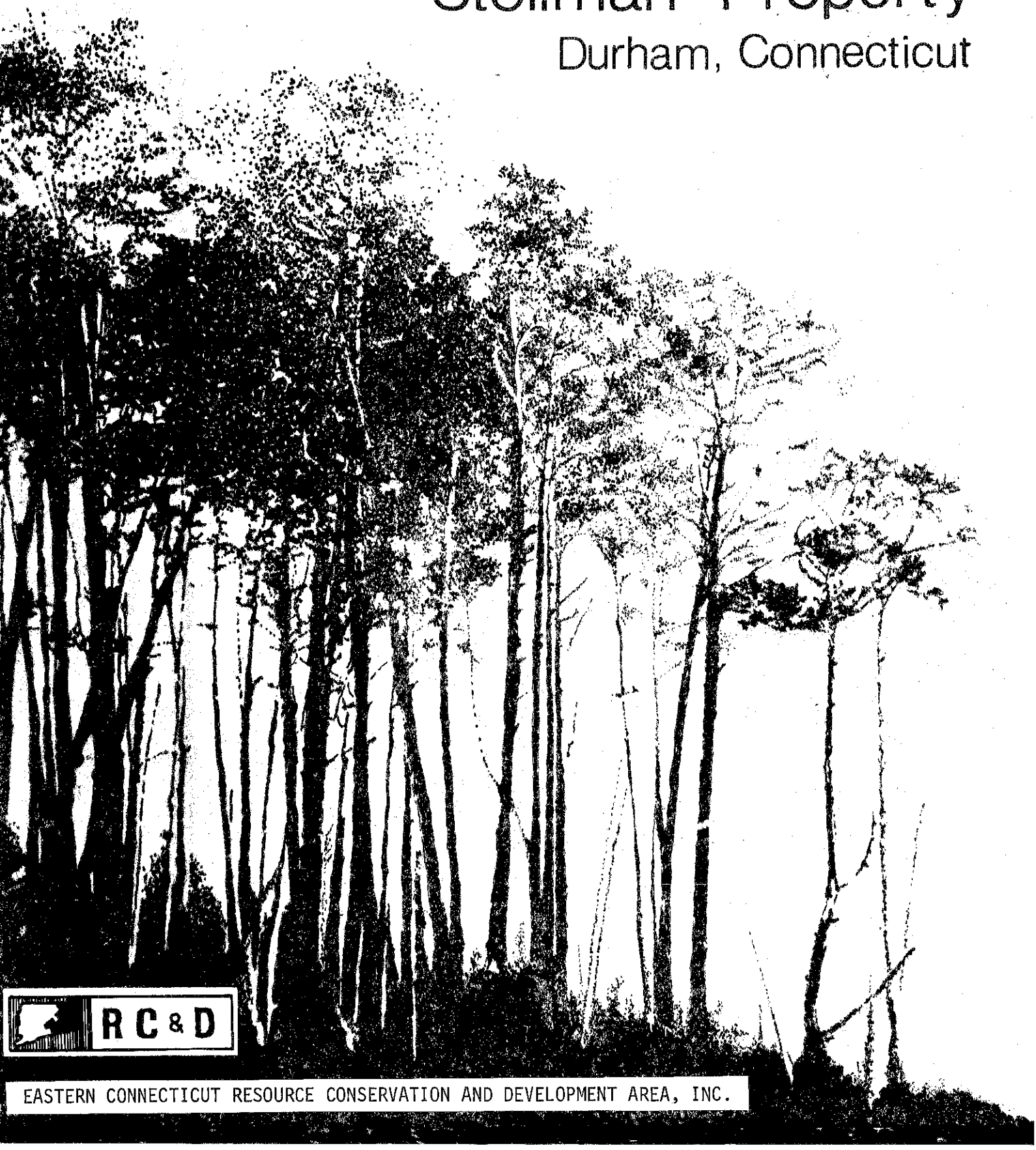
Environmental Review Team Report

Stollman Property

Durham, Connecticut



R C & D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

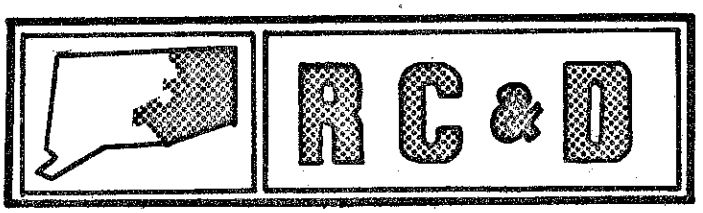
Environmental Review Team Report

on

Stollman Property

Durham, Connecticut

December 1979

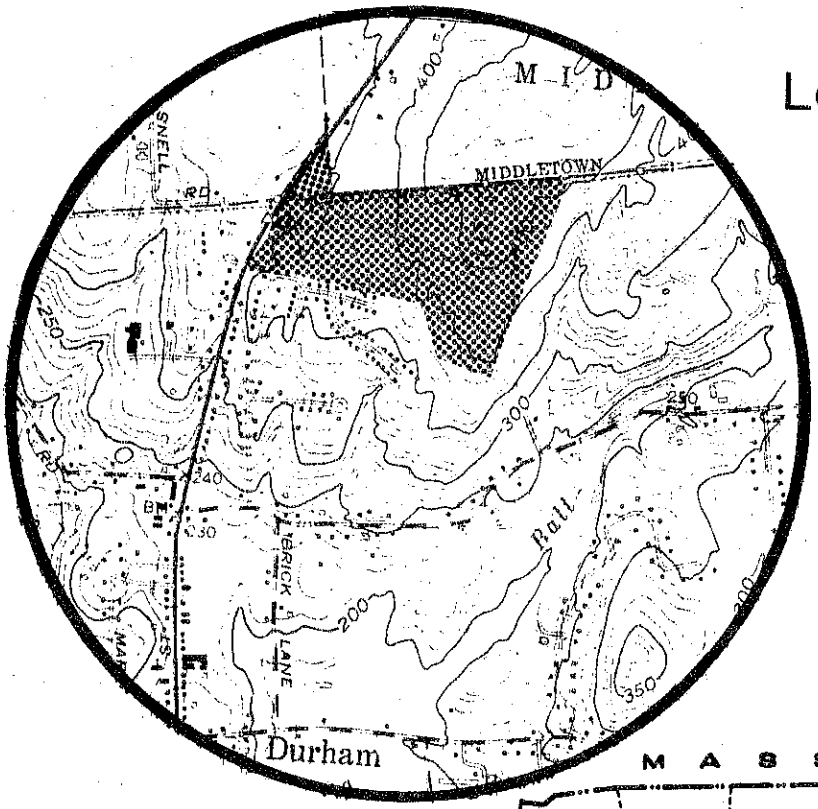


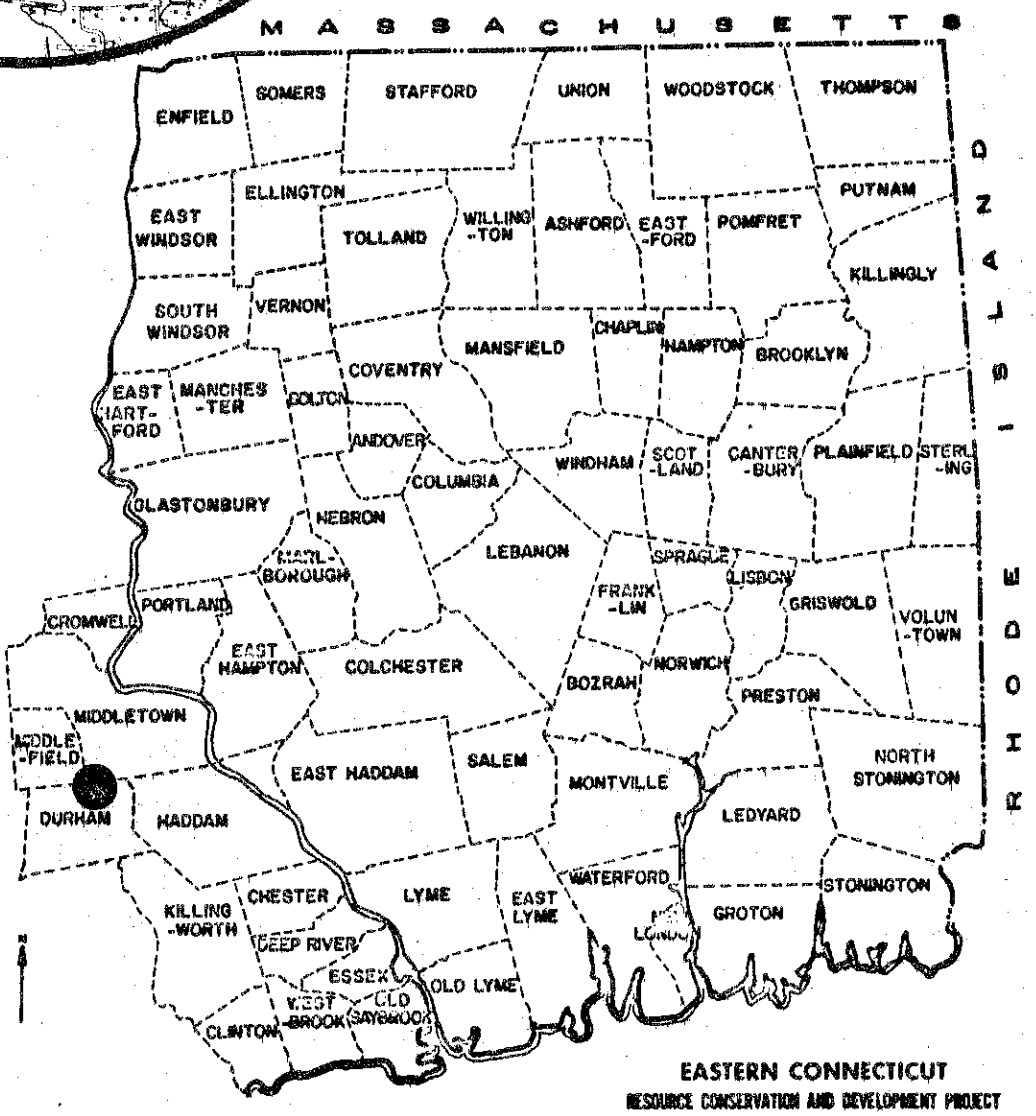
eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site

STOLLMAN PROPERTY
DURHAM, CONNECTICUT





ENVIRONMENTAL REVIEW TEAM REPORT
ON
STOLLMAN PROPERTY
DURHAM, CONNECTICUT

This report is an outgrowth of a request from the Planning and Zoning Commission to the Middlesex 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 by the RC&D Executive Committee 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.

