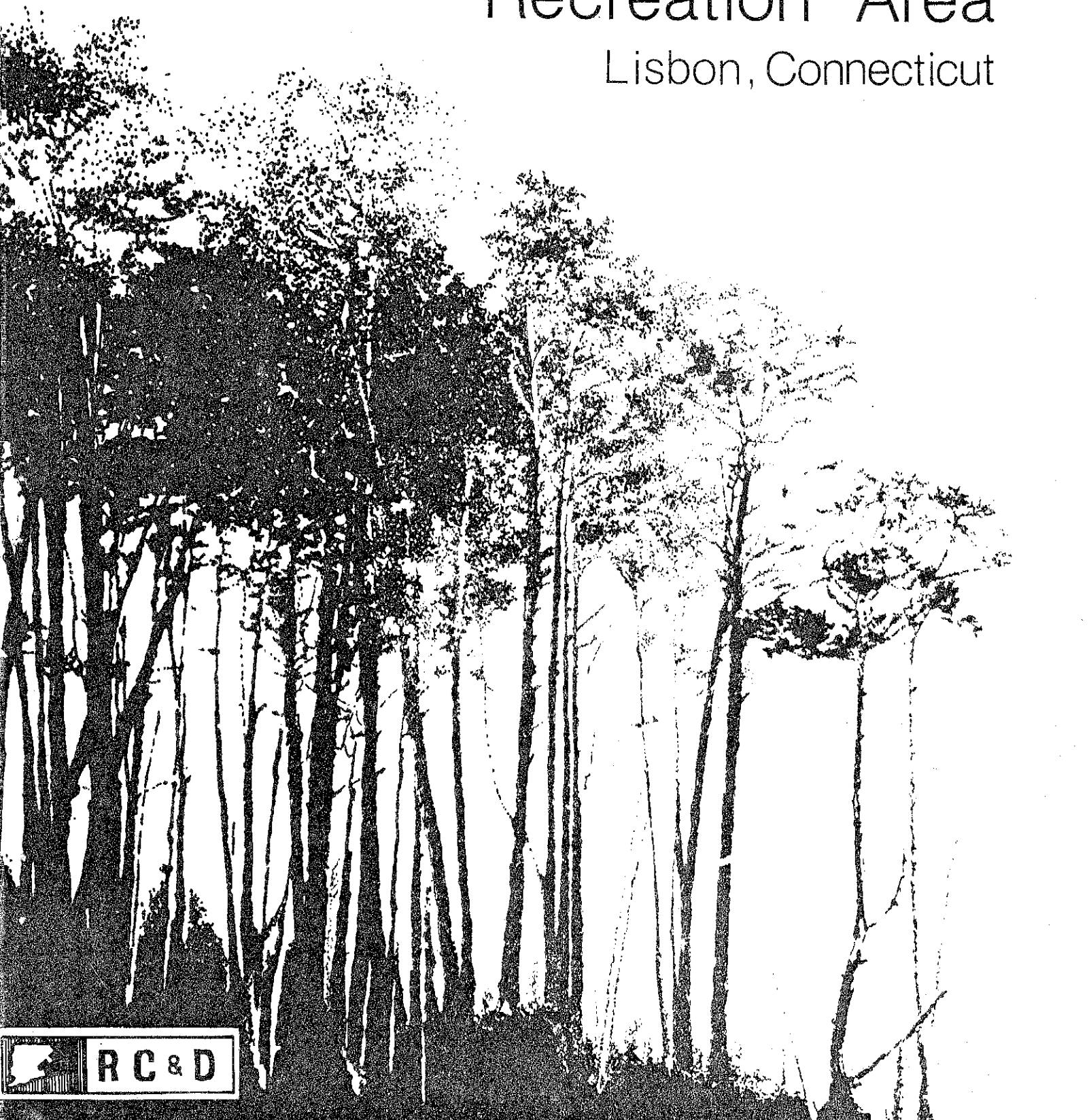


Environmental Review Team Report

Recreation Area

Lisbon, Connecticut

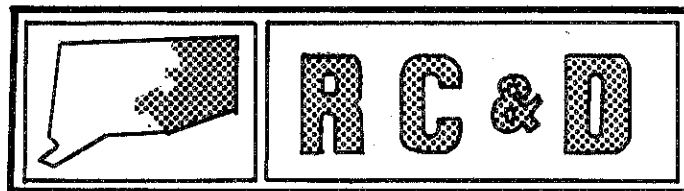


EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team
Report
on

Recreation Area
Lisbon, Connecticut

September 1980

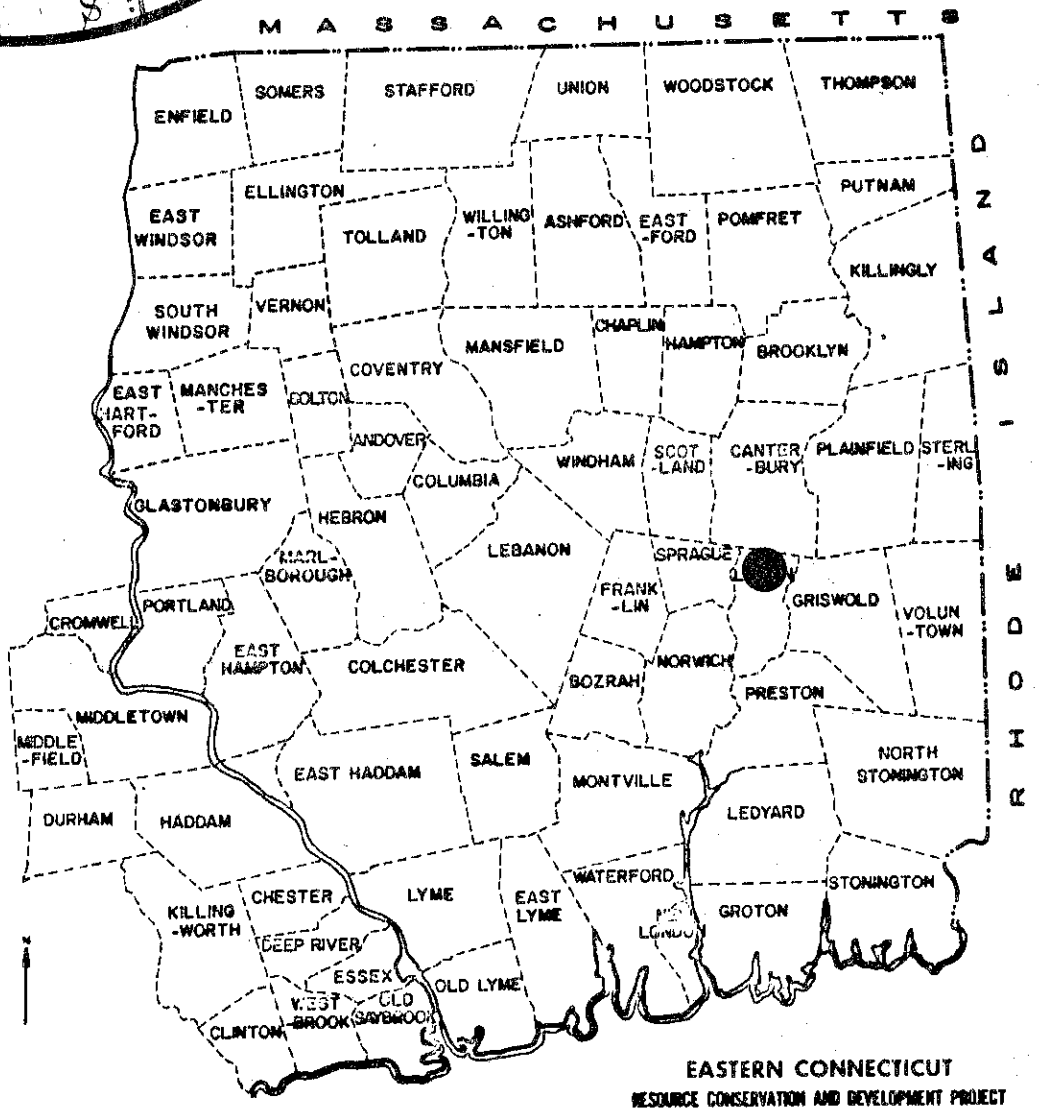
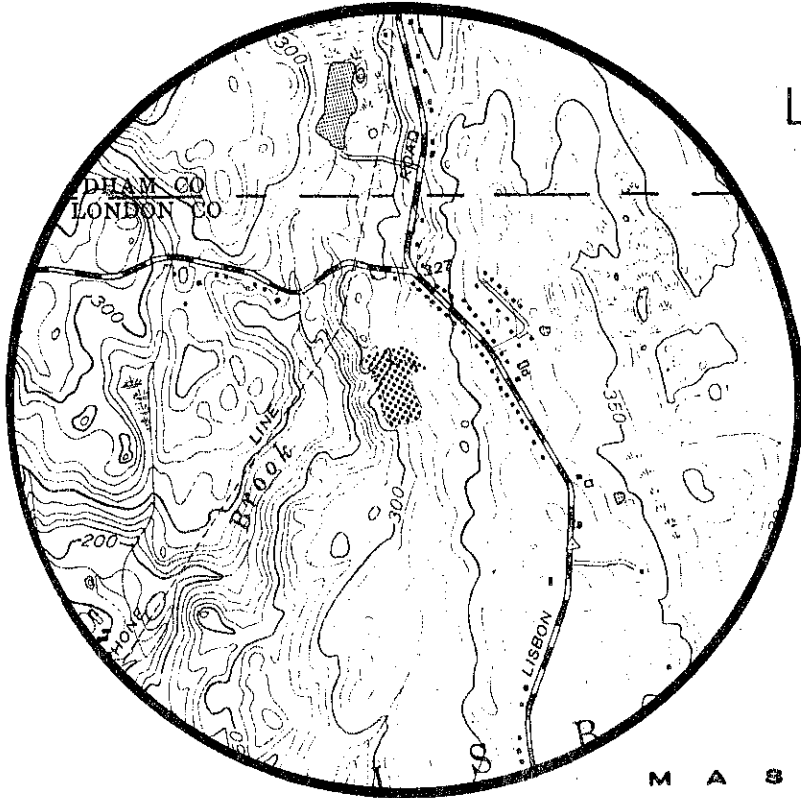


eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut, 06360

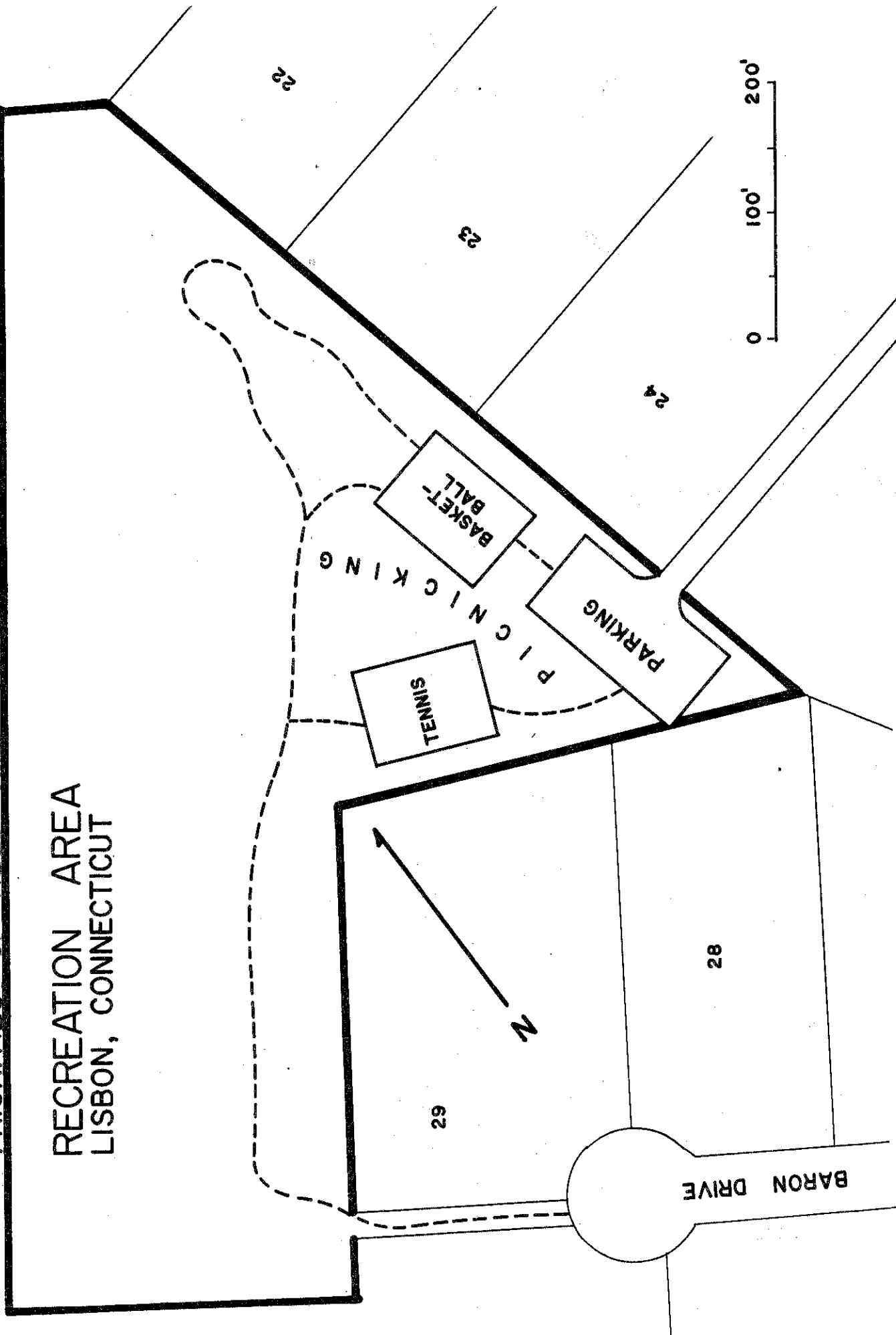
Location of Study Site

Recreation Area
Lisbon, Connecticut



CONCEPTUAL SKETCH ONLY. EXACT LOCATION OF FACILITIES
TO BE DETERMINED BY ON SITE ASSESSMENT AFTER
PRIORITIES OF NEED ARE SET.

RECREATION AREA
LISBON, CONNECTICUT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
RECREATION AREA
LISBON, CONNECTICUT

This report is an outgrowth of a request from the Lisbon Recreation Commission to the New London County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource, Conservation and Development (RC&D) Area Executive Committee for their consideration and approval. The request was approved and the measure was reviewed by the Eastern Connecticut 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 property boundaries were distributed to all Team members prior to their review of the site.

