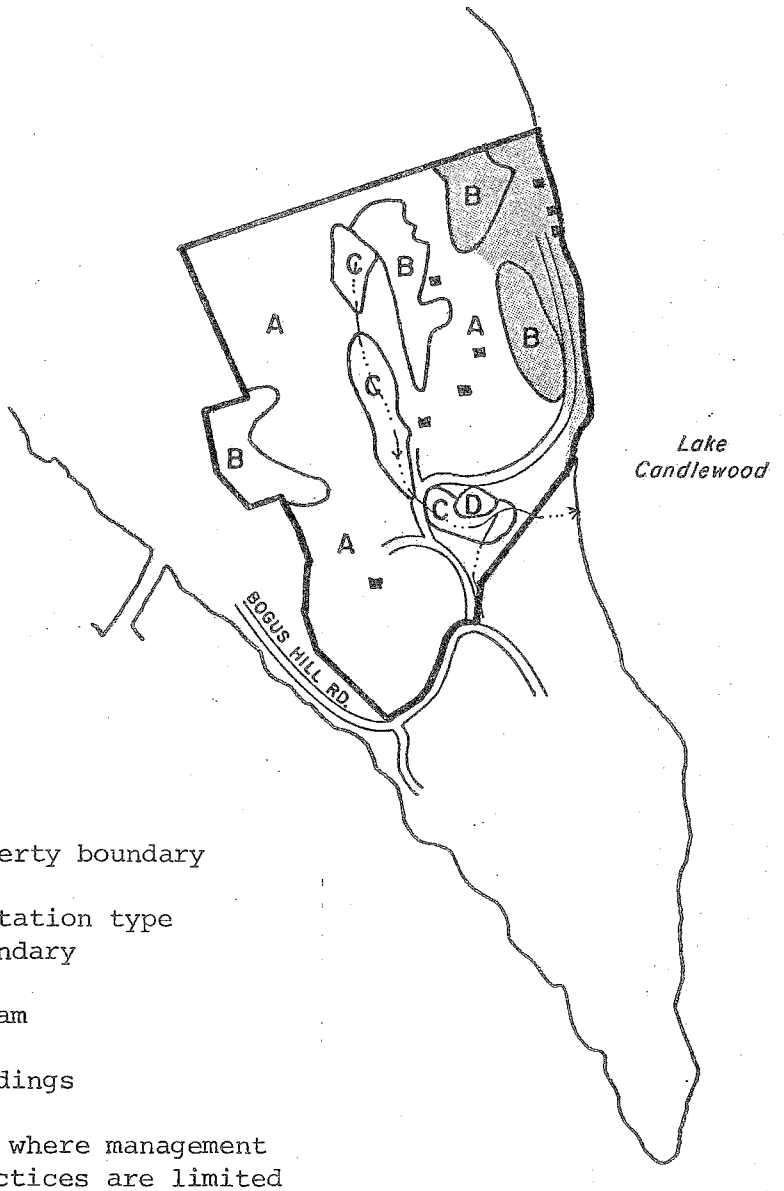
TYPE A. SOFTWOODS/HARDWOODS. This 59± acre over-stocked stand is made up of predominantly sawtimber size eastern hemlock, black oak, white oak, red oak, red maple, black birch, pignut hickory and scattered tulip tree, yellow birch and American beech. The understory is dominated by hemlock seedlings, maple leaved viburnum, mountain laurel, flowering dogwood, striped maple, and witch hazel. Ground cover consists of poison ivy, club moss, aster, striped pipsissewa, rattle snake plantain, Pennsylvania sedge, Virginia creeper, partridge berry, Canada mayflower, Christmas fern, evergreen wood fern, hayscented fern, lady fern and bracken fern.

A commercial thinning which removes approximately one-third of the volume in sawtimber size trees would help to reduce the crowded condition in this area. All trees which represent hazards in heavy use areas or near structures should be removed during this thinning. High quality healthy trees should be retained in the residual stand.

TYPE B. HEMLOCK. Pole to sawtimber size eastern hemlock, black oak, yellow birch, black birch and scattered American beech are present in this 14± acre over-stocked stand. The understory is made up of hemlock seedlings, striped maple and witch hazel. Ground cover consists of Canada mayflower, Pennsylvania sedge, Christmas fern, lowbush blueberry and rock polypody. The trees in this stand are crowded and would benefit by receiving a thinning, however steep slopes may limit the feasibility of such management. Defoliation by gypsy moth has caused scattered mortality in the hemlocks throughout this vegetation type.

FIGURE 5.3

VEGETATION TYPE MAP



LEGEND

- Road
- Property boundary
- Vegetation type boundary
- Stream
- Buildings
- Area where management practices are limited by steep slopes, 12± acres.

N

0 1/4 1/2 mile

0 1000' 2000' 3000'

SCALE: 1" = 1000'

VEGETATION TYPE DESCRIPTION *

TYPE A Softwoods/hardwoods. Over-stocked, sawtimber size, 59± acres.

TYPE B Hemlock. Over-stocked, pole to sawtimber size, 14± acres.

TYPE C Mixed hardwoods. Variable stocking, sapling to pole size, 7± acres.

TYPE D Open field. 1± acres.

*Seedling size - trees less than 1" in diameter at 4½' above the ground (d.b.h.)
Sapling size - trees 1" to 5" in d.b.h.
Pole size - trees 5" to 11" in d.b.h.
Sawtimber size - trees 11" and greater in d.b.h.

TYPE C. MIXED HARDWOODS. This 7± acre area is variably stocked with sapling to pole-size red maple, sugar maple, red oak, white ash and occasional tulip tree. Flowering dogwood, bluebeech, spice bush, highbush blueberry, witch hazel, maple leaved viburnum and striped maple are present in the understory. Ground cover consists of club moss, partridge berry, evergreen wood fern, and Christmas fern along with skunk cabbage and cinnamon fern along the stream which passes through this area. The trees within this stand are generally of good health and quality, a reflection of the adequate moisture and rich soils which are present. Management is not needed at present, however this area should be re-evaluated for management needs in approximately 10 years. Loss of trees to windthrow is possible along the stream.

TYPE D. OPEN FIELD. One acre of open field is present within this parcel. It is vegetated with grasses and raspberry, barberry, maple leaved viburnum, and golden rod around its perimeter. Periodic mowing will be needed to control the encroachment of woody vegetation.

D. Wildlife

Three major wildlife habitat types are present on the Camp Candlewood parcel. These include Wetland, Open land, and forest land habitat types.

Camp Candlewood can be classified as having fair to good overall wildlife habitat. More open land habitat in the form of small 1/4 to 1/2 acre openings within the forest land habitat would be desirable. Simply by creating diversity in habitat (i.e. creating edge), wildlife feeding, resting and nesting requirements can be better met. Such species as deer, grouse, fox, turkeys, songbirds, doves, rabbits and numerous small mammals and birds will utilize an open land habitat.

The forest land habitat type can be improved by clearing small openings, clearing canopy trees away from berry producing brush, releasing trees that are overcrowding mast (nut producers) trees, and planting some evergreen cover.

Observations made during the review included heavy deer utilization in small brushy openings. Deer were also utilizing the hemlock (evergreen) cover that is scattered throughout the property. Grouse tracks, along with numerous small mammals and a short-tailed weasel were also observed in the forest land habitat.

Periodic manipulation of the vegetation in the open land habitat will be needed to ensure prolonged usage by wildlife.

The existing open land habitat on this property is comprised of a few scattered herbaceous openings and a couple of mowed meadows.

