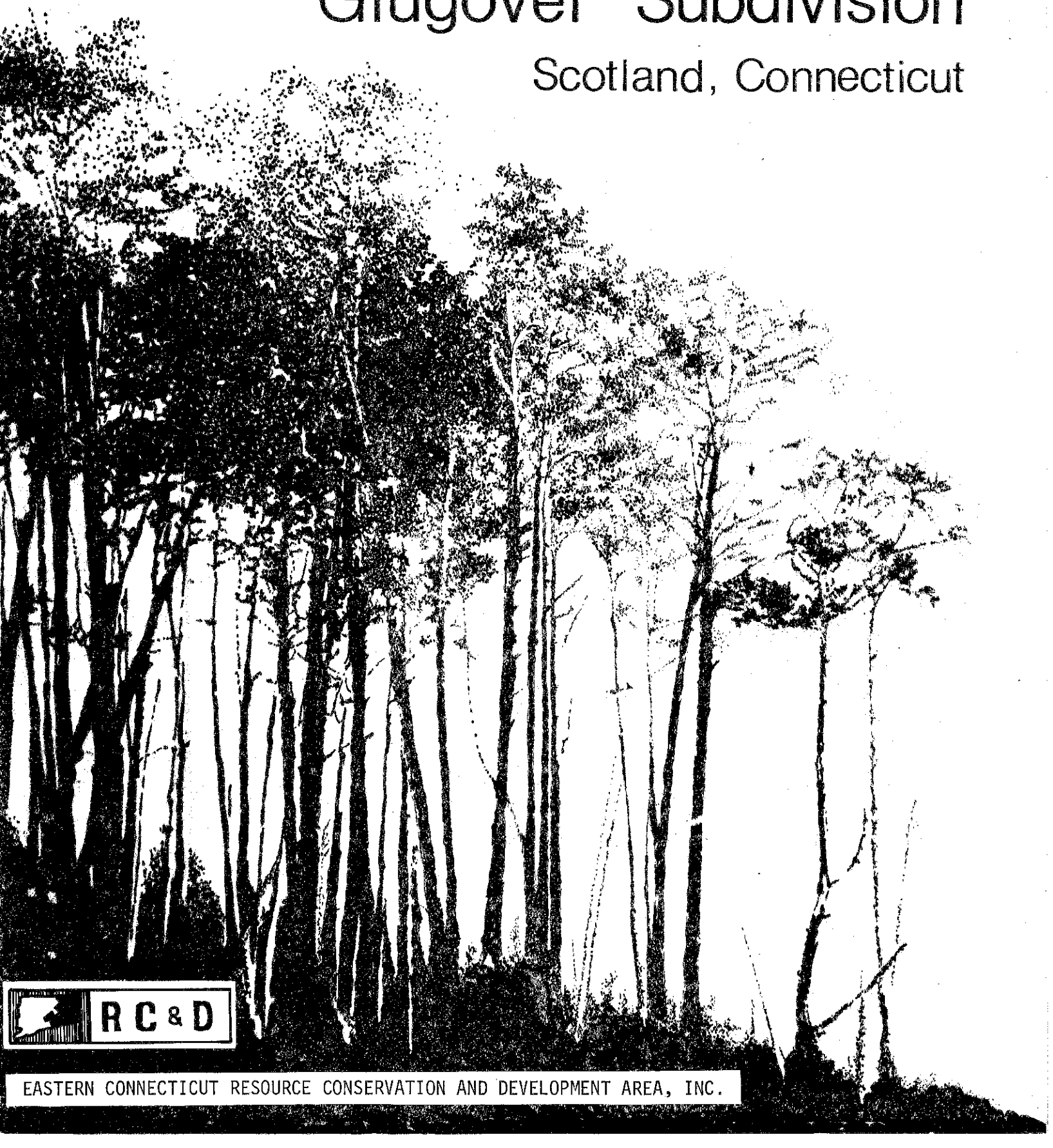
Environmental Review Team Report

Glugover Subdivision

Scotland, Connecticut



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EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

