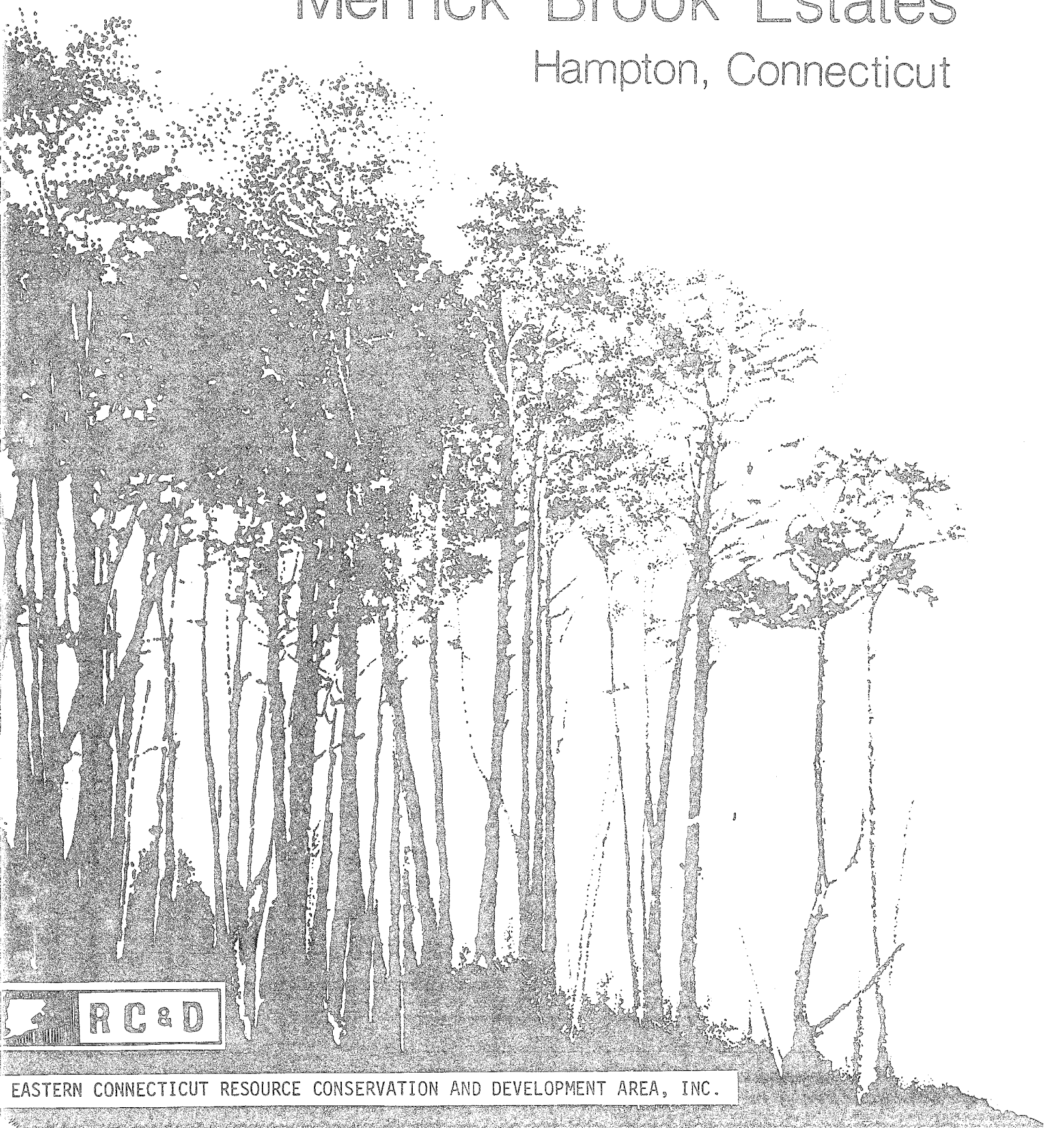
Environmental Review Team Report

Merrick Brook Estates

Hampton, Connecticut

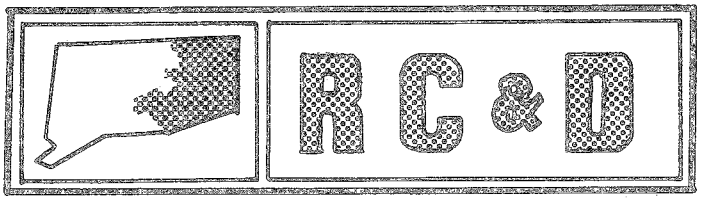


RC&D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team Report on Merrick Brook Estates Hampton, Connecticut