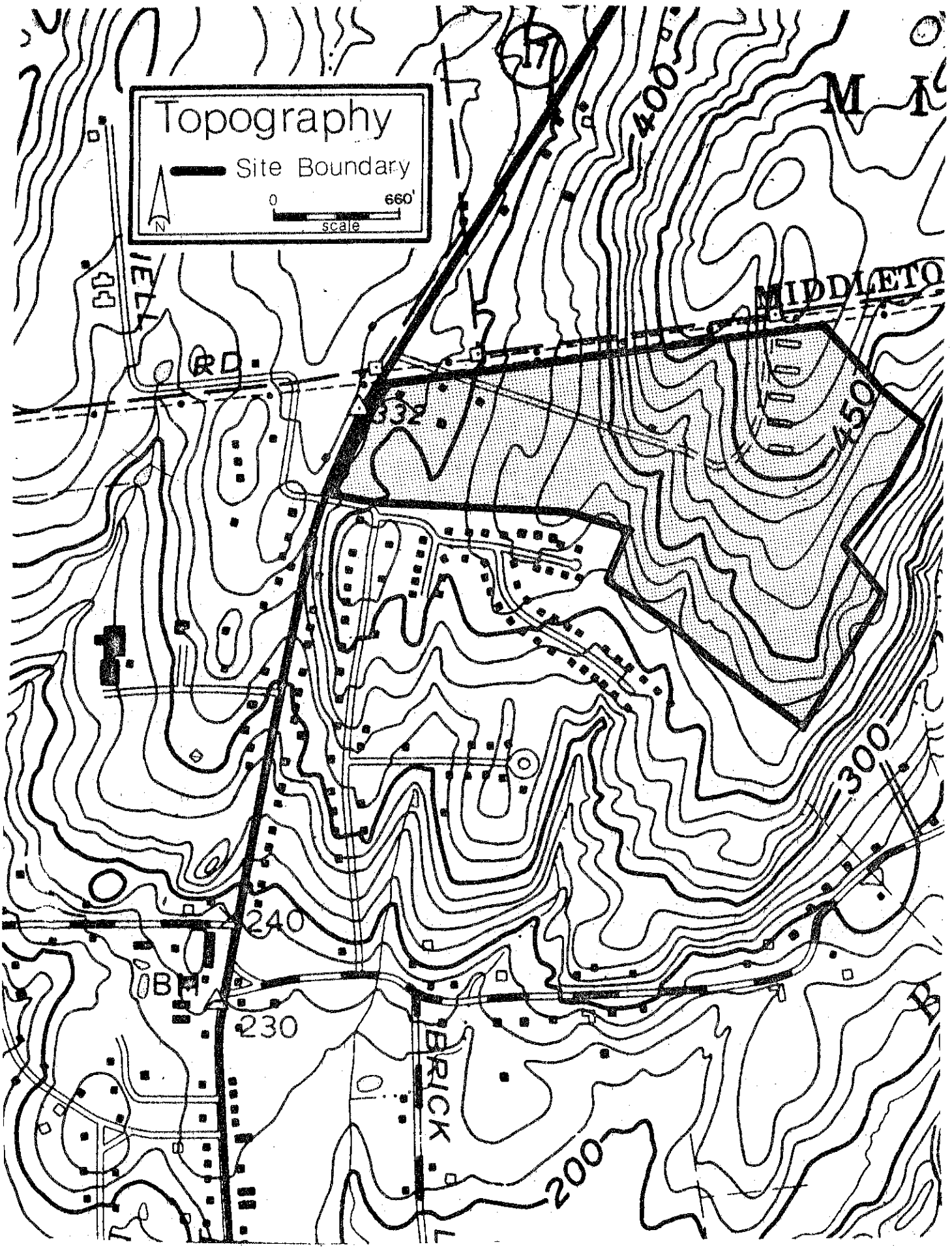
The ERT that field-checked the site consisted of the following personnel: Barry Cavanna, District Conservationist (SCS); Mike Zizka, Geologist, Connecticut Department of Environmental Protection (DEP); Rob Rocks, Forester, DEP; Tim Dodge, Resource Conservationist (SCS); Todd Cook, Planner, State Office of Policy and Management; Greg Bonadies, Sanitarian, State Department of Health; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Thursday, November 8, 1979. 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 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 Durham. 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 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 06360, 889-2324.