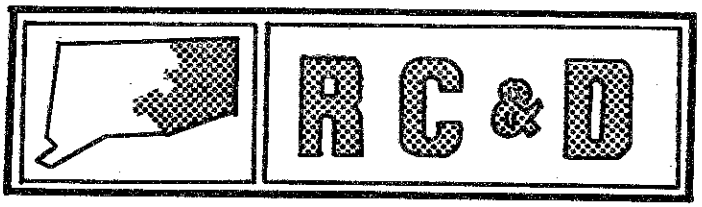
Environmental Review Team Report

on

Glugover Subdivision

Scotland, Connecticut

June 1978

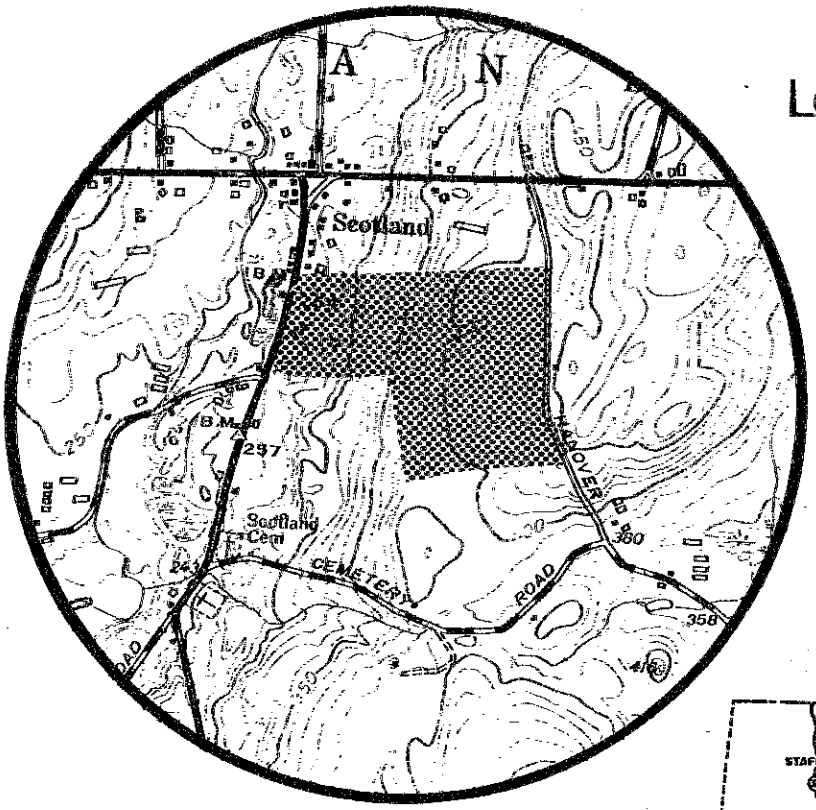


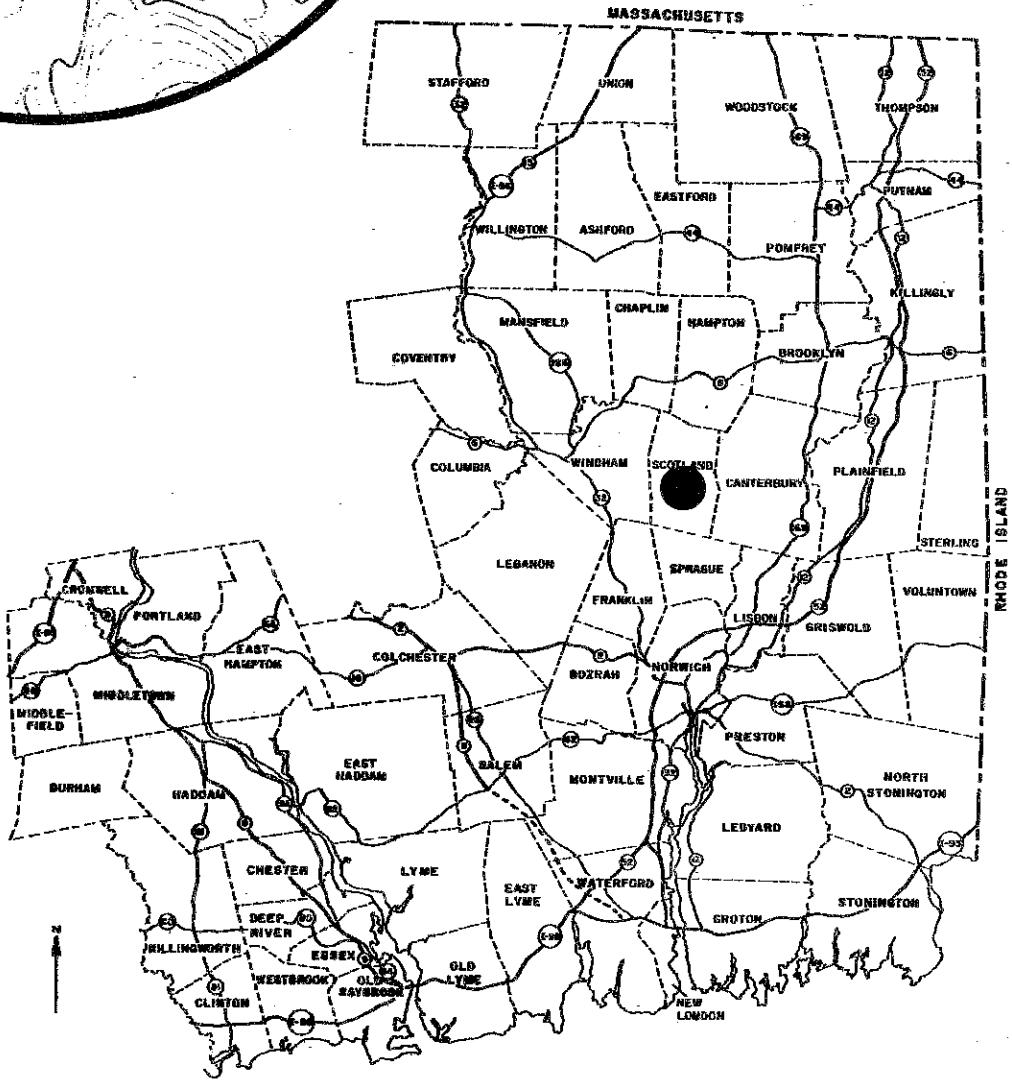
eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site

GLUGOVER PROPERTY
SCOTLAND, CONNECTICUT





EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
GLUGOVER PROPERTY
SCOTLAND, CONNECTICUT

This report is an outgrowth of a request from the Scotland Planning and Zoning Commission, to the Windham 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 as a project measure. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The soils of the site were mapped by a soil scientist of the United States Department of Agriculture (USDA), Soil Conservation Service (SCS). Reproductions of the soil survey map as well as a topographic map of the site were distributed to all ERT participants prior to their field review of the site.

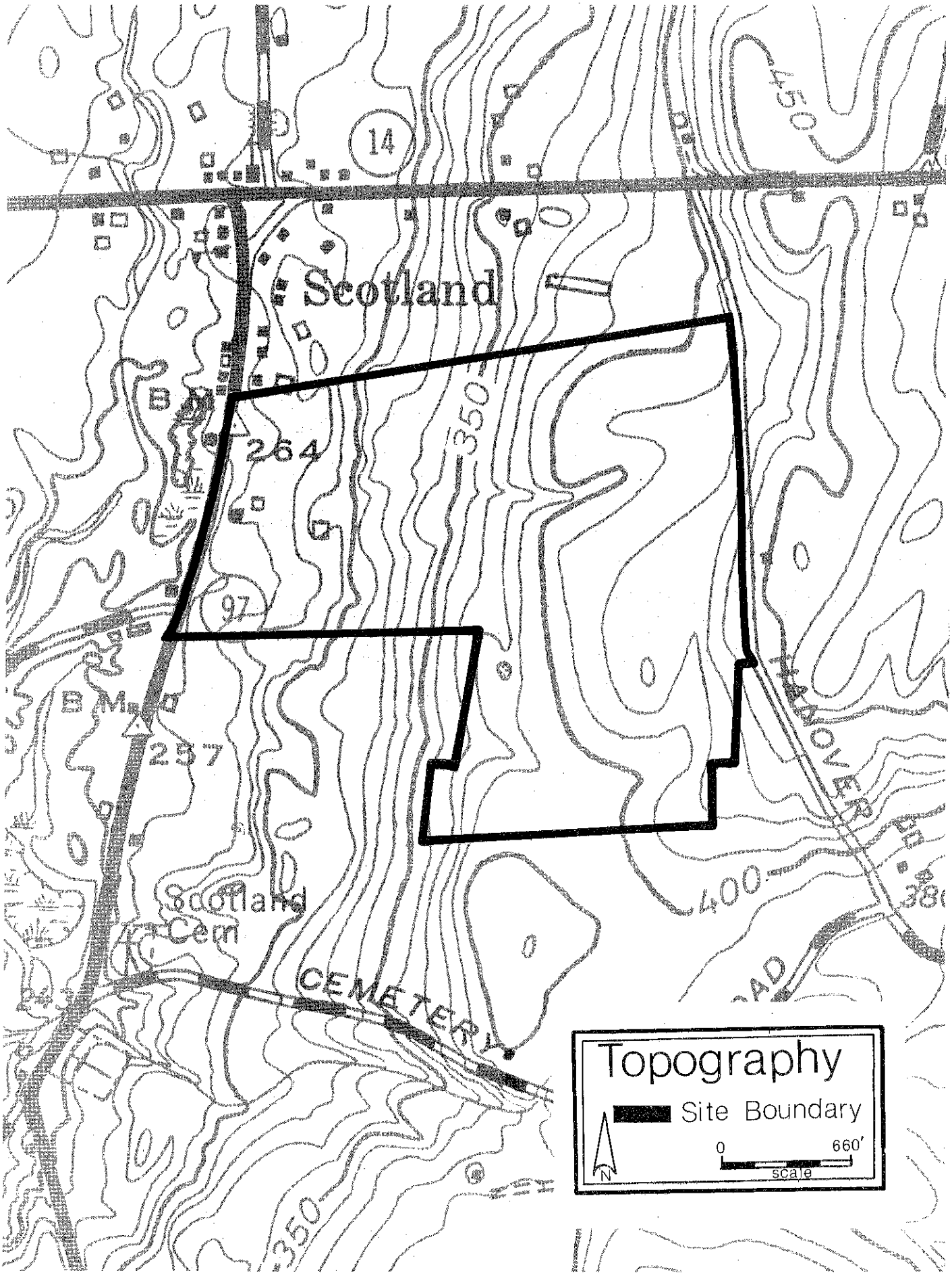
The ERT that field checked the site consisted of the following personnel: Howard Denslow, District Conservationist, Soil Conservation Service, (SCS); Michael Zizka, Geologist, Department of Environmental Protection (DEP); Donald Smith, Forester (DEP); Ernest Julian, Sanitarian, State Department of Health; Geoffrey Havens, Sanitarian, State Department of Health; Les Barber, Regional Planner, Windham Regional Planning Agency; Barry Cavanna, RC&D Project Coordinator; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field-checked the site on Thursday, April 27, 1978. Reports from each 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 by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the developer and the Town of Scotland. The results of this Team action are oriented toward the development of a better environmental quality and the long-term economics of the land use.

