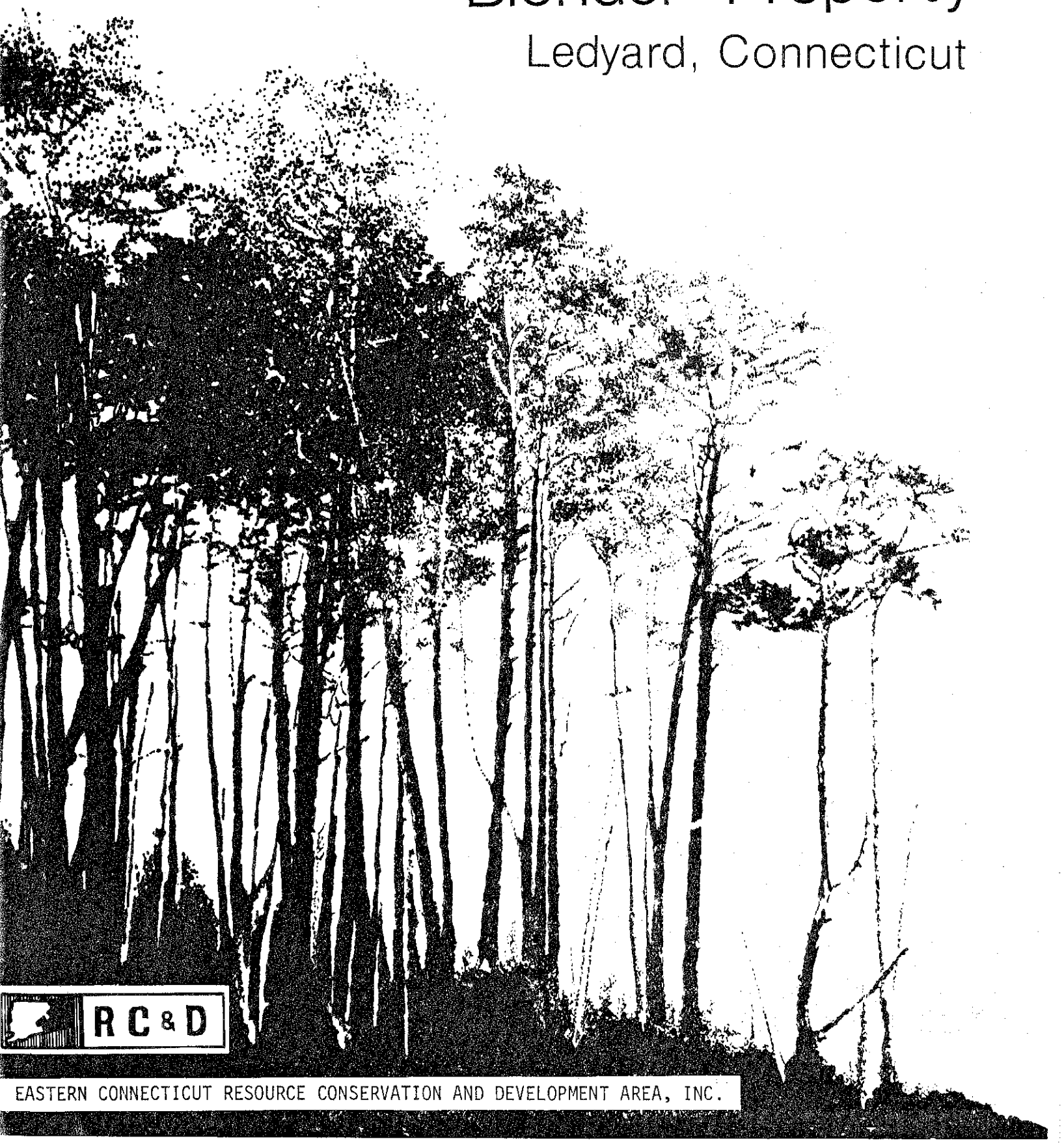
Environmental Review Team Report

Blonder Property

Ledyard, Connecticut

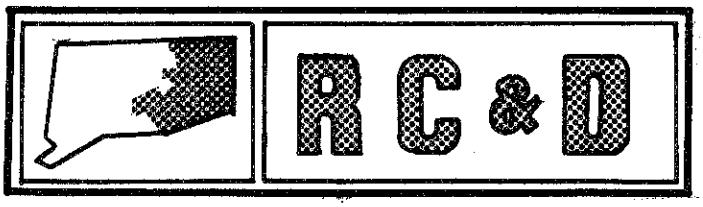


R C & D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

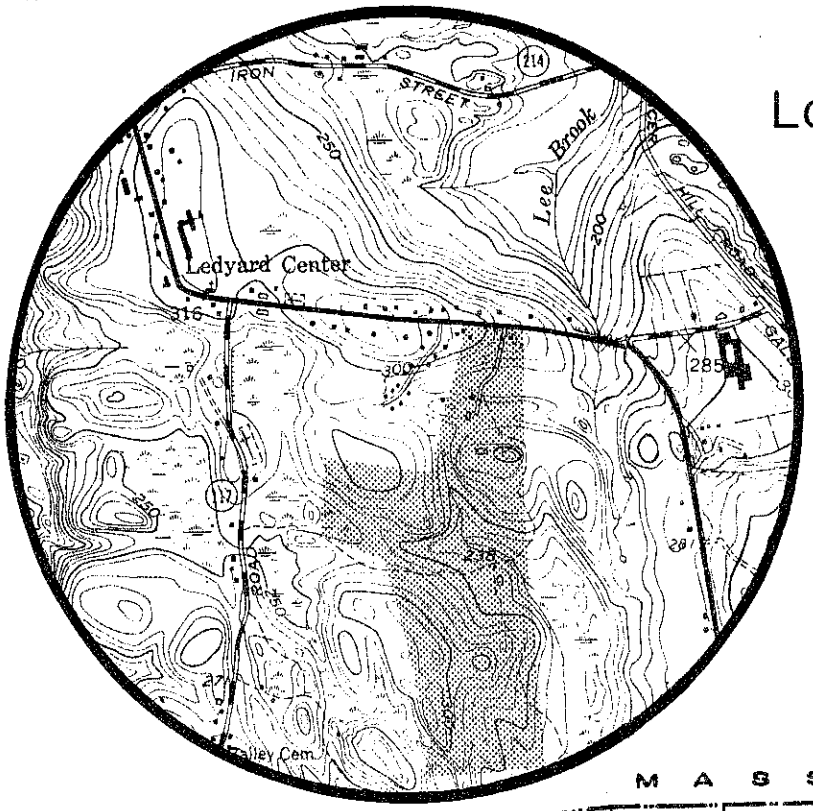
Environmental Review Team Report
on
Blonder Property
Ledyard, Connecticut

June 1980



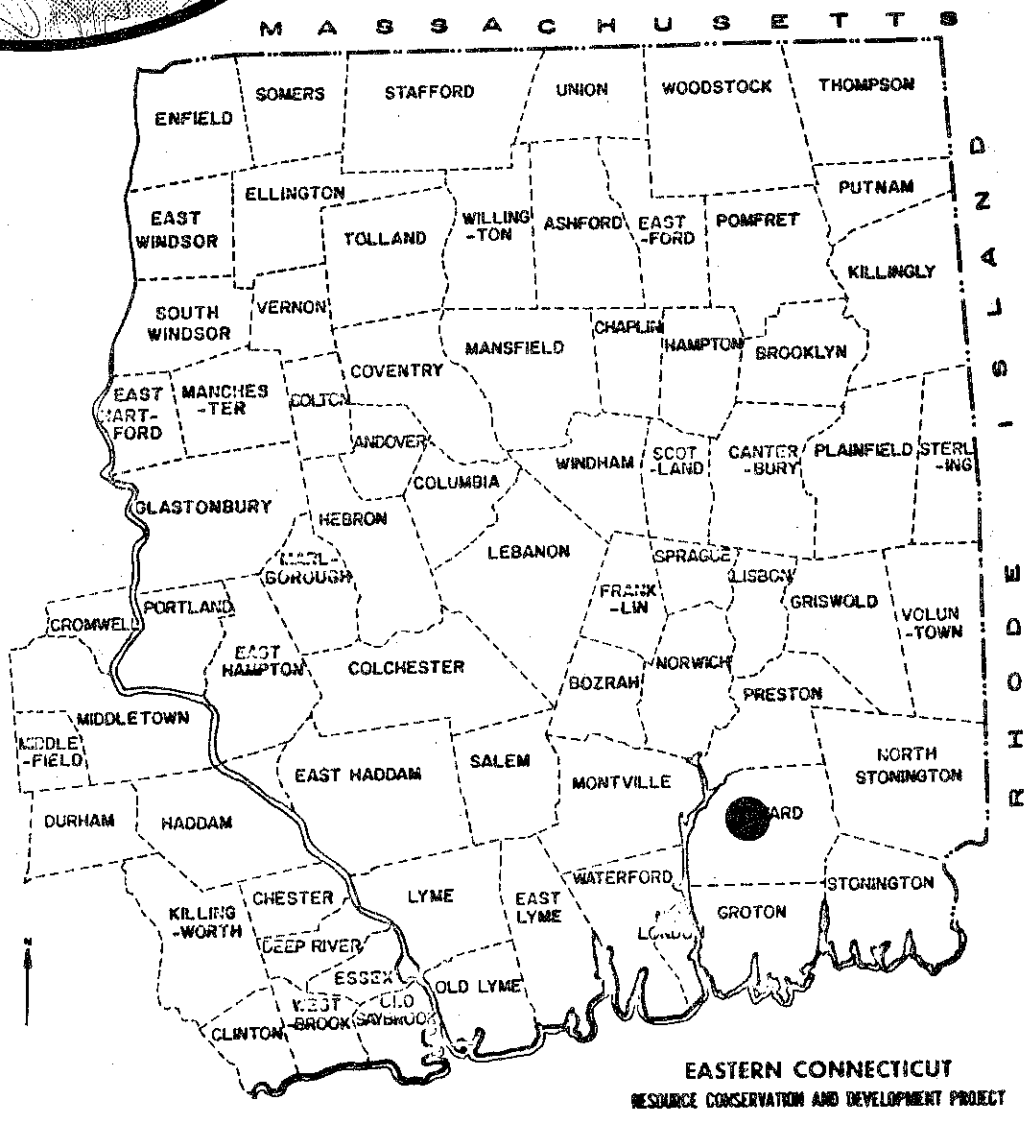
eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360