Topography
Site Boundary
0
660'
scale
N
400
MIDDLETO
RD
332
450
300
240
230
BRICK
200

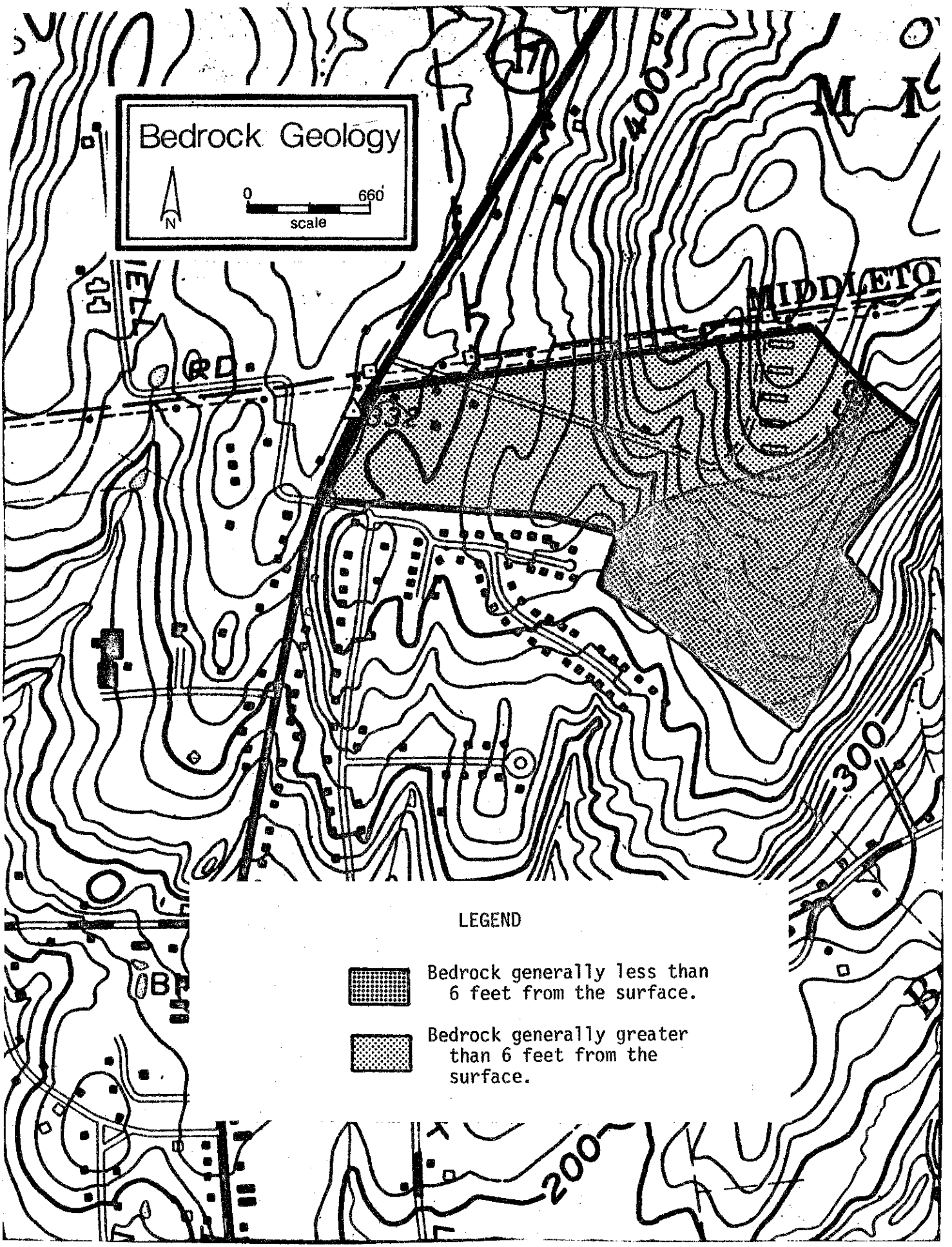
INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to review a proposal to subdivide a 80± acre parcel in Durham. The site is located on Route 17, just south of the Middletown border. It is presently in the private ownership of Hyman Stollman, a Colchester resident. Preliminary plans have been prepared by Robert Pfanner and Associates of East Lyme.

The Team reviewed plans dated October 20, 1979. These plans show the area divided into 64 lots for development of single family houses. A single road will extend east from Route 17 to form a loop and cul-de-sac which will provide access to interior lots. All lots will be served by on-site wells and on-site septic disposal systems.

The parcel is situated on the highest part of a ridge in northern Durham, on a south facing slope. The site is bounded on the north by a Connecticut Light and Power right-of-way. Most soils in the area are rapidly permeable, however areas of shallow-to-bedrock soils are also common. The site is partially forested showing evidence of its use as a nursery at one time. The remainder of the parcel is vegetated by field species with high food production potential for wildlife.

The Team is primarily concerned with the effect of this development proposal on the resource base of this site. Although many sites with severe limitations can be developed with the appropriate engineering techniques, these measures can become costly, making a project economically unfeasible for a developer. Development limitations on the Stollman property include problems caused by increased stormwater runoff volumes and shallow-to-bedrock and rapidly permeable soils. Development as proposed will cause an increase in stormwater runoff, as shown in the tables in the Hydrology section of this report. These runoff increases may cause additional flooding downstream if proper precautionary measures are not taken. Many soils on the site are severely limited for proper functioning of on-site septic systems. As there is a high potential for ground water pollution in areas of shallow-to-bedrock soils, the subdivision layout may be forced into an irregular pattern to facilitate system location in the most suitable soils and well locations upslope of these systems. Fifty percent of the proposed lots have moderate to severe limitations for effective subsurface sewage disposal systems, therefore in the Team opinion it may be advisable to reduce the number of lots by increasing the lot sizes or proposing a cluster development on the most suitable sections of the property with a community septic system.


