

Environmental Review Team Report

ZONE CHANGE

OLD SAYBROOK, CONNECTICUT



EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

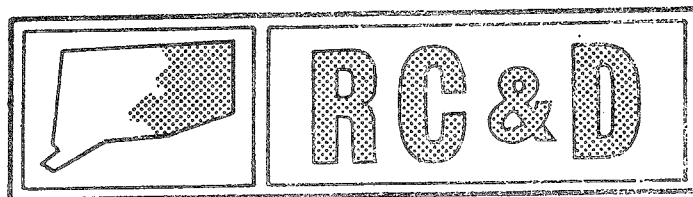
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on

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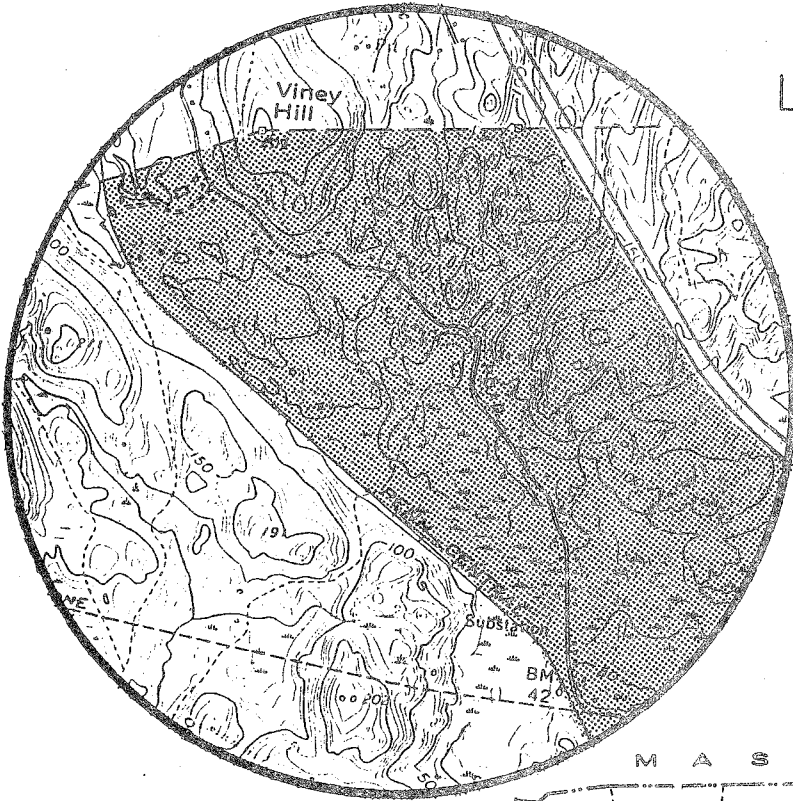
August 1982



Eastern Connecticut Resource Conservation & Development Area
Environmental Review Team
PO Box 198
Brooklyn, Connecticut 06234

Location of Study Site

ZONE CHANGE
OLD SAYBROOK, CONNECTICUT



EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
ZONE CHANGE
OLD SAYBROOK, CONNECTICUT

This report is an outgrowth of a request from the Old Saybrook 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 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: Barry Cavanna, District Conservationist, SCS; Mike Zizka, Geologist, Connecticut Department of Environmental Protection, (DEP); Tim Hawley, Forester, DEP; Don Cappellaro, Sanitarian, State Department of Health; Ed Meehan, Planner, Connecticut River Estuary Regional Planning Agency; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The team met and field-checked the site on Thursday, June 10, 1982. 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 Old Saybrook. 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.

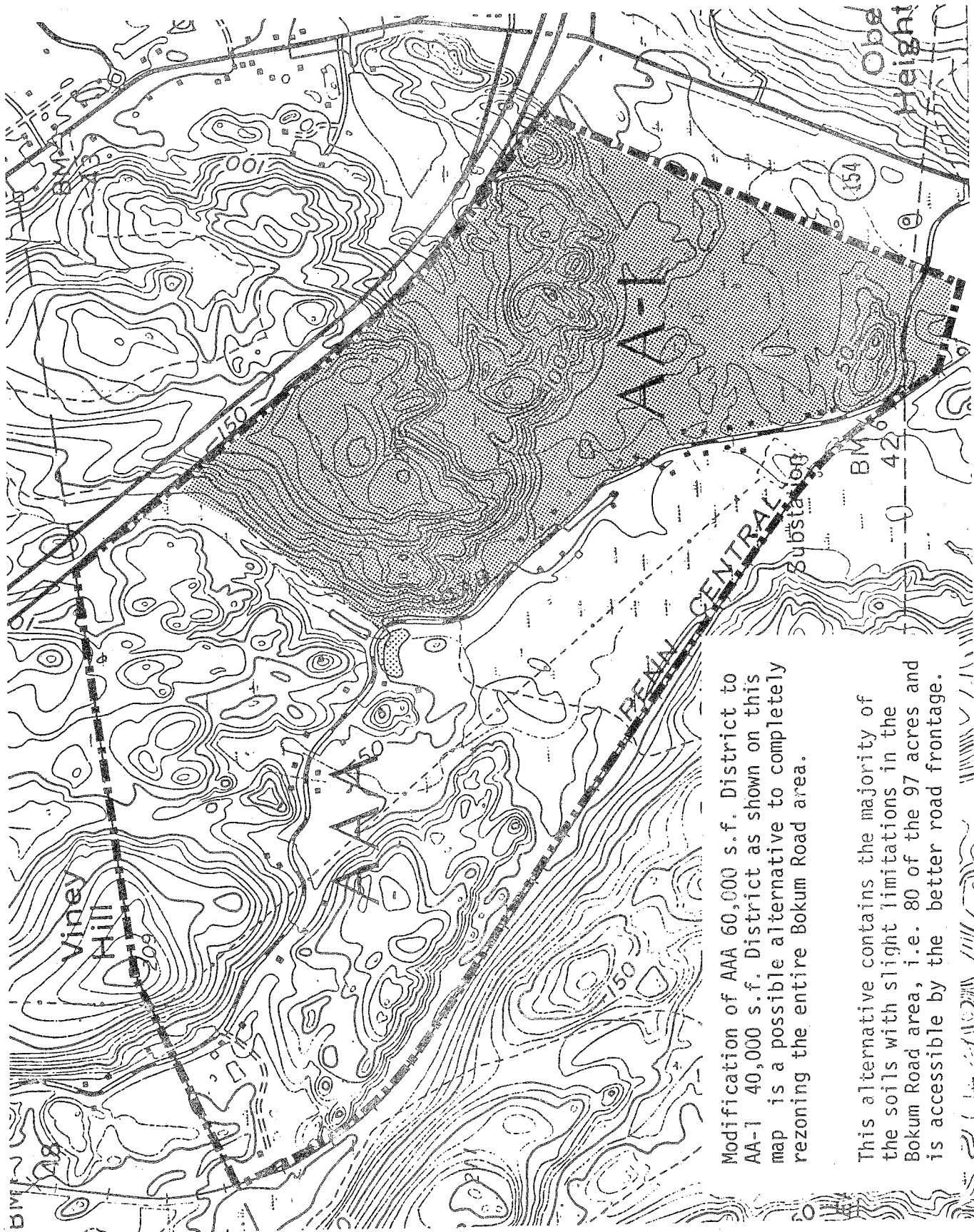
The Eastern Connecticut RC&D Area Committee hopes you will find this report of value and assistance in making your decisions on this particular site.

If you require any additional information, please contact: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, P.O. Box 198, Brooklyn, Connecticut, 06234, 774-1253.

POTENTIAL ZONE MODIFICATION



0' 1000' Scale



Modification of AAA 60,000 s.f. District to AA-1 40,000 s.f. District as shown on this map is a possible alternative to completely rezoning the entire Bokum Road area.

This alternative contains the majority of the soils with slight limitations in the Bokum Road area, i.e. 80 of the 97 acres and is accessible by the better road frontage.

INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare an evaluation of a proposed zone change in the town of Old Saybrook. The request for a zone change was initiated by two Old Saybrook residents, James Cahill and Earl Endrich, who own a 50 \pm acre parcel which they would like to develop. The actual area of the zone change, which includes the Cahill-Endrich parcel appears to be approximately 600 to 650 acres. It is bounded on the northeast by Route 9, on the southwest by the Penn Central Railroad tracks, on the northwest by the Essex-Old Saybrook town line and is slightly northwest of Route 154.