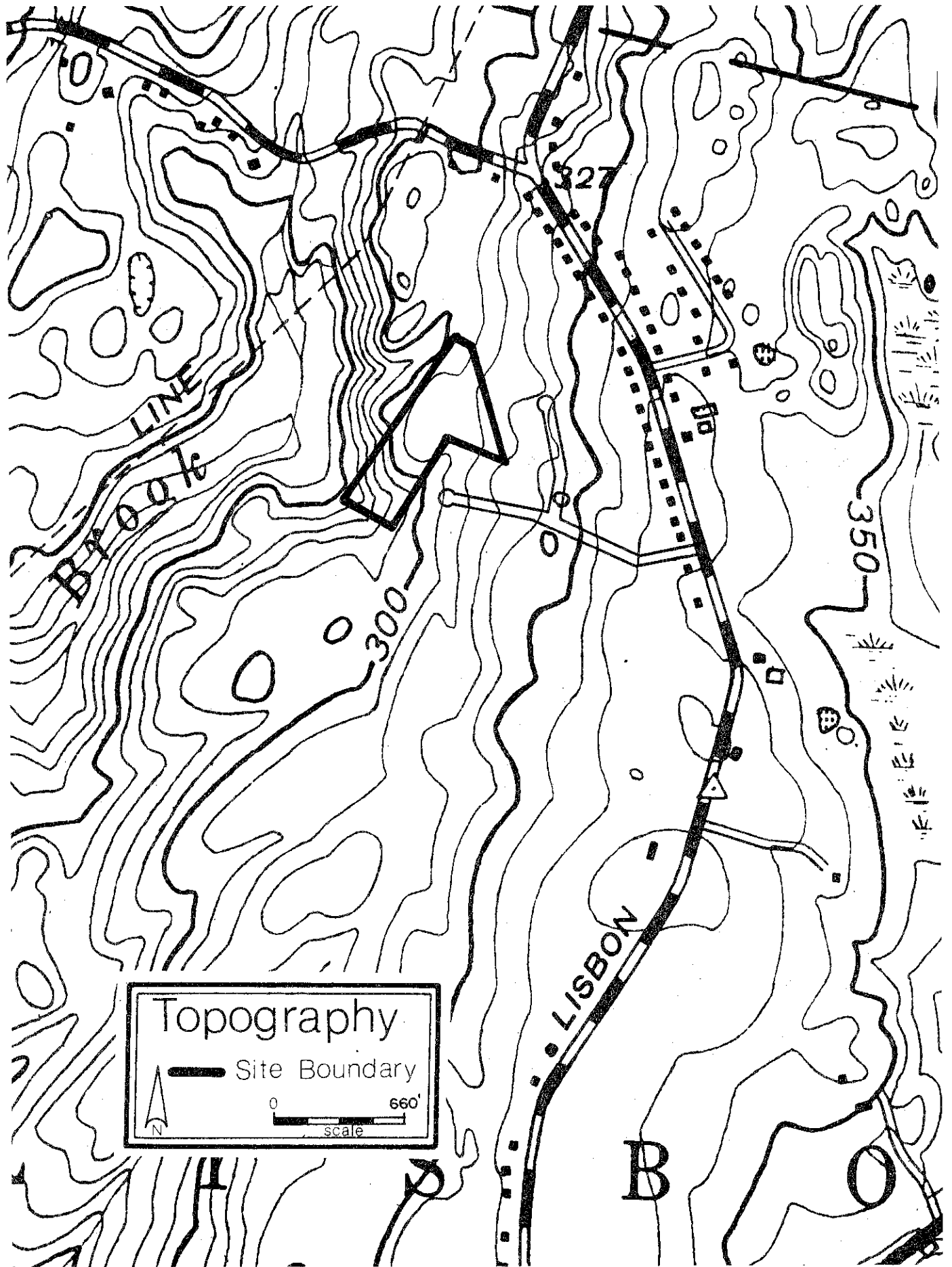
The ERT that field-checked the site consisted of the following personnel: Gary Domian, District Conservationist, SCS; Rob Rocks, Forester, Connecticut Department of Environmental Protection (DEP); Michael Zizka, Geologist, DEP; Andy Petracco, Recreation Specialist, DEP; Gerhard Amt, Regional Planner, Southeastern Connecticut Regional Planning Agency; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Thursday, May 22, 1980. Reports from each contributing Team member were sent to the ERT Coordinator for review and summarization for the final report.

This report is not meant to compete with private consultants. As requested by the Town, this report, which identifies the existing resource base of the recreation area, shall constitute the environmental assessment portion of the town's open space application for Federal Department of the Interior, Heritage Conservation and Recreation Service funds to assist in the development of this property.

The Eastern Connecticut RC&D Area Committee hopes that this report will be of value and assistance in making any decisions regarding this particular site.

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



DESCRIPTION OF THE PROPOSAL

The Eastern Connecticut Environmental Review Team was asked to prepare an environmental assessment for proposed development of an open space parcel in the town of Lisbon. The town is seeking Heritage Conservation and Recreation Service funding for help in developing this 8.4 acre site located on Baron Drive and Regina Avenue. The proposed project would involve development for active and passive recreation purposes. A softball field, basketball court, tennis court, picnicking and parking area are some of the desired uses. Although a broad variety of facilities are desired, the physical characteristics, size, and access to the parcel present limitations for its use.

That portion which is readily usable is located in a small triangular - shaped portion of the tract located behind some newly erected houses. A 20' right of way (R.O.W.) corridor provides access to this portion of the tract. An access road would have to be constructed along with a parking lot so that off street parking will be provided. There is another 20' R.O.W. in the southern portion of the tract off of the Baron Drive cul-de-sac, but this access point comes in at a point where steepness and wetness would preclude anything but foot access.

At present Lisbon has no town-owned active recreation areas. Existing recreation facilities in the town consist of the school playground, a state-owned roadside picnic area on Route 12, a private nine-hole golf course, and two commercial recreation campgrounds. The town is in the process of developing a parcel of land near the town hall, in the geographic center of the town, which will include a baseball field and a football/soccer field.

DESCRIPTION OF THE ENVIRONMENT

PAST/PRESENT LAND USE

The site may have been used at one time for pasture or wood production. It is presently a woodland area.