Bedrock Geology
N
0
660
scale
400
300
200
MIDDLETO
LEGEND
Bedrock generally less than 6 feet from the surface.
Bedrock generally greater than 6 feet from the surface.

ENVIRONMENTAL ASSESSMENT

GEOLOGY

The Stollman property lies within the Durham topographic quadrangle. A surficial geologic map of that quadrangle has been published by the U.S. Geological Survey (GQ-756, by H.E. Simpson, 1968). From that map, as well as from on-site inspection and logs of test holes supplied by the developer's engineer, the surficial geologic materials on the site (those unconsolidated materials overlying bedrock) are interpreted to consist of till. Till is a glacial sediment composed of rock particles and fragments which accumulated in an ice sheet as it spread over the land, and which were redeposited from the ice without having been sorted by meltwater. Because the ice sheet acted like a bulldozer in collecting and redepositing rock particles without regard to shape or size, the components of till run the gamut from clay to large boulders. Whereas the larger particles are often the most prominent feature of till, sand is generally the principal component. Most of the till on the site is fairly compact although the upper 2-3 feet are commonly looser. Depth to bedrock is variable; test hole logs indicate that the southeastern part of the site contains less than 6 feet of till over bedrock in most areas while the northwestern part contains more than 6 feet of till in most places (see accompanying illustration).

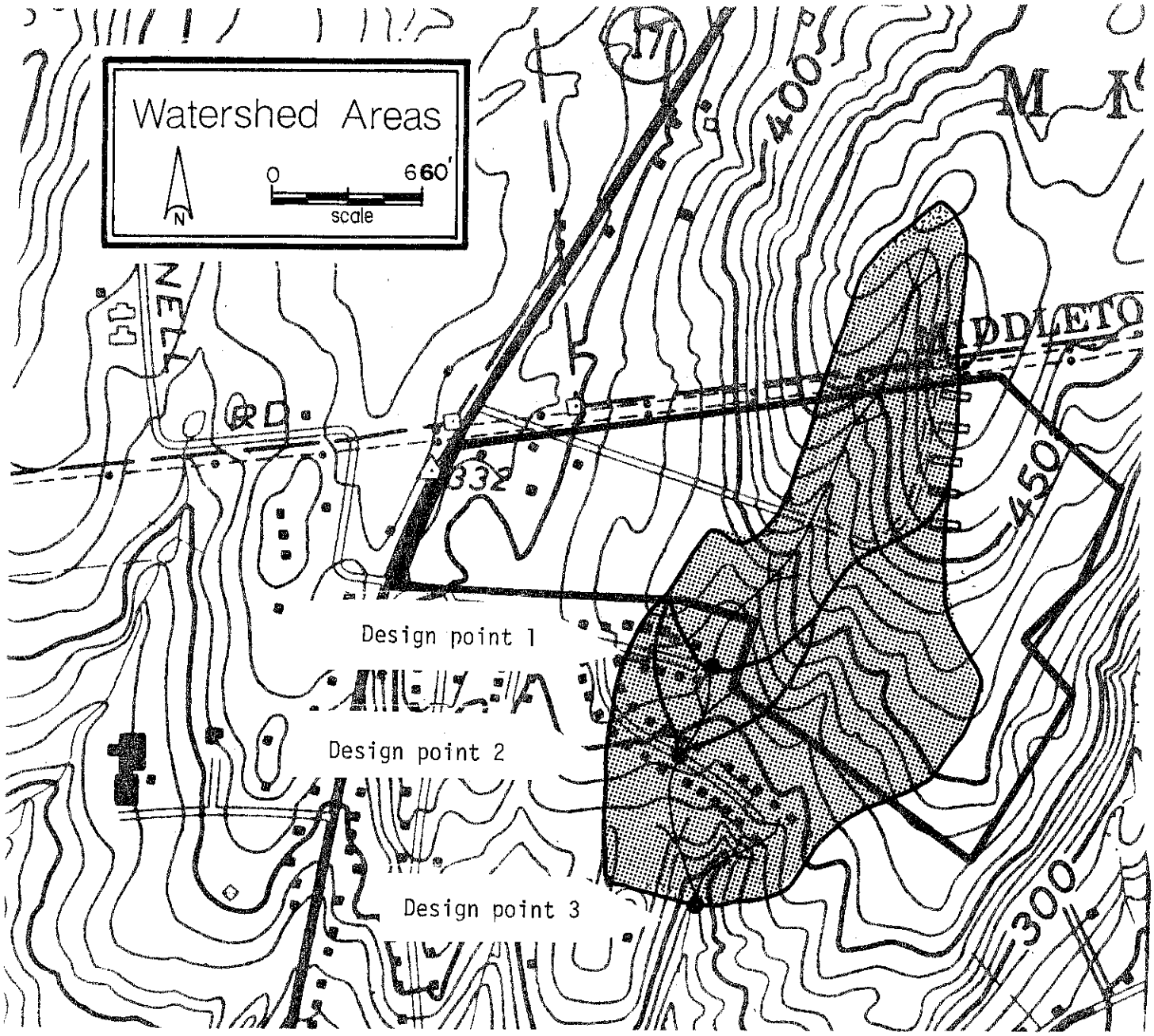
Although the bedrock geology of the Durham quadrangle has not yet been published, an open-file map is available for inspection at the Department of Environmental Protection's Natural Resources Center in Hartford. The bedrock is classified as Portland Arkose, a formation consisting of grayish red to reddish brown and pale brown, coarse- to fine-grained arkose (feldspar-rich sandstone) with interbedded arkose conglomerate (arkose containing pebbles and and cobbles of different rock types), red and gray shale, mudstone, and grayish green, less feldspathic sandstone. No bedrock outcrops were observed on the site.

HYDROLOGY

Drainage from much of the western part of the site is to the north while drainage from the eastern part is to the south. Development of the site will result in increased runoff volumes following periods of rainfall. Concern was expressed by town residents about the possible effects of these increases on residential areas to the south of the property. In order to address this issue, peak flows in local streams during major storm events were calculated for three design points south of the site. These design points and their corresponding drainage areas are shown in an accompanying illustration. Peak flows were calculated for both pre-development and post-development conditions. Results are shown in the table below.