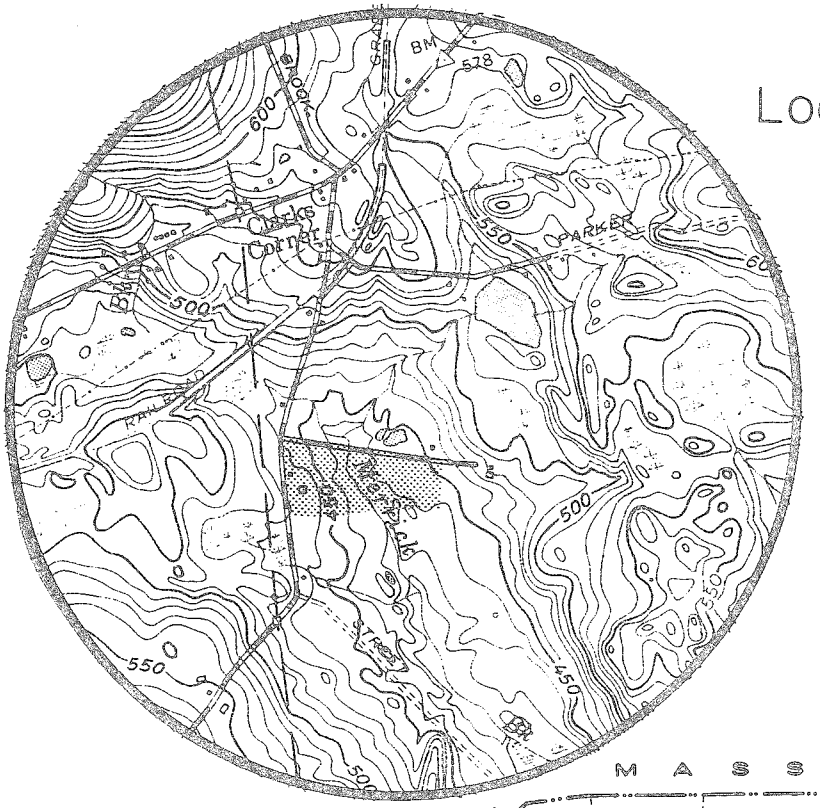
January 1982



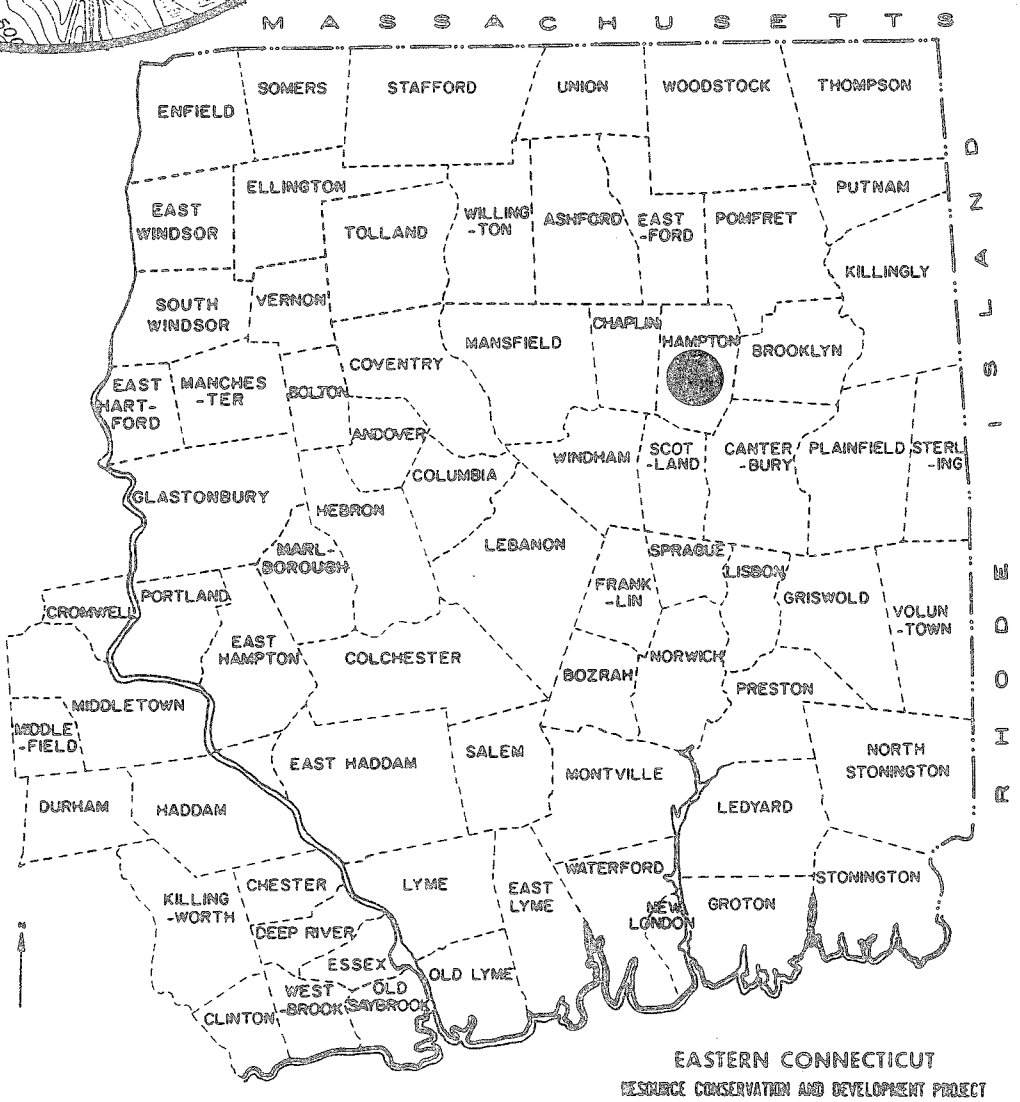
eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site



MERRICK BROOK ESTATES
HAMPTON, CONNECTICUT



EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
MERRICK BROOK ESTATES
HAMPTON, CONNECTICUT

This report is an outgrowth of a request from the Hampton Planning and Zoning Commission to the Windham County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource Conservation and Development (RC&D) Area Executive Committee for their consideration and approval. 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 State Department of Agriculture, Soil Conservation Service (SCS). Reproductions of the soil survey map, a table of soils limitations for certain land uses and a topographic map showing property boundaries were distributed to all Team members prior to their review of the site.

The ERT that field-checked the site consisted of the following personnel: Ed Lukacovic, Soil Conservationist, Soil Conservation Service (SCS); Michael Zizka, Geologist, Connecticut Department of Environmental Protection (DEP); Rob Rocks, Forester, (DEP); Meg Reich, Regional Planner, Windham Regional Planning Agency; Don Capellaro, Sanitarian, State Department of Health; Chuck Phillips, Fisheries Biologist (DEP); and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

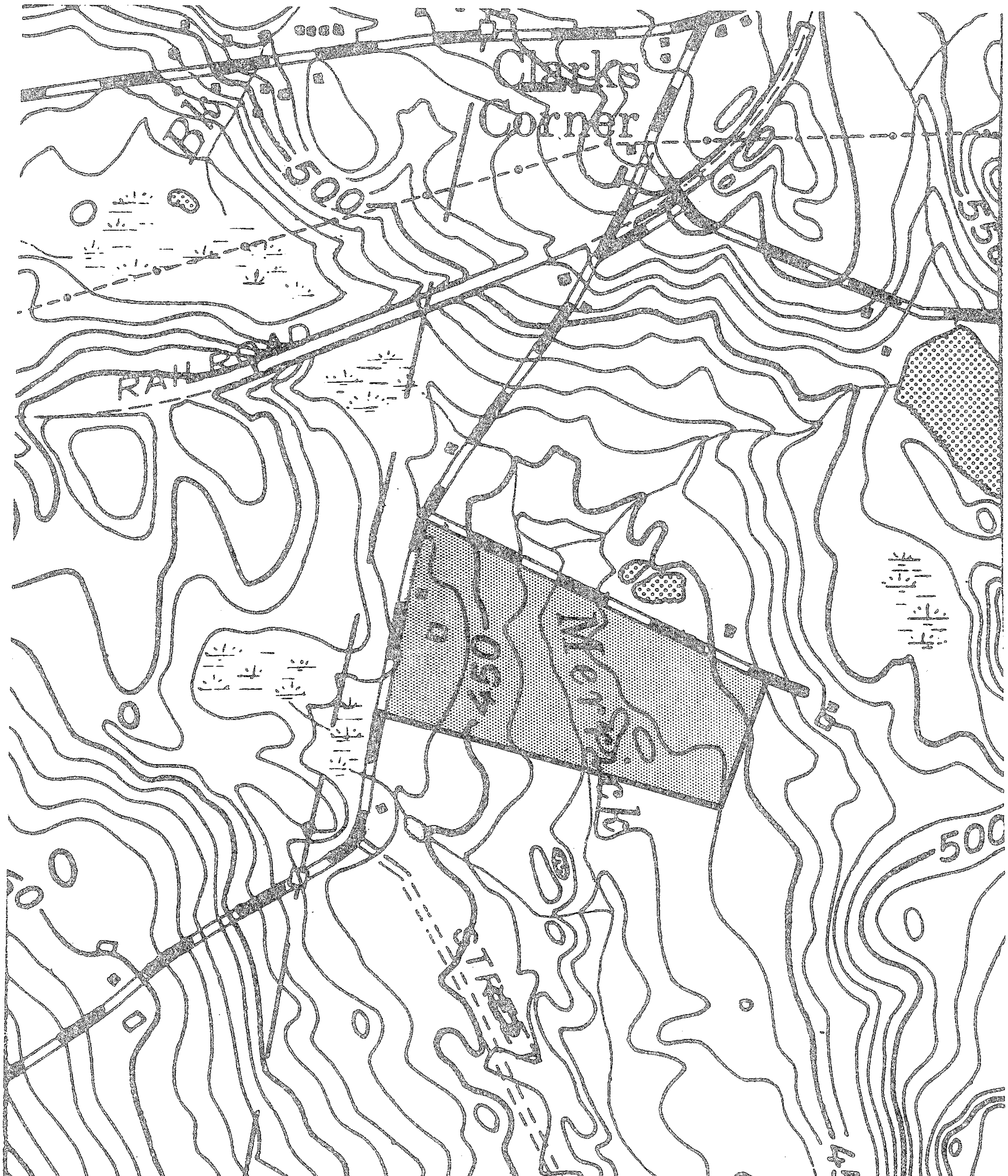
The Team met and field checked the site on Tuesday, December 8, 1981. Reports from each contributing Team member were sent to the ERT Coordinator for review and summarization for the final report.