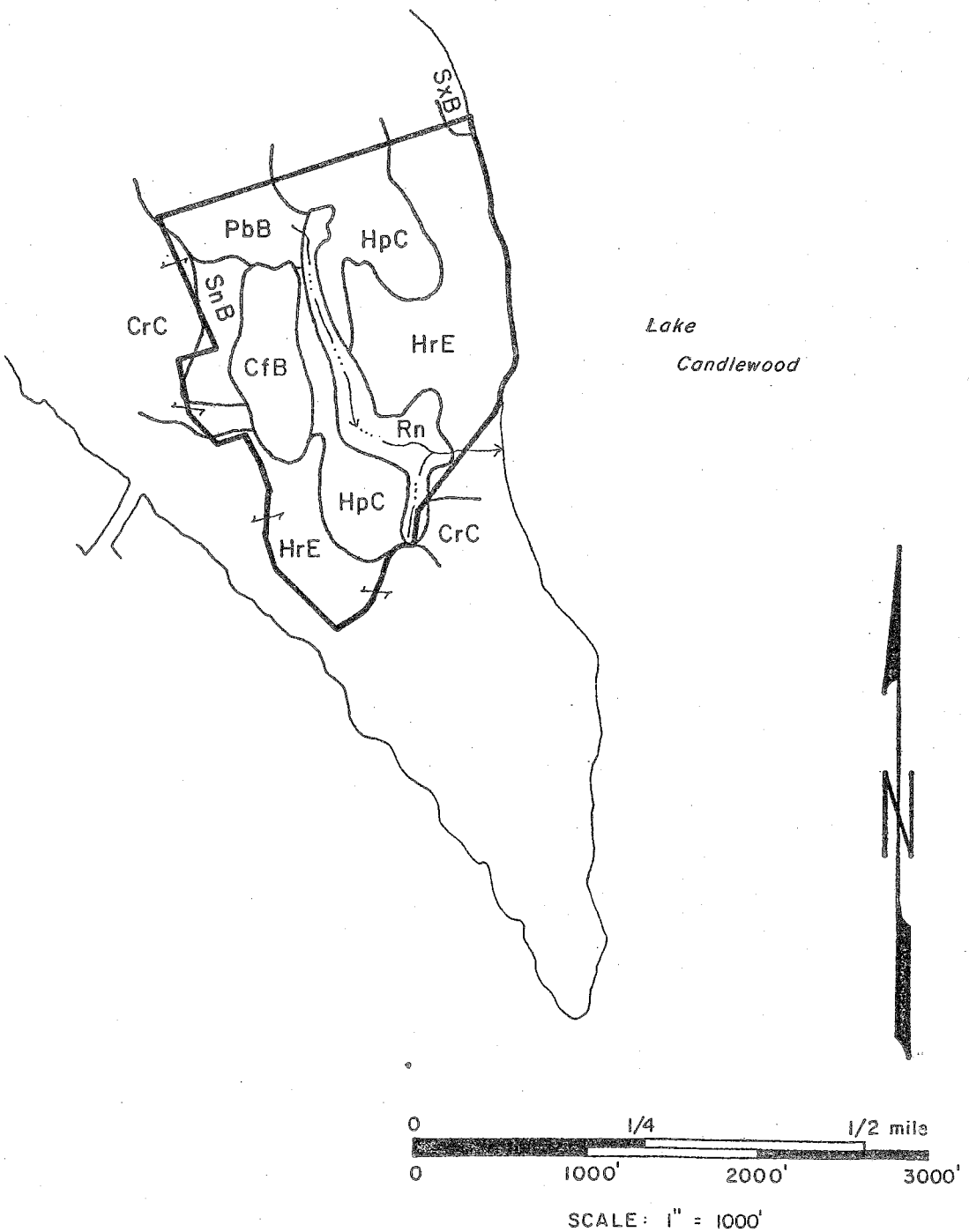
The few alders scattered through the current herbaceous openings should be encouraged for ruffed grouse production. Fox grapes, various berry bushes, green brier, winterberry, and barberry were observed; all produce valuable food for wildlife during critical months.

Ideally, herbaceous openings (created by clearing out forest lands) should be maintained at various successional stages to satisfy species specific needs.

FIGURE 5.4

SOILS MAP

* ADAPTED FROM FAIRFIELD COUNTY SOIL SURVEY, U.S.D.A. - S.C.S.



The old field apple trees found on a few of the "edges" and throughout the woodlot should be encouraged through "apple tree release". "Apple tree release" is accomplished by removing surrounding trees that are crowding out apple trees, waiting one year for tree vigor to come back, then pruning and fertilizing the apple trees. Grafting can also be done for a variety of apple species.

The wetland habitat type is comprised of Candlewood Lake, a stream, and a shrub swamp.

Ducks, woodcock, beaver, mink, otter, raccoons, muskrat, and a variety of small birds and mammals will utilize this wetland habitat.

A buffer strip of vegetation should be left bordering the stream and the lake.

Putting up bird boxes within different habitat types, along with wood duck boxes along the lake, will also provide beneficial results.

E. Soils and Recreation Considerations

Camp Candlewood is dominated by six soil types (see Figure 5.4 and the Soils Limitation Chart in the Appendix). The eastern half and southwestern quarter of the Camp consists of moderately to steeply sloping soils which are rocky and shallow to bedrock in most areas. Most existing camping facilities are located in this area. A stream and wetland corridor traverses the central portion of the Camp (map symbol Rn in Figure 5.4). The northwestern quarter of the Camp consists of deeper and more level soils. As previously mentioned this northwestern quarter has good potential for future facility development.

Camp Candlewood is one of the primary residential Camps of the Council. The Camp has much to offer including swimming, boating, waterskiing, canoeing and sailing. The diversity of habitat at the Camp lends itself to nature education and consideration should be given to establishing a nature trail on the property.

Erosion is occurring at the Camp's beach due to uncontrolled runoff from the steep hillside and macadam enhance road. Construction of a three foot wide drainage swale below the roadbed would control this problem. The USDA Soil Conservation Service office in Bethel (743-5453) should be contacted for technical assistance on this matter.

Erosion control is also needed on the railroad tie stairway between the upper camp level and the lower waterfront. Additional railroad tie and waterbar steps are needed together with backfill of the tread area with four inches of medium processed gravel.

Camp Candlewood presently offers an excellent number of camping sites. A number of these could be upgraded by the installation of A-frame tent platforms if so desired. As previously mentioned, the western half of the property has considerable room for expansion of camping facilities if needed.

* * * * *

CAMP FRANCIS

VI. CAMP FRANCIS

Camp Francis is the Girl Scout Council's largest camp measuring approximately 260 acres in size. The Camp is located estride the Kent and Warren town line. Access to the Camp is available off Route 341 and Kent Hollow Road. The Camp offers a small pond (Beaman Pond) for swimming, numerous camping sites, a dining hall, staff house, office, and meadow for field sports. A long access road to the central portion of the Camp is present on the western border of the property.

A. Topography and Geology

Camp Francis lies within an area of steep, irregular topography (see Figure 6.1). Elevations range from a high of approximately 1395 feet to a low of about 675 feet. Slopes are generally to the west or southwest in the central, northern, and southern portions of the parcel; to the east or south in the eastern portion; and to the south, west, or east in the western portion. Steep rocky knolls are located north and east of Beaman Pond, and also in the northeastern and central sections of the property. The drainage outlet from Beaman Pond flows through a spectacular ravine south and west of the access road. A tributary to the outlet flows through another steep-walled ravine east of the knoll east of Beaman Pond.

The Camp is located within the Kent topographic quadrangle. A preliminary bedrock map of the quadrangle, by Richard Jackson, and a preliminary surficial geologic map of the quadrangle, by G.C. Kelley, are on file at the Department of Environmental Protection's Natural Resources Center in Hartford.

Bedrock in Camp Francis consists of two major types: a gneissic unit and a schist unit (see Figure 6.2). The terms "gneiss" and "schist" both refer to metamorphic rocks; that is rocks which have been structurally or mineralogically altered from previous forms. In gneisses, thin bands or lenses of elongate or flaky minerals alternate with bands or lenses of granular minerals. In schists, flaky or elongate minerals are predominant and are aligned to form a platy or slabby structure. The gneissic unit in the site is made up of interlayered light-gray weathering, well-foliated gneisses and schistose gneisses composed of quartz, muscovite, biotite, and garnet; massive or weakly foliated micaceous gneiss; and thinly layered, well-foliated, light gray and black gneiss. The schist unit consists of well-foliated, reddish tan or tan-weathering, medium - to course-grained schist composed of feldspar, quartz, muscovite, biotite, garnet, and sillimanite.

Bedrock is exposed in many parts of the Camp Francis property. Elsewhere, a very thin deposit of till overlies the rock (see Figure 6.3). Till is a glacial sediment composed of a nonsorted mixture of clay, silt, sand, gravel, and boulders. The average thickness of the till on the site is probably less than 10 feet, but deeper pockets of till may be scattered throughout the parcel.

Steep slopes and rockiness are the site's major geological limitations. Intensive development of the site for purposes other than recreation would be precluded in most areas. The present camp facilities and the access road are located in those portions of the site where development potential is highest. The remaining undeveloped areas that appear to offer the greatest potential for the expansion of camp facilities are the area due north of the "Wet & Wild" units * and the moderately sloping area along

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* This area is located in the northcentral portion of the camp and is shown on a map of Camp Francis presented in a publication entitled "Camp Sites" by the Southwestern Connecticut Girl Scout Council.