Pre-development Peak Flows

	2-year, 24-hour storm	10-year, 24-hour storm	25-year, 24-hour storm	50-year, 24-hour storm	100-year, 24-hour storm
Design Point 1	16 cfs	42 cfs	62 cfs	81 cfs	130 cfs
Design Point 2	17 cfs	46 cfs	69 cfs	89 cfs	143 cfs
Design Point 3	36 cfs	93 cfs	136 cfs	176 cfs	281 cfs



LEGEND

- Design points
- Watershed boundaries
- Drainage channel and flow direction

Post-development Peak Flows

	2-year, 24-hour storm	10-year, 24-hour storm	25-year, 24-hour storm	50-year, 24-hour storm	100-year, 24-hour storm
Design Point 1	21 cfs (36% increase)	51 cfs (23% increase)	74 cfs (20% increase)	95 cfs (18% increase)	149 cfs (14% increase)
Design Point 2	24 cfs (34% increase)	57 cfs (23% increase)	82 cfs (19% increase)	104 cfs (17% increase)	163 cfs (14% increase)
Design Point 3	47 cfs (29% increase)	111 cfs (20% increase)	159 cfs (17% increase)	203 cfs (15% increase)	316 cfs (13% increase)

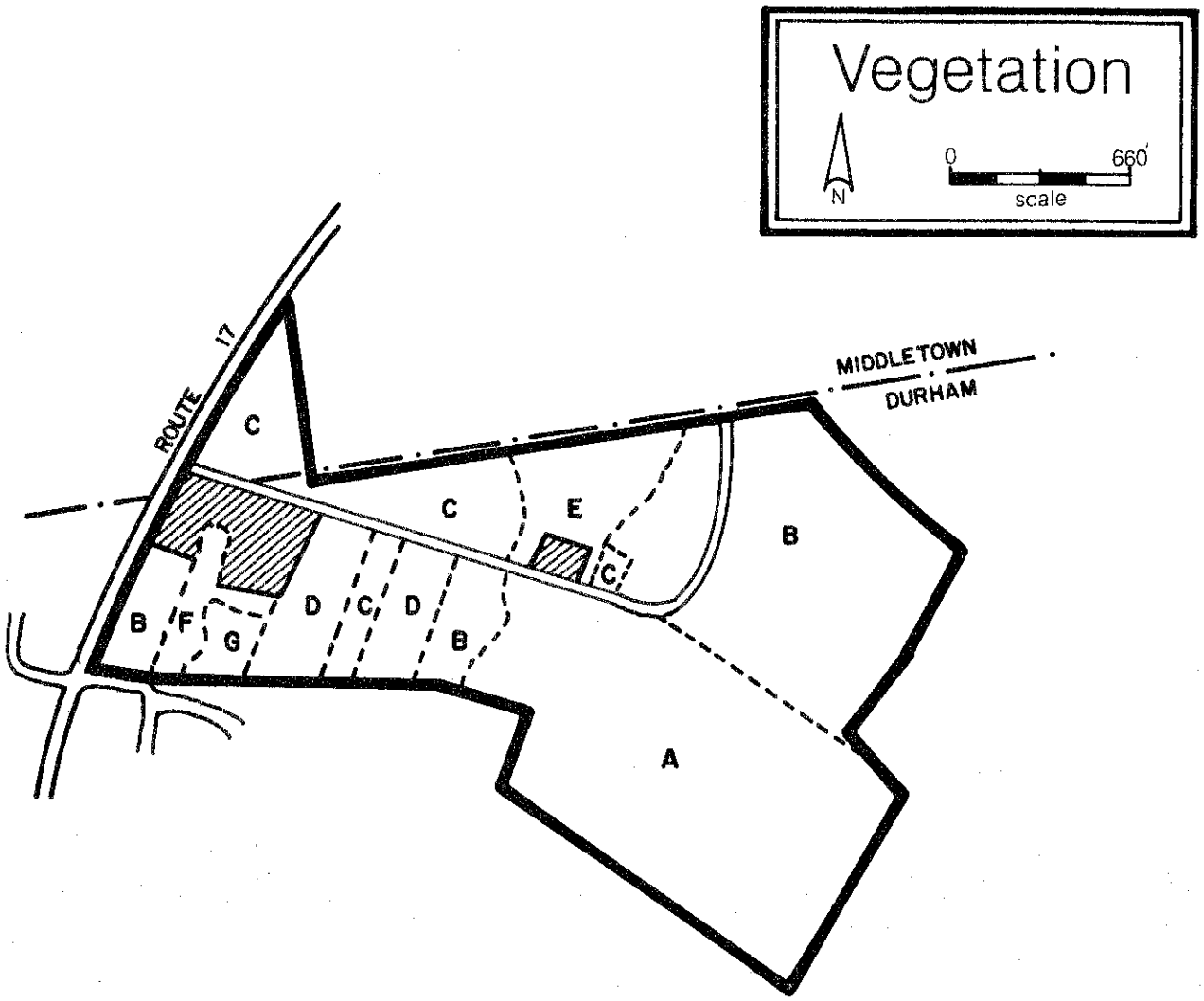
Runoff Depths from Site as a Whole

	2-year, 24-hour storm	10-year, 24-hour storm	25-year, 24-hour storm	50-year, 24-hour storm	100-year, 24-hour storm
Pre-development	0.72 in.	1.90 in.	2.82 in.	3.67 in.	5.89 in.
Post-development	0.97 in. (35% increase)	2.30 in. (21% increase)	3.29 in. (17% increase)	4.19 in. (14% increase)	6.51 in. (11% increase)

The results tabulated above are not based on actual measurements of flow at the three design points. Rather, they derive from a standard method of estimating peak flows and runoff based on rainfall amounts, soil types, and land use. Hence, the figures should be used only as guidelines for planning and should not be interpreted as hard-and-fact data. The storm events used in this study refer to rainfall amounts which occur within a continuous 24-hour period and which have a statistical frequency of recurrence of once every 2 years, 10 years, 25 years, 50 years, and 100 years. These storm events may, however, occur more than once during their given frequency interval: the 2-year event has a 50% chance of occurring in any given year; the 10-year event, a 10% chance; the 25-year event, a 4% chance; the 50-year event, a 2% chance; and the 100-year event, a 1% chance.

It will be noted that runoff increases are proportionately greater for smaller storm events. This reflects the fact that the absorptive capability of the soil decreases as the soil becomes saturated during a period of continuous precipitation. Hence, as rainfall continues, an undeveloped piece of land will gradually lose its absorptive advantage over a developed piece.

The runoff increases described above may be regarded as moderate but significant. Certainly such increases will tend to speed the process of erosion in poorly stabilized or unstabilized areas and in drainage channels on or near the site. Also, any flooding problems currently experienced along these drainage channels would be aggravated. These potential adverse effects, however, may be alleviated by on-site engineering methods, such as a runoff retention basin. Such methods are to be recommended for this development proposal, particularly in light of the flooding problems that have been experienced by some Durham residents living south of the site.



LEGEND

- Road
- Town Line
- Property Boundary
- Vegetation Type Boundary
- Residential Area, 4 Acres

VEGETATION TYPES*

TYPE A Mixed hardwoods, fully-stocked, sapling-size, 29 acres.

TYPE B Old field/brush, understocked, sapling-size, 25 acres.

TYPE C Open field, 9 acres.

TYPE D Northern hardwoods, fully-stocked, sapling-size, 6 acres.