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 Hampton. 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



INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare an environmental assessment for a proposed subdivision in the town of Hampton. The 32± acre site is located on Calvin Burnham Road and South Brook Street. The property is presently in the private ownership of Clarence Stone, a Hampton resident. Preliminary plans have been prepared by Stanley Szestowicki.

Preliminary plans show the site divided into twelve lots. One of these lots is occupied by a colonial house. The eleven remaining lots will be developed with single family homes. Lots 1 through 7 have frontage on Calvin Burnham Road. Lots 8 through 10 have frontage on South Brook Street. Lot 11 is a rear lot with access onto South Brook Street. All lots will be served by on-site septic systems and wells.

The site consists of several open field areas and wooded terrain. Most of the open area is located along Calvin Burnham Road with the exception of a lower, wet and wooded section in Lots 5 and 6. Merrick Brook is located in this area and crosses the property in a north to south direction. The open field and lots east of Merrick Brook are partially wooded towards the south side. The lower southeast corner of the property tends to be wet and also has a defined watercourse which eventually joins with Merrick Brook. A sand and/or gravel removal operation was apparently conducted from a limited portion of the property (wooded area near Lot 5) near Merrick Brook. There is a small pond located west of Merrick Brook in the open area near the road (Lot 7). The terrain along Brook Street slopes in an eastern direction and generally contains numerous large stones, particularly towards the south side of the property. At one time, a portable saw mill was operated in this part of the site.

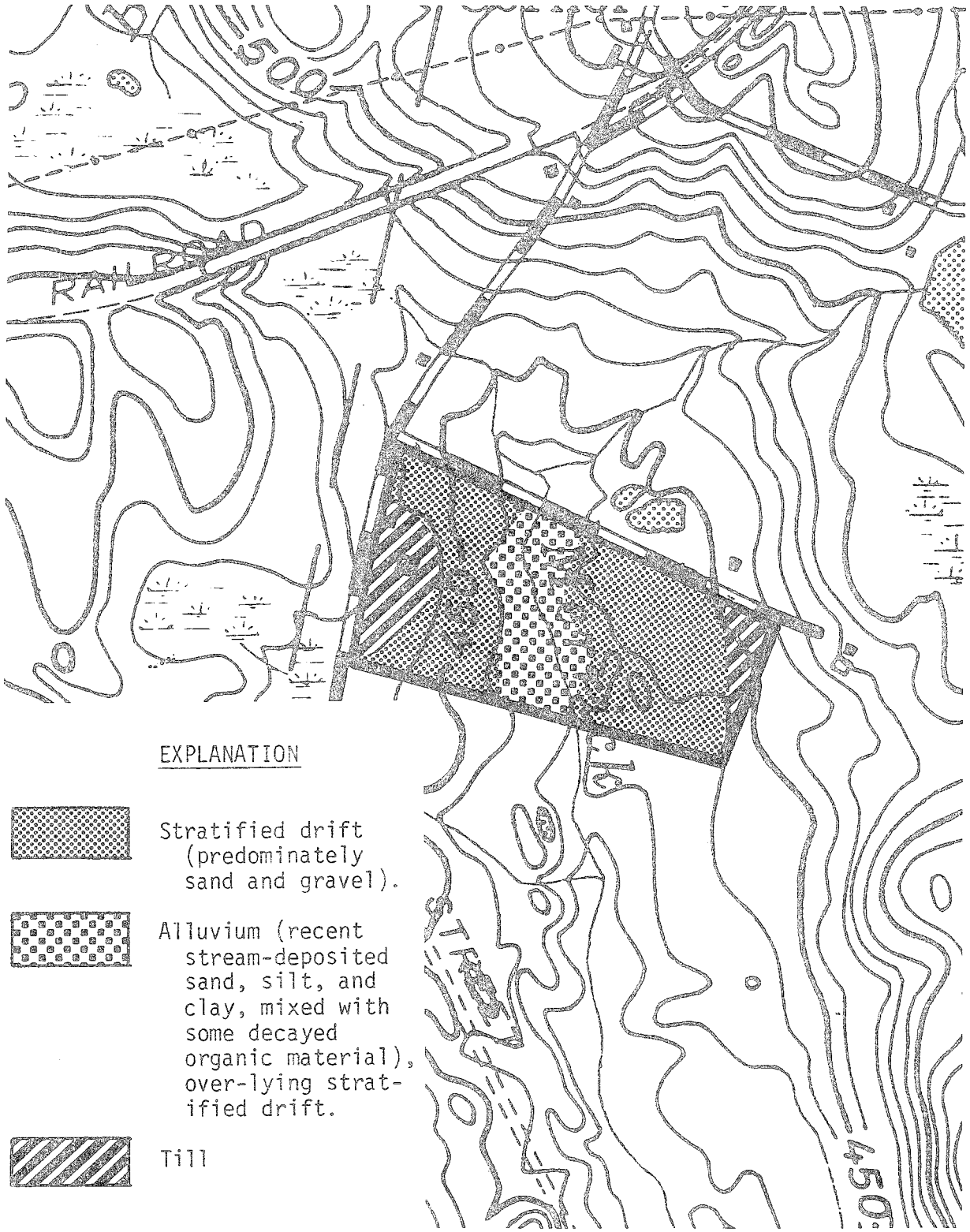
The Team is concerned with the effect of this development on the natural resource base of this site. Although many severe limitations to development can be overcome with proper engineering techniques, these measures can often become costly, making a project financially unfeasible for a developer. Development restrictions on this parcel are primarily caused by Merrick Brook and its associated wetland areas. Soils in this general area of the site have seasonal high water tables and are subject to periodic flooding. Other soils types in the Merrick Brook area are rapidly permeable which could lead to poor renovation of septic effluent. In the Team's opinion, Lots 5 and 6 were found to be marginally suitable for development. These concerns are discussed in detail in the Hydrology, Fish Resources, Soils, Waste Disposal, and General Design sections of this report.

ENVIRONMENTAL ASSESSMENT

GEOLOGY

Merrick Brook Estates is located within the Hampton topographic quadrangle. The geology of the quadrangle, mapped by H.R. Dixon and F. Pessl, Jr., has been published by the U.S. Geological Survey (Map GQ-468).

Surficial Geology	Site Boundary	0 660' scale	N



EXPLANATION

Stratified drift (predominately sand and gravel).