FIGURE 6.1

TOPOGRAPHIC MAP

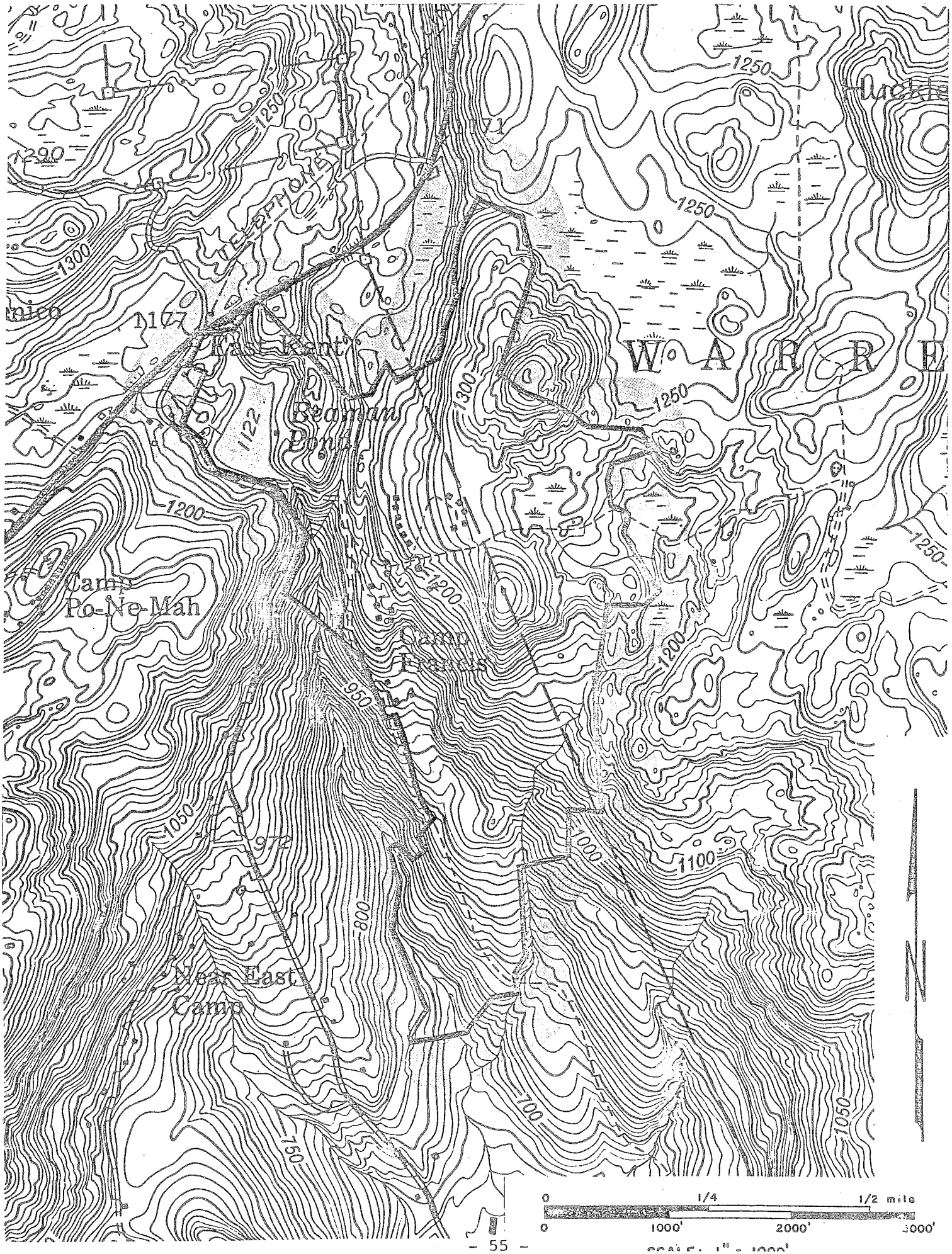
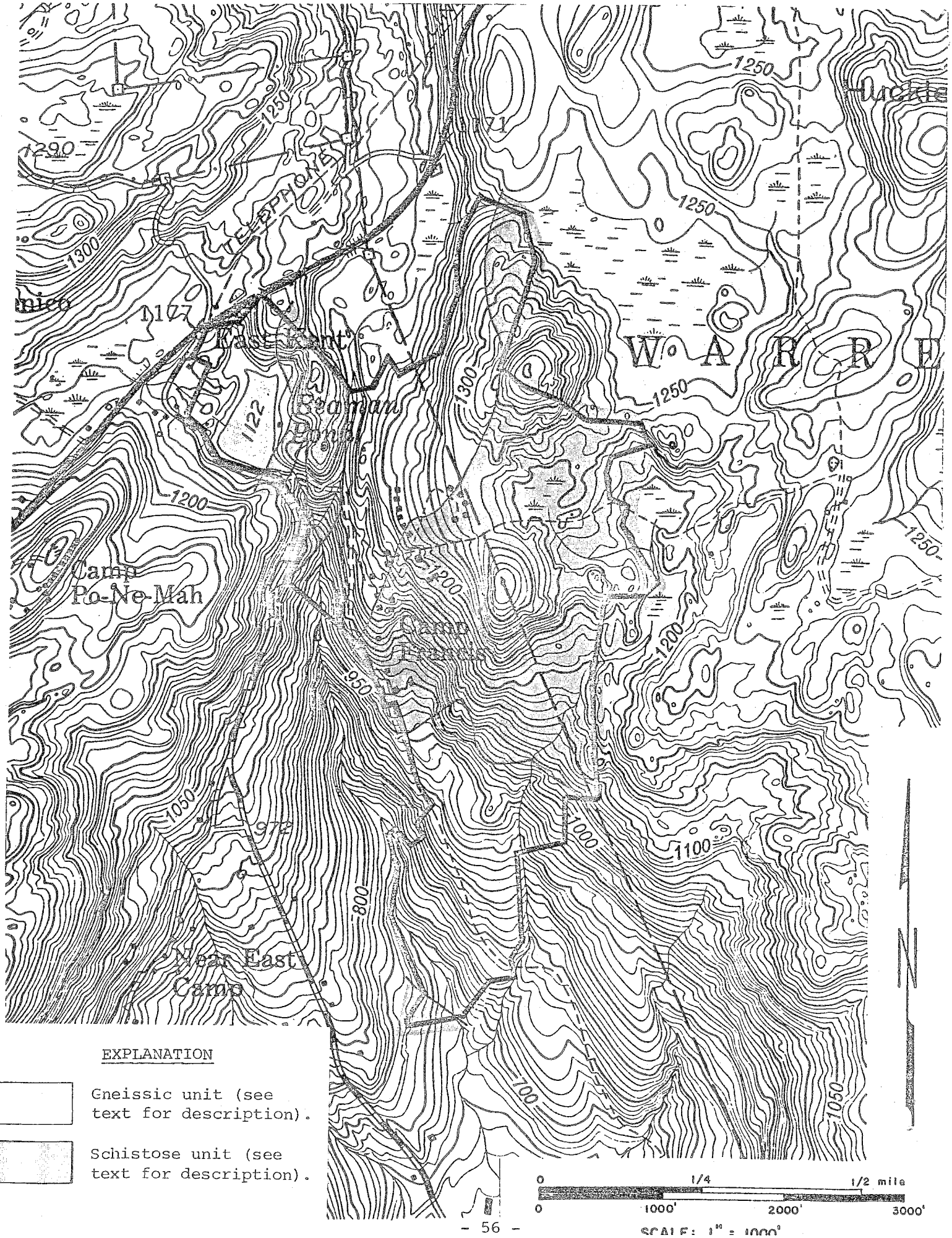