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 Area, 139 Boswell Avenue, Norwich, Connecticut 06360, 889-2324.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CEMETERY
HANOVER
Topography
Site Boundary
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INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to review a 118 acre parcel, located between route 97 and Hanover Road in the town of Scotland, for proposed subdivision and dwelling construction. The property is presently in the private ownership of Dr. Donald Glugover, a Scotland resident. Dr. Glugover's residence is located directly to the west of the study site. The most striking physical features of this site are its varied topography, its intermittent streams and wetland areas and its vegetative diversity. Development plans and soils investigation results have been prepared by Lenard Engineering of Storrs, Connecticut. The original development plan,calling for 90 two bedroom apartments in 10 buildings and 28 single family dwellings to be constructed over a ten year period, was rejected at an April 1978 meeting of the Scotland Planning and Zoning Commission. The Team's remarks will address the feasibility and impact on the natural resource base, of <u>any</u> proposed development on this site.

The Team is concerned that the final subdivision plan for this parcel relates to the natural resource base of the site. The Glugover Property appears to be suitable for home development, but probably not at the density originally planned. Clustering of dwellings to avoid encroachment on sensitive wetland areas may be an ecologically sound alternative for the Town to consider. Design and engineering for this project must work with and overcome the limitations which topography and soils present.

ENVIRONMENTAL ASSESSMENT

GEOLOGY

The bedrock and surficial geology of the Glugover property is included in U.S. Geological Survey Map GQ-392, "Geological Map of the Scotland Quadrangle, Connecticut", by H.R. Dixon and C.E. Shaw, Jr. (1965). According to that map, the property is underlain by a bedrock unit known as Scotland Schist. The unit is principally a muscovite schist with a well-developed foliation (structural alignment of the platy minerals). The color of the weathered surface is described as murky gray with streaks of rusty or yellowish iron stain. The main mineral constituents are fine-grained quartz and biotite and coarse-grained muscovite; minor mineral constituents are garnet, staurolite, oligoclase, and kyanite; accessory minerals (minerals with very low concentrations) are tourmaline, apatite, zircon, and opaque minerals (probably principally iron sulfides and oxides).

Surficial geologic materials (unconsolidated sediments that overlie bedrock and underlie the active soil zone) on the property include till and stratified drift (see fig.1). Till is the product of glacial erosion of a previous geologic landscape and direct deposition of the transported debris by ice. Till is characteristically a conglomeration of rock particles that range in size from clay to boulders and in shape from round to angular to flat. In eastern Connecticut, till varies from sandy and loose to clayey, compact, and hard. Lenses of relatively well-sorted ("clean") sand are occasionally found in till. Both U.S.G.S. Map GQ 392 and soil test data provided by Lenard Engineering indicate that fine to medium sand is the principal constituent of till on the Glugover property.

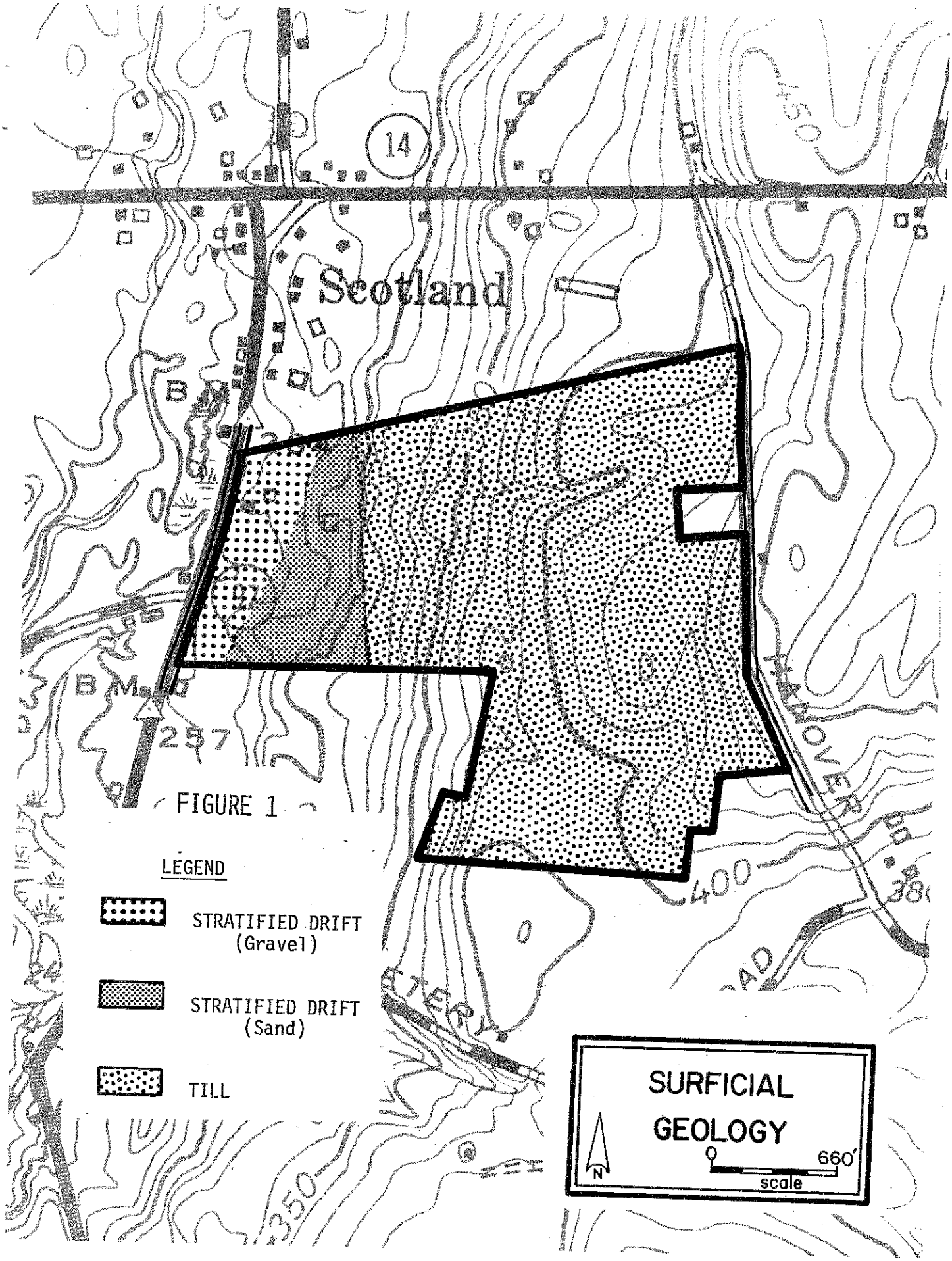
Stratified drift, another glacial deposit, consists primarily of relatively well-sorted sand and gravel. Stratified drift was formed by the deposition of sediment in streams or ponds of glacial meltwater. On the Glugover property, stratified drift is confined principally to the easternmost section, which is already developed.