The landowners have proposed a zone change for the minimum lot size from 60,000 square feet (AAA zone) to 40,000 square feet (AA-1 zone) for residential structures. The area in question does not have access to public water or public sewer facilities. It is located in a "sewer avoidance zone" and thus is unlikely to be sewered in the future. All efforts should be made to protect against ground-water contamination in this area. Also due to the significant number of steep slope areas and erosive soil conditions present, proper erosion control measures should be required by the local commissions on any development proposal within this zone change area.

The project site is part of the valley system formed by Viney Hill along the northeast side (Route 9) and the steep terrain which raises from the railroad right of way to the west. Within this 600 \pm acre area, Bokum Road twists and turns around sharp corners that follow contours and wetland limitations. Existing development has been located along road frontage where the better soils exist. Toward the northern end (Essex townline) a few houses have been built between the roadway's flatter surface and steep backyards.

Should zone density be increased in the Bokum Road area the Team Planner recommends that only the southern half of the 600 \pm acres reviewed be changed. The reasons for this recommendation are twofold: (1) the better soils are present in the area bounded by Bokum Road, Route 9, the Business District and a stream/wetland system descending from Route 9 near the radio tower parcel; and (2) the roadway's sightlines are better at its middle to southern end.

It is suggested that the Environmental Review Team be requested to review any subsequent development proposals which may result from a zone change to AA-1 (40,000 square feet minimum residential lot size).

ENVIRONMENTAL ASSESSMENT

GEOLOGY - TOPOGRAPHY

The topography and geology of the proposed zone-change area are very closely related. The northwestern portion of the area is irregularly hilly, with steep slopes

in many places. This section is composed of bedrock that is thinly and completely covered by glacial till. The southeastern portion of the area is fairly flat. This section is composed of relatively thick stratified drift deposits, covered in some places by organic-rich swamp sediments.

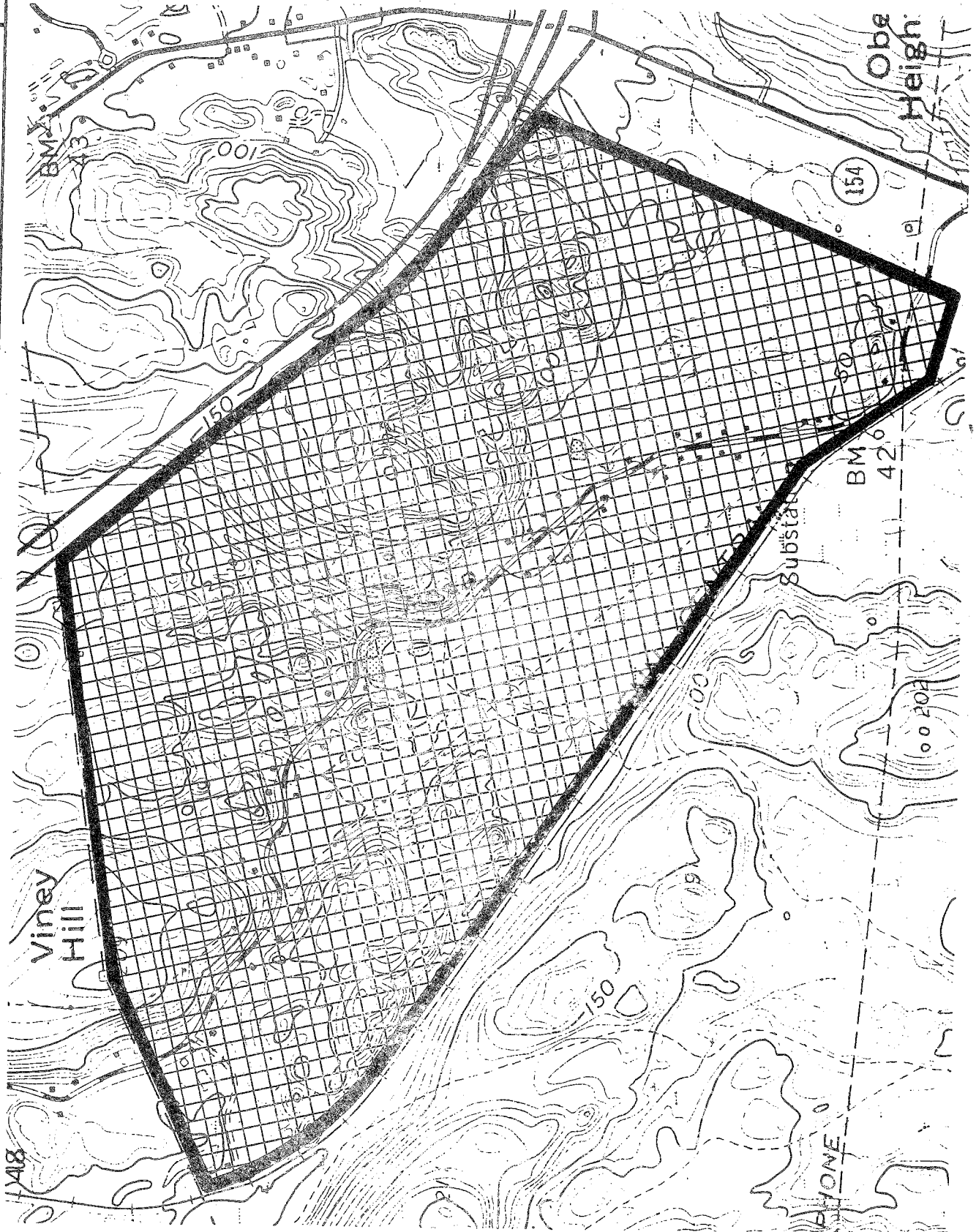
Till is the name given to the glacial sediments that were deposited directly from a preexisting ice sheet. As ice moved through the region, it wore away the underlying soils and bedrock, incorporating the debris into the ice. These materials were then transported for some distance before being redeposited. As a result of these processes, the till contains a complex, nonsorted mixture of clay, silt, sand, gravel, and boulders. In contrast, the stratified drift in the area consists largely of well-layered sand and gravel. These materials were deposited by meltwater streams which carried them away from stagnant, wasting ice masses during a period of glacial retreat. The average thickness of the stratified drift deposits probably exceeds 20 feet; whereas the average thickness of the till is probably less than 10 feet.

Where the till is thin (less than 5 feet thick), it tends to have a loose, sandy, very stony texture. Where it is thicker, a compact, siltier till horizon is generally present at depths of 3 to 5 feet. The till-covered portions of the proposed zone-change area generally pose difficult problems for development. The major limitations are the thinness of the overburden and the steep, irregular topography. Blasting would probably be needed to prepare some parts of the area for home sites, driveways, and roads. Septic systems would generally require careful engineering to avoid failures or groundwater contamination. Much consideration would need to be given to erosion-control measures, since the channeling of runoff that commonly accompanies development could cause gullying on the steep slopes.

The primary limitations to development in the stratified-drift-covered portions of the area will probably be wetland encroachment and seasonably high water tables. While wetness does appear to affect a large percentage of this section, however, it does not seem to be as extensive or as difficult a problem as the slopes and shallow-soil conditions in the till-covered section. Engineered septic systems and raised dwellings may be effective solutions to the seasonally high water-table conditions in many places. Wetland encroachment should be avoided.