FIGURE 6.2

BEDROCK GEOLOGY



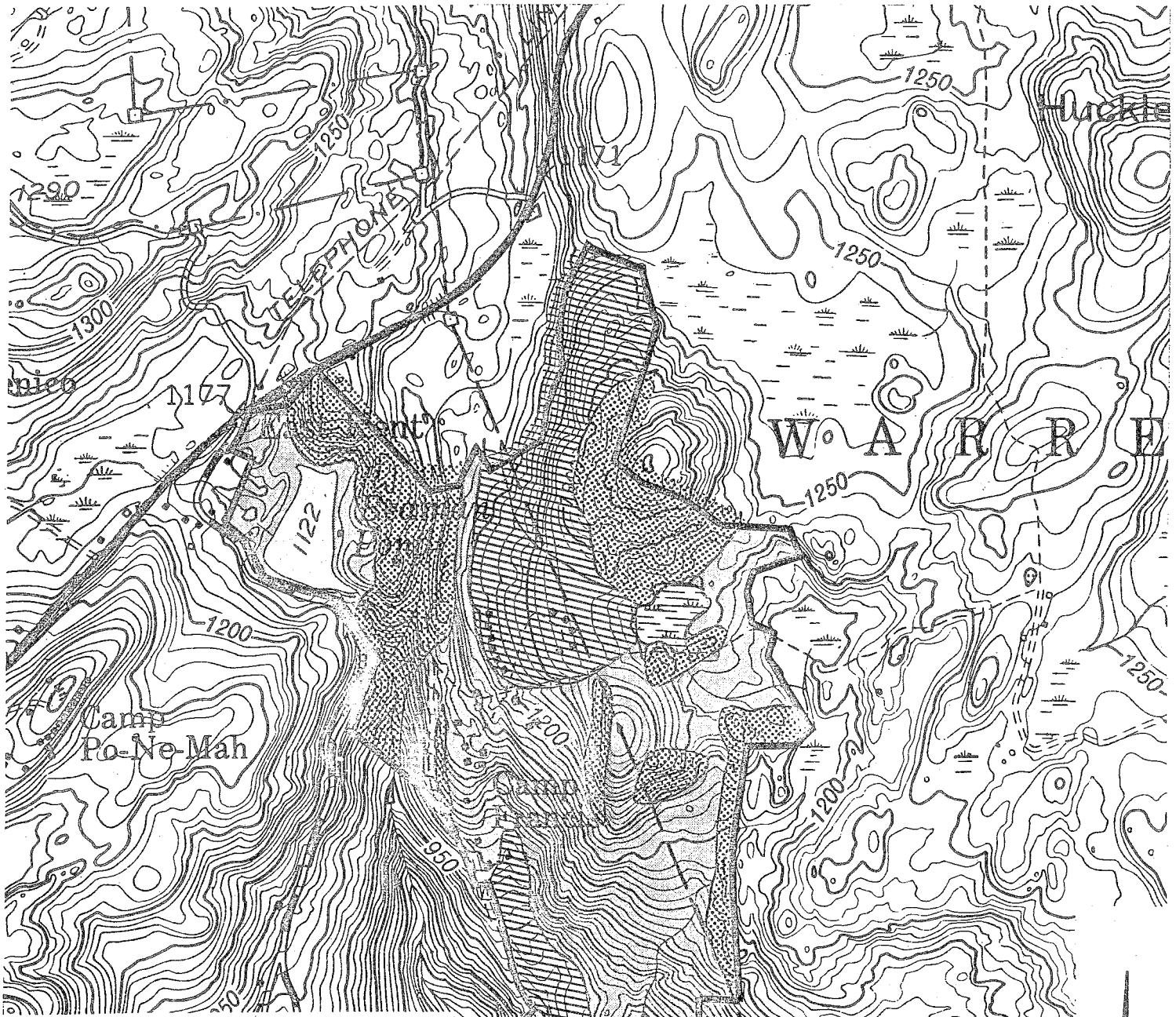
EXPLANATION

Gneissic unit (see text for description).

Schistose unit (see text for description).

FIGURE 6.3

SURFICIAL GEOLOGY



EXPLANATION

Areas of extensive rock outcrops. Very thin patches of till among the outcrops.

Thin till areas. Small, scattered bedrock outcrops. Till is generally less than 10' thick.

Thicker till areas. Till may be more than 10' thick in most places.

Swamp sediments. Silt, sand and clay mixed with decayed organic materials.

N

0 1/4 1/2 mile

0 1000' 2000' 3000'

the eastern boundary of the southern section of the property. Camp facilities not requiring septic disposal sites could probably be located in many other areas.

B. Hydrology

Camp Francis lies within the upper drainage area of West Aspetuck River. The outlet stream from Beaman Pond is the major headwater stream of the river. Beaman Pond receives drainage from North Spectacle and South Spectacle Ponds, which are located west and southwest of the camp in the town of Kent. The outlet stream from Beaman Pond flows through a dramatic, steeply sloped ravine. The upper reaches of the stream are difficult to gain access to because of the slopes; the lower reaches are slightly more approachable. Approximately two-thirds of the site drains directly into the outlet stream or into a short tributary that joins the stream about 600 feet south of Beaman Pond. The tributary itself flows through an attractive, and much more easily accessible, ravine in the northwestern portion of the property. The remaining third of the site drains to a longer tributary that flows along or near the eastern boundary of the parcel and joins the outlet stream about one mile south of the pond.

Beaman Pond has a watershed of approximately 2.45 square miles. Much of the watershed consists of lakes (the Spectacle Ponds) and wetland areas. The remainder consists of lightly developed till uplands. The most significant developments in the watershed have been the many camps in the area. The wetlands and the dearth of easily buildable land in the watershed should help to preserve the quality of water in Beaman Pond.

There are no particularly significant groundwater-supply sources (aquifers) on the site. Bedrock is the most important local aquifer. Bedrock is ordinarily capable of yielding small but reliable yields of groundwater. A survey of selected bedrock-based wells in northwestern Connecticut indicated that 90 percent of the wells were able to supply 2 gallons per minute or more of groundwater. On the other hand, less than 20 percent of the wells yielded 20 gallons per minute or more. A yield of 2-3 gallons per minute should be adequate for most recreational needs.

Water moves through metamorphic rocks chiefly by way of fractures. The success of a well drilled at any specific location depends upon the number and size of water-bearing fractures that the well intersects. Since fractures are distributed irregularly in bedrock, there is no practical way to predict the suitability of a particular location for a drilled well. It is known, however, that the probability of obtaining additional water from a drilled well decreases with depth. If no water has been obtained after drilling 150 feet into the bedrock, it may be more fruitful to attempt drilling in a different location.

Because the soils on the site are generally thin, there is a relatively high risk of groundwater pollution from wastewater discharges, particularly septic effluent. Shallow-soil limitations may be overcome by appropriate engineering techniques, but great care must be used in the design and installation of sanitary facilities. Pit toilets used only infrequently during the year do not pose a serious hazard as long as they are kept the required distances away from water supply sources.

C. Vegetation

The vegetation which is present within the tract of land known as "Camp Francis" may be divided into four major vegetation types. These include three mixed hardwood areas which total 234± acres; several oak ridge areas which total 15± acres; four hardwood swamp areas which total 8± acres; and an open field which totals approximately 6 acres (see Figure 6.4). Trees which are present in the deeper soiled valley areas of the mixed hardwood vegetation types tend to be larger and of higher quality than their counter parts elsewhere. This is due to better soil/moisture conditions. It should be noted that the boundaries between the mixed hardwood areas are only approximate. The wide transition zones which exist between them make mapping difficult. Management practices are severely limited by steep slopes on approximately 69 acres of this tract.