TOPOGRAPHY

The property slopes generally westward; slope values range from 4% to 10%, approximately. The landscape is quite irregular, and numerous knolls and basins are found within the site. The largest basins, both containing swamps, are located in the south central and northeastern parts of the site. The channels of two apparently perennial brooks and a long, narrow depression near Hanover Road form a horseshoe-shaped trough that partly encloses the large knoll.

HYDROLOGY

Drainage appears to be largely disorganized on the property. Two westward-flowing, seemingly perennial brooks originate in swampy areas in the northeastern and south central sections of the property. Apart from the relatively well-defined channels of these brooks, most runoff appears to collect temporarily in shallow topographic depressions, which are numerous on the property, or to flow into a pond near


14
Scotland
BM
257
450
400
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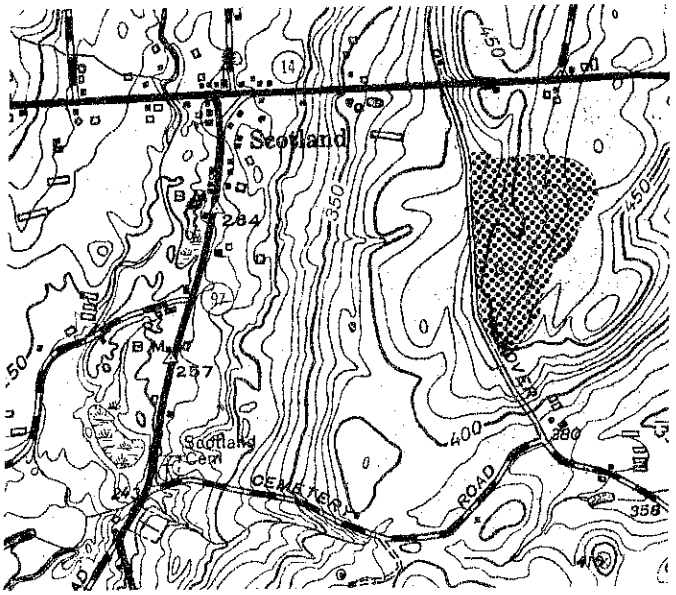
HARROVER
LEGEND
STRATIFIED DRIFT
(Gravel)
STRATIFIED DRIFT
(Sand)
TILL
SURFICIAL
GEOLOGY
N
660'
scale

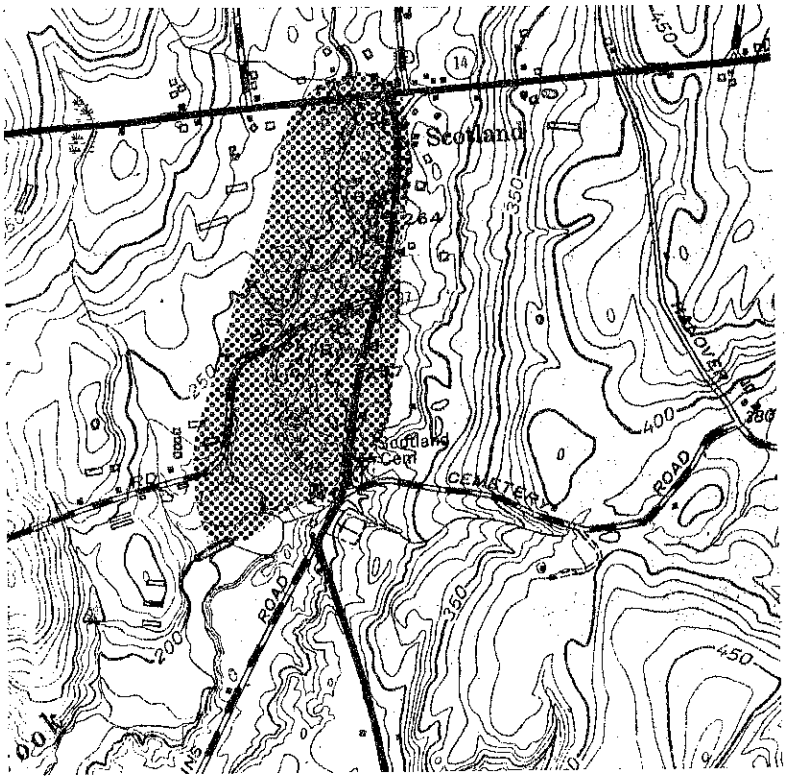
FIGURE 1

Figure 2.



Outside area contributing runoff to the Glugover property.

Figure 3.



Potentially high-yielding stratified drift aquifer near the Glugover property. Source: Conn. Water Resources Bulletin No. 11.

Route 97 via a network of intermittent streams. The central and southern parts of the property seem to contain the highest proportion of wet areas.

Wetness on the property can be attributed both to the nature of the surficial materials and to the irregularity of the topography. Although it is likely that some of the wet areas observed represented only seasonal groundwater buildups, or perhaps even temporary surface-water storage, it is important to recognize that permanent wetness does exist in many places. The hypothetical plan of development for the property that was presented to the Team at the pre-review meeting did not seem to consider the distribution of wetlands; one proposed access road, for instance, was located in the channel of one of the brooks, and several proposed houses, as well as other parts of the road network, were located in apparently perennial swamps. Although the plan was presented as more of a concept than an actual final design, it would be desirable to show in any revised plan the locations of all wet areas in relation to buildings, roads, and recreational facilities.