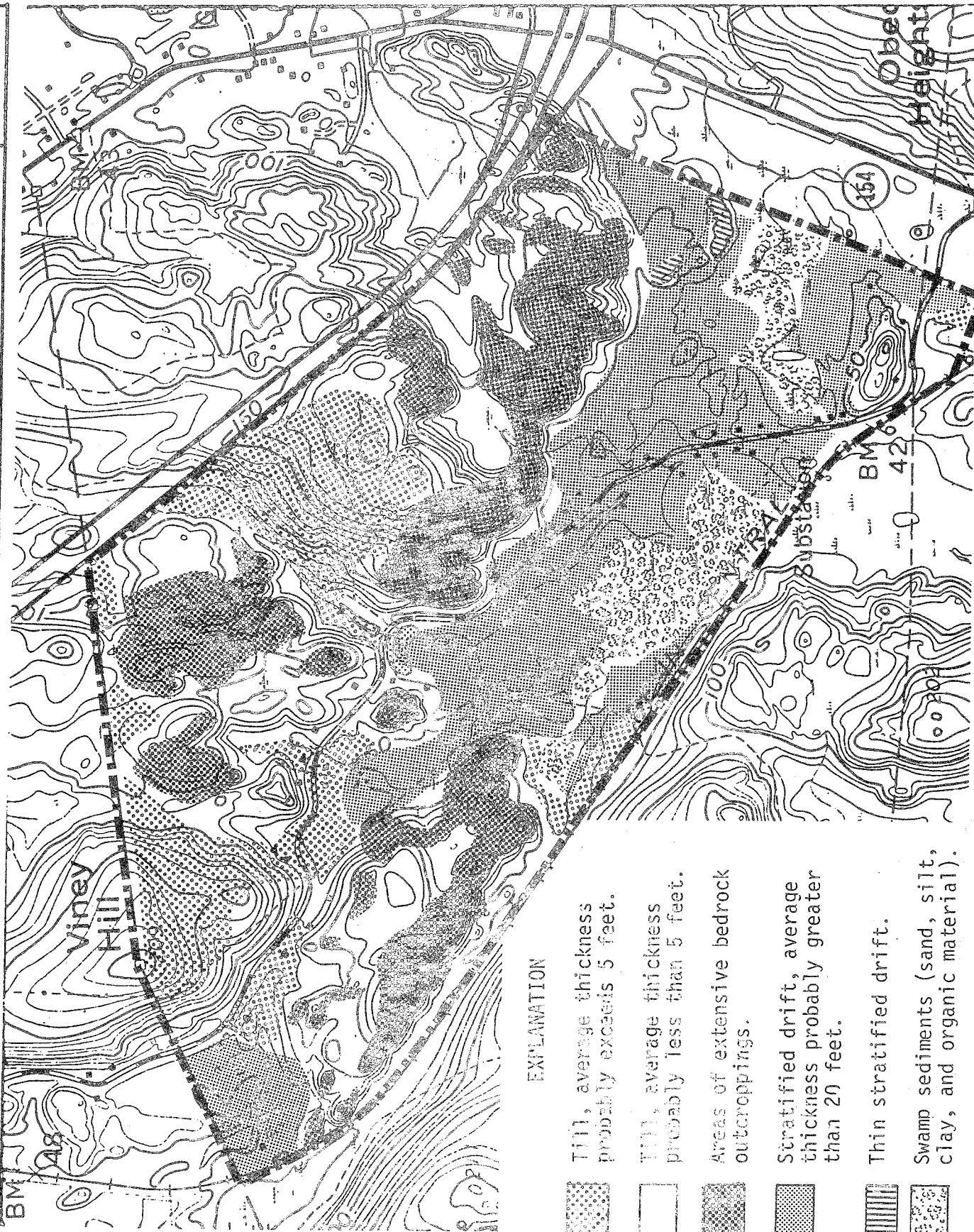
A comparison of the existing AAA zone, which requires minimum lot size of 60,000 square feet, to the soils and surficial geologic maps of the town shows that the zone encompasses the rockiest section of Old Saybrook. For this reason, the current zone, as it applies to most of the area, seems both logical and desirable. Of the area presently proposed for a zone change, the northwestern portion presents no apparent reasons for a decreased lot-size requirement; if anything, the requirement should perhaps be increased. The stratified-drift portion, on the other hand, is unlike the remainder of the zone as it encompasses some of the most easily developable land in the town. In this section, a decrease in lot-size requirements from 60,000 square feet would not be unreasonable and may, in fact, be desirable.

Topography





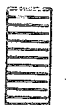
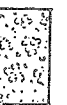


Surficial Geology

0 1000' scale



EXPLANATION

-  Till, average thickness probably exceeds 5 feet.
-  Till, average thickness probably less than 5 feet.
-  Areas of extensive bedrock outcroppings.
-  Stratified drift, average thickness probably greater than 20 feet.
-  Thin stratified drift.
-  Swamp sediments (sand, silt, clay, and organic material).

HYDROLOGY

The surface drainage pattern for the proposed zone change area can best be described as untidy. Short streamcourses run between small and large swamps, which are in turn scattered throughout the area. There does not appear to be even one through-flowing stream in the area. Most of the drainage flows south-eastward, passes under the Valley Railroad, and then flows southeastward into an unnamed tributary of Oyster River. A small section of the western portion of the proposed zone-change area drains northwestward into the Mud River system in the town of Essex. Another small section in the northern part of the area drains northward through short tributaries into the Connecticut River.

Development of any area generally leads to increases in the amount of runoff that the area sheds during periods of precipitation. These increases are caused by removal of vegetation, the compaction of soils, and most importantly, by the covering of permeable soils by impervious surfaces, such as roofs and driveways. It is clear that a change from a 60,000-square-foot zone to a 40,000-square-foot zone could lead to greater runoff increases following development of the area. It is not feasible to attempt to assess the practical significance of this difference, however. As long as appropriate runoff-and-erosion-control measures are employed for any development, this aspect of the zone change should not be a point of significant concern.

The stratified drift area has a moderate to good potential for the development of public water-supply wells. The Team had only limited data concerning the subsurface characteristics of the deposits, but the best present estimate would be that the deposits are relatively coarse-grained, a positive factor in water supply development. On the other hand, the deposits are not believed to be much more than 30 to 50 feet thick in most places, a factor that would limit drawdowns and, therefore, would limit yields. Obviously, more testing would be required to fully assess the potential of the deposits.

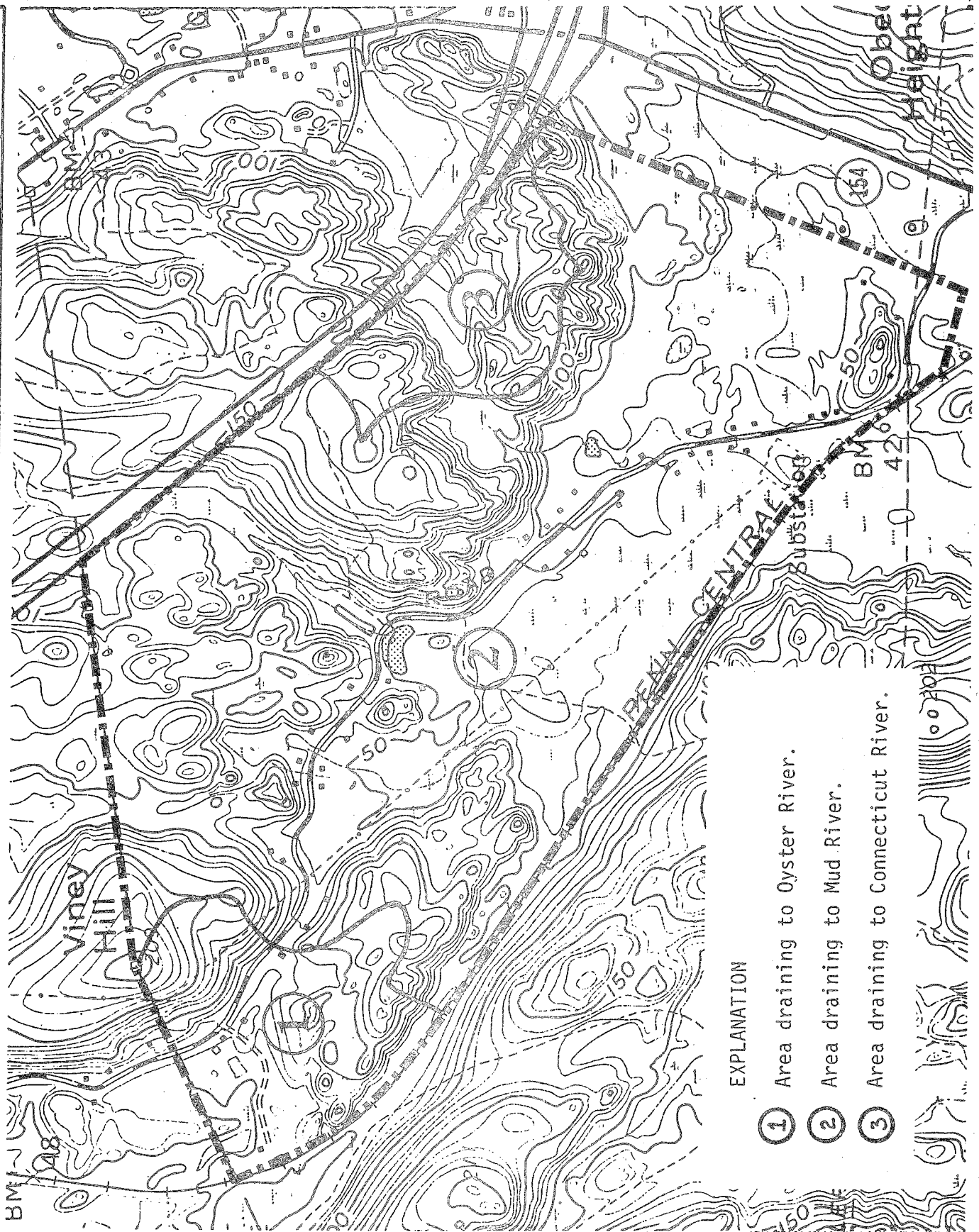
A change to smaller lot-sizes in the stratified-drift area will increase the risk of groundwater contamination to some extent, since there would be more sewage effluent discharged, more roof and driveway drainage, etc. However, if the development of the area is carefully planned and designed, the 40,000-square-foot standard probably provides an adequate margin of protection for the groundwater. Any septic systems should be placed as far as possible from wells in this area, since sand and gravel is not a particularly effective filter for septic effluent.