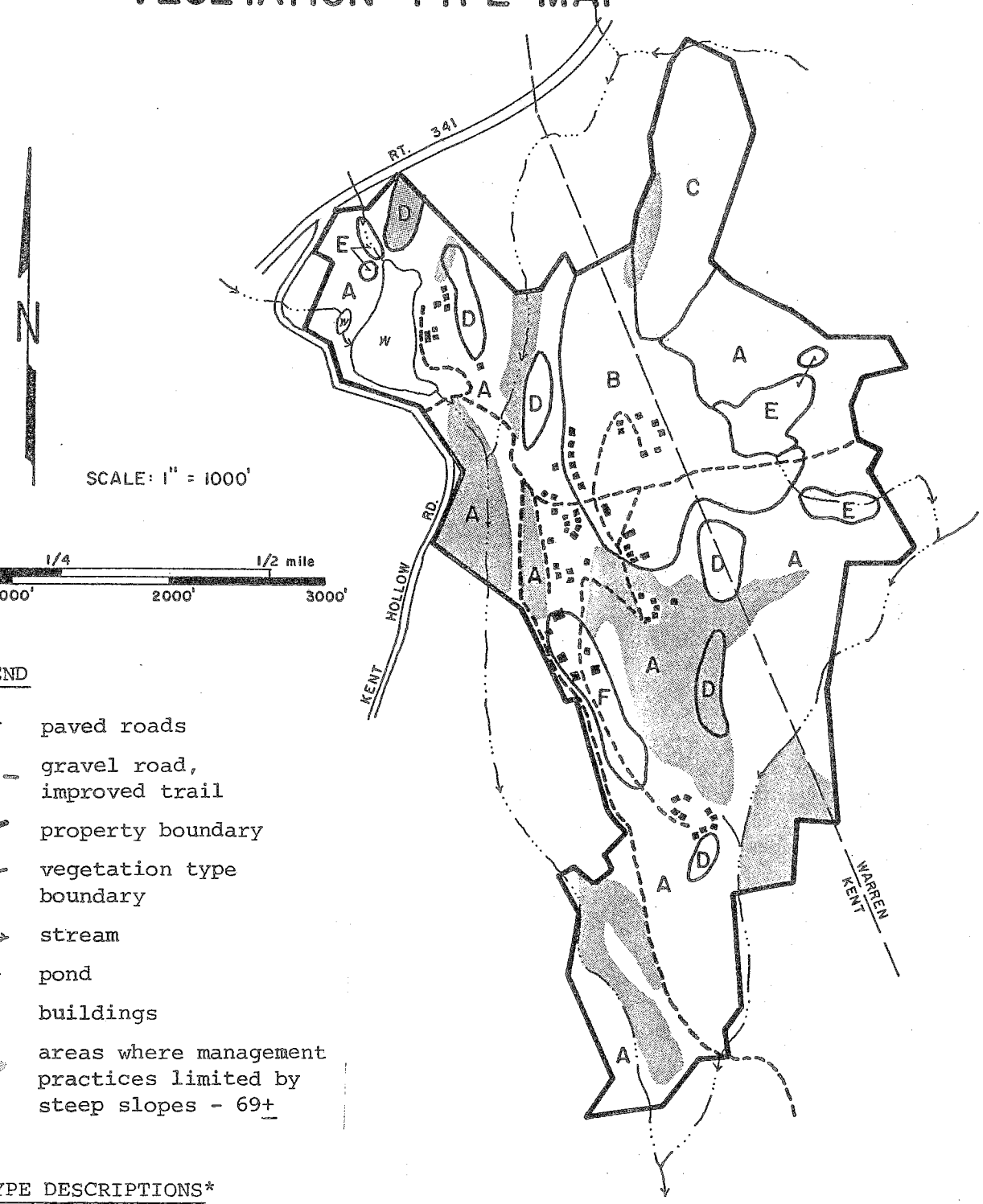
TYPE A. MIXED HARDWOODS. Approximately 176 acres of this property is characterized by pole to sawtimber-size black oak, white oak, red oak, black birch, red maple, sugar maple, shagbark hickory, mockernut hickory and pignut hickory with scattered yellow birch, basswood, white ash, and american beech. Many of the trees in this over-stocked stand are declining in health and vigor as a result of their crowded condition. Understory vegetation includes witch-hazel, striped maple, shadbush, patches of mountain laurel, maple leaved viburnum, spice bush and azalea. Ground cover consists of christmas fern, evergreen wood fern, club moss, partridge berry, rattle snake plantain, pipsissewa, striped pipsissewa, aster and undoubtly many other weed and wild flower species which were not observed due to the snow cover on the day of the ERT's field review. A series of commercial thinnings would be feasible within this type. These thinnings could be implemented in 20 to 35 acre blocks over a time period of three to five years. Approximately one third of the volume in the over story should be removed during these intital improvement thinnings. High quality trees should be retained in the residual stand. Management practices are severly limited by steep slopes over approximately 60 acres of this vegetation type. These areas are depicted on the vegetation type map (see Figure 6.4). Windthrow is a potential hazard where soils are extremely shallow to bedrock because trees are unable to become securely anchored.

Regardless of whether or not the above thinnings are implemented, the dead trees and dead branches on trees near roads, trails, camps, and buildings should be removed to reduce potentially hazardous conditions. Trees and branches removed should be utilized as fuelwood.

TYPE B. MIXED HARDWOODS. Pole-size black birch, paper birch, black cherry, white ash, red maple, sugar maple, shagbark hickory and American beech dominate this 36± acre over-stocked stand. Witch hazel, hophorn beam, blue beech, shad bush, maple-leaved viburnum, spice bush and hazelnut are present in the understory. Ground cover vegetation includes poison ivy, club moss, Virginia creeper, barberry, evergreen wood fern and christmas fern. Raspberry has become very dense within the small clearings near the permanent camps. This condition could be controlled by periodic mowing throughout the year, or by judicious application of an approved herbicide. The trees in this stand are declining in health and vigor, and would benefit by receiving a thinning following the "Crop Tree Selection method", (discussed on page 6 of this report). The high quality paper birch, sugar maple, white ash, American beech, shagbark hickory, and black cherry should be selected over red maple and black birch as crop trees wherever possible.

FIGURE 6.4

VEGETATION TYPE MAP



VEGETATION TYPE DESCRIPTIONS*

TYPE A Mixed hardwoods, over-stocked, pole to sawtimber size, 176± acres.

TYPE B Mixed hardwoods, over-stocked, pole size, 36± acres.

TYPE C Mixed hardwoods, fully-stocked, small sawtimber size, 22± acres.

TYPE D Oak ridge, under-stocked, pole to sawtimber size, 15± acres.

TYPE E Hardwood swamp, variably-stocked, sapling to pole size, 8± acres.

TYPE F Open field. 6± acres.

*Seedling size - trees less than 1" in diameter at 4½' above ground (D.B.H.).
Sapling size - trees 1" to 5" in D.B.H.
Pole size - trees 5" to 11" in D.B.H.
Sawtimber size - trees 11" and greater in D.B.H.

TYPE C. MIXED HARDWOODS. This 22± acre fully-stocked stand is made up of small sawtimber-size black oak, red oak white oak, black birch and occasional paper birch, American beech and chestnut oak. The understory is made up of dense mountain laurel, with scattered witch hazel, azalea and sapling-size eastern hemlock. Ground cover in this area is scarce due to the dense mountain laurel which is present. At this time the trees in this area are reasonably healthy and no management is needed. However, reevaluation of management needs should be carried out in approximately 10 years.

TYPE D. OAK RIDGE. Several oak ridge areas which total approximately 15 acres are present throughout this tract. They are under-stocked with poor quality pole to sawtimber-size chestnut oak, black oak, scarlet oak, black birch and red maple. Hardwood tree seedlings, mountain laurel, witch hazel, high bush blueberry and occasional sassafras are present in the understory. Ground cover consists of low bush blueberry, huckleberry, grasses, Pennsylvania sedge, Christmas fern and club moss. Many of the trees which are present are stunted in growth and malformed due to environmental stress. Many of these trees have also been damaged by adverse weather conditions. Windthrow is a potential hazard in these areas because of the extremely shallow to bedrock soils which are present. Management for timber products is not feasible in these areas, however where access and operability permit, dead trees could be salvaged for fuelwood.

TYPE E. HARDWOOD SWAMP. Four hardwood swamp areas which total 8 ± acres are present within this property. Poor quality sapling to pole size red maple dominate these variably-stocked areas along with occasional white ash, black gum and yellow birch. A dense understory of spice bush, sweet pepper bush, winterberry, highbush blueberry and swamp azalea is characteristic. Ground cover vegetation includes tussock sedge, club moss and skunk cabbage. Loss of trees to windthrow is a potential hazard because the trees which are present are shallow rooted and unable to become securely anchored in the saturated soils. Management of these areas for timber production is not feasible.

TYPE F. OPEN FIELD. Approximately 6 acres of open field dominated by grasses are present within this tract. Several pole-size apple trees which could be improved through proper pruning are located around the perimeter of this open field area. Periodic mowing will be necessary to control the establishment of woody vegetation.

D. Wildlife

The 260 acres of land which make up Camp Francis have a combination of Woodland, Wetland, and Openland habitat.

With proper controls on the use of the Camp, along with good wildlife management, this Camp can offer an attractive home for wildlife. Basic habitat requirements for wildlife include food, cover, water and suitable nesting areas. A diversified combination of habitat types is needed to create a suitable "edge effect". "Edge" is a product of where two habitats meet. Examples of edge are the borders of woods, fields, ponds, streams, clearings, meadows, and swamps.

The woodland habitat type is dominated by a mixed hardwood component. A few small clumps of conifers are present, but there is not enough to give wildlife a valuable "evergreen cover". Wildlife such as deer, grouse, squirrels,

pheasants, foxes and small mammals and birds will use evergreen cover as "escape areas" from the elements. To improve this camp for wildlife, it is recommended that the Girl Scout Council purchase desirable conifers and plant a few 1/4 to 1/2 acre concentrated clumps in some randomly cleared 2 to 3 acre openings created within the woodland. Tree seedlings can be ordered by contacting the Forestry Unit, Department of Environmental Protection. The wood removed from the numerous randomly created openings could produce profit through cordwood sales.

When cordwood or timber cutting, 5-7 snag trees per acre should be left for cavity nesting wildlife. A few randomly scattered small brush piles should also be created for small mammals to utilize.