Alluvium (recent stream-deposited sand, silt, and clay, mixed with some decayed organic material), over-lying stratified drift.

Till

Most of the site is covered with coarse-grained stratified drift. The term "stratified drift" refers to glacial sediments that were deposited by meltwater. Meltwater streams flowed rapidly away from wasting masses of glacier ice, carrying fine-grained particles further away than the coarser materials, and thereby sorting the sediment. As a result, the stratified drift on the site consists predominantly of sand and gravel. Test pits on the site indicated that gravel was at least seven feet deep in Lots 2 through 7. Records made by the test-pit excavator also show gravel to seven feet for "Lot 10," but it is not clear whether this was the same lot as the presently proposed Lot 10.

Several wet basins are located in the rear portions of Lots 1 through 4. These basins appear to be places where gravel was excavated to just below the water table. It is possible, however, that one or more of the basins are natural.

In a small portion of the site adjacent to Brook Street, the overburden is composed of till. Till was deposited directly from glacier ice and therfore lacks the sorting associated with stratified drift. Till may contain varying proportions of clay, silt, sand, gravel, and boulders. A transition from stratified drift to till begins in Lot 1, with till becoming predominant eastward and off the site. Till is often sandy, stony, and loose in the upper few feet, but it commonly becomes slightly fine-grained and compact at depth.

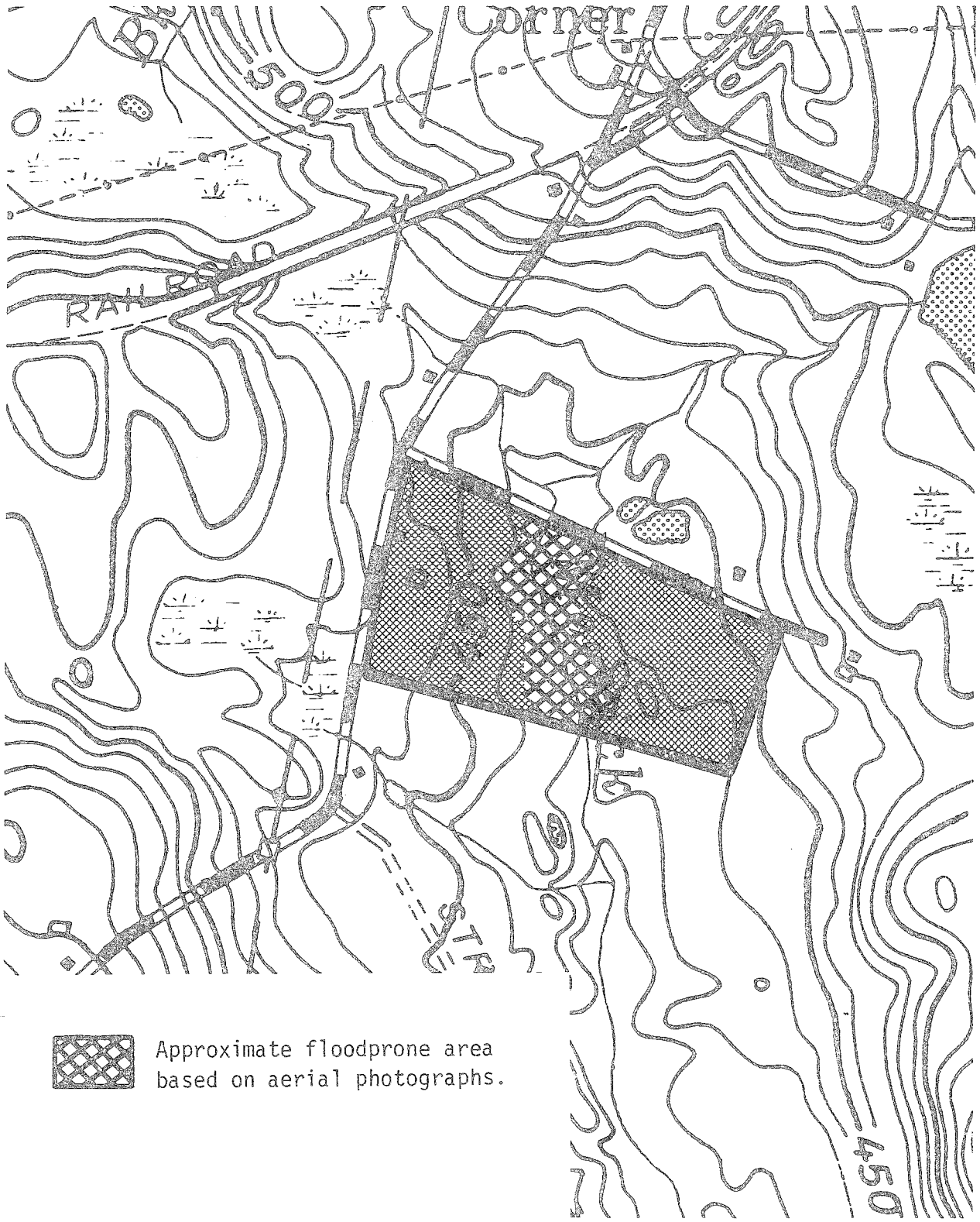
No bedrock was observed on the site, but numerous boulders were seen in lots along Brook Street. Lot 10 contained the largest concentration of boulders. The bedrock underlying the site, generally at depths in excess of ten feet, is an assemblage of schists and granulites. Both rock types are metamorphic; that is, they are rocks that have been mineralogically altered by high pressures and temperatures sometime during their history. The schists have high percentages of flaky or elongate minerals, which are aligned to produce a strongly layered internal structure. These rocks usually split easily along layers. Granulites are composed primarily of granular minerals and have little, if any internal structure. Common minerals in the schists and granulites are quartz, andesine, biotite, hornblende, and epidote. There are also numberous accessory minerals. In localized areas, the rocks may contain relatively high concentrations of sulfide or iron-bearing minerals. Wells in these areas may produce rusty-colored or foul-smelling water.

HYDROLOGY

The entire parcel drains into Merrick Brook, which flows southward through the center of the site. At the point where it leaves the property, Merrick Brook has an overall drainage area of about 900 acres (1.41 square miles). The parcel represents about 3.5 percent of that area.

The 100-year flood-prone area along this section of Merrick Brook has not been included in the preliminary HUD flood-prone-areas map for the town of Hampton. This does not mean that there is no floodplain along the brook on the site. The more detailed, final HUD map will undoubtedly include areas not presently mapped. In the absence of more precise information, a rule-of-thumb estimate states that water levels in small streams during the 100-year storm rise at least five feet. A detailed topographic map of the site (something more detailed

Floodprone Area	Site Boundary	0 660' scale	N



Approximate floodprone area based on aerial photographs.

than the U.S.G.S. topographic information) would allow one to estimate the 100-year floodplain of Merrick Brook. The Team has included in this report an estimate of the flood-prone area based on an analysis of aerial photographs. The limitations of this estimate should be recognized.

Despite these limitations, it seems safe to conclude that most of the frontage portions of Lots 5 and 6, part of the rear portion of Lot 5, and the eastern portion of Lot 11 would be subject to flooding on a periodic, though perhaps infrequent, basis. It would, of course, be possible to fill part of the flood-prone area in order to elevate the houses and septic systems above the flood level, but filling in floodplains is not a wise idea, since it can aggravate flooding problems in other areas. Lots 5 and 11 may have enough area outside the flood-prone boundaries to locate a house and septic system. Lot 6 may not have even enough non-flood-prone area for a septic system.