Location of Study Site

BLONDER PROPERTY
LEDYARD, CONNECTICUT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
BLONDER PROPERTY
LEDYARD, CONNECTICUT

This report is the outgrowth of a request from the Town of Ledyard to the New London County Soil and Water Conservation District (S&WCD). The Eastern Connecticut Resource Conservation and Development (RC&D) Project Executive Council also approved the request as a project measure which was subsequently reviewed by the Environmental Review Team (ERT).

The soils of the site were mapped by a soil scientist from the United States Department of Agriculture, Soil Conservation Service (SCS). Reproductions of the soil survey map, a table of soils limitations for certain land uses, and a topographic map showing the property boundaries were forwarded to all members of the Team prior to their review of the site.

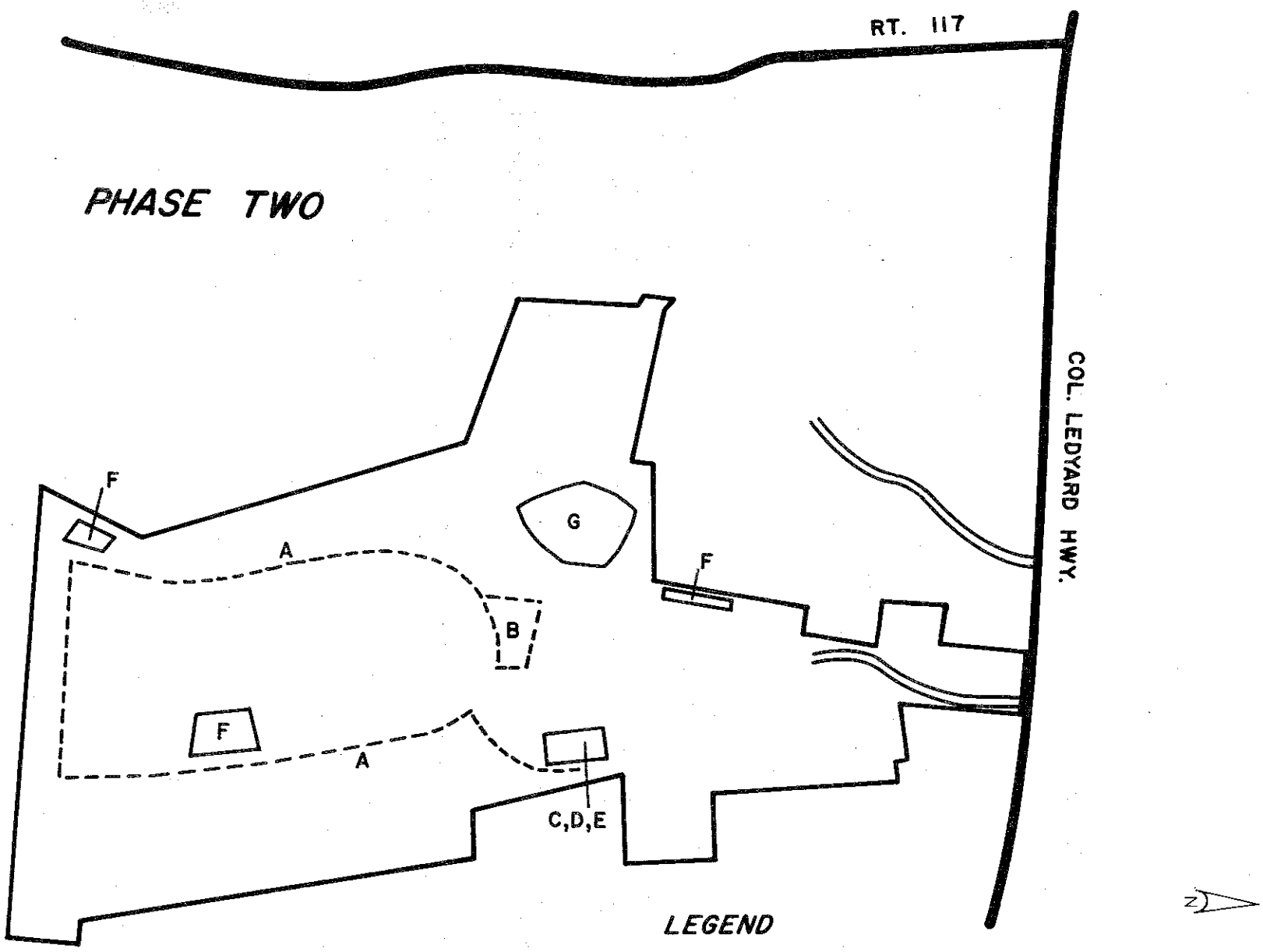
The Environmental Review Team that field-checked the property consisted of the following personnel: Gary Domian, District Conservationist, SCS; Tim Dodge, SCS; Mike Zizka, Geologist, Connecticut Department of Environmental Protection (DEP); Rob Rocks, Forester, DEP; Joseph Piza, Fisheries Biologist, DEP; Andy Petracco, Recreation Specialist, DEP; Dave Miller, Climatologist, University of Connecticut Cooperative Extension Service; Gerhard Amt, Planner, Southeastern Connecticut Regional Planning Agency; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Project.

The Team met and reviewed the site on Thursday, May 1, 1980. Reports from each Team member were sent to the ERT Coordinator for review and summarization for this final report.

This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. As requested by the Town, this report, which identifies the existing resource base of the Blonder Property, shall constitute the environmental assessment portion of the Town's open space application for federal Department of the Interior, Heritage Conservation and Recreation (HCRS) funds to assist in the recreational development of the Blonder Property.

The Eastern Connecticut RC&D Project Committee hopes you will find this report of value and assistance in making your decisions on this particular site.

If you require any additional information, please contact: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Project, 139 Boswell Avenue, Norwich, Connecticut 06360, 889-2324.


RT. 117
PHASE TWO
COL. LEDYARD HWY.
F
A
G
F
B
F
A
C,D,E
N
LEGEND
A - TRAIL
B - FITNESS COURSE
C,D,E - BASKETBALL, HANDBALL
TENNIS
F - PICNIC AREAS
G - SLEDDING & SKIING
0
660'
scale

DESCRIPTION OF THE PROPOSAL

The Parks and Recreation Department of the town of Ledyard wishes to develop a multiple use recreation facility on open space land currently owned by the Town. The Town acquired the total 133± acres in 1974 and has proceeded with Phase I of their development proposal. The Heritage, Conservation and Recreation Service has been instrumental in both acquisition and preliminary development of this parcel. The proposed improvements are Phase II of a four phase development of the entire 133± acre parcel. The site serves the entire community and eventually will offer a range of facilities for organized and informal activities for all age groups.

The property is located on the south side of the Colonel Ledyard Highway. Most of the property is wooded with a small brook and associated wetlands located through the central portions of the property and extending in a west-east direction. The property rises in elevation toward the southwest corner and toward the west boundary with a large bedrock outcrop in this area.

Present facilities consist of parking areas, two ball fields, a soccer field, and an informal grassy area. A third ball field is being prepared. Phase II development would provide a large shelter/pavillion for group activities, a hiking trail, a sledding slope, picnic areas, and tennis courts.

Activities at the Blonder property are under the direction of the Parks and Recreation Commission, which determines programs and facility needs for all of Ledyard's recreation areas.