SOCIO-ECONOMIC CONDITIONS

Lisbon is a rural-residential community, bordering on the City of Norwich. Economic activity is sparse, with most persons employed outside of the town. The population totalled 2,808 in 1970, according to the Census. The Connecticut Department of Health estimates the 1979 population to be 3,300, a nine-year increase of 18%. SCRPA forecasts a population of 3,450 in 1980 and 3,950 in 1990.

Data from the 1970 Census showed a 1969 median family income of \$9,771. Out of a total of 766 families and 100 unrelated individuals in the Town, 46 families and 42 unrelated individuals were classified as having incomes below the poverty level. The families in poverty represented 6% of the Town's families, compared

with a regional average of 10.8%. The 1970 Census also disclosed only 1 black person residing in Lisbon.

The proposed project would serve a neighborhood of over 100 homes within a quarter-mile of the site. This is one of Lisbon's largest residential concentrations. It is approximately two and one-half miles from the center of town where the only other recreation facility in the town is being developed. The zoning for the part of Lisbon which includes the proposed project is Residential, requiring 60,000 and 80,000 square-foot lots.

TRANSPORTATION ROUTES

The proposed project involves land that has no frontage on a road or street. Access is gained from streets in the adjacent subdivision over two twenty-foot rights-of-way. This, combined with the limited amount of level land on the site, suggests that vehicle access and parking should not be considered in the site development. Emphasis for use of the site should be on serving the adjacent neighborhood, which is predominantly families. The close proximity of the site to the neighborhood residences makes it well suited to pedestrian access.

Types of facilities that serve the nearby neighborhood should be provided, such as, basketball and tennis courts, an open field for informal sports, and horseshoe pits. Facilities that serve town-wide organized sports should be discouraged so that vehicle access and parking does not become a problem on the subdivision streets.

TOPOGRAPHIC CONDITIONS

The northeast section of the site is flat to gently sloping. Toward the southwest, the slopes become moderately steep to steep, dropping off into the valley of Old Stone Mill Brook. Access to the parcel from Baron Drive is very difficult; the cul-de-sac ends in a mound of gravel, sand, and boulder fill with precipitous edges. Considerable work would be required to improve this access. The right-of-way off Regina Avenue is a much more suitable access, as it passes over the flatter land near the northeast section of the site.

SURFACE/SUBSURFACE GEOLOGIC CONDITIONS

The property is located within the Scotland topographic quadrangle. H.R. Dixon and C.E. Shaw, Jr., prepared a geologic map of the quadrangle. The map has been published by the U.S. Geological Survey (Map GQ-392). Bedrock underlying the site is described as sillimanite gneiss. Gneiss is a crystalline rock in which alternating thin bands of elongate minerals and more rounded minerals form a distinct lineation. The elongate minerals in the gneiss on the property are predominantly biotite and muscovite; the non-elongate minerals are mostly quartz and feldspar. Sillimanite is a characteristic accessory mineral in the rock. Although no bedrock exposures were observed on the site, the presence of numerous boulders and the steepness of the slopes in the southwestern section suggest that the depth to bedrock is generally less than 10 feet. The rock is not believed to have any substantial commercial value.

A glacial sediment known as till overlies bedrock on this parcel. Till consists of rock particles and fragments of widely varying shapes and sizes. There is little grain-size sorting within the till; sand is the predominant constituent but silt, clay, gravel, and boulders are intermixed in varying percentages. The rock materials that make up the till were incorporated into an ice sheet as it expanded southward through New England, scraping, chipping, and gouging the pre-glacial soils and bedrock surfaces. The materials were then redeposited from the ice without further transport by meltwater. The stoniness of the till on the site is indicated by the numerous boulders scattered throughout the area. The till matrix is generally compact and transmits groundwater very slowly; however, the till appears to become coarser and more gravelly toward the southwest.

SOILS

Soil series typical of the site include the Charlton-Hollis series, the Hollis series, the Paxton and Montauk series, the Woodbridge series and the Ridgebury, Leicester and Whitman series.

The sloping landforms highest in the landscape are occupied by Charlton-Hollis very rocky, fine sandy loams. The mapping unit symbol is 17LC. The letter "L" signifies very rocky surface conditions. In the Charlton-Hollis mapping unit, the letter "C" indicates a slope of 3 to 15 percent. The Charlton soils formed in glacial till derived mainly from schist and gneiss. The soils are well-drained. Charlton soils have moderate to moderately rapid permeability. These soils have medium to rapid surface runoff.

The Hollis soils formed in glacial till derived mainly from schist and gneiss. The soils are shallow with bedrock within 10 to 20 inches of the surface. Drainage is well-to somewhat excessively well-drained. Hollis soils have moderate or moderately rapid permeability. Surface runoff is medium to very rapid.

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 texture substratum. Surface runoff from both soils is medium to rapid.

The gently sloping landforms higher in the landscape are occupied by Woodbridge very stony fine sandy loam. The soils are designated by the mapping unit symbol 31XB. The symbol "X" denotes very stony. The Woodbridge soils formed in compact glacial till. The soils are moderately well drained. Woodbridge soils have moderate permeability in the surface layer and subsoil, slow to very slow permeability in the substratum (fragipan). The soils have a seasonal highwater table at 18 to 24 inches. Woodbridge soils have slow to rapid surface runoff.