TYPE E Mixed hardwoods, understocked, sapling to pole size, 5 acres.

TYPE F Plantation, 1 acre.

TYPE G Hardwoods/softwoods, fully-stocked, sapling-size, 1 acre.

* Seedling size = trees 1 inch and smaller in diameter at breast height (dbh).
Sapling size = trees 1 to 5 inches in dbh.
Pole size = trees 5 to 11 inches dbh.

VEGETATION

The 80± acre Stollman property which is proposed for subdivision may be divided into seven vegetative types (see vegetation type map and vegetation type description). In the recent past most of this property was utilized as a nursery; this is reflected in the high-value ornamental species still present. Vine species are widespread throughout this tract, and at this time they are limiting the health and vigor of the trees that support them. Removal of the vines from potentially high-quality trees will help improve the condition of these support trees. Poison ivy is abundant on this property. It represents a potential hazard to future lot owners and should be eradicated.

Vegetation Type Descriptions

Type A. (Mixed hardwoods). This 29-acre fully-stocked stand consists of poor-quality sapling-size white oak, scarlet oak, shagbark hickory, black birch, black cherry, shadbush, red maple, sugar maple, and bigtooth aspen. In addition good-quality sapling-size flowering dogwood, crabapple, and apple trees are present. Poison ivy, fox grape, summer grape, oriental bittersweet, and American wisteria are abundant throughout this stand. Ground cover is lacking except for widely spaced patches of grass.

Type B. (Old field). Sapling-size red cedar, gray birch, apple, and crab apple are present in this 25-acre understocked stand along with widely scattered sapling-size red oak, white ash, sugar maple, red maple and black birch. Shrub species present include arrowwood, autumn olive, barberry, bayberry, blackberry, gray-stemmed dogwood, highbush blueberry, multiflora rose, privet, raspberry, spirea, staghorn sumac, sweet fern, tartarian honeysuckle, and winged sumac. Vine species including American wisteria, fox grape, summer grape, Japanese honeysuckle, oriental bittersweet, and poison ivy are well-established on this site. The dominant ground cover species in this stand include grasses, goldenrod, and yarrow.

Type C. (Open field). Nine acres of open fields, which are vegetated by grasses and assorted weed species, are present within this tract. Woody vegetation has not become established at present.

Type D. (Northern hardwoods). This 6-acre fully-stocked stand is dominated by sapling-size sugar maple with occasional pole-size sugar maple, white ash, red oak, and scarlet oak. Ground cover is sparse in this stand.

Type E. (Mixed hardwoods). Poor-quality sapling to pole-size black walnut, shagbark, hickory, apple, black cherry, white ash, and red cedar are present in this 5-acre understocked stand. Many of the shrub and ground cover species which are present in type B are also present in this stand.

Type F. (Plantation). Approximately one acre has been planted to white spruce, Norway spruce, Scotch pine, and white pine. This stand is fully-stocked and the trees are sapling to pole-size. Ground cover is lacking in this stand.

Type G. (Hardwoods/softwoods). This one-acre fully-stocked stand is made up of sapling-size sweetgum, apple, crabapple, flowering dogwood, white ash, gray birch, speckled alder, Scotch pine, white pine, and white spruce. Ground cover is dominated by grasses, goldenrod, steeplebush and club moss.

The majority of this property has been utilized as a nursery and holding area for a variety of ornamentals, including flower and fruit-producing trees and shrubs. Many of these trees and shrubs still remain and are spread out throughout this tract; however, some species, such as the sweetgum and Scotch pine, are confined to one stand (type G). All of these trees have high value for landscaping and should be preserved to the greatest possible extent. It may be desirable to set an area aside, such as the area which encompasses vegetative type G, and use it to stockpike desirable trees for later use in landscaping.

The dense growth of vine species present in areas A, B, and E (see vegetation type map) limits the health and vigor of the trees present in these stands. These vines, once well-established, will compete with the supporting trees for sunlight, moisture, and nutrients. Over time, this intense competition may result in mortality of many of the supporting trees. These vines, although detrimental to the supporting trees, provide high value food and cover for wildlife.

The poison ivy which is wide-spread throughout areas A, B, and E represents a potential hazard to future lot owners. To reduce this hazard, it would be desirable to have it eradicated from the entire area prior to subdivision. Development activities may be enough to substantially reduce the abundance of poison ivy on this tract; however, if complete eradication is desired, the controlled use of a selective herbicide will be necessary

Transplanting and Planting Procedures

Trees should be transplanted during the spring or fall for best survival (sweetgum should be spring transplanted only). Ideally the large ball of earth surrounding the roots should accompany the tree during transplanting. If this is not feasible and trees are transplanted bare-rooted, it is imperative that the roots are never allowed to dry out. Trees that are transplanted should be located in such a position that they will receive full sunlight and so that structures will not limit their growth. Generally trees should be planted no closer to a structure than one-half the trees potential crown spread at maturity. Planting holes should be wide enough and deep enough to accommodate trees without cramping roots. Once a tree is placed in its hole, the roots, if the tree is bare-rooted, should be spread out evenly and covered with topsoil to the previous depth. The tree should be watered weekly during the spring, summer, and fall for the first two years. Fertilization starting at least one year after planting may be desirable, depending on local soil conditions. Deciduous trees, greater than three feet tall, may need support until their roots become securely anchored. These supports should be checked periodically and removed within two years. Failure to check and remove supports may cause damage to the transplanted tree. Bare tree trunks should be wrapped with burlap or tree wrapping paper. This will prevent damage from sunscald and mechanical injury. This wrapping, like the supports, should be removed after two years.

If these simplified guidelines are followed, transplanting and planting operations should be successful.

Suggested Management Techniques

To improve the health and vigor of the trees in areas A, B, and E, it would be beneficial to mechanically remove the vines which are at present damaging trees.

Many of the trees, if released from domination by vines, have the potential to respond by becoming healthier and faster-growing over time. If subdivision of this property proceeds as proposed, removal of these vines might best be accomplished by lot owners on individual lots.

WILDLIFE

The old field areas on this site provide excellent habitat for both non-game and game species of wildlife. These overgrown fields account for more than 50% of the site. Vegetation includes perennial weeds, dense shrub thickets, and scattered trees of the 4 to 8-inch diameter class. A small percentage of grasses is also present. This mixture or diversity of habitat elements within the field area is desirable for wildlife. The remainder of the site is a mix of open land and wooded land. A utility line somewhat parallels the northern border creating a corridor for wildlife and improving diversity of vegetation.