DESCRIPTION OF THE ENVIRONMENT

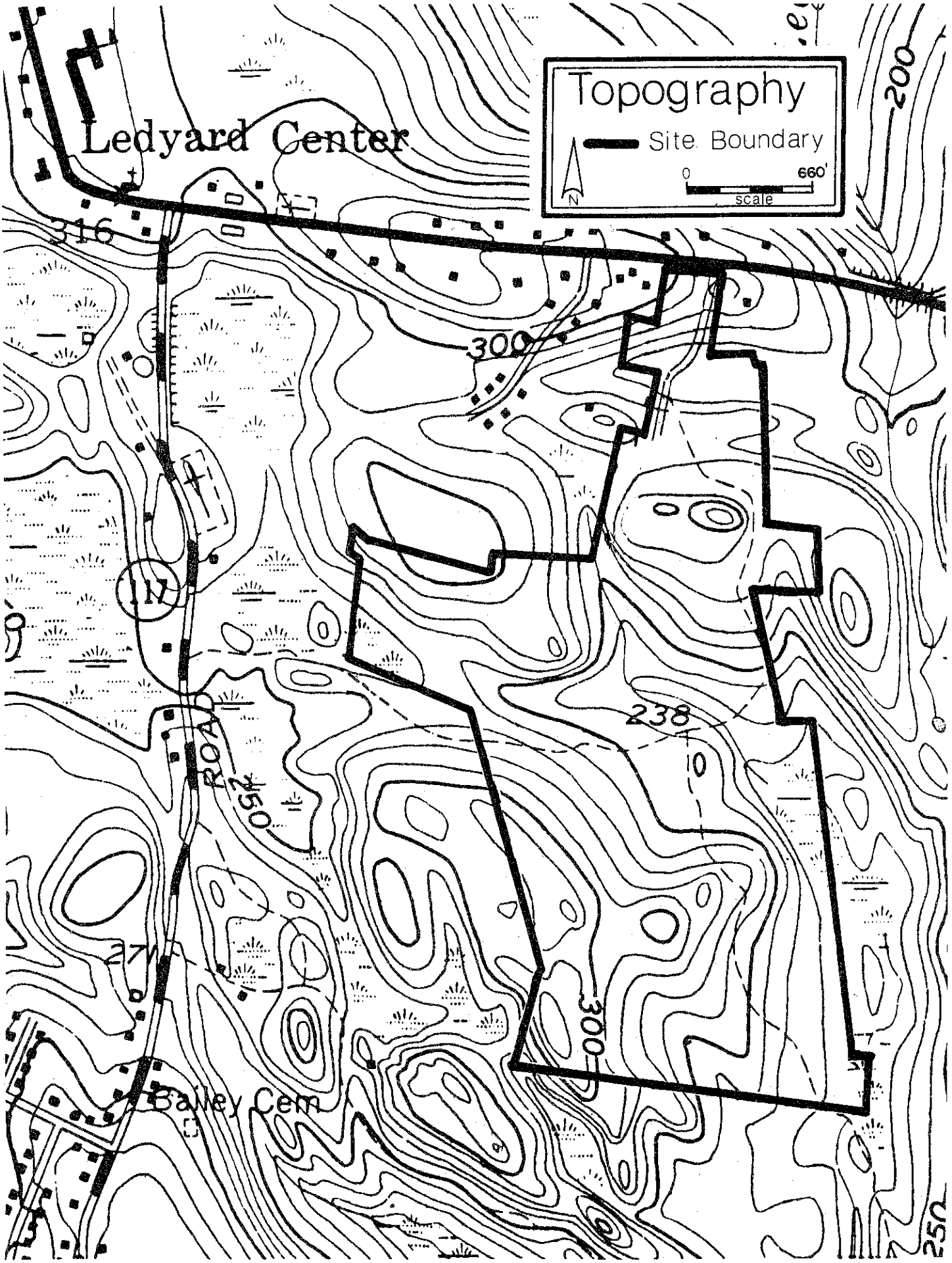
PAST/PRESENT LAND USES

The wooded tract has been unused for many years, although there is evidence of farming in the distant past. The surrounding land is also largely undeveloped, with residences scattered along the frontage of town roads in the area. The zoning is residential, requiring a 60,000 square foot minimum lot size.

SOCIO-ECONOMIC CONDITIONS

Ledyard's current population is 16,500 according to the 1978 estimate by the state Department of Health. East Lyme is the only town in the region that has exceeded Ledyard in growth during this decade.

Ledyard is a predominantly residential community, with its economy closely tied to the defense activities in neighboring Groton. The 1970 Census revealed that children represent a disproportionately high percentage of the population. This age group is 10% higher in Ledyard than the average for Southeastern Con-


Topography
Site Boundary
0
660'
scale
N
Ledyard Center
316
300
200
117
238
ROAD
050
27
300
Bailey Cem

necticut, reflecting the high number of large families in the Town. The Census also disclosed that 98.5% of the population is White, one percent Black and one-half of one percent Other (Indian, Japanese, Chinese or Filipino). Median family income for Ledyard topped all other towns in the region in 1969, at $12,237. Population projections by SCRPA indicate a 1990 population for Ledyard of 20,550.

TRANSPORTATION

The Blonder Property is located in Ledyard Center, and is south and west of Colonel Ledyard Highway, and east of Connecticut Route 117. It is also approximately six miles north of Interstate 95.

Ledyard is a member of the Regional Transit District and local bus service is proposed for year two of the transit program along Colonel Ledyard Highway to the Highlands. Thus access could be by bicycle, automobile, or mass transit.

TOPOGRAPHIC CHARACTERISTICS

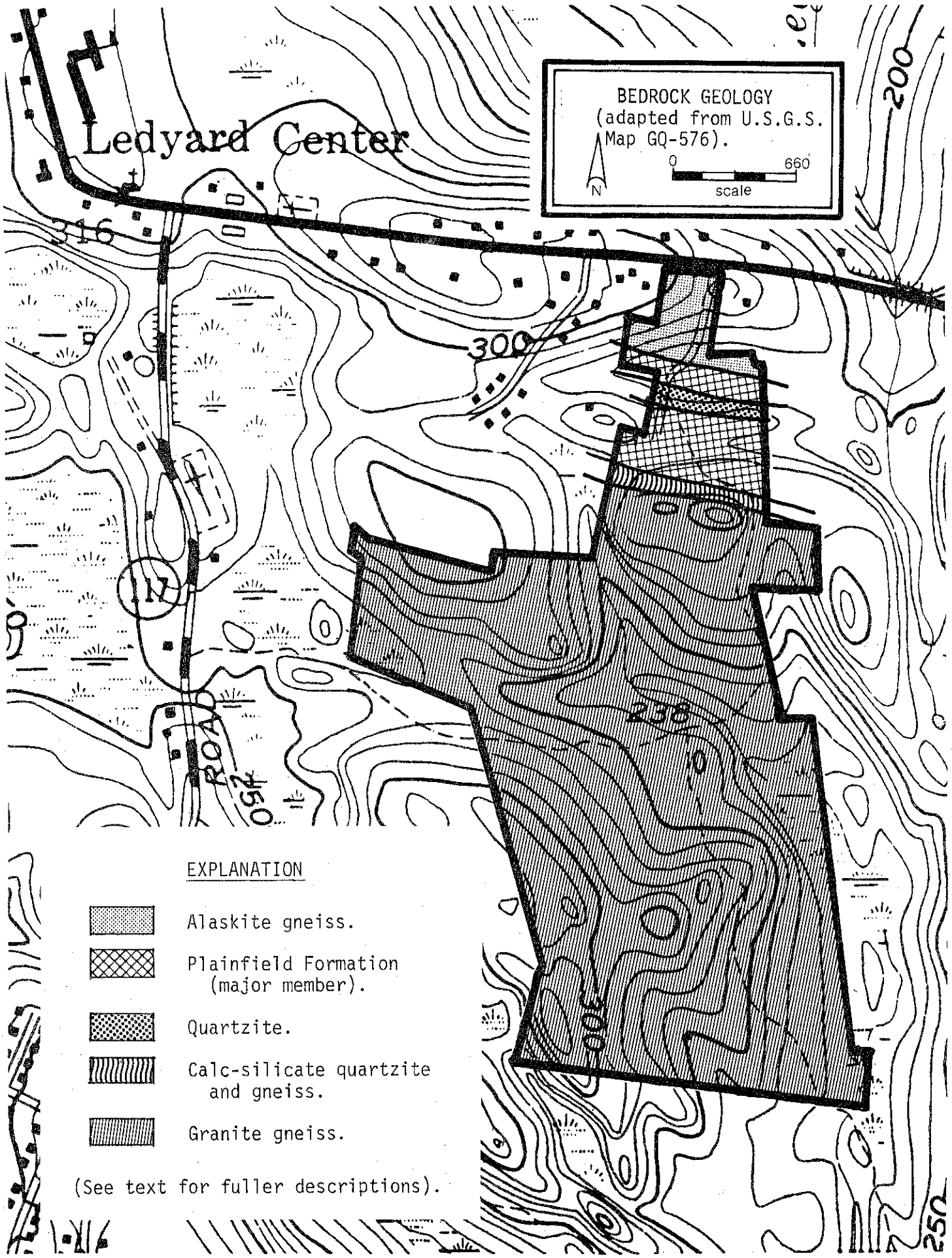
The site comprises a series of irregular hills surrounding a stream and its associated wetlands. The shape of the hills is controlled by the underlying bedrock surface. Steep slopes occur in many areas and often are associated with bedrock exposures. With the notable exception of a particularly steep rock face near the southwestern corner of the site, most of the prominent slopes adjoin the stream valley. The higher elevations on these slopes commonly provide attractive views of the wetland. The maximum relief (difference in elevation between high and low points) on the site is approximately 110 feet.