Development as planned will cause increases in runoff volumes. Ordinarily, the Team would urge that some method of runoff-retention be considered to prevent increases in streamflows during flooding periods. However, the proposed density of this subdivision is low enough so that the impact of the runoff increases on flood flows should be very minor.

Several wet areas were noted on the site. These areas probably indicate a shallow depth to groundwater. The sandy, gravelly stratified drift found on most areas of the site is a relatively poor filter for septic effluent. If septic leaching fields are placed too close to the wet areas, a possibility of surfacing of poorly renovated septic effluent would exist. The Team recommends that leaching fields be set back at least 75 feet from the wet areas, where possible. This setback probably could not be accomplished on Lot 6 and it may be geometrically difficult on Lot 5.

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 probably 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, Windham 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.

Soils series typical of this site include the Canton and Charlton series, the Gloucester series, the Hinckley series, the Sudbury series, the Woodbridge series and the Rippowam series. These soils are described in detail as follows:

#85B Canton and Charlton fine sandy loams, 3 to 8 percent slopes. These gently sloping, well drained soils are on ridges, hills and side slopes of glacial till uplands. Areas are mostly rectangular or irregular in shape and mostly range from 3 to 30 acres. Slopes are mostly smooth and convex and 200 to 400 feet long. About 45 percent of the mapped acreage of this unit is Canton soils, 40 percent is Charlton soils, and 15 percent is other soils. Areas of this unit consist of Canton soils or Charlton soils or both. These soils were mapped together because they have no significant differences in use and management. Typically, Canton soils have a very dark grayish brown fine sandy loam surface layer two inches thick. The subsoil is yellowish brown fine sandy loam, gravelly fine sandy loam and gravelly sandy loam twenty-one inches thick. The substratum is pale brown gravelly loamy sand to a depth of sixty inches or more. Typically, Charlton soils have a dark yellowish brown fine sandy loam surface layer five inches thick. The subsoil is yellowish brown fine sandy loam and sandy loam twenty inches thick. The substratum is light yellowish brown and light brownish gray sandy loam to a depth of sixty inches or more. The water table is commonly deeper than six feet. The available water capacity is moderate. The permeability of the Canton soils is moderately rapid in the surface layer and subsoil and rapid in the substratum. The permeability of the Charlton soils is moderate or moderately rapid. Runoff is medium to rapid. These soils are very strongly acid to medium acid. The soils of this unit are well suited to cultivated crops. It is easy to maintain in good tilth. The erosion hazard is moderate. The use of cover crops and minimum tillage are suitable management practices to help control erosion. These soils are well suited to openland and woodland wildlife habitat. They are too dry for wetland wildlife habitat. This unit is well suited to community development. In places, steep slopes of excavations in Canton soils are unstable. Establishing quick plant cover, mulching, and using siltation basins are suitable management practices to control runoff and erosion during construction.

85MC Canton and Charlton extremely stony fine sandy loams, 3 to 15 percent slopes. These gently sloping to sloping, well drained soils are on ridges, hills, and side slopes of glacial till uplands. Areas are oval or irregular in shape and range from 5 to 100 acres. Slopes are mostly smooth and convex and are 100 to 600 feet long. Stones cover 8 to 25 percent of the surface. About 45 percent of the mapped acreage of this unit is Canton soils, 40 percent is Charlton soils, and 15 percent is other soils. Areas of this unit consist of Canton soils or Charlton soils or both. These soils were mapped together because they have no significant differences in use and management. Typically, Canton soils have a very dark grayish brown fine sandy loam surface layer two inches thick. The subsoil is yellowish brown fine sandy loam, gravelly fine sandy loam, and gravelly sandy loam twenty-one inches thick. The substratum is pale brown gravelly loamy sand to a depth of sixty inches or more. Typically, Charlton soils have a dark yellowish brown fine sandy loam surface layer five inches thick. The subsoil is yellowish brown fine sandy loam and sandy loam twenty inches thick. The substratum is light yellowish brown and light brownish gray sandy loam to a depth of sixty inches or more. The water table is the same as 85B. The soils of this unit are too stony for cultivation. Stones and boulders hinder the use of farm equipment. These soils are suited to cultivation if the stones are removed, but stone removal is costly. These soils have a moderate to severe erosion hazard. Maintaining permanent vegetative cover is a suitable management practice. These soils are well suited to woodland wildlife habitat, but they are poorly suited to openland wildlife habitat because the stoniness hinders the use of equipment. They are

too dry for wetland wildlife habitat. The soils of this unit are well suited to community development. The steepness of slope is the main limitation. Onsite septic systems need careful design and installation to prevent effluent from seeping to the surface. Steep slopes of excavations are unstable. Stones and boulders need to be removed for landscaping. Establishing quick plant cover, mulching, and using siltation basins are suitable management practices to control runoff and erosion during construction.

11MC Gloucester extremely stony sandy loam, 3 to 15 percent slopes. This gently sloping to sloping, somewhat excessively drained soil is on ridges and hills of glacial till uplands. Areas of this soil are mostly irregular in shape and range from 5 to 75 acres. Stones and boulders cover 8 to 25 percent of the surface. Slopes are mostly smooth and convex or undulating and 100 to 300 feet long. Typically, this soil has a very dark grayish brown sandy loam surface layer four inches thick. The subsoil is dark yellowish brown and yellowish brown gravelly sandy loam and loamy sand twenty-one inches thick. The substratum is light olive brown and light brownish gray gravelly loamy coarse sand to a depth of sixty inches or more. The water table is commonly below a depth of six feet. The available water capacity is moderate. This soil has rapid permeability. Runoff is medium. This soil is very strongly acid to medium acid. This soil is too stony for cultivation. Stones and boulders make the use of farming equipment impractical. This soil can be used for cultivated crops if stones are removed, but stone removal is costly. This soil is droughty during extended dry periods. The erosion hazard is moderate to severe. Maintaining permanent vegetative cover is a suitable management practice. This soil is poorly suited to woodland and openland wildlife habitat because is it droughty and stony. It is too dry for wetland wildlife habitat. This soil is well suited to community development. The steepness of slopes is the main limitation . Caution is needed to insure effluent from onsite septic systems does not pollute the groundwater. Stones and boulders need to be removed for landscaping. Lawns and gardens require watering during the summer. Establishing quick plant cover and the use of mulch and siltation basins are suitable management practices to control runoff and erosion during construction.