The development as proposed is likely to have a significant impact on the local hydrology. Runoff leaving the property at its western borders is generated in part by precipitation on the property itself and on an area east of Hanover Road (see fig. 2). The establishment of roofs and paved surfaces and the further removal of forest timber will increase the ratio of runoff to precipitation on the property for a given storm event. This increase will occur because less area will be available for water to soak into the ground and fewer tree roots will be actively absorbing soil moisture. The drainage area east of Hanover Road is smaller than the Glugover property; hence, an increase in runoff that occurs only on the developed area could still have a significant overall effect on the total amount of runoff that leaves the property during a heavy rainfall. It is possible that drainage channels and culverts downstream from the property may be overtaxed during large storm events by the additional surface flow. The adequacy of the culverts during such storms should be checked before development, to ascertain the potential for handling future runoff increases. A cursory inspection of the western section of the property suggested that some surface flow originating in the eastern section is absorbed by the stratified drift before it reaches the culverts.

The size of the proposed development is of concern in relation to the potential change to the general hydrologic system. Presently, water on the property flows generally westward toward Merrick Brook. Following development, the general flow direction should remain approximately the same, but the distribution of water in the various parts of the system may change drastically. Assuming a per-capita daily water use of 60 gallons and a resident population of 400, water would be withdrawn from wells at a rate of 2,400 gallons per day. While the water probably would be derived from bedrock, it would be discharged into the overburden via septic systems. Depending upon the particular hydrologic characteristics of the property and the location and design of the septic facilities, the wastewater may then reenter the bedrock, flow out onto the surface, or remain in the overburden, discharging finally into Merrick Brook. If effluent is returned to the bedrock, it could affect the quality of well water; this situation would be most likely to arise where the overburden is thinnest. If effluent is brought to the surface or if it stays within the surficial deposits, it may affect water quality in and around Merrick Brook. This latter possibility should be of real concern to both the developer and the Town: the stratified drift deposits around Merrick Brook between Route 14 and Plains Road (fig. 3) have been identified in Connecticut Water Resources Bulletin No. 11 as a potentially high-yielding groundwater aquifer; indeed, these deposits represent the only such aquifer presently believed to exist within the Town of Scotland. Pragmatic

town planning should include protection of this water source for future town needs.

FOREST RESOURCES

Recent logging on this site has removed most material of any market value and has resulted in damage to many of the residual stems. This area will have a minor forest production value for a minimum of 15 years. Retention of as much forest cover as possible is very important during development of this parcel if severe erosion problems are to be avoided.

Should the area not be developed, the dense tree reproduction and influx of shrub species expected within three years should greatly increase the wildlife value of this tract. Since the area also has good potential for future development under proper forest management, perhaps consideration should be given to this alternative.

The forest resources for the Glugover property have been divided into three separate stands. These stands are shown in the accompanying illustration.

STAND ONE: This wetland area is dominated by red maple. There are some hickory and sugar maple present on drier knolls, with occasional red oaks and black oaks. The understory consists of saplings of the aforementioned species.

STAND TWO: This 42 acre mixed hardwood stand is dominated by red oak, black oak, red maple, sugar maple, hickory and ash, with occasional hemlock and white pine. The understory consists of oak, red maple and hickory saplings. Should development occur as planned, care should be taken to retain as many trees as possible which are of good form and free of defects. Planting areas near lot lines and roadsides with softwoods such as Canadian Hemlock, white pine and larch should be considered to provide visual diversity.

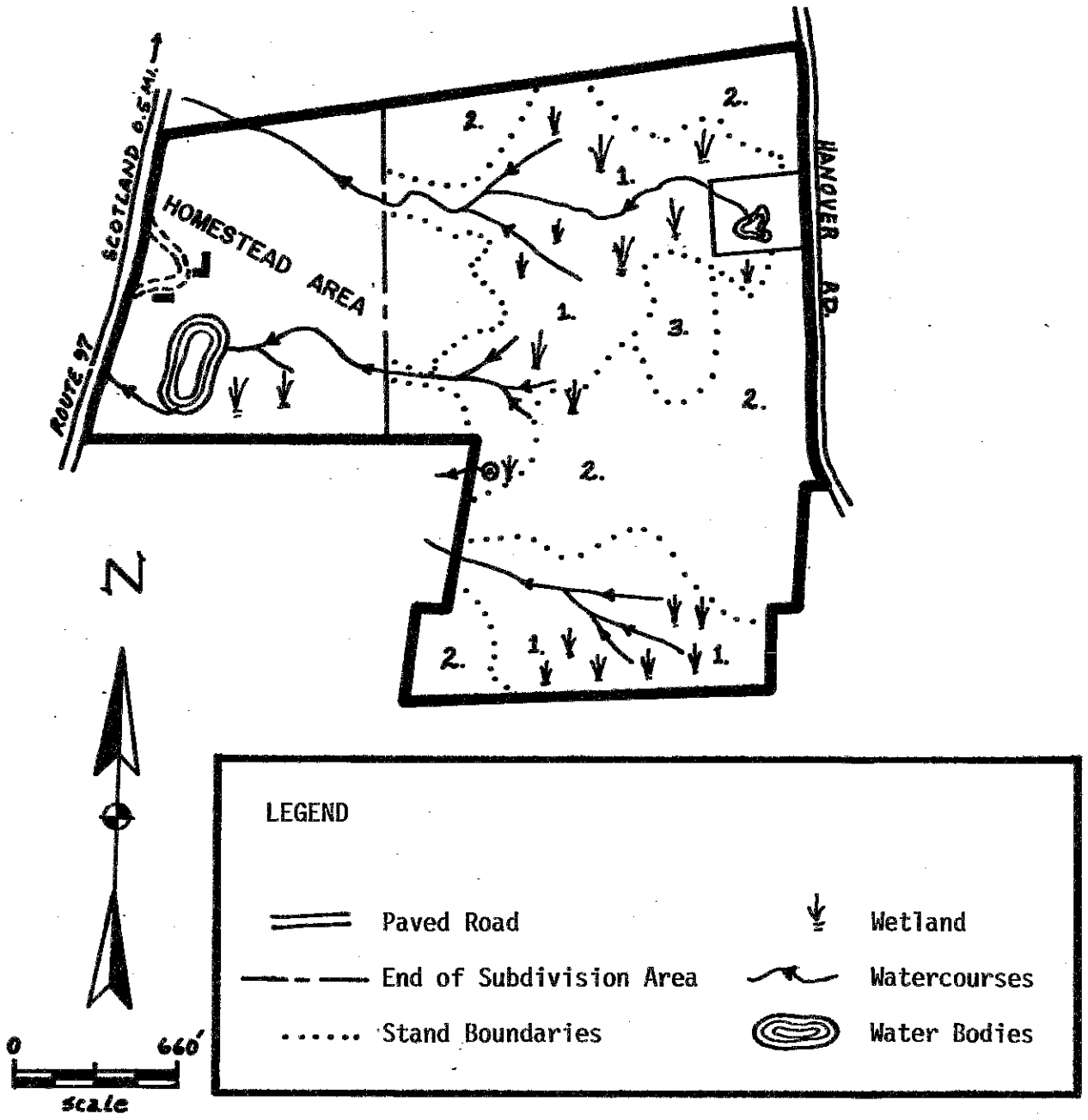
STAND THREE: The primary species in this old field area consist of gray birch, scarlet oak, black cherry and red cedar. Development should be structured to minimize impact here as this area provides a visual contrast to the remainder of the site. Scattered plantings of Japanese Black Pine and Eastern White Pine would be well suited to this area.