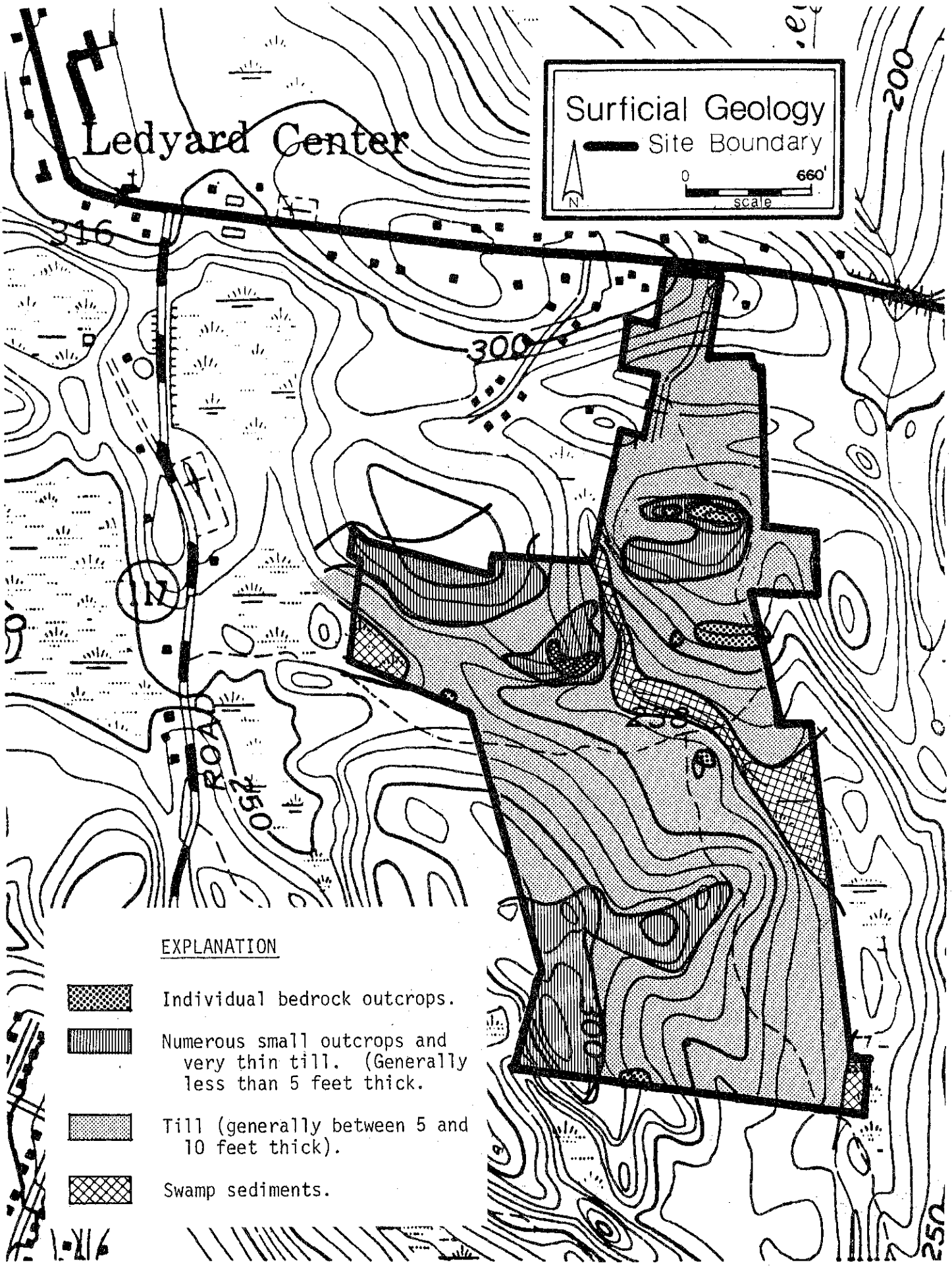
SURFACE/SUBSURFACE GEOLOGIC CHARACTERISTICS

The Blonder Property lies within the Uncasville topographic quadrangle. The bedrock and surficial geology of that quadrangle have been mapped by Richard Goldsmith and published by the U.S. Geological Survey (U.S.G.S. Maps GQ-576 and GQ-138, respectively).

The accompanying bedrock geologic map, adopted from U.S.G.S. Map GQ-576, shows the major rock types that crop out on or underlie the property. The northernmost unit is alaskite gneiss, a fine-grained to medium-grained gneissic granite composed of approximately equal amounts of the minerals quartz, microcline, and albite or sodic oligoclase. Minor amounts of magnetite and biotite also are present. The term "gneissic" refers to the linear, alternating banding of different mineral types. The term "granite" refers to the particular mineral composition of the rock (rich in quartz and feldspar).

South of the alaskite gneiss is a major member of the Plainfield Formation. This unit consists largely of gneisses of variable texture and mineralogy. The most common minerals are plagioclase, quartz, biotite, and hornblende; other mineral components include microcline, garnet, and diopside. The formation occasionally contains layers of schist, a type of rock in which platy, flaky, or otherwise elongated minerals have become aligned to form distinct laminae


Ledyard Center
BEDROCK GEOLOGY
(adapted from U.S.G.S.
Map GQ-576).
0
660
scale
N
EXPLANATION
Alaskite gneiss.
Plainfield Formation
(major member).
Quartzite.
Calc-silicate quartzite
and gneiss.
Granite gneiss.
(See text for fuller descriptions).


Surficial Geology
Site Boundary
0
660'
scale
N
Ledyard Center
316
300
200
ROAD
EXPLANATION
Individual bedrock outcrops.
Numerous small outcrops and very thin till. (Generally less than 5 feet thick.
Till (generally between 5 and 10 feet thick).
Swamp sediments.

(thin layers). The formation also includes relatively narrow units of quartzite, and calc-silicate quartzite and gneiss. These inclusions are mapped separately.

The southern two-thirds of the site, which contains the most prominent outcrops, is composed of a gneissic granite that is different in certain subtle respects from the granite rock in the northernmost portion. The southern granite is grayish, contains more oligoclase than microcline, and has a higher percentage of biotite, which is evenly distributed throughout the rock.

The alaskite gneiss and granitic gneiss may have economic value as rough-construction building stone, rip-rap, or crushed stone. The other rock units appear to have little if any economic worth.

A discontinuous, generally thin (less than 10 feet) blanket of glacial till overlies bedrock on the site. Till consists of rock particles that range widely in size (from clay to boulders) and in shape (from rounded to flat or angular). Commonly sand is the dominant constituent, but the numerous large boulders and the wealth of smaller stones may be the most striking aspect of the till. The texture ranges from relatively loose in the upper few feet to tightly compact at greater depths. Small inclusions of sand and gravel may be scattered throughout the till.

In the valley, till is overlain in some places by thin accumulations of decayed plant material, sand, silt, and clay. These deposits are referred to as swamp sediments in the accompanying surficial geologic map, which was adapted from U.S.G.S. Map GQ-138.

SOILS

The gently sloping land forms higher in the landscape are occupied by Paxton and Montauk very stony fine sandy loams. The soils are designated by the soil symbol 35XB. The soils are well drained and formed in compact glacial till. Both soils have moderate permeability in the surface layer and subsoil, and slow permeability in the substratum (fragipan). The Montauk soil has a coarser textured substratum.

The moderately steep slopes and longer sloping landforms adjacent to the highest elevations in the landscape, are occupied by Charlton-Hollis fine sandy loams, very rocky. These soils are designated by the soil symbols 17LC and 17LD. Both soils are well drained. The Charlton soils formed in deep friable glacial till, and the Hollis soil formed in glacial till less than 20 inches deep over bedrock. Charlton soils have moderate to moderately rapid permeability, the Hollis soils have moderate permeability. Surface runoff is medium to very rapid for Hollis soils and medium to rapid for Charlton soils.

The sloping to moderately steep and steep slopes at the highest elevations in the landscape, are occupied by Hollis-Charlton-Rock outcrop complex. The soils are designated by the soil symbols 17MC, 17MD, and RD for the Rock outcrop-Hollis complex. The Hollis and Charlton soils are well drained. The Hollis soil formed in glacial till less than 20 inches deep over bedrock. Charlton soils formed in deep friable glacial till. The Hollis soil formed in deep friable glacial till. The Hollis soils have moderate permeability. The Rock outcrop is rock that is exposed. Surface runoff is medium to very rapid for Hollis soils and medium to rapid for Charlton soils.

Nearly level to gently sloping landforms at the base of hills are occupied by Sutton fine sandy loam, Sutton very stony fine sandy loam and Sutton extremely stony fine sandy 41XB and 41MB respectively. Sutton soils formed in loamy glacial till. The soils are moderately well drained, and have moderate or moderately rapid permeability. The seasonal high water table is at 18 to 24 inches. Surface runoff is slow to medium.