##213C Hinckley gravelly sandy loam, 3 to 15 percent slopes. This gently sloping to sloping, excessively drained soil is on terraces of stream valleys and on glacial outwash plains. Areas of this soil are oval or irregular in shape and range from 5 to 200 acres. Slopes are convex or undulating and are mostly less than 200 feet long. Typically, the surface layer is very dark grayish brown gravelly sandy loam two inches thick. The subsoil is dark yellowish brown, yellowish brown, and brownish yellow gravelly sandy loam and gravelly loam sand sixteen inches thick. The substratum is pale yellow gravelly sand to a depth of sixty inches or more. The water table is commonly below a depth of six feet. The available water capacity is low. This soil has rapid permeability in the surface layer and subsoil and very rapid permeability in the substratum. Runoff is rapid. The soil is extremely acid to medium acid. This soil is well suited to cultivated crops when irrigated and fairly suited without irrigation. Droughtiness is the major limitation. This soil is easy to maintain in good tilth. It dries out and warms up early in the spring and is easy to till. The erosion hazard is moderate. Minimum tillage and the use of cover crops are suitable management practices to control runoff and erosion. This soil is poorly suited to woodland and openland wildlife habitat because it is droughty. It is too dry for wetland wildlife habitat. This soil is well suited to community development, but onsite septic systems pollute the groundwater in places. Steep slopes

of excavations are unstable. Lawns and gardens need watering during summer. Establishing quick plant cover and the use of mulch and siltation basins are suitable management practices to control runoff and erosion during construction.

#455B Sudbury sandy loam. This nearly level to gently sloping, moderately well drained soil is in slight depressions of outwash plains and stream terraces. Areas are mostly oval or irregular in shape and range from 4 to 20 acres. Slopes range from 0 to 5 percent. Typically, the surface layer is dark brown sandy loam ten inches thick. The subsoil is mottled, yellowish brown and strong brown sandy loam, gravelly sandy loam and gravelly loamy sand eighteen inches thick. The substratum is light brownish gray and dark gray stratified sand and gravel to a depth of sixty inches or more. This soil has a seasonal water table at a depth of about twenty inches from autumn to spring. It has a moderate available water capacity. This soil has moderately rapid permeability in the surface layer and subsoil and rapid permeability in the substratum. Runoff is slow. This soil is very strongly acid to medium acid. This soil is well suited to cultivated crops. It is limited mainly by wetness and is slow to dry out and warm up in the spring. Artificial drainage helps dry this soil earlier in the spring, but even if drained, it remains wet for several days after heavy rains. Minimum tillage and use of cover crops are suitable management practices. This soil is well suited to woodland and openland wildlife habitat. It is poorly suited to wetland wildlife habitat. This soil is fairly suited to community development. Wetness is the major limitation. Steep slopes of excavations are unstable. Foundation drains help prevent wet basements. Lawns are wet and soggy in autumn and spring. On-site septic systems need special design and installation, and sites generally require filling. In places, onsite septic systems pollute the groundwater. Establishing quick plant cover and mulching are suitable management practices to control erosion.

31MC Woodbridge extremely stony fine sandy loam, 3 to 15 percent slopes. This gently sloping to sloping, moderately well drained soil is on the tops of large drumlins and hills of glacial till uplands. Areas are mostly oval or irregular in shape and range from 3 to 60 acres. Stones cover 8 to 25 percent of the surface. Typically, the surface layer is very dark grayish brown fine sandy loam eight inches thick. The subsoil is mottled, dark yellowish brown and yellowish brown fine sandy loam twenty-two inches thick. The substratum is firm to very firm, olive gray fine sandy loam and gravelly fine sandy loam to a depth of sixty inches or more. This soil has a seasonal water table at a depth of about twenty inches from fall to spring. It has a moderate available water capacity. This soil has moderate permeability in the surface layer and subsoil and slow to very slow permeability in the substratum. Runoff is rapid. This soil is 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 too stony for cultivation. Stones make the use of farming equipment impractical. If the stones are removed, this soil is well suited for farming, but stone removal is costly. Maintaining permanent vegetative cover is a suitable management practice to control runoff and erosion. This soil is fairly suited to woodland wildlife habitat, but it is poorly suited to openland wildlife habitat because stones restrict the use of equipment. This soil is too dry for wetland wildlife habitat. This soil is fairly suited to community development. It is limited mainly by wetness and the slow to very slow permeability in the substratum. Onsite septic systems need special design and installation and many areas require filling. Artificial drains help prevent wet basements. Stones need to be removed for landscaping. Lawns are wet and soggy in autumn and spring. Controlling runoff and erosion

is a major concern. Establishing quick plant cover and the use of mulch and siltation basins are suitable management practices to control runoff and erosion during construction.

*825 Rippowam fine sandy loam. This nearly level, poorly drained soil is on the lowest floodplain areas along major streams and their tributaries. Areas are mostly long and narrow and range from 5 to 100 acres. Typically, the surface layer is very dark gray fine sandy loam seven inches thick. The subsoil is mottled, dark brown, grayish brown, and dark grayish brown fine sandy loam twenty-eight inches thick. The substratum is grayish brown and gray gravelly sand to a depth of sixty inches or more. This soil has a seasonal water table at a depth of about ten inches from autumn through spring. It is subject to frequent flooding, mainly from autumn to spring. This soil has a moderate available water capacity. It has moderate or moderately rapid permeability in the surface layer and subsoil and rapid or very rapid permeability in the substratum. Runoff is slow. The soil is very strongly acid to medium acid. This soil is fairly suited to cultivated crops when drained. Wetness is the major limitation. This soil dries out slowly in the spring and often delays planting of crops. Areas that cannot be drained are poorly suited for cultivation. This soil is fairly suited to woodland and openland wildlife habitat. It is limited mainly by wetness. This soil is well suited to wetland wildlife habitat. This soil is poorly suited to community development. Frequent flooding and the seasonal high water table are the major limitations. Areas used for onsite septic systems require extensive filling and are unstable. In places, onsite septic systems pollute the groundwater. Lawns are wet and soggy from autumn to spring, and sediment deposited by floodwater can damage lawns, shrubs, and other kinds of landscape plantings.

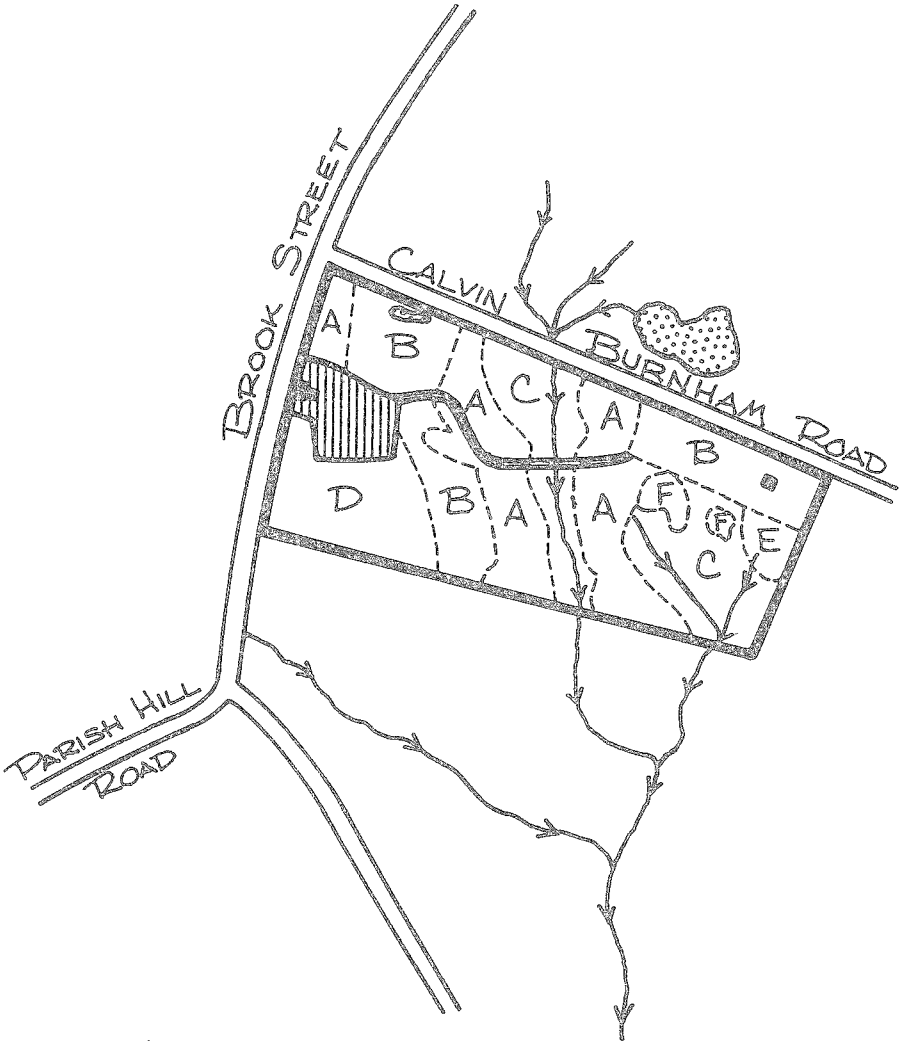
\# Prime Farmland
\## Additional Farmland of Statewide Importance
* Designated wetland soil by PA 155