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

Drainage Areas

0 1000
scale



EXPLANATION

- ① Area draining to Oyster River.
- ② Area draining to Mud River.
- ③ Area draining to Connecticut River.

the soil map is an enlargement from the original 1,320 feet/inch scale to 1000 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 Soil Survey, Middlesex County, Connecticut, 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.

Major portions of this 650[±] acre parcel are covered with Hollis-Charlton soils, Charlton-Hollis soils, Hollis-rock outcrop soils and Sudbury soils. Many of these soils were formed in glacial till uplands as described in the Geology section of this report. Soil series typical of this site are described in detail below.

Adrian muck. This nearly level, very poorly drained, organic soil is in low depressions of outwash terraces and glacial till plains.

Typically, this soil has an organic layer 24 inches thick. The upper 8 inches of the organic layer is very dark brown muck, the next 12 inches is black muck, and the lower 4 inches is very dark grayish brown muck. The substratum is dark gray gravelly sand to a depth of 60 inches or more.

Included with this soil in mapping are small, intermingled areas of very poorly drained Carlisle, Saco, Whitman, and Scarborough soils. Included areas make up 5 to 20 percent of this map unit.

The permeability of this soil is rapid. The soil has moderate to high available water capacity. Runoff is very slow or ponded. This soil remains wet most of the year and is ponded for several weeks from fall through spring and after heavy rain in summer. Unlimed areas are very strongly acid to neutral in the organic layers.

This soil is poorly suited to cultivated crops because of wetness. Most areas are difficult to drain. If drained, the soil can be used to grow vegetables, but the water table needs to be carefully maintained to minimize subsidence and prevent excessive loss of organic material. If the soil is cultivated, cover crops are needed to prevent wind erosion.

This soil is poorly suited to trees, but most of the soil is wooded primarily with red maple, ash, and alder. Other common types of vegetation are sweet pepperbush, blueberry, viburnum, cinnamon fern, and royal fern. The use of equipment is difficult on this soil because of wetness. The soil has a severe windthrow hazard because the roots of trees are restricted by the high water table.

The soil has poor potential for community development. The major limitations are the high water table that is at or near the surface most of the year, frequent flooding or ponding, and the very low strength and poor stability of the organic layers. If fill is placed on top of the organic layers, it will settle. If the soil is drained, the organic material subsides and shrinks and the surface of the soil is lowered. Excavations are unstable. Onsite septic systems are not feasible on this soil.

Agawam fine sandy loam. This gently sloping, well drained soil is on outwash plains and stream terraces.

Typically, the surface layer is dark brown fine sandy loam 8 inches thick. The subsoil is dark brown and strong fine sandy loam 16 inches thick. The substratum is dark brown and grayish brown, stratified sand to a depth of 60 inches or more.

Included with this soil in mapping are small, intermingled areas of moderately well drained Ninigret soils, somewhat excessively drained Merrimac soils, and excessively drained Hinckley and Windsor soils. Included areas make up 5 to 15 percent of this map unit.

The permeability of this soil is moderately rapid in the surface layer and upper part of the subsoil, moderately rapid or rapid in the lower part of the subsoil, and rapid in the substratum. Available water capacity is moderate. Runoff is medium. This soil dries out and warms up early in the spring. Unlimed areas are very strongly acid to medium acid.

Cleared areas of this soil are used for cultivated crops or hay. A small acreage is wooded or idle. Some scattered areas are used for community development.

This soil is well suited to cultivated crops. It is easy to till, and the hazard of erosion is moderate. Minimum tillage, use of cover crops, and incorporating crop residue into the soil are suitable management practices.

This soil has good potential for community development. Steep slopes of excavations are unstable. Onsite septic systems need careful design and installation to prevent pollution of groundwater. Quickly establishing plant cover, mulching, and establishing siltation basins are suitable management practices during construction.

Canton and Charlton extremely stony fine sandy loams. These gently sloping and sloping, well drained soils are on hills and ridges of glacial till plains. These soils have 3 to 15 percent of the surface covered with stones and boulders. Areas of this unit consist of Canton soils or Charlton soils or both. The soils were mapped together because they have no significant differences that affect use and management. The acreage of this unit is about 45 percent Canton soils, 35 percent Charlton soils, and 20 percent other soils.

Typically, the surface layer of the Canton soils is very dark grayish brown fine sandy loam 2 inches thick. The subsoil is dark brown and dark yellowish brown

fine sandy loam 17 inches thick. The substratum is light brownish gray gravelly loamy sand to a depth of 60 inches or more.

Typically, the surface layer of the Charlton soils is dark brown fine sandy loam 2 inches thick. The subsoil is 34 inches thick. The upper 30 inches is dark yellowish brown, yellowish brown, and light olive brown fine sandy loam. The lower 4 inches is light yellowish brown gravelly sandy loam. The substratum is brown fine sandy loam to a depth of 60 inches or more.

Included with these soils in mapping are small, intermingled areas of somewhat excessively drained Hollis soils, well drained Paxton and Montauk soils, moderately well drained Woodbridge soils, poorly drained Leicester and Ridgebury soils, and very poorly drained Whitman soils.

The permeability of the Canton soils is moderately rapid in the surface layer and subsoil and rapid in the substratum. Available water capacity is moderate. Runoff is medium to rapid. Canton soils warm up and dry out early in the spring. Unlimed areas are extremely acid to medium acid.

The permeability of the Charlton soils is moderate or moderately rapid. Available water capacity is moderate. Runoff is medium to rapid. Charlton soils warm up and dry out early in the spring. Unlimed areas are very strongly acid to medium acid.

These soils are poorly suited to cultivated crops. Stoniness makes the use of farming equipment impractical, and stone removal is difficult. These soils have a moderate to severe erosion hazard. Establishment of permanent vegetative cover is suitable management practice on these soils.

These soils are suited to trees. Stoniness limits the use of equipment, and machine planting is not practical.

These soils have fair potential for community development. They are limited mainly by stoniness and slope. The removal of stones is difficult. On the steeper slopes of this unit, onsite septic systems need careful design and installation to prevent effluent from seeping to the surface. Quickly establishing plant cover, providing temporary diversions, and establishing siltation basins are suitable management practices during construction.

Carlisle muck. This nearly level, very poorly drained, organic soil is in low depressions of outwash terraces and glacial till plains throughout the county. Typically, this soil is dark reddish brown and black muck to a depth of 60 inches or more.

Included with this soil in mapping are small, intermingled areas of very poorly drained Adrian, Scarborough, and Whitman soils and poorly drained Leicester, Ridgebury, Raypol, and Walpole soils. Also included are a few areas of soils that are more acid than this Carlisle soil. Included areas make up 5 to 20 percent of this map unit.

The permeability of this soil is moderate or moderately rapid. Available water capacity is high. Runoff is very slow. This soil is wet most of the year, and water is frequently ponded on the surface from autumn to spring and after heavy rains in summer. Unlimed areas are very strongly acid to medium acid.

Most of this soil is wooded. A few small areas have been cleared and drained. Cleared areas are used for vegetables or are idle.

This soil is poorly suited to cultivated crops because of wetness. Most areas are difficult to drain, but drained areas can be used for vegetables. If the soil is cultivated, use of cover crops and maintaining a proper water table level help to minimize subsidence and control wind erosion.

This soil is poorly suited to trees, but most areas are wooded mainly with red maple, ash, and alder. Other common types of vegetation are sweet pepperbush, blueberry, viburnum, cinnamon fern, and royal fern. This soil is limited mainly by wetness. The organic material will not support heavy equipment. Tree windthrow is common because the high water table restricts rooting depth.

This soil has poor potential for most types of community development. The soil is limited by a high water table most of the year and by ponding. The organic layers have very low strength and will not support structures. In some places the organic layers are too deep to be removed. If the soil is drained, the organic layers are too deep to be removed. If the soil is drained, the organic layers subside or shrink and lower the surface of the soil. Side slopes of excavations are very unstable and slump. Onsite septic systems are not practical in this soil.