The gently sloping to steep landforms down from the bedrock-controlled landforms are occupied by Canton-Charlton fine sandy loams. The mapping unit symbols are 11XB and 11MD. The letter "X" denotes very stony conditions, while the letter "M" denotes extremely stony conditions. The Canton soils formed in a fine sandy loam mantle underlain by gravelly sandy glacial till, derived mainly from gravel and gneiss. The Charlton soils formed in deep loamy glacial till. Canton soils have moderately rapid or rapid permeability. Charlton soils have moderate to moderately rapid permeability. Surface runoff is medium in Canton soils and medium to rapid in Charlton soils.

Wetland Soils

The low lying, nearly level areas along drainageways in the landscape are occupied by Ridgebury, Leicester and Whitman extremely stony fine sandy loams. The soils are designated by the mapping unit symbol 43M. The Ridgebury and Whitman soils formed in compact glacial till; the Leicester soils formed in friable glacial till. The Ridgebury and Leicester soils have moderate to moderately rapid permeability in the surface layer and subsoil and slow or very slow permeability in the substratum (fragipan). The Leicester soils have moderately rapid permeability throughout. The seasonal highwater table for Ridgebury and Leicester soils is at or near the surface 7 to 9 months of the year. The Whitman soil has a highwater table at or near the surface 9 to 10 months of the year. Whitman soils have high runoff potential. Runoff is slow to medium in Ridgebury soils and slow in Leicester soils. This soil is designated as a wetland soil and is regulated under Public Act 155.

Prime Farmlands

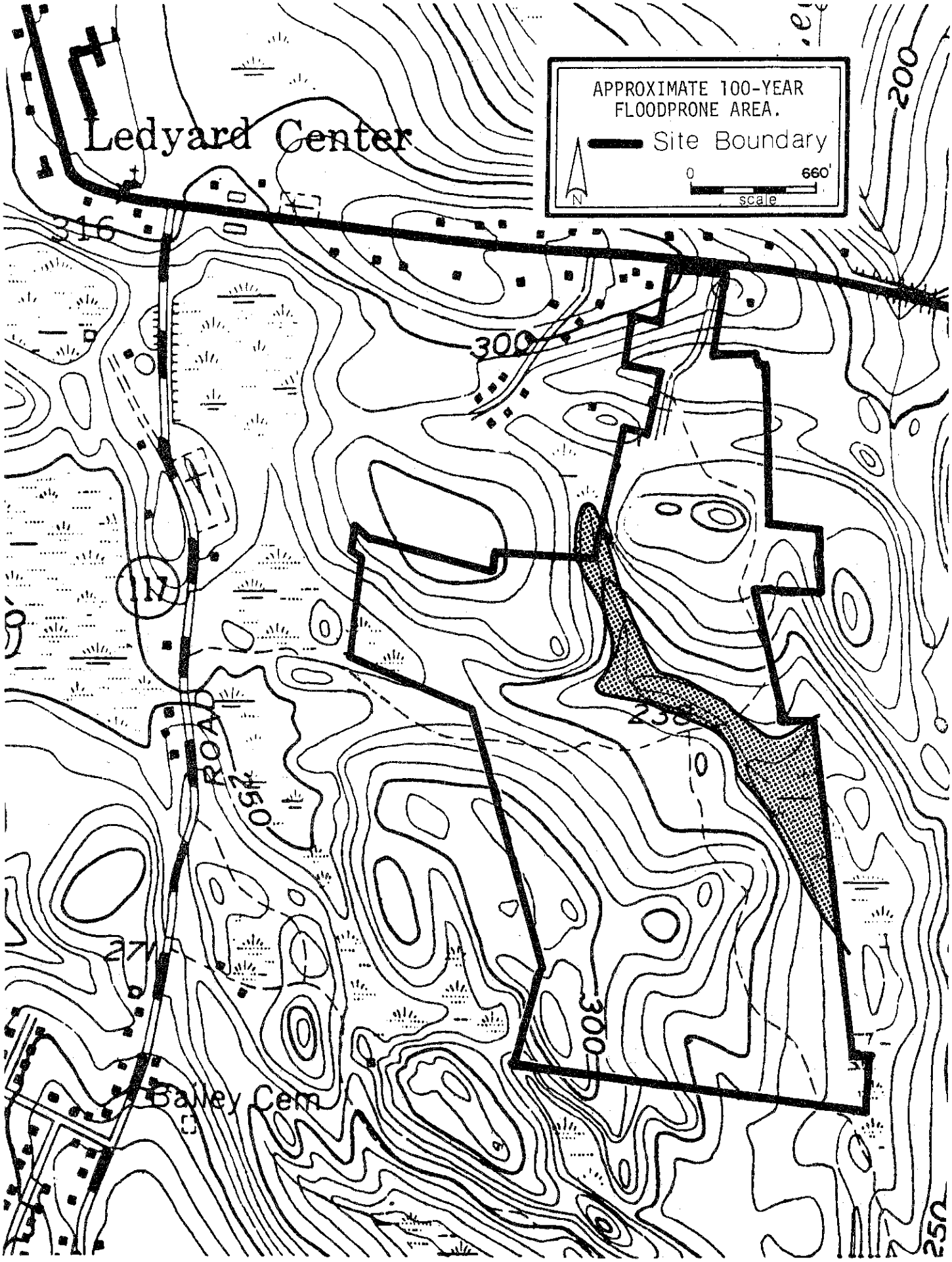
According to the U.S. Department of Agriculture classification criteria for Prime Farmland soils, the following soils are classed as Prime Farmland soils:

(41B) Sutton fine sandy loam.

CLIMATIC CONDITIONS

The area is on the edge of the Connecticut coastal region and its climatic characteristic as a mixture of the coastal marine climate and the Northwestern uplands. Therefore the climate is basically mild and humid in all seasons. When low pressure weather systems bring southerly air flow from the south the area experiences humid maritime conditions especially in the winter and spring seasons. When high pressure systems prevail the area experiences relatively cool dry weather which are the prevailing summer and fall season conditions.

The following data was taken from the CLIMATE OF CONNECTICUT, Bulletin of the Connecticut Geological and Natural History Survey.


APPROXIMATE 100-YEAR
FLOODPRONE AREA.
Site Boundary
0
660'
scale
N
Ledyard Center
316
300
200
ROAD
Bailey Cem

Annual Mean Temperatures	50°F
Probability of Winter temperatures getting below 0°F	2 in 5
Probability of Summer temperatures getting above 90°F	2 in 5
Annual Heating Degree Days	5800
Precipitation (mean annual) (relatively evenly distributed by month)	50 inches
Snow Depth (mean annual)	35 inches

The surrounding topography is gentle and therefore does not influence the local climate in any limiting manner. Since Ledyard is currently below the state limits for various air pollutants, the ambient air quality should not change with regard for the uses planned for this site. Changes in air quality could occur in the summer months when vehicle miles traveled increases. Air pollutants generated in the adjacent industrialized coastal town of Groton could affect Ledyard air quality.

WATER RESOURCES

Most of the surface runoff from the site flows toward the central stream, which is part of the headwater system of Haley's Brook. A small tract (about 8 acres) at the western edge of the property and a smaller tract (less than 1 acre) in the southwestern corner drain into a wetland system that feeds Morgan Pond and the Ledyard Reservoir. Seasonal flooding or even the flooding accompanying major storms would not be expected to affect much of the site beyond the wetlands adjacent to the stream. An accompanying map shows the approximate flood-prone-areas boundary within the property.