The 32 acre site consists of soils that are primarily derived from glacial outwash. The Hinckley, Sudbury and Scarboro soils are of this type. Also found onsite is the Rippowam soil, derived from alluvium, and the Gloucester, Woodbridge, Canton and Charlton soils which are derived from glacial till. Rippowam and Scarboro soils are designated wetland soils by P.A. 155.

Lot numbers 1, 2, 3, 4, 8, 9, 10, and 11 are best suited for development as long as the homes are located on the well drained soils. Lot 7 consists mainly of a Sudbury sandy loam. This soil is well drained and rapidly permeable. However, it is also known to have a seasonal high water table at a depth of twenty inches. This soil is suited to a home with the basement footing not extending lower than two feet below the ground surface. The use of fill around the foundation will be needed. Lot 7 also has a pond that apparently dries out during the summer months. Plans are being made to fill this in.

Substantial portions of Lots 5 and 6 lie in wetlands. Lot 5 has a gravel knoll where an excavation operation once existed. If not within the potential flooding area, a house may be placed there with a driveway located along the boundary of Lot 4. Land grading will be needed to fill borrow holes left from the gravel operation. Installation of a culvert beneath the driveway just off

Vegetation



LEGEND

- Road
- Gravel road
- Property boundary
- Vegetation type boundary
- Stream
- Pond
- Structures, residential area, 2 ± acres.

VEGETATION TYPE DESCRIPTIONS *

TYPE A. Mixed hardwoods, 9 ± acres. Over-stocked, pole size.

TYPE B. Open fields, 8 ± acres.

TYPE C. Hardwood swamp, & ± acres. Over-stocked, pole size.

TYPE D. Mixed hardwoods, 4 ± acres. Over-stocked, pole size.

TYPE E. Hardwood swamp, 1 ± acre. Over-stocked, sapling size.

TYPE F. Open swamp, 1 ± acre. Under-stocked, seedling size.

* Seedling size = trees less than 1 inch in diameter at 4.5 feet above the ground, (d.b.h.).
Sapling size = trees 1 to 5 inches in d.b.h.
Pole size = trees 5 to 11 inches in d.b.h.
Saw-timber size = trees 11 inches and greater in d.b.h.

the road should be considered so as not to pond runoff east of the drive during storm events or when ground is frozen. Lot 6 lies partly on the Sudbury soil. Care must be exercised in home construction similar to that indicated for Lot 7. The entrance drive to this lot might better approach the west end of the home to keep it further from the wetlands and the brook. Installation of a culvert should be considered here also. The town might consider combining Lots 6 and 7 into one large lot. Encroachment on the wetlands could be avoided entirely.

The town of Hampton presently has no wetland setback. A 25-foot setback from wetlands is required by State law. A Sediment and Erosion Control Plan should be prepared for this subdivision and implemented during construction. This would prevent sedimentation of any adjacent wetlands and streams. Guidelines for such a plan can be found in the Erosion and Sediment Control Handbook (USDA Soil Conservation Service 1976).

VEGETATION

The tract proposed for subdivision into "Merrick Brook Estates" may be divided into four major vegetation types. These include mixed hardwood, which total 13± acres; hardwood swamps, which total 8± acres; open fields, which total 8± acres and an open swamp area which totals 1± acre.

Vegetation Type Descriptions:

Type A. (Mixed Hardwoods) Poor to medium quality pole with occasional small sawtimber-size red maple, black cherry, white oak, scarlet oak, red maple, scattered white pine and bigtooth aspen are present in this 9± acre over-stocked stand. The trees in this stand are declining in health and vigor due to their crowded condition. The total volume ranges between 15 and 18 cords per acre. Hardwood tree seedlings, white pine seedlings, maple-leaved viburnum, witch hazel, blue beech, shadbush and occasional highbush blueberry form the understory in this stand. Ground cover consists of club moss, Christmas fern, Canada mayflower, huckleberry and Pennsylvania sedge.

Type B. (Open Fields) Approximately 8 acres of open fields are present within this tract. They are vegetated with grasses, sedges, goldenrod, milkweed, raspberry, dewberry and other assorted weed and wildflower species.

Type C. (Hardwood Swamp) Pole-size red maple and occasional yellow birch, American elm, and white ash are present in these over-stocked stands which total approximately 7 acres. The trees in these areas are very poor in quality. A dense understory of spice bush, highbush blueberry and swamp azalea is present throughout. Ground cover consists of sphagnum moss, tussock sedge, skunk cabbage, cinnamon fern and sensitive fern.

Type D. (Mixed Hardwoods) This 4± acre over-stocked stand is made up of medium quality pole-size black oak, red oak, white oak, red maple, shagbark hickory, pignut hickory, American beech and scattered white pine. The total volume ranges between 18 and 20 cords per acre. The understory is dominated by maple-leaved viburnum, highbush blueberry, hawthorn, witch hazel and white pine seedlings. Ground cover vegetation consists of club moss, Pennsylvania sedge, Canada mayflower and Christmas fern. Clearing operations have taken place on approximately half an acre within this stand.

Type E. (Hardwood Swamp) This 1± acre area is over-stocked with sapling-size red maple in clumps on hummocks. Occasional American elm and white ash are also present. Swamp azalea, highbush blueberry, spice bush, nanny berry, arrowwood, barberry, and sweet pepperbush are the shrub species which are present. Ground cover is made up of cinnamon fern, skunk cabbage and tussock sedge.

Type F. (Open Swamp) Two small open swamp areas which total approximately one acre are present within this tract. These areas are dominated by shrub species which include highbush blueberry, swamp azalea, buttonbush, swamp loose-strife and pussywillow. Tussock sedge, skunk cabbage and sphagnum moss are also present.