Charlton-Hollis very stony fine sandy loams. This complex consists of gently sloping and sloping, well drained and somewhat excessively drained soils on ridges where the relief is affected by the underlying bedrock and on upland glacial till plains. These soils formed in glacial till derived from gneiss, schist, and granite. Stones and boulders cover 0.1 to 3 percent of the surface. This complex is about 50 percent Charlton soils, 30 percent Hollis soils, and 20 percent other soils and bedrock outcrops. The soils of this complex are in such an intricate pattern that it was not practical to map them separately.

Typically, the surface layer of the Charlton soils is dark brown fine sandy loam 2 inches thick. The subsoil is 34 inches thick. The upper 30 inches is dark yellowish brown, yellowish brown, and light olive brown fine sandy loam. The lower 4 inches is light yellowish brown gravelly sandy loam. The substratum is brown fine sandy loam to a depth of 60 inches or more.

Typically, the surface layer of the Hollis soils is very dark grayish brown fine sandy loam 3 inches thick. The subsoil is yellowish brown fine sandy loam 11 inches thick. Hard, unweathered schist bedrock is at a depth of 14 inches.

Included with this complex in mapping are small, intermingled areas of well drained Canton, Montauk, and Paxton soils; moderately well drained Woodbridge soils; poorly

drained Leicester and Ridgebury soils; and very poorly drained Adrian and Whitman soils. Also included are bedrock outcrops and a few areas where the stones and boulders have been cleared from the surface.

The permeability of the Charlton soils is moderate or moderately rapid. Available water capacity is moderate. Runoff is medium to rapid. Unlimed areas of the Charlton soils are very strongly acid to medium acid.

The permeability of the Hollis soils is moderate or moderately rapid above the bedrock. Available water capacity is low. Runoff is medium to rapid. Unlimed areas of the Hollis soils are very strongly acid to medium acid.

This complex is poorly suited to cultivated crops. It is limited mainly by stoniness, bedrock outcrops, and the shallow depth to bedrock in many places. The complex is suited to orchards and pasture. It has a moderate to severe erosion hazard, and minimum tillage and maintaining permanent vegetative cover help to control erosion.

This complex is suited to trees. Trees on the Hollis soil are subject to windthrow because of the shallow rooting zone above the bedrock.

This complex has fair potential for community development. The shallow depth to bedrock in the Hollis soils and the bedrock outcrops make excavation difficult. Onsite septic systems require very careful design and installation, and an area of more than 2 acres is sometimes needed as a suitable site for an onsite septic system. In a few areas, bedrock outcrops have esthetic value for homesites.

Hinckley gravelly sandy loam. This excessively drained and gently sloping to sloping or undulating soil is on stream terraces, kames, and eskers. Typically, the surface layer is dark grayish brown gravelly sandy loam 8 inches thick. The subsoil is 19 inches thick. In the upper 12 inches it is brown gravelly loamy sand, and in the lower 7 inches it is yellowish brown gravelly sand. The substratum is brown and light brownish gray very gravelly sand to a depth of 60 inches or more.

Included with this soil in mapping are small, intermingled areas of excessively drained Windsor soils, somewhat excessively drained Merrimac soils, moderately well drained Sudbury soils, and poorly drained Walpole soils. Included areas make up 5 to 15 percent of this map unit.

Permeability is rapid in the surface layer and subsoil and very rapid in the substratum. The available water capacity is low. Runoff is slow to medium. This soil dries out and warms up early in spring. Unlimed areas are extremely acid to medium acid.

This soil is poorly suited to cultivated crops. Droughtiness and slope are the main limitations. Irrigation is difficult on the steeper slopes. Minimum tillage, use of cover crops, and returning crop residue to the soil are suitable management practices.

This soil is suited to trees, but only a small acreage in the county is wooded. The major limitation is droughtiness.

This soil has good potential for community development. The soil is limited mainly by slope and droughtiness. Steep side slopes of excavations are unstable, and onsite sewage disposal systems need careful design and installation. Lawns have many pebbles on the surface. Lawn grasses, shallow-rooted trees, and shrubs require watering in summer. Quickly establishing plant cover is a suitable management practice during construction.

Hollis-Charlton extremely stony fine sandy loams. This complex consists of moderately steep to very steep, somewhat excessively drained and well drained soils on ridges where the relief is affected by the underlying bedrock on upland glacial till plains. These soils formed in glacial till derived mostly from granite, gneiss, and schist. The areas have a rough surface with bedrock outcrops; narrow, intermittent drainageways; and small, wet depressions. In most areas 3 to 5 percent of the surface is covered with stones and boulders. The total acreage of this complex is about 40 percent Hollis soils, 35 percent Charlton soils, and 25 percent other soils and bedrock outcrops. The soils of this complex are in such an intricate pattern that it was not practical to map it separately.

Typically, the surface layer of the Hollis soils is very dark grayish brown fine sandy loam 3 inches thick. The subsoil is friable, yellowish brown fine sandy loam 11 inches thick. Hard, unweathered schist bedrock is at a depth of 14 inches.

Typically, the surface layer of the Charlton soils is dark brown fine sandy loam 2 inches thick. The subsoil is 34 inches thick. The upper 30 inches is dark yellowish brown, and light olive brown fine sandy loam. The lower 4 inches is light yellowish brown gravelly sandy loam. The substratum is friable, brown fine sandy loam to a depth of 60 inches or more.

Included with this complex in mapping are small, intermingled areas of well drained Canton, Montauk, and Paxton soils and moderately well drained Woodbridge soils. Also included are bedrock outcrops, areas of soils with slopes of less than 15 percent, and a few nonstony areas.

The permeability of the Hollis soils is moderate or moderately rapid above the bedrock. Available water capacity is low. Runoff is rapid. Unlimed areas of the Hollis soils are very strongly acid to medium acid.

The permeability of the Charlton soils is moderate or moderately rapid. Unlimed areas of the Charlton soils are very strongly acid to medium acid.

This complex is not suited to cultivated crops. The steep slopes, stoniness, shallow depth to bedrock in many places, and bedrock outcrops are the main limitation. The erosion hazard is severe, and establishing permanent plant cover helps to control erosion.

This complex is poorly suited to trees, but it is better suited to woodland than to most other uses. The complex is limited for woodland mainly by the steep slopes, bedrock outcrops, stoniness, and shallow depth to bedrock. Tree windthrow is a concern on the Hollis soils because of the shallow rooting depth above the bedrock. Equipment is difficult to use because of stoniness, steep slopes, and outcrops. Logging roads and trails need careful layout to prevent erosion.

This complex has poor potential for community development. The soils are limited mainly by the steep slopes, shallowness to bedrock, rock outcrops, and stoniness. Excavation is difficult because of the shallow depth to bedrock in many places. Onsite septic systems require very careful and often special design and installation. Many areas of this complex provide a scenic and picturesque setting for homes. The rock outcrops, stones, and boulders have esthetic values and are sometimes left undisturbed. During construction, quickly establishing cover, providing temporary diversions, and establishing siltation basins are suitable management practices.

Hollis-Rock outcrop complex. This complex consists of moderately steep to very steep, somewhat excessively drained soils and area of Rock outcrop. The complex is glacial till uplands where the relief is affected by the underlying bedrock. The areas have a rough surface with bedrock outcrops; a few narrow, intermittent drainageways; and small, wet depressions. In most areas 3 to 25 percent of the surface is covered with stones and boulders. This complex is about 50 percent Hollis soils, 30 percent Rock outcrop, and 20 percent other soils. The Hollis soils and Rock outcrop are in such an intermingled pattern on the landscape that it was not practical to map them separately.

Typically, the surface layer of the Hollis soils is very dark grayish brown fine sandy loam 3 inches thick. The subsoil is yellowish brown fine sandy loam 11 inches thick. Hard, unweathered schist bedrock is at a depth of 14 inches.

Rock outcrop consists of exposed bedrock that is mainly schist, gneiss, and granite.

Included with this complex in mapping are areas that are made up of as much as 5 acres of well drained Canton and Charlton soils, moderately well drained Woodbridge soils, and soils that have bedrock at a depth of 20 to 40 inches. Also included are a few areas of soils that have slopes of as much as 90 percent.

The permeability of the Hollis soils is moderate or moderately rapid above the bedrock. Available water capacity is low. Runoff is rapid. The Hollis soils are very strongly acid to medium acid. The areas of rock outcrop have very rapid runoff.

This complex is not suited to cultivated crops. It is limited by steep slopes, Rock outcrop, stoniness, and shallow depth to bedrock.