Wetlands in the upland glacial till soils are occupied by Ridgebury, Leicester and Whitman extremely stony fine sandy loams. The soils are designated by the mapping unit symbol 43M. The symbol "M" indicates extremely stony surface conditions. The Ridgebury and Whitman soils formed in compact glacial till; the Leicester soils formed in friable glacial till. The Ridgebury and Leicester soils are poorly drained and the Whitman soil is very poorly drained. The Ridgebury

and Whitman 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 high water table for Ridgebury and Leicester soils is at or near the surface 7 to 9 months of the year. The Whitman soil has a high water 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.

Approximately three acres of the site on the south end could not be used for athletic fields, basketball or tennis courts or for parking without major land reshaping and grading. There is also a portion of wetlands that runs through this section that would have severe limitations to these types of uses. This section is most adapted to the picnicking and hiking type activities.

The north section is more suitable for this type of recreation, but is only about six acres in size. Other limitations are access, surface stoniness, and seasonally high water tables. The slope becomes a limiting factor again as the land form slopes along the west boundary. Most of the limitations, except for slope, can be overcome in this section by installing drainage and removing surface stones. Land grading will also have to take place in this section prior to installation of intensive use recreation areas.

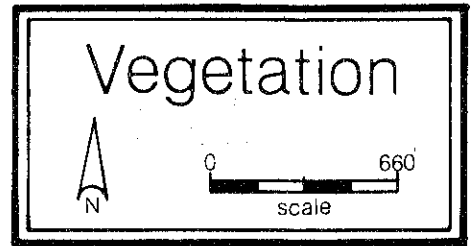
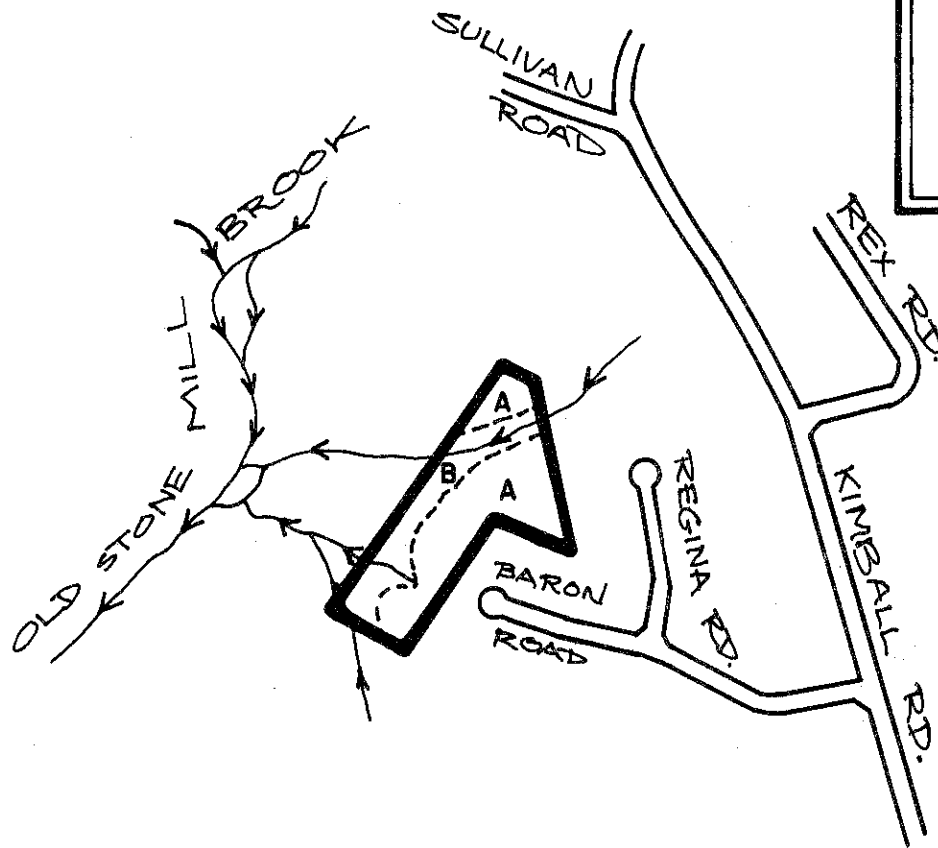
WATER RESOURCES

Old Stone Mill Brook, a perennial stream originating in the town of Scotland approximately two miles north of the site, receives all the drainage from the property. The brook itself does not traverse the site, nor do any other perennial streams. Several springs or man-made drainage outlets release small, intermittent flows onto the parcel from the vicinity of the Baron Drive cul-de-sac. A larger intermittent flow passes through a swale near the northernmost corner of the property. These flows reenter the ground through coarse soils on the edge of the Old Stone Mill Brook wetland border. Water flowing from underneath the fill at the Baron Drive terminus gave a bright reddish-orange stain to soils and stones near the fill, suggesting that the water was either highly mineralized or nutrient-rich.

The till on the site is unlikely to have a significant potential for groundwater supplies. Bedrock-based wells could probably provide at least small yields (2-5 gallons per minute) that would reliably serve the needs of users of the recreational facilities. However, high-yielding wells from the bedrock aquifer are unlikely to be obtained; the public-supply potential of the rock is therefore small. No sand and gravel deposits of sufficient thickness or extent to serve as a high-yielding water supply source are available on the site.