During the ERT's field review of Camp Francis, much deer activity among the lower elevated camps was observed. Ruffed grouse were flushed, white-footed deer mice travels were observed in the snow, pileated woodpecker activity was seen, and fox tracks, short-tailed shrew tracks, squirrel tracks, cottontail rabbit tracks, and numerous forest inhabitants such as hairy woodpeckers, chickadees and nuthatches were observed.

Although not observed, occasionally coyotes, woodcock, wild turkeys, hawks and owls, and various small mammals and birds along with numerous furbearers will seasonally utilize forestland habitat such as that present at Camp Francis.

E. Soils and Recreation Potential

A Soils Map of Camp Francis is presented in Figure 6.5. The Appendix of this report contains a Soils Limitation Chart which identifies soil names and basic characteristics. By comparing the Soil Map with the Soils Limitation Chart, one can gain an appreciation of the suitability of the various soils for alternative recreational land uses.

Most of this property consists of the steeply sloping, shallow to bedrock "Hollis" soils (map symbols HrC, HxE, HrE). Camping sites may be terraced into these soils in some areas, but the soils are not suitable for extensive recreational development. The northcentral portion of this property consists of "Paxton" soils of moderate slope (PdB, PdC). These soils are more suitable than Hollis soils for extensive recreational development and there is room for expansion in this area of the Camp. The Paxton soils encompasses about 30 acres of this site. The area most suitable for expanded recreational development is in the southeastern corner of the Camp. The soils (ChB, CrC) in this $\pm$ 8 acre area are deep and well drained and moderately sloping. Access to this area is also good from the central portion of the site.

Camp Francis contains all the essentials of a good Camp: a small pond suitable for swimming, an excellent all-weather access road, parking facilities, open areas suitable for games and field sports, and many suitable facility and unit buildings. The unit sites are well developed and there are possibilities for additional expansion in several additional areas.

There are, however, a number of factors which should be investigated and improved in the near future. The present swimming-waterfront area next to the town road is very small, and most likely inadequate for the Camp population. It cannot be extended or improved in its present location. There are two areas which should be able to provide a more adequate waterfront than the present location. These are the western shore of the pond and the eastern shore. The

FIGURE 6.5

SOILS MAP

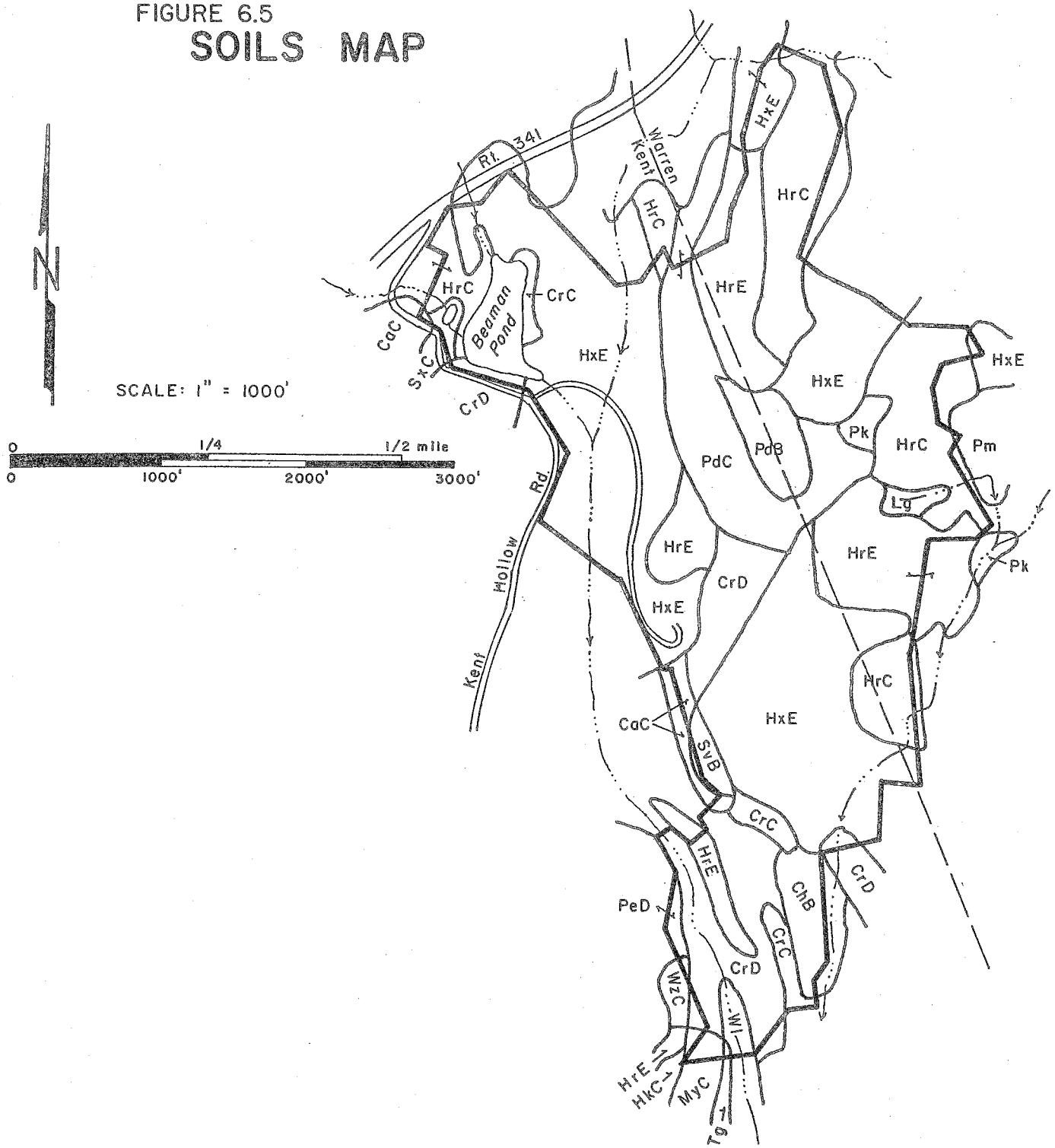
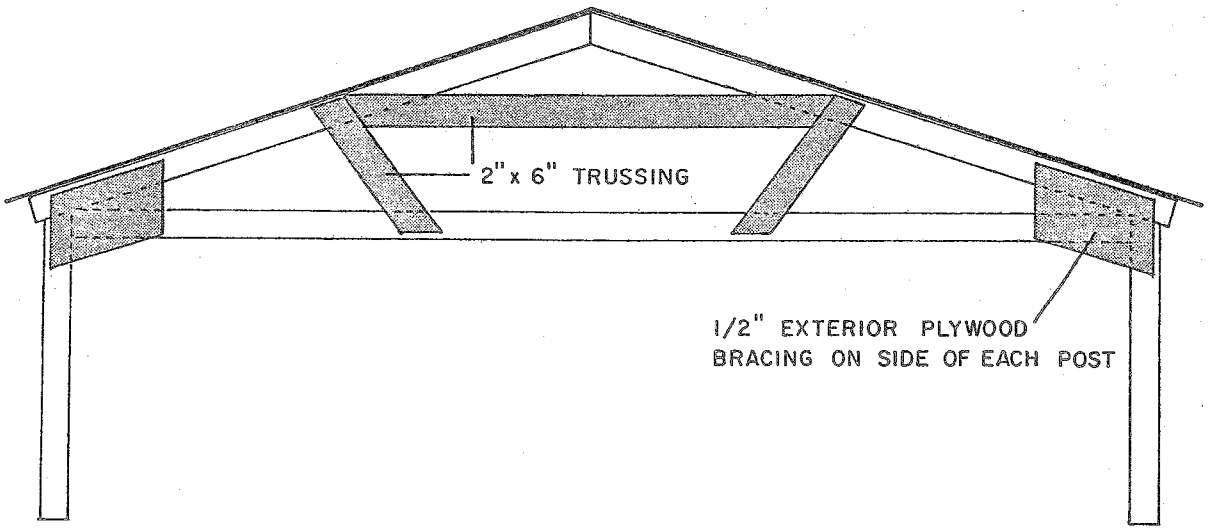
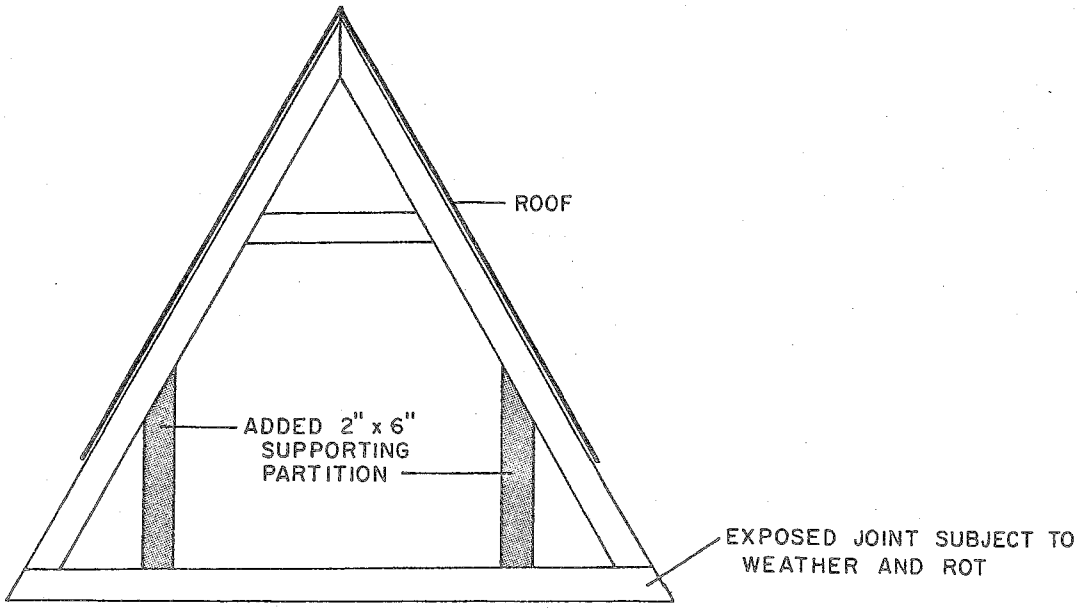