This complex is poorly suited to trees, but it is better suited to woodland than to most other uses. It is limited for use as woodland mainly by the steep slopes, Rock

outcrop, shallowness to bedrock, and stoniness. Tree windthrow is a major concern because of the shallow root zone. Rock outcrop, stoniness, and steep slopes hinder the use of most equipment. Machine planting of seedlings is not feasible.

This complex has poor potential for community development mainly because of shallowness to bedrock, steep slopes, Rock outcrop, and stoniness. Excavation is difficult, and blasting is required in most places. Onsite septic systems require special design and installation. The complex is used for single homesites. Quickly establishing plant cover, providing temporary diversions, and establishing siltation basins are suitable management practices during construction.

Leicester, Ridgebury, and Whitman extremely stony fine sandy loams. This unit consists of nearly level to gently sloping, poorly drained and very poorly drained soils in drainageways and depressions of glacial till uplands. This unit has more than 3 percent of the surface covered with stones and boulders. The total acreage of this unit is about 40 percent Leicester soils, 25 percent Ridgebury soils, 15 percent Whitman soils and 20 percent other soils. The soils of this unit were mapped together because they react similarly to most uses and to management. Some areas of this unit contain only one of the major soils, and some areas contain two or three.

Typically, the surface layer of the Leicester soils is very dark brown fine sandy loam 7 inches thick. The subsoil is grayish brown and brown, mottled fine sandy loam 26 inches thick. The substratum is 9 inches of brown, mottled fine sandy loam over yellowish brown, mottled gravelly sandy loam to a depth of 60 inches or more.

Typically, the surface layer of the Ridgebury soils is very dark fine sandy loam 7 inches thick. The subsoil is 17 inches thick. The upper 8 inches is grayish brown, mottled fine sandy loam, and the lower 9 inches is grayish brown and brown, mottled sandy loam. The substratum is brown, mottled, firm fine sandy loam to a depth of 60 inches or more.

Typically, the surface layer of the Whitman soils is black fine sandy loam 5 inches thick. The subsoil is dark gray, grayish brown, and light brownish gray, mottled fine sandy loam 17 inches thick. The substratum is light brownish gray, mottled fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are areas that are made up of as much as 5 acres of moderately well drained Woodbridge soils, poorly drained Walpole soils, and very poorly drained Adrian soils. Also included are a few small areas of soils that have slopes of as much as 10 percent.

The permeability of the Leicester soils is moderate or moderately rapid. Available water capacity is moderate. Runoff is slow. Unlimed areas of the Leicester soils are very strongly acid or strongly acid above a depth of 40 inches and very strongly to medium acid below 40 inches.

The permeability of the Ridgebury soils is moderate or moderately rapid in the

surface layer and subsoil and slow or very slow in the substratum. Available water capacity is moderate. Runoff is slow. Unlimed areas of the Ridgebury soils are very strongly acid to medium acid.

The permeability of the Whitman soils is moderate or moderately rapid in the surface layer and subsoil and slow or very slow in the substratum. Available water capacity is moderate. Runoff is very slow or ponded. Unlimed areas of the Whitman soils are very strongly acid to slightly acid.

The soils of this unit are poorly suited to cultivated crops. Stoniness and wetness are the major limitations. Farming is not practical on these soils.

The soils of this unit are suited to trees. The shallow rooting zone above the high water table causes tree windthrow. The use of equipment is limited by stones and wetness.

These soils have poor potential for community development. Wetness, stoniness, and the slow to very slow permeability of the substratum in the Ridgebury and Whitman soils are major limitations. These soils are not suited to community development unless they are extensively filled. Where practical, artificial drains help prevent unstable footings and wet basements. If the soils are cleared, removing stones and boulders is often difficult. In places, onsite septic systems are not feasible; in other places they require very careful design and installation.

Merrimac sandy loam. This nearly level, somewhat excessively drained soil is on outwash plains and stream terraces of water-sorted sand and gravel derived mainly from granite, gneiss, and schist. Areas are irregular in shape and range from 5 to 75 acres.

Typically, the surface layer is very dark grayish brown sandy loam 9 inches thick. The subsoil is 13 inches thick. The upper 9 inches is brown and dark yellowish brown sandy loam. The lower 4 inches is dark yellowish brown gravelly loamy sand. The substratum is dark yellowish brown very gravelly sand to a depth of 60 inches or more.

Included with this soil in mapping are small, intermingled areas of excessively drained Hinckley and Windsor soils, well drained Agawam soils, and moderately well drained Sudbury soils. Included areas make up 5 to 20 percent of this map unit.

The permeability of this soil is moderately rapid or rapid in the surface layer and subsoil and rapid in the substratum. Available water capacity is moderate. Runoff is slow. Unlimed areas are extremely acid to medium acid.

The soil is well suited to cultivated crops. It is droughty for short periods during the summer. Irrigation is needed for vegetables and other specialized crops. This soil dries out and warms up early in the spring. The soil is easy to till. The erosion hazard is slight. Minimum tillage and use of cover crops are suitable management practices.

The soil is suited to trees. Many seedlings do not survive dry periods during the summer.

This soil has good potential for community development. Onsite septic systems cause pollution of ground water in places. Steep slopes of excavations are unstable. Lawns, shallow-rooted trees, and shrubs need watering during the summer. Quickly establishing plant cover, providing temporary diversions, and establishing siltation basins are suitable management practices during construction.

Paxton and Montauk fine sandy loams. These gently sloping, well drained soils are on drumlins and till plains of glaciated uplands. The soils were mapped together because there is no significant difference that affects their use and management. The mapped acreage of this unit is about 40 percent Paxton soils, 40 percent Montauk soils, and 20 percent other soils.

Typically, the surface layer of the Paxton soils is very dark grayish brown fine sandy loam 10 inches thick. The subsoil is brownish yellow and yellowish brown sandy loam 22 inches thick. The substratum is dark grayish brown, firm, gravelly fine sandy loam to a depth of 60 inches or more.

Typically, the surface layer of the Montauk soils is dark brown fine sandy loam 7 inches thick. The subsoil is 23 inches thick. The upper 13 inches is dark yellowish brown fine sandy loam. The lower 10 inches is dark yellowish brown and yellowish brown sandy loam. The substratum is dark yellowish brown, firm sandy loam to a depth of 60 inches or more.

Included with these soils in mapping are small, intermingled areas of well drained Canton and Charlton soils, moderately well drained Woodbridge soils, and poorly drained Leicester and Ridgebury soils.

The permeability of the Paxton soils is moderate in the surface layer and subsoil and slow or very slow in the substratum. Available water capacity is moderate. Runoff is medium. Unlimed areas of the Paxton soils are strongly acid to slightly acid.

The permeability of the Montauk soils is moderate in the surface layer and subsoil and slow in the substratum. Available water capacity is moderate. Runoff is medium. Unlimed areas of the Montauk soils are extremely acid to medium acid.

These soils are well suited to cultivated crops. The soils warm up slowly in the spring. The erosion hazard is moderate. Minimum tillage, use of cover crops, and stripcropping are suitable management practices on these soils.

These soils have fair potential for community development. They are mainly limited by the slowly permeable or very slowly permeable substratum. Onsite septic systems require careful design and installation. Steep slopes of excavations slump when saturated. Artificial drains help prevent wet basements. Lawns are often wet and soft in autumn and spring. Quickly establishing plant cover, providing temporary diversions, and establishing siltation basins are suitable management practices during construction.

Saco silt loam. This nearly level, very poorly drained soil is on low flood plains adjacent to streams and rivers.

Typically, the surface layer is very dark grayish brown mucky silt loam 6 inches thick. The substratum is dark gray and very dark gray silt loam to a depth of 60 inches or more.

Included with this soil in mapping are small, intermingled areas of moderately well drained Podunk soils, poorly drained Rumney and Rumney Variant soils, and very poorly drained Westbrook soils. Included areas make up about 10 percent of this map unit.

This soil is subject to frequent flooding. The permeability of this soil is moderate. Available water capacity is high. Runoff is slow or very slow, and water covers some areas from late fall through early spring. The soil is strongly acid to neutral at a depth of less than 30 inches and medium acid to neutral at a depth of more than 30 inches.

This soil is poorly suited to cultivated crops because of wetness and frequent flooding. The soil is difficult to drain for crop production. Frequent flooding severely damages or destroys some crops. Wetness severely restricts the use of farming equipment.

This soil is not suited to commercial timber production because of wetness and frequent flooding.