FISH RESOURCES

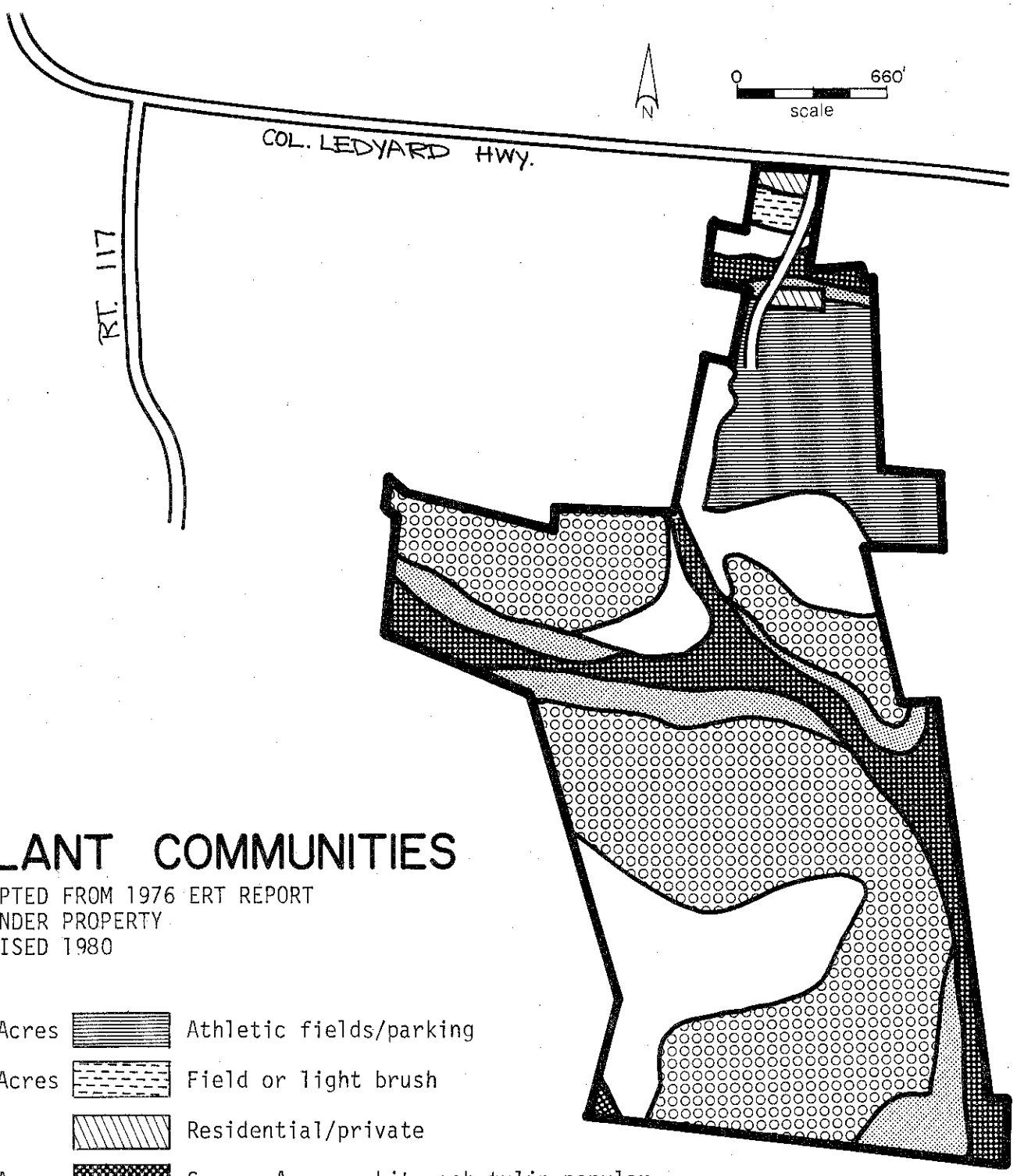
From a fisheries standpoint, the major concern is the interior wetlands and streams of the site. The wetlands form a natural starting drainage for Lee's Brook, Sandy Hollow Brook, and Haley Brook. The latter brook is stocked with trout downstream in Groton as it becomes a sizable stream which eventually drains into Mystic Harbor.

Severe uses of property entailing much tree cutting or general land-clearing will encourage a faster runoff into the wetlands with possible erosion and sittation as well. At present the water budget of the site to feed the three brooks mentioned is low.

WILDLIFE

Habitat is provided primarily to woodland game and non-game species of wildlife. The habitat is of good quality based on the composition and distribution, and management condition of the vegetative habitat elements. Approximately 50% of the woodland area is within 1/4 mile of the open field area. The woodland stand composes about 94% of the site, evenly distributed, with a moderately dense understory of shrubs, vines, and ground cover useful to wildlife. In addition, the open field area is surrounded by woody vegetation including fruiting shrubs. Den trees are present in the woodland area.

This type of habitat is useful to a variety of wildlife species such as grey squirrel, ruffed grouse, a variety of songbirds and woodpeckers, cottontail



PLANT COMMUNITIES

ADAPTED FROM 1976 ERT REPORT
BLONDER PROPERTY
REVISED 1980

15 Acres		Athletic fields/parking
2 Acres		Field or light brush
		Residential/private
17 Acres		Swampy Area: white ash-tulip popular-red maple (ferns, skunk cabbage, jack-in-the-pulpit, shrubs-viburnum and witch hazel, assorted wildflowers)
25 Acres		Pole Size Stand: oaks-hickory-black birch (dry, ledge areas; some steep slope)
14 Acres		Pole Size Wet Areas: red maple-white ash
60 Acres		Saw Timber (12" and up): oaks & hickory (usually more level areas and deeper soils)

rabbit (field area), racoon, whitetailed deer, and small mammals including mice. The woodland wildlife habitat appears adequate to support better than average populations of wildlife.

VEGETATION

The diversity of plant forms and species is high. The vegetative cover includes trees, shrubs, vines, grasses, and wild herbaceous plants. Grasses are primarily limited to the open fields in the northern portion of the site while the mixed deciduous hardwood trees, shrubs, and vines are evenly distributed throughout the remaining area. Various species of wild herbaceous plants are found over the entire site. Examples of trees, shrubs, and vines present include, but are not limited to, the following: red maple, black cherry, apple, elm, dogwood, shagbark hickory, white oak, red oak, tulip popular, and white ash. The aesthetic values of the wooded area is high; many specimen trees of the various species are present. Older chestnuts rarely exist due to disease. There are approximately 31 acres of wooded wetlands. Dominant vegetation includes red maple trees, spicebush, skunk cabbage, and hellebore.

At one time most or all of the area was cleared, but because of the rough terrain very little of it was ever cultivated. It was probably pasture with a few large trees left here and there for shade. If properly designed to take advantage of the existing topographic features, this site can retain much of its wooded characteristics and still provide for the much needed recreational facilities.

The forest types illustrated on the following plant communities map are more completely described as follows:

Field: Two acres of the area labeled as field is open grass land; the rest is old field coming up to brush. There are areas of open ledge in the south-central portion. The ledge areas have very limited use.

Swampy Areas: Approximately 31 acres of the site are in the large pole size 8" to 12" and contain various concentrations of red maple, white ash and tulip poplar. The ground varies from stony muck areas of nearly pure red maple of very poor form to good stands along the edge of these swamps that contain quality stems of white ash and tulip poplar. These areas are easily disturbed. They are subject to wind-throw if excessively thinned, or subjected to flooding, or smothering, even with small amounts of fill. Any development including these areas should be of very low intensity. Future management should include light thinnings under the supervision of a forester to maintain the stand in a good growing condition.

Saw Timber Stands: These 60 acres are generally fully stocked stands of oak and hickory where the dominant trees are twelve inches or more in diameter, and beginning to decline in health and vigor due to crowding. Of all the wooded areas, these are the most suitable for development. These are the most level, have deeper soils, and development is likely to do the least damage. The trees are more windfirm and drainage is better. These are also the best growing sites with the greatest variety of undergrowth. Undergrowth includes flowering dogwood, wild azalea, pepper bush, blueberries, mountain laurel, witch hazel, and a host of lesser shrubs and ferns. The real wet areas have their own species of

undergrowth, but shrubs are mainly blueberries and pepperbush. Periodic thinnings in these saw timber stands would reduce crowding and over time improve the health and vigor of residual trees. Such thinnings would also improve wildlife habitat by allowing sunlight to stimulate sprouting and growth of herbaceous vegetation.

Pole Size Stands: These are stands of small four inch to twelve inch oaks, hickory and black birch. The trees are about the same age as those on the lower slopes classed as saw timber, but due to the poor ground conditions growth is very slow. There are few shrubs in the undergrowth. This also is a sensitive area like the wet area. Due to the shallow soils, trees are subject to wind throw and disturbance of the surface is apt to cause erosion due to the steepness of the slope. Selected areas might be cleared for vistas, or thinned to improve health and vigor of residual trees.

ENVIRONMENTAL IMPACT

EFFECT ON LAND USE

The Blonder property is located near the geographic center of the community, within a half-mile of the local high school, three-quarters of a mile from Ledyard Center, the town's government center and the site of an elementary school and a group of commercial establishments. Several large subdivisions are within a two-mile radius of the property. Continued development of the tract should further enhance the attractiveness of property in this part of the town for residential use.

EFFECT ON SOCIO-ECONOMIC CONDITIONS

Development of the property as proposed should cause no appreciable change in existing socio-economic conditions.

EFFECT ON TRANSPORTATION ROUTES

The proposed facilities, together with probable intensive use of the existing facilities, should generate substantial auto traffic at the Blonder property. Since the only access is by way of Blonder Boulevard, traffic signals may eventually have to be installed on Colonel Ledyard Highway where it is intersected by Blonder Boulevard to control traffic during peak use periods. It would be desirable to implement the proposal in the town Plan of Development that calls for a one-mile east/west road at the south end of the Blonder property between Route 117 and Colonel Ledyard Highway. This would allow access to the property from three directions and would open up large areas of easily usable land in now-remote parts of the property for more intensive recreational use. This would also make the property directly accessible to Barrett Park, a large subdivision on Route 117 a half-mile west of the Blonder property.

EFFECT ON WATER RESOURCES

The proposed recreational plan would require a minimum of new impermeable surface area. In addition, large-scale removal of trees would not be required. Hence, the effect on peak flows and flooding in and along the stream would be negligible. Groundwater quality should not be deteriorated, unless proper precautions are omitted with respect to sanitary facilities. Septic systems would require careful engineering in most parts of this rocky site.

EFFECT ON VEGETATION

The development of a multiple use trail system to accomodate hiking, cross country skiing, a fitness course and emergency and fire control vehicle access, will have only slight impact on vegetation.

Losses due to original development and clearing will depend largely on the length and width of the trail's construction. Trails which meet minimum standards for fire control access may be eligible for federal cost sharing and could also be used for hiking, cross country skiing, emergency and management access. Multiple use trails of this size and quality would be wide enough to allow sunlight to stimulate grass cover to help prevent soil erosion.

Removal of some vegetation to open up picnic areas to allow increased sunlight and air flow will be necessary. Clearing operations should remove the lowest quality trees in these areas. Large, healthy, high vigor trees should be retained for their shade and aesthetic value.