FIGURE 6.6

SUGGESTED IMPROVEMENTS FOR EXISTING STRUCTURES



a. UNIT ACTIVITY SHELTER



b. A-FRAME - UNIT SHELTER

eastern shore in the area mapped as CrC on the Soils Map appears to offer the most potential. At the time of the ERT's field review, snow covered the area and there was 6 inches of ice on the pond. Therefore, investigation of the pond bottom topography and characteristics (i.e. rocky or muddy) could not be performed. Even if the bottom was rocky, however, perhaps the rocks could be removed by a bulldozer and sand brought in. This should be investigated by the Girl Scout Council as the effort and expense needed to provide a more adequate swimming-waterfront area would most likely be well worth it.

Most of the many facility buildings at this Camp require some form of minor maintenance. There are also several types of buildings which are poorly designed structurally and require modification. The unit activity shelters are poorly designed as to framing and support with a flatish roof of corrugated fiberglass. A heavy wet snow load could collapse these structures. In fact many of these structures are already showing signs of stress. Trussing the roof support structure and bracing the roof to the support poles as per Figure 6.6a will improve the situation considerably. New structures of this type which are constructed should be more adequately designed. The A-framed unit structures have their structural joints exposed to the weather and are susceptible to rot. Modification of this design before such weathering and rot progresses as per Figure 6.6b will increase the life of these structures.

The latrines and shower units serving the various camping units are poorly designed and appear inadequate for the population of the units. This problem is common to all the council Camps and a concerted effort to arrive at an adequate and suitable design for future construction of these facilities should be undertaken. Perhaps an adequately designed central shower house to replace the present facilities is the answer.

Basically Camp Francis provides an excellent facility for residential camping. The suggested improvements are comparatively minor, and would help improve and compliment the existing Camp property.

It appears that Beaman Pond would support an adequate fish population of warm water fish (e.g. bass, perch, bull heads, etc.) to provide fishing activities for the camp population and visiting parents. The stream through the property may support some limited trout fishing.

* * * * *

APPENDIX

SOILS LIMITATION CHART - SOUTHWESTERN CONNECTICUT GIRL SCOUT CAMPS

MAP SYMBOL	SOIL NAME	CAMP AREAS	PICNIC AREAS	PLAYGROUNDS	PATHS & TRAILS
CAMP CANDLEWOOD, NEW FAIRFIELD					
CfB	Charlton fine sandy loam, 3-8% slopes	Slight	Slight	Moderate, Slope	Slight
CrC	Charlton-Hollis fine sandy loams, very rocky, 3-15% slopes	Moderate; Slope, Large stones	Moderate; Slope	Severe; Slope, Depth to rock	Moderate; Large stones
CrE	Charlton-Hollis fine sandy loams, very rocky 15-45% slopes	Severe; Slope	Severe; Slope	Severe; Slope, Depth to rock	Severe; Slope
HpC	Hollis-Charlton rock outcrop, 3-15% slopes	Moderate; Slope, Large stones	Moderate; Slope	Severe; Slope, Depth torock	Moderate; Large stones
HrE	Hollis-rock outcrop-Charlton complex 15-45% slopes	Severe; Slope	Severe; Slope	Severe; Slope, Depth to rock	Severe; Slope
PbB	Paxton fine sandy loam, 3-8% slopes	Moderate; Percs slowly	Slight	Moderate; Slope, Percs slowly	Slight
Rn	Ridgebury, Leicester, and Whitman extremely stony fine sandy loams	Severe; Wetness, Large stones	Severe; Wetness	Severe; Wetness, Large stones	Severe; Wetness, Large stones
SnB	Stockbridge loam, 3-8% slopes	Moderate; Percs slowly	Slight	Moderate; Slope, Percs slowly	Slight
CAMP CATOONAH, RIDGEFIELD					
Aa	Adrian muck	Severe; Wetness, floods, Excess humus	Severe; Wetness, Excess humus	Severe; Wetness, floods, Excess humus	Severe; Wetness, Excess humus

MAP SYMBOL	SOIL NAME	CAMP AREAS	PICNIC AREAS	PLAYGROUNDS	PATHS & TRAILS
CrC	Charlton Hollis fine sandy loams, very rocky, 3-15% slopes	Moderate; Slope, Large stones	Moderate; Slope	Severe; Slope, Depth to rock	Moderate; Large stones
CrE	Charlton-Hollis fine sandy loams, very rocky 15-45% slopes	Severe; Slope	Severe; Slope	Severe; Slope, Depth to rock	Severe; Slope
HrE	Hollis-rock outcrop~ Charlton complex 15-45% slopes	Severe; Slope	Severe; Slope	Severe; Slope, Depth to rock	Severe; Slope
Rn	Ridgebury, Leicester, and Whitman extremely stony fine sandy loam	Severe; Wetness, Large stones	Severe; Wetness	Severe; Wetness, Large stones	Severe; Wetness, Large stones
CAMP COKAMONG, GREENWICH					
CrE	Charlton-Hollis fine sandy loams, very rocky 15-45% slopes	Severe; Slope	Severe; Slope	Severe; Slope, Depth to rock	Severe; Slope
HpC	Hollis-Charlton rock outcrop, 3-15% slopes	Moderate; Slope, Large stones	Moderate; Slope	Severe; Slope, Depth to rock	Moderate; Large stones
HrE	Hollis-rock outcrop~ Charlton complex 15-45% slopes	Severe; Slope	Severe; Slope	Severe; Slope, Depth to rock	Severe; Slope
CAMP ASPETUCK, WESTON					
CnC	Charlton extremely stony sandy loam, 3-15% slopes	Severe; Large stones	Moderate; Slope, Large stones	Severe; Slope Large stones	Severe; Large stones
CrC	Charlton Hollis fine sandy loams, very rocky, 3-15% slopes	Moderate; Slope, Large stones	Moderate; Slope	Severe; Slope, Depth to rock	Moderate; Large stones

MAP SYMBOL	SOIL NAME	CAMP AREAS	PICNIC AREAS	PLAYGROUNDS	PATHS & TRAILS
CrE	Charlton-Hollis fine sandy loams, very rocky 15-45% slopes	Severe; Slope	Severe; Slope	Severe; Slope, Depth to rock	Severe;
Rn	Ridgebury, Leicester, and Whitman extremely stony fine sandy loams	Severe; Wetness, Large stones	Severe; Wetness	Severe; Wetness, Large stones	Severe; Wetness, Large stones
CAMP ROCKY CRAIG, STAMFORD					
Ce	Carlisle muck	Severe; Floods, Ponding	Severe; Ponding, Excess humus	Severe; Excess humus, Ponding	Severe; Ponding; Excess humus
CrC	Charlton-Hollis fine sandy loams, very rocky, 3-15% slopes	Moderate; Slope, Large stones	Moderate; Slope	Severe; Slope, Depth to rock	Moderate; Large stones
CrE	Charlton-Hollis fine sandy loams, very rocky 15-45% slopes	Severe; Slope	Severe; Slope	Severe; Slope, Depth to rock	Severe; Slope
HrE	Hollis-rock outcrop-Charlton complex 15-45% slopes	Severe; Slope	Severe; Slope	Severe; Slope, Depth to rock	Severe; Slope
UD	Udorthents, smoothed	-------- Soil Characteristics Variable ------			

EXPLANATION OF RATING SYSTEM:

SLIGHT LIMITATION: indicates that any property of the soil affecting use of the soil is relatively unimportant and can be overcome at little expense.