This soil has poor potential for community development. The soil is limited mainly by the high water table and frequent flooding. Use of this soil for community development is not feasible unless the soil is extensively filled.

Scarboro mucky loamy fine sand. This nearly level, very poorly drained soil is in depressions of broad glacial outwash terraces. Areas are dominantly irregular in shape and range from 3 to 90 acres.

Typically, the surface layer is 3 inches of very dark brown muck over 6 inches of black mucky loamy fine sand. The next 8 inches is black loamy fine sand. The substratum is grayish brown and dark grayish brown sand to a depth of 60 inches or more.

Included with this soil in mapping are small, intermingled areas of moderately well drained Sudbury soils, poorly drained Walpole soils, and very poorly drained Adrian soils. Included areas make up to 5 to 15 percent of this map unit.

This soil has a seasonal high water table at the surface from fall until late spring. The permeability of the soil is rapid or very rapid. Available water capacity is low. Runoff is slow or very slow. Unlimed areas are very strongly acid to medium acid.

This soil is poorly suited to cultivated crops because of wetness. Artificial drainage is needed, but suitable outlets are not available in most places.

This soil is poorly suited to trees, but it is better suited to woodland than to most other uses. Wetness restricts the use of equipment and causes high seedling mortality and tree windthrow. Machine planting is not practical when the soil is wet.

This soil has poor potential for community development because of the high water table. Steep slopes of excavations are unstable. Extensive filling is needed in areas of this soil used for community development. During construction, quickly establishing plant cover, providing temporary diversions, and establishing siltation

basins are suitable management practices.

Sudbury sandy loam. This nearly level, moderately well drained soil is in slight depressions of broad outwash terraces and narrow stream valleys. Typically, the surface layer is very dark grayish brown sandy loam 9 inches thick. The subsoil is 25 inches thick. The upper 9 inches is dark yellowish brown sandy loam. The middle 10 inches is dark yellowish brown, mottled loamy sand. The lower 6 inches is yellowish brown, mottled gravelly loamy sand. The substratum is light yellowish brown gravelly sand to a depth of 60 inches or more.

Included with this soil in mapping are small, intermingled areas of somewhat excessively drained Merrimac soils, moderately well drained Ninigret soils, and poorly drained Walpole soils. Also included are a few areas of soils that have a fine sandy loam surface layer. Included areas make up to 5 to 15 percent of this map unit.

This soil has a seasonal high water table at a depth of about 20 inches from late in autumn until midspring. The permeability of this soil is moderately rapid in the surface layer and upper part of the subsoil, moderately rapid or rapid in the lower part of the subsoil, and rapid in the substratum. Available water capacity is moderate. Runoff is slow. Unlimed areas are extremely acid to medium acid.

This soil is well suited to cultivated crops. The soil is limited mainly by wetness and is slow to warm up and dry out in the spring. Artificial drainage helps to dry out the soil earlier in the spring, but even if drained, this soil remains wet for a few days after heavy rains. Artificial drainage, minimum tillage, and use of cover crops are suitable management practices.

This soil is suited to trees. Machine planting is practical in open areas.

This soil has fair potential for community development. The seasonal high water table is the major limitation. Steep slopes of excavations are unstable. Onsite septic systems need very careful design and installation, and sites generally require filling. In places, such systems cause pollution of ground water. If suitable outlets are available, artificial drains can be used to help prevent wet basements. During construction, quickly establishing plant cover, providing temporary diversions, and establishing siltation basins are suitable management practices.

Udorthents-Urban land complex. This complex consists of moderately well drained to excessively drained soils that have been disturbed by cutting or filling and areas that are covered with buildings and pavement. This complex is about 60 percent Udorthents, 30 percent Urban land, and 10 percent other soils. The areas of Udorthents and Urban land are so intermingled that it was not practical to map them separately.

Udorthents are in areas that have been cut to a depth of 2 feet or more or are in areas with more than 2 feet of fill. Udorthents consist primarily of moderately coarse textured soil material, but a few small areas have some medium textured material.

Included with this complex in mapping are small, intermingled areas of undisturbed soils. Also included are a few areas that are made up entirely of Udorthents. Included areas make up 10 percent of this map unit.

Most cut areas of this unit were used as a source for fill material. In some areas, cuts were made to level sites for buildings, recreation facilities, and roads. Most filled areas are used as sites for urban development. In some places fill has been used to build up recreation areas and highways.

The permeability and stability of the soils in this unit are variable. The unit requires onsite investigation and evaluation for most uses.

Windsor loamy sand. This nearly level, excessively drained soil is on broad glacial outwash plains and stream terraces.

Typically, the surface layer is very dark grayish brown and dark yellowish brown loamy sand 7 inches thick. The subsoil is strong brown and brown loamy sand 25 inches thick. The substratum is brown loamy sand to a depth of 60 inches or more.

Included with this soil in mapping are small, intermingled areas of excessively drained Hinckley soils, somewhat excessively drained Merrimac soils, well drained Agawam soils, and moderately well drained Sudbury soils. Included areas make up 5 to 15 percent of this map unit.

The permeability of this soil is rapid. Available water capacity is low. Runoff is slow. Unlimed areas are very strongly acid to medium acid in the surface layer and subsoil and very strongly acid to slightly acid in the substratum.

This soil is poorly suited to cultivated crops because it is droughty. Irrigation is needed. This soil dries out and warms up early in the spring and is easy to work. If irrigated, this soil is well suited to vegetables. Minimum tillage, returning crop residue to the soil, and the use of cover crops are suitable management practices.

This soil is suited to trees. Drought is the major limitation. Many seedlings do not survive dry periods during the summer.

This soil has good potential for community development. Steep slopes of excavations are unstable. Onsite septic systems are a pollution hazard to ground water in places. Lawns, shallow-rooted trees, and shrubs need watering in summer. Quickly establishing plant cover, providing temporary diversions, and establishing siltation basins are suitable management practices during construction.

Woodbridge very stony fine sandy loam. This gently sloping, moderately well drained soil is on side slopes of drumlins and glacial till uplands. Typically, the surface layer is dark brown fine sandy loam 3 inches thick. The subsoil is 25 inches thick. The upper 12 inches is dark yellowish brown fine sandy loam. The lower 13 inches is yellowish brown and olive, mottled fine sandy loam. The substratum is olive, mottled, firm fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small, intermingled areas of well drained Paxton, Montauk, Charlton, and Canton soils and poorly drained Ridgebury and Leicester soils. Also included are a few areas of soils that have a friable and moderately permeable substratum. Included areas make up 5 to 15 percent of this map unit.

This soil has a seasonal high water table at a depth of about 18 inches from autumn until-midspring. The permeability is moderate in the surface layer and subsoil and slow or very slow in the substratum. Available water capacity is moderate. Runoff is medium. Unlimed areas are strongly acid or medium acid.

This soil is poorly suited to cropland because of stoniness. Stones and boulders severely hinder the use of farming equipment. The soil is wet from late autumn until midspring and for several days after heavy summer rains. Minimum tillage and maintaining permanent plant cover are suitable management practices.

This soil is suited to trees. Machine planting is hindered by stones and boulders but is practical in most places.

This soil has fair potential for community development. The soil is limited mainly by wetness and the slowly permeable or very slowly permeable substratum. Steep slopes of excavations slump when saturated. Onsite septic systems need very careful design and installation, and sites require filling in places. Lawns are wet and soggy from late autumn until midspring and for several days after heavy summer rains; artificial drains and land shaping help prevent wet lawns and basements. Quickly establishing plant cover, providing temporary diversions, and establishing siltation basins are suitable management practices during construction.

FOREST RESOURCES

The forest of the area is typical of south - central Connecticut. The proposed zone change may increase the impact of development on the forest in proportion to the number of homes constructed. Good opportunities exist for forest management on properties not scheduled for immediate development.

Nearly all of the undeveloped portion of the area is covered with mixed hardwood forest in which red, black, and white oaks, black birch, and red maple predominate. Size and health of the trees vary according to past use and productive capacity of the soil. Loss of vigor due to over-crowding is becoming a significant factor in the mortality of trees of moderate value. Shallow soils store limited amounts of water, and tree growth is reduced. Thus, trees tend to be smaller and slower growing in shallow soils common on the upper slopes of this area.

For residential development, the relatively steep slopes on much of the area will pose a limitation on tree growth. Cuts and fills for driveways, lawns, and septic systems are usually more extensive on steep (more than 10%) slopes. Since trees are often severely injured by grading, filling, or compacting soil anywhere within the dripline of the tree, alteration of grade can cause trees to die up to five years following construction. Thus, loss of proportionately more trees should be anticipated on steeper slopes.