Later some loss of vegetation may come about through soil compaction, mechanical root injury, direct trampling and vandalism along trails and in the picnic areas. Such vegetation losses will reduce the aesthetic quality of the area, and potentialy cause accelerated erosion in some sections. These disturbances may also accelerate mortality of low vigor, unhealthy trees. Dead and dying trees along the trails and within picnic areas may be hazardous to people using these areas.

Complete removal of the woody vegetation in the area proposed for sledding will be necessary to reduce safety hazards. On these slopes it will be important to establish a thick sod cover to prevent erosion problems.

The development of the basketball, handball, and tennis courts will require complete removal of the vegetation in the areas set aside for these activities. Impact on the vegetation of the area after the initial clearing and development of these courts should be slight.

EFFECTS ON WILDLIFE

Development will create added disturbance from humans and domestic pets. The mobility of wildlife should not be significantly affected, as surrounding land uses are compatible with daily and seasonal wildlife movements. Habitat quantity will be reduced due to losses in existing vegetation for play and parking areas. Changes in habitat quality will depend on location, revegetation, and management of playing field areas. Development of the site with wildlife

as a second priority land use could result in good quality wildlife habitat.

WATER SUPPLY

A water supply will have to be developed by the installation of an on-site well(s). The well(s) should be located to maintain proper separating distances from subsurface sewage disposal systems and other potential sources of pollution.

No major sand-and-gravel aquifer exists on the site. On-site water supplies could be provided by wells tapping bedrock. Such wells would obtains water from fractures within the rock, and the yields would depend upon the number and size of such water-bearing fractures that the well intersects. Although large yields are unlikely, a high probability exists for obtaining at least 3 gallons per minute. Moreover, the nature of the bedrock suggests that the water obtained would be of very good quality (low in dissolved iron and other mineral constituents).

Water fountains should be strategically located so that they enhance and compliment the usage of the facilities. The fountains should be in close proximity to areas of intense use such as ballfields, toilet building, pavilion, the fitness course and if possible the picnic areas.

SEWAGE DISPOSAL

The proposed toilet building will have to be serviced by the installation of an on-site subsurface sewage disposal system to handle wastes from conventional water flush and hand washing fixtures. The area where the toilet building is proposed to be constructed would have high ground water as a limiting factor for the installation of a subsurface sewage disposal system. The system should be based on proper testing, a good engineering design and proper construction with close supervision and inspection. Other areas may be better suited to accept a subsurface sewage disposal system and these areas should be considered.

From visual observations and soil conservation service map data, the area directly north of the existing parking lot may be better suited to accept a subsurface sewage disposal system than the proposed site. The final decision should be based on appropriate testing (observation pits and seepage tests) of the soil.

Isolated picnic areas are proposed along a trail system which circles around and through the entire property. Non-water carriage type sewage disposal facilities should be installed at these areas for the picnickers and hikers.

SOLID WASTES

Recreational areas, particularly picnicking areas and areas associated with spectator sports generate sizable amountsof refuse. An adequate number of conveniently located containers for the storage of refuse should be provided. The containers should be provided with covers to exclude animals and insects. Refuse should be collected on a regular basis and final disposal at an off-site landfill.

MANAGEMENT PRACTICES PROPOSED FOR THE AREA

The wood which is removed during clearing operations for development of the proposed trails, picnic areas, sledding areas and athletic courts should be utilized as fuelwood or woodchips. Trees that are to be removed should be marked to lessen the chances of removal of wanted trees, especially in the picnic areas.

Dead and dying trees, which have the potential to become hazardous to users of the facilities, should also be removed and where possible utilized as fuelwood or wood chips.

Careful planning and wise layout of the proposed multiple use trails and picnic sites is essential to minimize potential problems. Trails and service roads should generally follow natural land contours, avoid steep slopes and wet areas. Where wet area crossings are unavoidable, wooden bridges adequate for emergency vehicle passage should be constructed. These trails and picnic sites should be well defined and clearly marked. This should limit extensive soil compaction, root injury and trampling of herbaceous vegetation outside the trail system and picnic areas.

Soil compaction may be reduced by spreading woodchips several inches deep along heavily used foot trails and picnic sites. As woodchips rot they lose their effectivenss and should be replaced. Woodchips are also used as kindling for campfires at picnic sites. Crushed stone or cinders spread over these areas also reduce soil compaction and are more permanent than woodchips, however, they are usually more costly.

Eventual loss of some trees caused by soil compaction, even with the addition of woodchips, crushed stone or cinders, is unavoidable. As these trees die they should be removed to prevent a possible hazard.

It is extremely important that provisions for trail and picnic area maintenance, trail use (hiking, cross country skiing, motorcycling, fire control, emergency vehicle access etc.), and enforcement of trail use should be established before the trails and picnic areas are actually developed.

Any development in the wetland areas, including heavy thinnings, is apt to cause windthrow in the remaining stand because of shallow root systems and saturated soils. Windthrow is also a potential hazard in the shallow to bedrock areas of the Charlton-Hollis and Hollis Rock outcrop soil areas. Development in these areas should be limited.

The establishment of a vision barrier between the existing residences and the proposed pavilion, would help to avoid future conflicts. Planting a mix of native species such as Eastern white pine and hemlock in several staggered rows, with trees approximately eight feet apart would eventually produce an adequate barrier. The additional planting of fruiting shrubs, such as silky dogwood, crab apple and perhaps autumn olive on the southern side of the conifer planting, will provide visual variety and additional food and cover for birds.

The sawtimber-size mixed hardwood stands (see vegetation type map) which total approximately 60 acres, are presently fully-stocked. The trees are beginning to decline in health and vigor. A commercial thinning, which removes

approximately one-third of the total volume or between 2000 and 2500 board feet per acre, would improve conditions in this stand. This improvement thinning would reduce competition between residual trees for space, sunlight, water and nutrients, resulting in an eventual improvement in tree health and vigor. These thinnings should focus on the removal of the poor quality trees, unhealthy trees, damaged trees and trees which are directly competing with the high quality trees which are to be retained. Sale and utilization of the tops left after the thinning for fuelwood will improve the aesthetic quality of the area by reducing the visual impact.

Logging roads should be planned and laid out in such a way that they may be later utilized as part of the multiple use trail system proposed for the area. Revenues from these thinnings could be used to develop and upgrade this trail system.

This area once treated with the initial improvement harvest should be re-evaluated within 10 to 15 years to determine future management practices.

If management of this area is desired for multiple uses such as recreation, wildlife and the production of timber or fuelwood, a public service forester or private consulting forester should be contacted.

RECREATION POTENTIAL

Field review of the Blonder tract showed that the northern portion of the property (nearest Colonel Ledyard Highway) has been developed for active recreation under Phase I plans. Ballfields and a parking area have been provided and plans are for further development of this section of the site with an area for court related activities such as tennis, handball, and basketball courts. Eventually the town also hopes to install a combined toilet and service building.

The southern part of the tract is relatively inaccessible by any method other than walking. Public vehicular access is not planned. In general, activities which involve the transport of items to designated areas of use (e.g. picnicking, tobogganing, etc.) must be considered as occasional low volume use when vehicular access is not provided.

The area being proposed for toboggan runs has some undesirable aspects. It is a moderate distance from the parking area, which would necessitate walking a sled or toboggan to the site. The size and configuration of the hill, large amount of ledge and boulders, coupled with the distance from a parking lot make this use appear to be a marginal consideration.

Two picnic areas are being proposed for the southern section of the site. Selection of locations for these picnic areas should be largely based on soil suitability. The tentative site selected for the picnic area in the southwest corner of the tract has shallow soil and slope limitations which would limit usability. A slight shift of this location would put it in soils more suitable for picnicking.

Installation of pit or chemical toilets to service the picnic areas should be considered to meet sanitary needs since lack of them can result in site misuse with ensuing site degradation and health standard problems.

An alternate or supplemental proposal to designating picnic areas in the southern section might be to provide rustic bench seats which could simply be in the form of slabbed log sections along the hiking/jogging trail. These could be used as rest stops or informal picnic sites. Garbage cans should be appropriately spotted to service such areas.

The picnic area proposed for the area behind the ballfield backstop would be well situated for direct access from the existing parking lot and for watching ballgames or to simply sit and observe nature in the adjacent woods.

A fitness course has been proposed for installation on the site. The tentative location selected for this course is partially on soils offering severe limitations for this type of activity. Adjustment of siting to more suitable soils is recommended to forestall possible problems resulting from use. It is advisable to put this facility close to areas of heavy use (near the ballfields) for ease of maintenance and in the event that emergency evacuation of someone using the course is necessary. While not a very likely possibility, heat stroke and heart attack are problems which could occur requiring rapid evacuation of the victim. A gated access road (denying vehicular access to the rear portions of the park) could necessitate a hand carry evacuation which would be impractical if the distance is great. Recommendation could be made via posted sign for "buddy system" use of the fitness course for the purpose of expediting evacuation should an emergency situation occur. Posting rules and regulations along with a map of the park would be desirable near the parking lot. The map could detail the layout of facilities and trails within the park.