WILDLIFE

The open space area abuts additional woodland property which probably provides food and cover for game species such as deer and partridge as well as more common species such as skunk, raccoon, muskrat, frogs, snakes and seasonal songbirds.



LEGEND

- ==== Roads
- Property Boundary
- Vegetation Type Boundary
- Stream

VEGETATION TYPE DESCRIPTIONS*

- TYPE A. Mixed hardwoods, 5 1/2 acres, Fully stocked, pole to saw-timber-size.
- TYPE B. Hardwood swamp, 3 1/2 acres, Over-stocked, sapling to pole-size.

- * Seedling-size = Trees less than 1 inch in diameter at 4 1/2 feet above the ground (d.b.h.)
- Sapling-size = Trees 1 to 5 inches in d.b.h.
- Pole-size = Trees 5 to 11 inches in d.b.h.
- Sawtimber-size = Trees 11 inches and greater in d.b.h.

VEGETATION

The 9± acre parcel proposed for recreational development is entirely forested. Two vegetation stand types are present, they include a 5 1/2 acre mixed hardwood stand and a 3 1/2 acre hardwood swamp. No endangered plant species were observed during the field investigation. Clearing this site will produce between 17 and 20 cords of fuel wood per acre.

Vegetation type descriptions for this site are as follows:

Type A: (Mixed Hardwoods) - Medium quality pole to sawtimber-size red oak, white oak, shagbark hickory, black birch and red maple are dominant species, sugar maple is also present in this fully stocked 5 1/2 acre stand. The understory is dominated by hardwood tree seedlings, chestnut sprouts, maple-leaf viburnum, witch hazel, arrowwood and occasional eastern red cedar. Club moss, huckleberry, Canada mayflower, pink ladyslipper, rattlesnake plantain, wild sarsaparilla, bracken fern and hay-scented fern form the groundcover in this stand. The driest sections of this stand, located on knolls, contain considerable white oak mortality.

Type B: (Hardwood Swamp) - This 3 1/2 acre overstocked stand is made up of sapling to pole-size red maple and white ash, with scattered sugar maple around the edges. The trees in this stand are beginning to decline in health and vigor as a result of their crowded condition. Patches of spicebush, arrowwood and highbush blueberry are present in the understory. Groundcover vegetation consists of skunk cabbage, false hellebore, Solomon's seal, Christmas fern, cinnamon fern, sensitive fern and spinulose woodfern.

PROBABLE FUTURE ENVIRONMENT

If development funding is unavailable, the site will remain in open space use, perhaps with some informal development for this purpose by neighborhood residents.

ENVIRONMENTAL IMPACT

EFFECT ON LAND USE

This project should not adversely effect land uses in the area.

EFFECT ON SOCIO-ECONOMIC CONDITIONS

It does not appear that the proposed development will have a noticeable impact on socio-economic conditions, except that there will undoubtedly be some local public expenses produced by developing and maintaining the property. These costs will be reflected in the local tax rate.

EFFECT ON TRANSPORTATION ROUTES

This project will have no appreciable effect on transportation routes or traffic conditions in the area.

EFFECT ON WATER RESOURCES

The seasonally high groundwater conditions on the site may affect its recreational potential, but the recreational facilities and uses themselves should not adversely affect groundwater quality or quantity. Establishment of a septic system, if improperly designed or engineered, could pollute the local ground and surface waters, but this hazard would be true (and probably greater) for most other types of uses. Some grading and filling would be needed in order to provide playing fields in the northeastern section of the site; sediment-and-erosion controls should be planned to accompany any such activities to prevent the loss of soil into Old Stone Mill Brook. Massive filling and regrading would be required to allow active recreational usage of the southwestern section of the property. The town is unlikely to attempt this type of development. In general, deterioration of local surface water and/or groundwater quality from recreational usage of this parcel is not anticipated.

EFFECT ON WILDLIFE

This proposal should have little effect on wildlife in the vicinity, however, increased use by humans may discourage deer from using the area.

EFFECT ON VEGETATION

A considerable amount of vegetation clearing in the mixed hardwood stand will have to take place to construct the proposed recreational facilities on this tract. The extent of vegetation loss will depend on the degree of development which is decided upon. Once development of this property has been completed further impact on the vegetation will be minimal.

IRRETRIEVABLE COMMITMENTS OF RESOURCES

No unavoidable adverse effects on water or geologic resources are involved in this proposal. No irreversible or irretrievable commitment of such resources would result.

MITIGATING MEASURES

Revegetation with sod as soon as possible after clearing, excavation and grading takes place will minimize runoff and erosion. The trees which are removed during the clearing operation should be utilized as fuelwood.

RECREATION POTENTIAL

The amount of relatively level land on the tract which lends itself to recreational development without a major earthmoving effort is comparatively small and is located in the triangular - shaped portion of the tract. The area of relatively level land available would not permit accommodation of all of the activities being sought for the site. Elimination of one or more of these activities would be necessary. A few options are possible, but the priority of need will undoubtedly determine which facilities are to be retained.

The site may be large enough to accommodate a basketball court, tennis court and small (25-30 car) parking lot with picnic sites interspersed in the wooded areas between them. A short trail system could be incorporated into the design, connecting use areas and providing access to the rear land. The tracts' configuration and size of the area suitable for development make establishment of a softball field appear to be a low probability consideration. If a ballfield were installed it would necessarily be quite small and would virtually preclude the installation of any other facilities.