SOILS

A detailed soils map of this site is included in the Appendix to this report, accompanied by a chart which indicates soil limitations for various urban uses. As the soil map is an enlargement from the original 1,320'/inch scale to 660'/inch, the soil boundary lines should not be viewed as absolute boundaries, but as guidelines to the distribution of soil types on the site. The soil limitation chart indicates the probable limitations for each of the soils for on-site sewerage, buildings with basements, buildings without basements, streets and parking, and landscaping. However, limitations, even though severe, do not preclude the use of the land for development. If economics permit large expenditures for land development and the intended objective is consistent with the objectives of local and regional development, many soils and sites with difficult problems can be used. The soils map, with the publication Soil Interpretations: Windham County, Connecticut, can aid in the identification and interpretation of soils and their uses on

FOREST STANDS

DONALD GLUGOVER SUBDIVISION
SCOTLAND, CONNECTICUT



prepared by D.H. Smith, D.E.P. Forestry

this site. Know Your Land: Natural Soil Groups for Connecticut can also give insight to the development potentials of the soils and their relationship to the surficial geology of the site.

The soil series most representative of the Glugover Property are the Sutton series, the Canton series and the Ridgebury-Whitman series, a regulated wetland soil under Public Act 155.

The Sutton series are moderately well drained soils developed in upland till normally deeper than five feet. These soils are moderately permeable in the subsoil but slowly to very slowly permeable layers may be present below 40 inches. The water table normally rises to within 15 to 20 inches of the surface during the winter and spring months. The Sutton soils are naturally stony and contain few to many stones throughout the soil. Most development problems are related to the seasonal high water table and stoniness.

The Canton series are well drained soils developed in upland till normally deeper than five feet. These soils are rapidly permeable in the subsoil, but slowly to very slowly permeable layers may be present below 40 inches. The water table normally is below 40 inches during most of the year. The Canton soils are naturally stony and contain few to many stones through the soil. Gravel size rock fragments generally make up 10 to 30 percent of the surface and subsoil. Most use problems are related to slope and stoniness.

The Ridgebury-Whitman series is made up of poorly and very poorly drained soils. These soils occur in an intricate and complex pattern and separation of each individual soil was not practical on the scale surveyed. The Ridgebury soils are somewhat poorly to poorly drained soils developed in silty or fine silty or fine sandy loam material with a hardpan 18 to 24 inches deep. These soils, normally deeper than five feet, occupy low-lying nearly level upland areas. They are slowly to very slowly permeable in the subsoil. Ridgebury soils are naturally stony and contain few to many stones throughout the soil. The water table is near the surface from late fall through early spring. Most use problems are related to the slowly to very slowly permeable subsoil and long seasonal high water table. Whitman soils are very poorly drained soils developed in silty or fine sandy loam material with a hardpan 18 to 24 inches deep. These soils, normally deeper than 5 feet, occupy low lying nearly upland areas. They are slowly to very slowly permeable in the subsoil. Whitman soils are naturally stony and contain few to many stones throughout the soil. The water table is normally near the surface from late fall through early spring. Most development problems are related to long seasonal high water table and stoniness.

As the soils limitation chart in the Appendix to this report shows, approximately 32 acres of this site are covered by wetland soils regulated under Public Act 155. Sutton soils extend over approximately 34 acres of the site and limit construction of dwellings and septic systems by the seasonally high water table present. The remainder of the site is made up of Canton, Charlton and Hinckley soils only having slight to moderate limitations for building.

As the soil pattern on the Glugover property is intricate, careful engineering of storm water runoff and surface drainage, septic leaching fields, paving and dwelling construction will be necessary if the natural resources of the hillside are not to be harmed. The wetland areas are of specific concern, as any construction on the site which does not use adequate erosion and sedimentation controls, could cause

significant sedimentation of the wetland areas. Additional runoff from impervious surfaces on the site could cause gullying in one or more of the existing brooks and general erosion of the hillside areas.

It is possible to design an environmentally acceptable residential community which would complement the varied topography of this site and avoid excessive disturbance to the wetlands. Development of a pond in the Ridgebury-Whitman soil areas, as an active and passive recreation facility, as well as, providing wildlife habitat and fire protection could enhance the community significantly.

It is strongly urged that an erosion and sediment control plan be developed for the site and included on the subdivision plan before final approval is given. A schedule of land disturbance should also be included. Connecticut's Erosion and Sediment Control Handbook published by the Soil Conservation Service will aid both the developer and the Town in preparing and approving an adequate erosion and sediment control plan. Standards and specifications for both mechanical and vegetative practices listed within the Handbook are available at the Windham County Soil Conservation District office, Brooklyn, Connecticut.

FOUNDATION DEVELOPMENT AND GRADED CONDITIONS

As most soils on this site are effected by seasonally high water tables, footing drains would be required to avoid basement flooding. Great care should be taken to reduce the high erosion hazard on the numerous sloped areas. Care should also be taken in cutting level areas from slopes, as interception of perched water tables could lead to flooding of yards and septic systems.

WATER SUPPLY

On site wells, which are proposed for the development, would almost certainly tap the underlying bedrock, as till generally is a poor and unreliable water source. Because the crystalline metamorphic rocks in eastern Connecticut have very slight porosity, most water in bedrock is transmitted along fractures. Yields from bedrock wells, therefore, depend in part upon the number and size of fractures encountered. In the Shetucket River basin, according to Connecticut Water Resources Bulletin No. 11, the average yield in a sampling of 134 bedrock wells was 13 gallons per minute; 90% of the wells supplies 3 gpm or more, but few supplied 50 gpm or more. Although such yields are normally adequate for single-family needs, the apartment complexes probably would require either several wells or one or more large water-storage tanks to handle peak demand periods (usually mornings and evenings).

The Scotland Schist, which underlies the property, contains iron-bearing minerals and has a tendency to add excessive concentrations of iron to groundwater. Filtration may therefore be required to remove objectionable water color and taste.

WASTE DISPOSAL

Because the property appears to have wetness problems in many areas, great care should be exercised in siting and designing septic systems. High groundwater levels, which may actually be bolstered by the large daily wastewater

discharges that are anticipated, may interfere with the proper functioning of the systems in several ways: 1) flooding of the tile lines would cause backup in the system; 2) frequent saturation of leaching fields could plug pore spaces with fine sediments, causing the system to fail; 3) lack of aeration of the effluent would reduce its renovation in the soil, allowing undesirable bacteria and biochemical constituents to enter the groundwater. It is especially important for effluent to be renovated by the soil in this large development, as general groundwater flow will carry most wastewater into Merrick Brook and its aquifer.