The old field areas generally lie along a south-facing slope, which increases their value to wildlife especially during winter and which improves growth conditions. These areas are bounded by woodland to the north and to the east. The large number and variety of fruiting shrubs and trees provides summer and fall food in the form of berries and fleshy fruit. This area is especially attractive to seasonal songbirds, rabbits, and whitetail deer. A partial listing of vegetation present with wildlife values includes:

Shrubs	Trees	Herbaceous Plants
Multiflora Rose	Crabapple	Ragweed
Bittersweet	Sumac	Sweet Fern
Blueberry	Cherry	Red Top
Bayberry	Red Cedar	Raspberry
Autumn Olive	Red Maple	Milkweed
Shadbush	White Pine	Goldenrod
Gray-Stemmed Dogwood	Gray Birch	Steeplebush
Privet	Oak	Partridge Pea
Barberry	Poplar	
Elderberry		
Alternate-Leaved Dogwood		

During any plan of development, consideration should be given to salvaging existing plant materials for use in future landscaping. In doing so, wildlife would benefit and a valuable resource could be utilized.

Increased disturbance and predation on wildlife created by residential development has an adverse impact to wildlife. Whitetail deer would probably be excluded from the site if development proceeds to housing. In general, both quality and quantity of habitat are reduced.

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 feet/inch scale to

660 feet/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 Special Soils Report, Connecticut River Estuary Planning Region, can aid in the identification and interpretation of soils and their uses on 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.

Soil series typical of this site include the Wethersfield series, the Cheshire series, the Ellington series, the Hartford series, and the Ludlow series. Many of these soils have severe limitations for establishment of buildings with basements and on-site septic systems due to slope, percolation rate, and susceptibility to frost action.

The Cheshire series consists of deep, well-drained soils on uplands. They formed in glacial till. Typically these soils have a dark brown, fine sandy loam surface layer 8 inches thick. The subsoil from 8 to 26 inches is reddish-brown, fine sandy loam. The substratum from 26 to 60 inches is reddish-brown, gravelly sandy loam. Slopes range from 0 to 45 percent.

The Ellington series consists of deep, moderately well-drained soils on terraces. They formed in glacial outwash deposits. Typically, these soils have a dark reddish-brown silt loam surface layer, 8 inches thick. The subsoil, from 8 to 18 inches, is reddish-brown silt loam and from 18 to 26 inches, is mottled reddish-brown, very fine sandy loam. The substratum, from 26 to 60 inches, is dark reddish-brown, loose sand and gravel. Slopes range from 0 to 15 percent.

The Hartford series consists of deep, somewhat excessively-drained soils on terraces. They formed in glacial outwash material. Typically, these soils have a dark reddish-brown, sandy loam surface layer, 8 inches thick. The subsoil, from 8 to 20 inches, is yellowish-red sandy loam, and, from 20 to 26 inches, is reddish-brown loamy sand. The substratum, from 26 to 60 inches, is reddish-brown stratified sand and gravel. Slopes range from 0 to 15 percent slopes.

The Ludlow series consists of deep, moderately well-drained soils on uplands. They formed in glacial till. Typically these soils have a dark brown silt loam surface layer 8 inches thick. The subsoil from 8 to 20 inches is reddish brown silt loam and from 20 to 26 inches is mottled, dark reddish brown silt loam. The mottled substratum from 26 to 48 inches is dark reddish brown, gravelly loam. Slopes range from 0 to 15 percent.

The Wethersfield series consists of deep, well-drained soils on uplands. They formed in glacial till. Typically these soils in a wooded area have a dark brown loam surface layer 2 inches thick. The subsoil from 2 to 12 inches is reddish brown loam and from 12 to 26 inches is dark reddish brown loam. The very firm and brittle fragipan substratum from 26 to 60 inches is dark reddish-brown, gravelly loam. Slopes range from 0 to 35 percent.

As shown in the Soil Limitations Chart in the Appendix to this report, most of the soils on the parcel have severe limitations for proper functioning of on-site septic systems. Flooding is already a problem in the Oak Terrace-Wilcox Drive area. This subdivision will aggravate the situation unless adequate provisions to handle the increased run-off are included in the plan. Lot layout may also present problems due to steep slopes and locations of natural drainageways on the site.

Due to the highly erosive nature of the majority of soils on this site, a sediment and erosion control plan should be included in the final design plans and implemented during construction. The Middlesex County field office of the Soil Conservation Service is willing to help the Town or developer in formulating such a plan.

WATER SUPPLY

The subdivision is proposed to be serviced by individual on-site water-supply wells. Although till has sometimes been used as a water source, it is often unreliable and inadequate for daily household needs. In view of the absence of a stratified drift (sand and gravel) aquifer on the site, most wells will probably tap bedrock. Data from the nearby Quinnipiac River basin, as reported in Connecticut Water Resources Bulletin No. 27, indicates that sedimentary bedrock is usually an adequate source of water for homes. Of 925 wells examined, approximately 95 percent yielded 2 gallons per minute or more, while 90 percent yielded 3 gallons per minute or more. These amounts are generally sufficient to meet the needs of an average household, particularly if ample storage space is available in the well.

The natural quality of the groundwater should be good to fair. Iron and manganese concentrations are generally within desirable limits in water derived from sedimentary bedrock. Hardness may be more of a problem: of 64 wells in the Quinnipiac River basin which tapped sedimentary rock and from which water was analyzed for hardness, 25 had water that would be classified as "hard" (121-180 mg/l CaCO equiv.) and 5 had water that would be classified as "very hard" (181 mg/l or more CaCO equiv.).

WASTE DISPOSAL

A review submitted by Frank Magnotta, Town Engineer, of the soil data from deep observation pits dug at most of the lots in the proposed subdivision revealed many limiting factors for the installation of effective subsurface sewage disposal systems. Soil conditions such as shallow depth to bedrock (less than 5 feet), high groundwater (less than 3 feet in depth), and layers of slowly permeable fragipan which create a temporary perched water table above the pan during wet seasons, are considered moderate to severe limitations in accordance with the public health code regulations for on-site individual septic systems.

Areas with shallow bedrock are of special concern when private wells are proposed for water supply. Septic effluent may easily reach fissures and fractures in the rock prior to adequate soil filtration, and contamination of the aquifer is possible.

The preliminary layout of the subdivision will necessitate an irregular pattern in the locations of the wells in relation to the subsurface sewage disposal systems.

Stating it simply, some of the wells may be installed down-grade of the septic systems and thereby increase the possibility of contamination of the groundwater.

Approximately 50% of the proposed lots have moderate to severe limitations for effective subsurface sewage disposal systems; therefore, it may be advisable to reduce the number of lots by increasing the lot sizes.

A master plan should be submitted, indicating the locations of the houses, wells, and septic systems in order to prevent the possibility of improper location of any well in relation to a septic system.