An alternative to installing a tennis court might be the establishment of a playground or open grassy area for horseshoe games, frisbee toss, volleyball, etc. A small number of fitness trail stations might be installed along the foot trail mentioned. These would be available for use primarily by the local residents. The foot trail on the tract might also be used by joggers as a part of their run so it should be located and constructed to minimize the maintenance factor and erosion potential. The Soil Conservation Service can provide guidance on the location and construction of these trails.

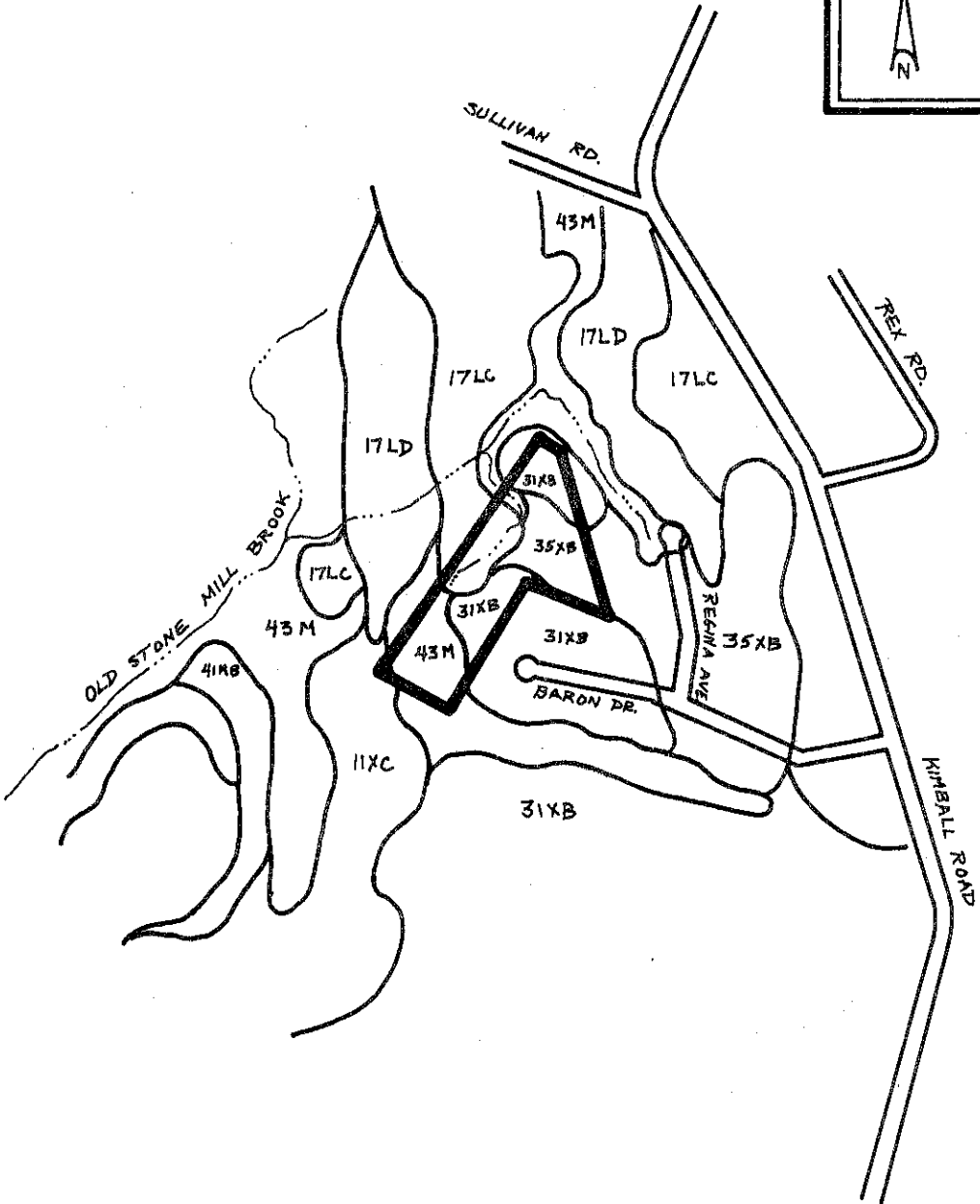
The use of pit or chemical toilets should fulfill the requirement for sanitary facilities. Tree tops and branches remaining from any tree harvesting operations would hopefully be chipped up for use in picnic areas to help reduce the potential for damage to remaining trees. The area proposed for development is sufficiently small to make it important that an attempt be made to retain those trees left standing.

If the tract is not developed for recreational use it will probably continue to be used as an informal woodland play area by local children.

Appendix

Soils

SCALE



LISBON RECREATION AREA
LISBON, 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	Playing Fields	Paths and Trails
Charlton-Hollis Charlton Part Hollis Park	17LC	1.5	16	Slope, large stones	2 3	3 3	2 2	3 3
Paxton-Montauk	35XB	2.0	21	Percs slowly	3	1	2	2
Ridgebury-Leicester, Whitman	43M	2.5	26	Large stones, percs slowly, wetness	3	3	3	3
Woodbridge	31XB	3.5	37	Percs slowly, wetness, large stones	3	1	2	2

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

** Regulated wetland soil under P.A. 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.