The proposed zoning change will increase the number of trees adversely affected by both the increase in the potential number of building lots allowed and by the extent to which steeper slopes are developed.

Management Potential

The trees on most of the area have reached a stage where forest products can be harvested at a net gain to the landowner. Properly done, the aesthetic, wildlife, and future timber values can be protected and even enhanced by harvesting.

Foresters of the Connecticut Department of Environmental Protection are available to provide advice to individual landowners on a one-to-one basis without charge. All owners of ten acres or more of forested land who are interested in long-range management of their property, whether for its scenic beauty, wildlife, recreation, or timber potential, should obtain professional advice.

The service forester for Middlesex County is Timothy Hawley. He may be reached at the Cockaponset State Forest Headquarters in Haddam, on Fridays, 8:30 to noon, at 345-4449. Private foresters are also available to provide detailed information and management services.

WATER SUPPLY

There is no public water supply available in the area of the proposed zone change. The Connecticut Water Company public supply terminates along Route 154 in the commercial area nearer to I-95. Therefore, development would depend upon private on site wells or the establishment of community, public water systems.

Sources of water for developments in the proposed zone-change area would include bedrock and the sand-and-gravel (stratified drift) deposits. The stratified drift may tend to allow slightly higher yields to individual wells than the bedrock, but bedrock should supply sufficient quantities of water to most homes regardless of whether or not the lot-sizes are reduced as proposed.

Private and/or community wells must be located correctly and have proper separating distances from sewage disposal systems and other potential sources of pollution. Separating distances will depend upon the daily estimated quantity of water needed for a development and the yield test of the well. For most community wells this distance will usually be a minimum of 150 feet up to 200 feet. Private wells have considerably less separating distance due to lower water demands of an individual system. Also drilled (bedrock) wells generally provide smaller yields thus drawing from a more limited water bearing area.

Water must be of safe and potable quality. If certain minerals, such as iron and manganese, are excessive, appropriate water treatment would be needed.

The major water-supply concern would be the possibility of well contamination by septic effluent or other urban pollutants. In the till-covered area, the zone-change would be of particular concern since the site conditions are unfavorable for subsurface sewage disposal. In that area, the soils are generally too thin to provide adequate natural renovation of the wastewater before it gets into the bedrock. Although engineered septic systems are a possible solution, unless the systems are very carefully designed and installed, there may still be pollution problems. Some portions of the stratified-drift area have high water-table limitations that may also necessitate the use of engineered septic systems. In addition, sand and gravel deposits are not particularly good at renovating wastewater. Nevertheless, the risk of decreasing the required lot size in the stratified drift area is probably not substantial. The deposits are not entirely coarse-grained, and the 40,000-square-foot requirement should allow enough natural dilution of effluent to reduce nitrates to acceptable levels.

A particular concern in the land areas which have steep or relatively steep slopes and exposed or shallow bedrock is the degree of treatment afforded sewage effluent from private on-site waste disposal systems. Where there is a lack of overlying soil material to treat and renovate effluent, and where there are cracks and seams in the underlying rock there is much greater potential for sewage to travel greater distances and well contamination problems to occur. For this reason plus allowing more flexibility for individual sites, lots of present size or possibly larger (2-3 acres) would seem to be more feasible for the limitations imposed on a relatively large segment of the various parcels in question.

WASTE DISPOSAL

The area reviewed for a possible zone change is designated in the Old Saybrook Waste Water Facilities Plan as a Sewer Avoidance Zone. Individual private on-site systems are proposed to handle sanitary wastes in this section of Old Saybrook. New systems would be designed to meet Connecticut Health Code Standards and under a sewer avoidance program the Old Saybrook Water Pollution Control Authority would require pumpout and inspection of systems at least once every five years.

The review of soil service mapping data, along with visual observations of topographical characteristics, supports large lot zoning in this area where both on site water supply and sewage disposal are required. While some areas, in particular portions of the Cahill-Endrich Parcel, have more favorable soil conditions with apparently fewer limiting factors, the vast majority of acreage in the zone change parcel would only seem to be marginally suited for development due to the terrain which encompasses steep slopes, rock and/or shallow depth to bedrock, watercourses and wetlands.

As such, the Team Sanitarian has serious reservations in recommending a general zone change which would allow for an overall increase in density, putting an even greater burden on the land without the benefit of additional support utilities. It may be feasible to have some provisions for clustering houses in the better land areas without a blanket lowering of lot sizes. In order to more

fully define and know areas which would best support sewage disposal, comprehensive on site testing should be conducted and results carefully evaluated.

ROADS AND UTILITIES

Bokum Road is classified as a major thoroughfare in the Old Saybrook Plan of Development. It has recently been paved to improve its travel surface. Traffic counts are not available for the number of trips over Bokum Road. The road carries primarily residential trips; however, within the past five years, work trips to a large employer in Essex, has added to the Bokum Road traffic load.

The feasibility of increasing design capacity is limited by right of way limitations and at least four very sharp curves with poor sight distance. Functionally, Bokum Road should remain as a major thoroughfare for residential trips. Should residential development occur at a higher density in the southern half of the study area a road layout plan which provides for through connection to Middlesex Turnpike (near Exit 2) is recommended.

SERVICES TO SUPPORT DEVELOPMENT

With no specific development proposal before the Review Team it is difficult to make an evaluation of needed support services. In general, the reduction of lot sizes from 60,000 sq. ft. to 40,000 sq. ft., given the terrain of the Bokum Road area, would probably not increase the number of houses overall.

However, where a large block of buildable land with only few development limitations is rezoned, from 60,000 to 40,000 sq. ft. the expected result would be an increase of about 45 to 48% more housing units. For example, 50 acres at 40,000 sq. ft. per lot with allowances for roads and open space would yield approximately 42 net acres or 40 to 44 home sites while the same parcel zoned for 60,000 sq. ft. lots would permit about 28 to 30 homes.

COMPATIBILITY WITH SURROUNDING LAND USES

The rezoning of this tract to Residential AA-1 would be compatible with adjacent districts south of telephone transmission line right of way and the AA-1 District across Route 9.

ALTERNATIVE LAND USES

If rezoned the application of Old Saybrook's Open Space Subdivision cluster might be an economic and preferable environmental option for a development in the southern half of Bokum Road. The cluster option would mean less frontage, i.e., shorter streets; more protected open space buffers--preferably located along Route 9; opportunity to use south facing slopes. A factor which must be considered in the cluster option is the cost requirement of developing a public community water service for the subdivision.

Appendix



PROPOSED ZONE CHANGE
OLD SAYBROOK, 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
Adrian	Aa	20	3%	Wetness, floods	3	3	3	3
Agawam	AfB	12	1%		1	1	1	1
Canton-Charlton	CdC	5	1%	Large stones	3	3	2	3
Carlisle	Ce	20	3%	Floods	3	3	3	3
Charlton-Hollis Charlton Part Hollis Part	CrC	143	22%	Slope, large stones	2 3	2 3	2 3	2 3
Hinckley	HkC	32	5%	Slope	2	2	2	3
Hollis-Charlton	HpE	85	13%	Slope, large stones	3	3	3	3
Hollis - rock outcrop	HsE	83	13%	Depth to rock	3	3	3	3
Leicester, Ridgebury Whitman	Lg	14	2%	Wetness	3	3	3	3
Merrimac	MyA	16	2%		1	1	1	1
Merrimac	MyB	9	1%		1	1	1	1

PROPOSED ZONE CHANGE
OLD SAYBROOK, 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
Paxton-Montauk	PdB	23	3%	Percs slowly	3	2	2	2
Paxton-Montauk	PdC	5	1%	Percs slowly	3	2	2	2
Paxton-Montauk	PeC	14	2%	Percs slowly	3	3	2	3
Paxton-Montauk	PeD	5	1%	Slope, percs slowly	3	3	3	3
Saco	Sb	5	1%	Floods, wetness	3	3	3	3
Scarboro	Sc	32	5%	Wetness	3	3	3	3
Sudbury	SgA	44	7%	Wetness	3	3	2	1
Udorthents	UD	5	1%	LIMITATIONS DETERMINED ON-SITE				
Windsor	WvA	30	5%		1	1	1	3
Windsor	WvB	30	5%		1	1	1	3
Woodbridge	WyA	7	1%	Percs slowly	3	3	3	2
Woodbridge	WyB	12	1%	Percs slowly	3	3	3	2
Woodbridge	WzC	7	1%	Percs slowly, frost action	3	3	3	3

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 (774-1253), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, P.O. Box 198, Brooklyn, Connecticut 06234.