Engineered systems could function in these areas, but only at added expense and less density of development. Approximately one quarter of the land, the higher areas in the northern and eastern-central parts of the parcel, would be suited for waste disposal systems. The soils here are fairly to moderately well drained, but engineered systems in many of these areas would be needed due to the limitations of slope, shallow compacted layers, and large stones.

Care should also be exercised in locating septic systems in areas where the till is compact or where bedrock is near the surface. Potable water supplies may be affected adversely by the latter situation, and tile lines may not drain properly in either case. Systems placed in fill also tend to be fragile unless sufficient time for natural settling of the fill has first been allowed.

Because the property is less than ideal in many places for the on-site disposal of sewage, the town may wish to consider a regular inspection program if full development occurs.

ROADS AND UTILITIES

The site under review fronts on Hanover Road, a small local street which intersects Route 14 just to the north of the site. While no counts have been taken on Hanover Road it can reasonably be estimated that on the order of 50 vehicle trips per day occur on the road. The segment of Route 14 upon which Hanover Road intersects has been identified as one having some of the most severe alignment problems of any road in the Region. The accident statistics in the vicinity of Hanover Road do not reflect the severe problems because of the very light traffic now occurring on the road.

Assuming development on the site similar to that proposed initially, i.e., ninety (90) units of apartments and twenty-eight (28) single-family homes, an average daily traffic count might be expected to escalate to around 900 trips per day at full development, the equivalent of an 85-unit single family home subdivision.* These figures might usefully be compared to an average daily count (in 1970) of 1,600 cars on Route 14 and 300 to 700 cars on Route 97 (the greater number of cars on the southern segment of Route 97). With the isolation of the proposed development from significant service facilities, in combination with the fact that the higher the income of the residents the greater the number of cars owned and trips generated by each household, any development on the site would likely generate close

* From Trip Generation Study of Various Land Uses, CONNDOT, 1974. Assuming 10.6 trips/day/single family home; 6.8 trips/day/apartment unit.

to the maximum number of trips projected.

In general the capacity of Hanover Road would not be taxed by any projected increase in traffic use on the order of that identified above. The intersection of that road with Route 14, however, may pose a considerable problem. The potential for a significant increase in accidents at that intersection would rise dramatically. Given the nature of the topography of that stretch of Route 14, there are very few actions that could be taken to limit or reduce the danger. It is difficult to assess the actual traffic patterns that might develop, i.e., the extent to which residents of the development might take local raods south to Baltic and Norwich and how many might go north to Route 14 and Willimantic. Over the life of the development, whatever the orientation of the residents of the parcel, ameliorating measures will have to be taken to minimize problems at the Hanover Road/Route 14 intersection. It is also likely that problems at the intersection will increase sharply with even modest development along Hanover Road of even a very standard subdivision.

SERVICES TO SUPPORT DEVELOPMENT

Scotland is the smallest of the Windham Region towns (334 dwelling units in 1976, population 1,150 (estimate). Any development of the scope currently contemplated on the Hanover Road parcel will have a significant impact on the community, no matter what its precise ultimate form. The impact is difficult to anticipate when the exact size and composition of the project is not known. Therefore, the following projections are based on assumptions which may not be valid when a final development plan is proposed. The various factors used to calculate impact will, nevertheless, be applicable when the definitive characteristics of the development are known.

For small communities like Scotland the greatest effect will be upon the school system. While the applicable statistic regarding school children/dwelling unit are undergoing considerable change, the following assumptions were made.* Each three to four bedroom single family home might produce an average of 1.4 school children. A one bedroom apartment would perhaps produce .05 school children. A two bedroom apartment might produce .34 children/unit.

If it is assumed that the Hanover Road development will contain 45 one-bedroom apartment units, 45 two-bedroom apartment units and 28 single family homes of three and four bedrooms each, and further that the whole project is constructed over a ten year period, an additional 57 children would likely attend Scotland schools from the proposed project or 5.7 additional children, on average, each year of development of the project.

With or without the development Scotland will continue to grow, albeit as slowly as any town in the Region. The town has averaged three new homes a year since

* The school children/dwelling unit was taken from a publication of the New Jersey County and Municipal Government Study Commission entitled Housing and Suburbs, Fiscal and Social Impact of Multi-family Development. The school system in Scotland has actually been losing students recently as children of established families grow older and are not replaced with younger, more "typical" suburban families. Scotland's slow residential expansion therefore complicates the problem of effective forecasting of student populations.

1970 with some acceleration in growth noted in the past couple of years. If it is assumed that Scotland would normally average five new homes per year over the life of the Hanover Road development then an additional 50 houses and 70 new school children might be added to the town over ten years, a matter of seven additional children each year.

It would be difficult to predict whether the Hanover Road single family homes would be in addition to, or a substitution for, the houses normally expected to be constructed in Scotland over the development period without a detailed analysis of the typical new home construction in Scotland in the recent past and the typical home to be constructed on the Hanover Road parcel. To the extent that the Hanover Road parcel will provide an environment not provided by persons building on individual, scattered lots in town, the Hanover Road houses would probably be an addition to the normal dwelling growth in the town. The following chart summarizes a possible course of events over ten years with regard to new units of housing and new school children with and without the proposed development assuming a 10-year development.

SCOTLAND DWELLING UNITS AND STUDENTS
WITH AND WITHOUT THE HANOVER ROAD DEVELOPMENT

	1978	1979*	1980
Projected Dwelling Units			
with		361	500
without	344	349	394
Projected Students			
with		258	359
without	245	252	308

* assuming full commencement of construction in 1979.

The current Scotland elementary school has an excess capacity of about 60 students, i.e., a total capacity of 175 students. If the new students in all projected new development were to be in the same proportion of elementary to high school as is presently the case (44 to 56%) neither development pattern (with or without the Hanover Road development) would exceed the capacity of the current elementary school although with the Hanover Road development that capacity would just be reached. That mix of students, however, would very much depend on the cost of the housing and changing demographic trends. And the number of students could change dramatically with changing demographic trends in the existing inventory of Scotland houses.

Additional town support services will be affected. The need for solid waste disposal would increase substantially. (Private haulers now take waste to a private facility shared jointly by Scotland, Hampton, and Chaplin.) It is currently estimated that the shared landfill site is sufficient until 1988 assuming growth trends similar to the past. Any substantial construction on the Hanover Road site would surely advance the time when other solutions would be needed. Region-wide solid waste solutions, including resource recovery incinerators, may be operative by the end of the construction period of the proposed development.

If the actual size of the buildings constructed are kept to modest size (less than 2 1/2 stories, adequate space distances) the fire company should be capable of serving any new development on the site.