Passive recreational use such as hiking educational/nature trails and the like could readily be accomodated with little work and expenditure. More formalized activities such as picnicking, where supportive structures are needed, requires a more intensive management program for pickup of garbage, the cleaning of sanitary facilities and the maintenance and repair of structures and facility components. Walk-in access is compatible with passive, low volume use recreation activities which includes the trail related activities sought. These activities can be hiking, bird watching, cross-country skiing, snowshoeing, and jogging.

If public vehicle access is to be denied to the tract's southern portion, a gating system will be needed on this service road. There may be an attendant problem with denial of vehicle access to the rear portion since there is a dirt road over private land which comes fairly close to the southernmost picnic area proposed for the southwest corner. People will undoubtedly try to gain access to this picnic area via the private road if the possibility exists. This could create problems for the abutting landowner. It may be no great problem, but is a consideration.

The existing road and pathway will have to be upgraded to provide access to service and emergency vehicles. The roadway should be wide enough to prevent a constant problem with brush scratching and whipping of service vehicles. Brush encroachment into the road will require periodic trimming operations. A roadway

will be needed to any picnic areas installed to transport picnic tables, toilets, etc. and to maintain these areas. Wet portions of the access road would have to be improved to provide for continued drainage and water flow while providing safe passage by vehicles without causing undue ground damage. Culverts, bridging, stone roadways, etc. could be employed to that end.

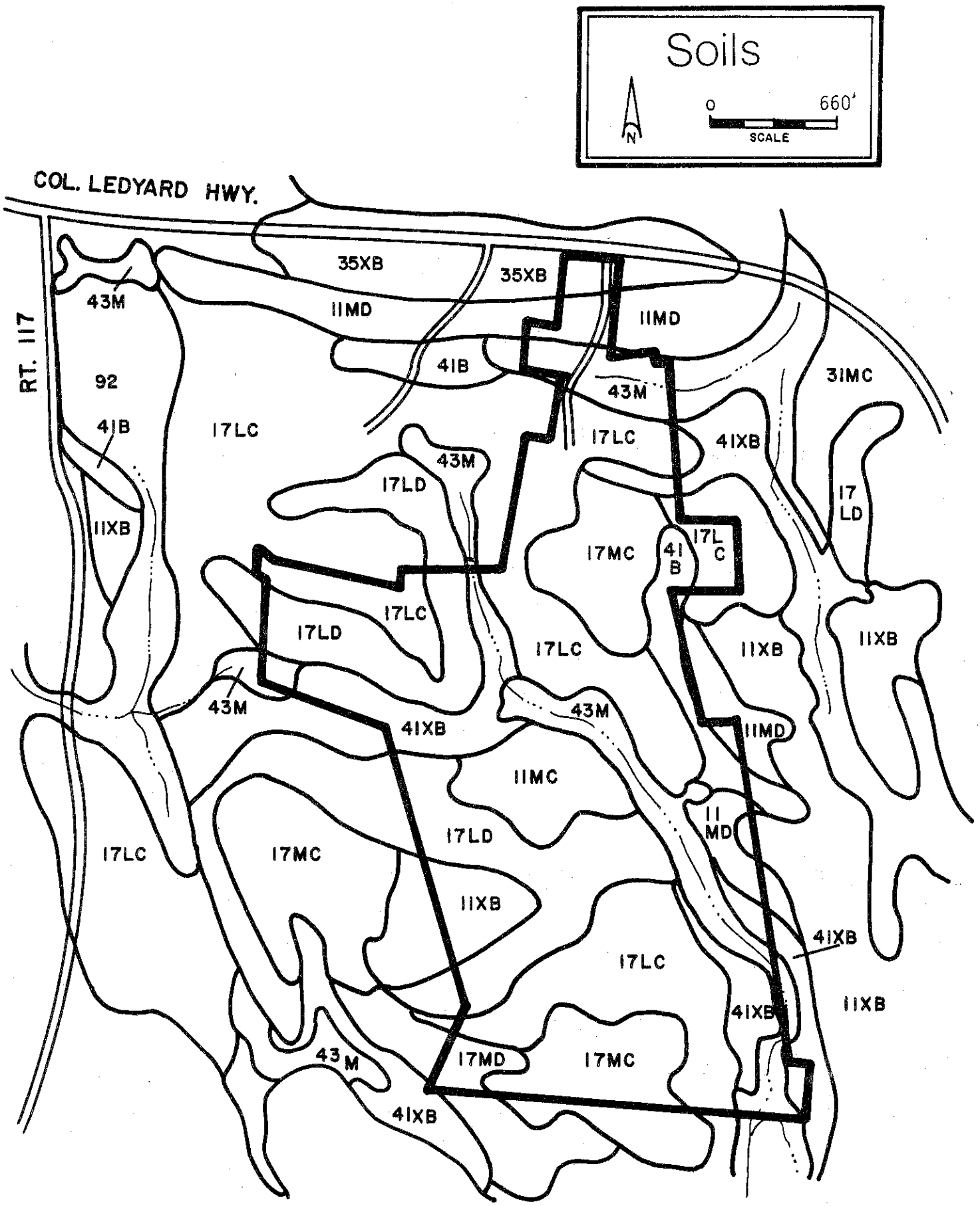
The area selected for basketball, handball, and tennis courts has soil limitations which may have to be corrected by excavation of existing materials and replacement with additional fill.

ALTERNATIVES TO THE PROPOSED ACTION

An alternative to the proposed action would be the initial construction of all or part of an east/west access road into the southern part of the property from Route 117 and/or Colonel Ledyard Highway. This would make the better building land of the site easily accessible and would avoid the possible conflicts with residences along Blonder Boulevard, the sole existing access to the site. This alternative would be costly, involving right-of-way acquisition for at least 1500 feet of roadway, plus construction costs of the road itself.

The location selected for the proposed open pavilion will have a negative visual impact on the existing residences adjoining the site. The occupants of the residences will also probably experience increased noise from the group activities conducted at the pavilion. Vegetative screening or fencing in carefully selected locations might reduce the impact. It is also apparent that use of all of the existing and proposed activities will generate more automobiles than there are parking spaces available. The result could be parking along the access road in front of the residences. Few users of the facilities on this property will walk to the site; therefore, care should be taken to have ample parking space available for potential users.

Appendix


Soils
N
0
660'
SCALE
COL. LEDYARD HWY.
RT. 117
35XB
35XB
43M
11MD
11MD
92
41B
41B
17LC
17LC
43M
17LD
31MC
41XB
17
LD
11XB
17MC
41
B
17L
C
17LC
17LD
17LC
11XB
11XB
43M
43M
41XB
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17LC
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17MD
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BLONDER PROPERTY
LEDYARD, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Soil Symbol	Approx. Acres	Percent of Acres	Principal Limiting Factor	Urban Use Limitations*			
					On-Site Sewage	Picnic Areas	Paths and Trails	Play-grounds
Canton-Charlton	11MC	8	6	Large stones	3	2	3	3
Canton-Charlton	11MC	3	2	Slope, large stones	3	3	3	3
Canton-Charlton	11XB	5	3	Large stones	2	1	2	2
Charlton-Hollis	17LC	46	32	Slope, large stones, depth to rock				
Charlton Part					2	2	2	3
Hollis Part					3	2	2	3
Hollis-Rock outcrop	17MC	20	14	Depth to rock	3	2	2	3
Hollis-Rock outcrop	17MD	2	2	Slope, depth to rock	3	3	2	3
Paxton-Montauk	35XB	5	3	Percs slowly	3	2	2	3
Ridgebury, Leicester, Whitman	43M	12	8	Large stones, percs slowly, wetness	3	3	3	3
Sutton	41B	5	3	Wetness	3	1	1	2
Sutton	41XB	14	10	Wetness, large stones	3	1	2	2

Limitations: 1=slight, 2=moderate; 3=severe.

** Regulated wetland soil under PA 155.

SOIL INTERPRETATIONS FOR URBAN USES

The ratings of the soils for elements of community and recreational development uses consist of three degrees of "limitations:" slight or no limitations; moderate limitations; and severe limitations. In the interpretive scheme various physical properties are weighed before judging their relative severity of limitations.

The user is cautioned that the suitability ratings, degree of limitations and other interpretations are based on the typical soil in each mapping unit. At any given point the actual conditions may differ from the information presented here because of the inclusion of other soils which were impractical to map separately at the scale of mapping used. On-site investigations are suggested where the proposed soil use involves heavy loads, deep excavations, or high cost. Limitations, even though severe, do not always preclude the use of land for development. If economics permit greater expenditures for land development and the intended land use is consistent with the objectives of local or regional development, many soils and sites with difficult problems can be used.

Slight Limitations

Areas rated as slight have relatively few limitations in terms of soil suitability for a particular use. The degree of suitability is such that a minimum of time or cost would be needed to overcome relatively minor soil limitations.

Moderate Limitations

In areas rated moderate, it is relatively more difficult and more costly to correct the natural limitations of the soil for certain uses than for soils rated as having slight limitations.

Severe Limitations

Areas designated as having severe limitations would require more extensive and more costly measures than soils rated with moderate limitations in order to overcome natural soil limitations. The soil may have more than one limiting characteristic causing it to be rated severe.