MODERATE LIMITATION: indicates that any property of the soil affecting use can be overcome at a somewhat higher expense.

SEVERE LIMITATION: indicates that the use of the soil is seriously limited by hazards or restrictions that require extensive and costly measures to overcome.

CAMP FRANCIS

MAP SYMBOL	SOIL NAME	ENGINEERING CONSIDERATIONS			RECREATION DEVELOPMENT			
		SEPTIC ABSORBTION FIELDS	BLDG. W/ BASEMENTS	ROADS OR DRIVEWAYS	LANDSCAPING	CAMP AREAS	PICNIC AREA	PATHS & TRAILS
Wl*	Walpole and Raynham Soils	Severe; Wetness, Poor filter	Severe; Wetness	Severe; Wetness, Frost action	Severe; Wetness	Severe; Wetness	Severe; Wetness	Severe; Wetness
ChB	Charlton stony fine sandy loam, 3-8% slopes	Slight	Slight	Slight	Moderate; Large stones	Slight	Slight	Slight
CaC	Charlton fine sandy loam, 8-15% slopes	Moderate; Slope	Moderate; Slope	Moderate; Slope	Moderate; Slope	Slight	Slight	Slight
CrC	Charlton very stony fine sandy loam, 3-15% slope	Moderate; Slope	Moderate; Slope	Moderate; Slope	Moderate; Slope, Lg. stones	Severe; Lg. stones	Moderate; Slope, Lg. stones	Severe; Lg. stones
CrD	Charlton very stony fine sandy loam, 15-35% slopes	Severe; Slope	Severe; Slope	Severe; Slope	Severe; Slope	Severe; Lg. stones, Slope	Severe; Slope	Severe; Lg. stones
SvB	Sutton fine sandy loam, 3-8% slopes	Severe; Wetness	Severe; Wetness	Moderate; Frost action	Slight	Moderate; Wetness	Slight	Slight
SxC	Sutton very stony fine sandy loam, 3-15% slopes	Severe; Wetness, Lg. stones	Severe; Wetness, Lg. stones	Moderate; Slope, Frost action	Severe; Lg. stones,	Severe; Lg. stones, Slope	Moderate; Lage stones,	Severe; Large stones
Lg*	Leicester, Ridge-bury, Whitman very stony fine sandy loam, 0-3% slopes	Severe; Lg. stones, Wetness	Severe; Lg. stones, Wetness	Severe; Wetness, Frost action, Lg. stones	Severe; Lg. stones, Wetness	Severe; Lg. stones, Wetness	Severe; Wetness	Severe; Lg. stones, Wetness
PdB	Paxton stony fine sandy loam, 3-8% slopes	Severe; Percs slowly	Moderate; Wetness	Moderate; Frost action, Wetness	Moderate; Lg. stones	Moderate; Percs slowly, Lg. stones	Slight	Moderate; Lg. stones

CAMP FRANCIS

MAP SYMBOL	SOIL NAME	ENGINEERING CONSIDERATIONS: SEPTIC ABSORBTION FIELDS	BLDG. W/ BASEMENTS	ROADS OR DRIVEWAYS	RECREATION DEVELOPMENT: LANDSCAPING	CAMP AREAS	PICNIC AREA	PATHS & TRAILS
PdC	Paxton fine sandy loam, 8-15% slopes	Severe; Percs slowly	Moderate; Slope, Wetness	Moderate; Slope, Frost action, Wetness	Moderate; Slope	Moderate; Percs slowly, Lg. stones, Slope	Moderate; Slope	Moderate; Lg. stones
HoC	Hollis rocky fine sandy loam, 3-15% slopes	Severe; Depth to bedrock	Severe; Depth to bedrock	Severe; Depth to bedrock	Severe; Thin layer	Severe; Lg. stones	Moderate; Slope, Lg. stones	Severe; Lg. stones
HrC	Hollis very rocky fine sandy loam, 3-15% slopes	Severe; Depth to bedrock	Severe; Depth to bedrock	Severe; Depth to bedrock	Severe; Thin layer	Severe; Lg. stones	Moderate; Slope, Lg. stones	Severe; Lg. stones
HrE	Hollis very rocky fine sandy loam, 15-35% slopes	Severe; Depth to bedrock	Severe; Depth to bedrock	Severe; Depth to bedrock	Severe; Thin layer	Severe; Slope, Lg. stones	Severe; Slope	Severe; Slope, Lg. stones
HxE	Hollis extremely rocky fine sandy loam, 15-35% slopes	Severe; Depth to bedrock	Severe; Depth to bedrock	Severe; Depth to bedrock	Severe; Thin layer	Severe; Slope, Lg. stones	Severe; Slope	Severe; Slope, Lg. stones
Ru*	Rumney fine sandy loam, 0-3% slopes	Severe; Floods, Wetness, Poor filter	Severe; Floods, Wetness	Severe; Floods, Wetness, Frost action	Severe; Wetness, Floods	Severe; Floods, Wetness	Severe; Wetness, Floods	Severe; Wetness, Floods
Pk*	Peat & Muck 0-3% slopes	Severe; Floods, Wetness	Severe; Floods, Wetness, Low strength	Severe; Low strength Floods	Severe; Excess humus, Floods	Severe; Excess humus, Floods	Severe; Excess humus, Floods	Severe; Excess humus, Floods

*Inland Wetland Soils

EXPLANATION OF RATING SYSTEM:

SLIGHT LIMITATION: indicates that any property of the soil affecting use of the soil is relatively unimportant and can be overcome at little expense.

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SEVERE LIMITATION: indicates that the use of the soil is seriously limited by hazards or restrictions that require extensive and costly measures to overcome.

ACKNOWLEDGMENTS

The King's Mark Environmental Review Team operates through the cooperative effort of a number of agencies and organizations including:

Federal Agencies
U.S.D.A. Soil Conservation Service

State Agencies
Department of Environmental Protection
Department of Health
University of Connecticut Cooperative Extension Service

Local Groups and Agencies
Litchfield County Soil and Water Conservation District
New Haven County Soil and Water Conservation District
Hartford County Soil and Water Conservation District
Fairfield County Soil and Water Conservation District
Northwestern Connecticut Regional Planning Agency
Valley Regional Planning Agency
Central Naugatuck Valley Regional Planning Agency
Housatonic Valley Council of Elected Officials
Southwestern Regional Planning Agency
Greater Bridgeport Regional Planning Agency
Regional Planning Agency of South Central Connecticut
Central Connecticut Regional Planning Agency
Capitol Regional Council of Governments
American Indian Archaeological Institute
Housatonic Valley Association

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FUNDING PROVIDED BY
State of Connecticut

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STAFF ADMINISTRATION PROVIDED BY

Northwestern Connecticut Regional Planning Agency

Lee Rand Burne, Chairman
Charles A. Boster, Director
Richard Lynn, ERT Coordinator
Rebecca Williams, ERT Cartographer
Irene Nadig, Secretary

ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state, and regional agencies. Specialists on the team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, recreation specialists, engineers, and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - a 47 town area in western Connecticut.

As a public service activity, the team is available to serve towns and developers within the King's Mark Area --- free of charge.

PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in the review of a wide range of significant activities including subdivisions, sanitary landfills, commercial and industrical developments, and recreation/open space projects.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

REQUESTING A REVIEW

Environmental Reviews may be requested by the chief elected official of a municipality or the chairman of an administration agency such as planning and zoning, conservation, or inland wetlands. Requests for reviews should be directed to the Chairman of your local Soil and Water Conservation District. This request letter must include a summary of the proposed project, a location map of the project site, written permission from the landowner/developer allowing the team to enter the property for purposes of review, and a statement identifying the specific areas of concern the team should address. When this request is approved by the local Soil and Water Conservation District and the King's Mark RC&D Executive Committee, the team will undertake the review. At present, the ERT can undertake two reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil Conservation District Office or Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P.O. Box 30, Warren, Connecticut 06754.