There are no significant retail businesses nearby to service the new development. All but the most basic of supplies can only be obtained in Willimantic, Baltic or Norwich, seven or more miles away.

COMPATIBILITY OF SURROUNDING USES

The parcel is located in one of the most rural, undeveloped communities in the State. Agriculture is a major adjacent use. Very low density, very scattered residences located in woodland settings characterize much of the remaining environment.

The village center with Town Hall, churches and country store is approximately a mile away. The proposed development, while not at all typical of existing land use, could be reasonably compatible with it, if the design of the project is sensitive to the character of its own site and to its visual appearance for those travelling on Hanover Road. Any design scheme which minimizes the visual influence of large buildings fronting on or being very visible from Hanover Road should be encouraged. If the project were typical of, and stimulated additional development in its own mold, the character of the town would be substantially altered.

ASTHETICS AND PRESERVATION

The site in no way exhibits dramatic changes in topography or outstanding natural ecological niches. It is essentially a typical New England woodland with its typical subtle variations in character which can be used to good advantage, with careful site planning, to create an interesting and attractive residential environment. The many seams of wetland soils, in particular, could be used to good advantage with the development of pond areas and natural open space buffers between building sites. In addition, the creation of a distinctive development on the site will depend importantly on the careful matching of residential density to the capacity of the site. Excessive densities will require the obliteration of the small features which could give the final product its greatest attractiveness. It is also important that the greatest flexibility be employed in the actual siting of the development density finally arrived at, to permit the most sensitive utilization of the site.

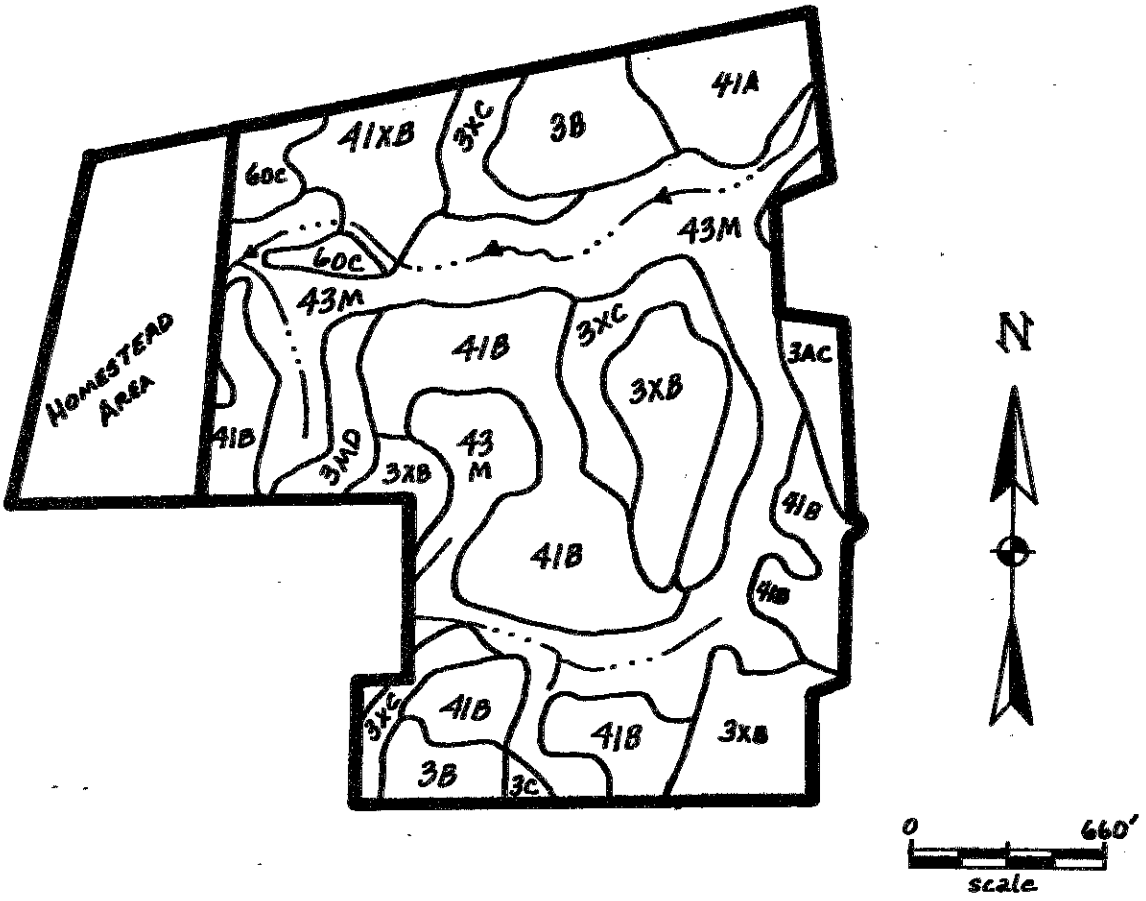
ALTERNATIVE LAND USES

A large lot single family subdivision could be accommodated on the site limited, of necessity, by the presence of considerable wetland. The use of a modest amount of clustering might permit better and more ecologically sensitive use of the existing good quality soils.

Appendix

SOILS

GLUGOVER PROPERTY
SCOTLAND, CONNECTICUT



This map is an enlargement from the original 1,320'/ inch scale to 660'/inch.

Information taken from: Soil Interpretations, Windham County, Connecticut, 1975; Soil Survey Sheet No. 2MM-141; prepared by United States Department of Agriculture, Soil Conservation Service, Advance Copy, subject to change.

GLUCOVER PROPERTY
SCOTLAND, 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	Dwellings without Basements	Dwellings with Basements	Roads and Streets	Landscaping and Lawns
Canton	3B	7	6		1	1	1	1	1
Canton	3C	1	1	Slope	2	2	2	2	2
Canton	3XB	13	12	Large stones	2	2	2	2	2
Canton	3XC	12	11	Slope, large stones	2	2	2	2	2
Canton & Charlton	3MD	3	2	Slope, large stones	3	3	3	3	3
Sutton	41A	5	4	Wetness, frost action	3	2	3	2	1
Sutton	41B	25	24	Wetness, frost action	3	2	3	2	1
Sutton	41XB	5	4	Wetness, large stones	3	2	3	2	2
Ridgebury & Whitman	43M	34	33	Percs. slowly, wetness, frost action	3	3	3	3	3
Hinckley	60C	3	2	Slope	2	2	2	2	2

Limitations 1 = slight, 2 = moderate, 3 = severe

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.

About the Team

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a variety of federal, state, and regional agencies. Specialists on the Team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, archeologists, recreation specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area.

The Team is available as a public service at no cost to Connecticut towns.

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 reviewing a wide range of projects including subdivisions, sanitary landfills, commercial and industrial developments, sand and gravel operations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

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 officials of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the Chairman of your local Soil and Water Conservation District. This request letter should include a summary of the proposed project, a location map of the project site, written permission from the landowner 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 Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information regarding the Environmental Review Team, please contact Jeanne Shelburn (889-2324), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360.