PLANNING CONCERNS

The Stollman subdivision is being submitted under the Farm-Residential zone of the Durham Zoning Regulations. The minimum lot area is 40,000 square feet with each lot having 150 foot minimum frontage. The majority of lots with frontage meet the zoning requirements; however, lots 16 and 17 should not be allowed to use the "emergency road" to meet the frontage or access requirements unless the road is constructed to town standards, and lot 45 should not use the "future road" as frontage requirement unless the road is constructed to town standards. It also appears that lot 6 does not have any frontage on Wilcox Drive; lots 39 and 40 do not have proper frontage of 150 feet; and some of the access strips to interior lots may not be 25 feet as required by the regulations. The access strips are mentioned only because the lot frontages are exactly 150 feet in many cases and, if access strips are to be increased, it may be to the loss of some lots. As a rough calculation, it appears that some of the lots are less than the 40,000 square foot requirements. When the final plan is submitted, the smaller lots should be checked. Also, the final subdivision plan should have the square footage of each lot on the plan. Interior lot 46 should be a minimum of 80,000 square feet. If lots 16, 17, and 45 are permitted to use the rights-of-way as indicated for frontage, then the Regulations state they are non-conforming lots. If allowed, it should be stated in the individual property deeds. On lots 40 through 47 the Commission may want to consider not allowing the CL&P right-of-way as part of the calculation for total square footage, especially when considering interior lots. It is understood that the Commission is presently considering a change to a required 200-foot frontage. If this is so, strict enforcement of 150 feet frontage should be adhered to at this time.

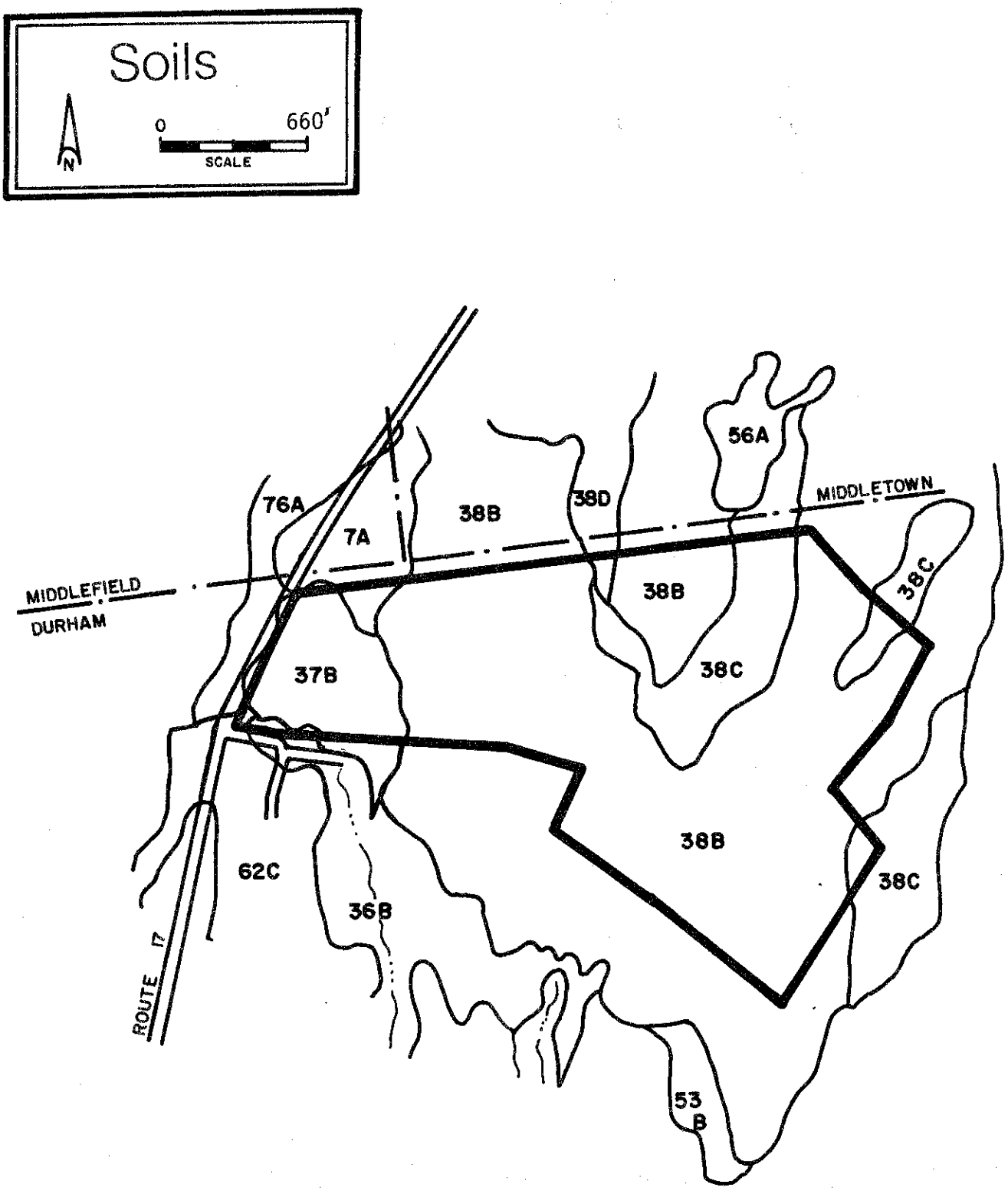
Access from Route 17 appears to be adequate. A turning lane off Route 17 to the Stollman property should be required. Also, it has been indicated that the access to Route 17 from Oak Terrace is a poor one and is approximately 500 feet from the present subdivision entrance. If possible, the Commission might want to consider closing off Oak Terrace at Route 17 and redirecting traffic through the new subdivision entrance to Route 17.

Due to the number of lots proposed, the poor soil, drainage, and vegetative cover, it would seem that a PRD proposal for this site would be more in keeping with the natural resource base, the surrounding land uses, and the potentially poor sanitary conditions. A PRD here would make better use of the topography and drainage patterns, while also allowing the design of sanitary disposal systems in the most suitable areas of the property. In the future if sanitary problems arise, a PRD design would allow the installation of a community treatment system for the area. Under the conventional system proposed, each lot should have a

primary and reserve leaching field, with both being so designated on the subdivision map.

Under whatever plan is finally submitted, the proposal should try to protect the ridge line either by a scenic easement or by design of the lots and houses. Finally, the proposal should be encouraged to incorporate the possible design of solar heating due to the southern exposure.

Appendix


Soils
N
0
660'
SCALE
56A
76A
7A
38B
38D
MIDDLETOWN
MIDDLEFIELD
DURHAM
38B
38C
37B
38C
38B
38C
62C
36B
ROUTE 17
53
B

STOLLMAN PROPERTY
DURHAM, 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	Buildings with Basements	Streets & Parking	Land-Scaping
Cheshire	37B	4	6	Slope	2	2	2	2
Ellington	76A	2	2	Wetness, frost action	3	3	3	2
Hartford	7A	2	2	Droughty	1	1	1	2
Ludlow	56B	2	2	Percs slowly, frost action	3	3	3	2
Wethersfield	38B	54	68	Percs slowly, slope, frost action	3	2	2	2
Wethersfield	38C	14	18	Percs slowly, slope	3	3	3	3
Wethersfield	38D	2	2	Slope	3	3	3	3
		80	100%					

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.