Care should be taken during the construction period not to disturb the trees that are to be retained for their aesthetic value. In general, healthy and high vigor trees should be favored for retention because they are usually more resistant to the environmental stresses brought about by construction.

Trees are very sensitive to the condition of the soil within the entire area under their crowns. The variable topography which is present within parts of Lots 5, 6, 7, and 11 may necessitate excavating, filling and grading for the construction of driveways, septic systems and buildings. These practices may disturb the balance between soil aeration, soil moisture level and soil composition. These disturbances may also cause a decline in tree health and vigor, potentially resulting in tree mortality within three to five years. Mechanical injury to trees may cause the same results. Dead trees reduce the aesthetic quality of an area and may become hazardous and expensive to remove if near driveways, buildings or utility lines.

The poorly drained and saturated soils which are present in the hardwood swamp and open swamp areas limit not only the potential for tree growth and tree quality but also the ability to effectively manage these areas. Red maple and occasional American elm, white ash and yellow birch are able to tolerate the excessive moisture levels which are present, however, under these conditions, the trees are generally slow growing and of poor quality. Conditions are more severe in the open swamp areas where the soils are so saturated that tree species have not been able to become established.

The loss of trees to windthrow in the hardwood swamp areas represents a potential hazard. The saturated soils which are present result in the development of shallow root systems which are unable to securely anchor trees. The crowded condition which is present may aggravate this windthrow hazard because the trees now rely on each other for stability. Heavy thinning operations, and clearing in or along side these areas may increase the windthrow potential by allowing wind to pass through rather than over these areas. Disturbances in or near these areas should be kept to a minimum to avoid increasing the windthrow potential.

The trees which are present in Vegetation Types A and D (Mixed Hardwoods) and parts of Vegetation Type C (Hardwood Swamp) are declining in health and vigor as a result of their crowded condition. Periodic fuelwood thinnings that are focused on the removal of the poorest quality trees in the overstory, up to 1/3 of the total volume in Vegetation Type A and no more than 1/4 of the total volume in Vegetation Type C, will reduce the crowded condition enough to allow the residual trees to respond over time with improved health, vigor, and stability.

To avoid irreversible soil damage, thinning operations in the hardwood swamp areas should only be implemented during the winter months when the ground is frozen or the summer months when the ground is dry.

The trees which are present within Vegetation Type D are also crowded and would respond well to the "crop tree selection method" of thinning.

Under the "crop tree selection method" 100 of the highest quality trees in each acre should be identified (trees spaced about 20' by 20' will equal 100 trees per acre), and one, two or three trees that are in direct competition with each of those identified should be removed. The 100 or so trees per acre that are selected as crop trees should be healthy, large crowned, and show little or no signs of damage. Trees which are not competing with the 100 selected trees should not be removed, unless they are severely damaged. This thinning, if implemented, will provide between 5 and 6 cords of fuelwood per acre.

If implementation of the suggested thinning operations are not feasible prior to actual subdivision of the property, thinnings on an individual lot basis by lot owners would be desirable. These "mini-thinnings" will provide new lot owners with a limited supply of fuelwood and also reduce the crowded condition, thus allowing trees to respond with better health over time.

It would be feasible to plant conifer species in the open fields which are present within this tract. Such plantings would improve the aesthetic quality of the area, improve cover conditions for wildlife and eventually provide a product of either Christmas trees or sawtimber. The somewhat excessively drained soils will support Christmas tree species such as white spruce, Douglas fir, and Norway spruce. These trees could be planted at a spacing of 5' x 5' or 6' x 6'. It should be realized the the proper maintenance of high quality Christmas trees may take four days per acre per year throughout the entire rotation. If this maintenance responsibility cannot be realistically met, conifers such as eastern white pine, eastern hemlock and larch could be planted.

These trees should be planted in a random mixture at a spacing of approximately 8 to 10 feet apart. They will not require the intensive maintenance that Christmas trees do, however, some initial grass and weed control may be desirable. A public service forester or private forester should be contacted to help implement the suggested thinnings and plantings should they be desired.

FISH RESOURCES

South of the proposed development in the town of Scotland, Merrick Brook is stocked by the state with yearling trout on an annual basis. The stream would also be expected to support native brook trout, suckers, red fin pickerel and a variety of minnow species including dace and shiners.

Since the project area is immediately below the headwaters segment of the brook, Merrick Brook is very vulnerable in this area to the possible negative impacts of the development. Specifically, these impacts could be:

(1) Clearance of stream corridor vegetation resulting in decreased shading and increased water temperatures.

(2) Disturbance of stream corridor soils resulting in erosion, sedimentation and destruction of fish habitat.

(3) Contribution of nutrients from poorly designed septic facilities through highly permeable soils affecting higher phosphorous levels, increased aquatic plant growth and higher Biological Oxygen Demand (B.O.D.) lowering the amounts of oxygen available to resident fish species.

The project as proposed delineates two lots with extensive stream corridor involvement, specifically Lots 5 and 6. For the purpose of protecting the stream from adverse developmental impacts, it is recommended that Lots 5 and 6 remain undeveloped.

WATER SUPPLY

Lots in the proposed subdivision would be supplied with water by individual wells. The property owner reported that his own well, within the parcel boundary, obtained flowing water at a depth of 260 feet. This need not be representative of the whole parcel, however. Bedrock supplies water to wells by transmitting it through fractures. A well must, therefore, encounter such fractures in order to produce a sustainable yield. The number of fractures intersected by the well and the size of the fractures is a critical factor in the yield. Fractures are irregularly spaced in bedrock, however. There is no assurance that every well will intersect fractures of suitable size and number. Still, most bedrock wells (80 to 90 percent) are capable of yielding at least three gallons per minute, enough for an average family.

There is a possibility that some of the lots could use gravel-packed "shallow" wells. If there is a sufficient thickness of coarse-grained stratified drift below the water table, the wells may produce substantial yields. However, gravel-based wells would be more susceptible to contamination by road salt or septic effluent. If such wells are desired, attempts should be made to separate them from roads and septic systems by at least 100 feet. In general, with lots having several acres, there should be sufficient area to locate wells properly from sewage disposal systems and other potential sources of contamination or pollution. Wells should be located on a relatively high portion of individual lots and in a direction opposite the expected direction of ground water movement. In this case, water movement towards the lower terrain and streams would be expected. Locating wells too close to a stream and in low lying areas can also subject them to periodic flooding conditions. Proper construction, ensuring an adequate depth of tightly sealed well casing, will prevent the entrance of surface water or undesirable water bearing formations which may be relatively close to the surface.

Wells, while being bacterioligically and chemically safe, may also have sufficient amounts of minerals, usually iron and/or manganese, in the water to lower the overall quality. Such objectionable features can render the water unacceptable for domestic purposes unless suitable treatment is provided.

WASTE DISPOSAL

Sewage disposal for the individual lots would be provided by on site subsurface systems. Based on visual observations, review of soil mapping data and consideration of deep test hole and percolation information, it is apparent that a considerable portion of the property contains well drained soils. These soils should be satisfactory for subsurface leaching systems, although there

is some concern the soil is too porous and it may not provide good filtration and renovation of sewage effluent before it moves into the ground water. It is not known or indicated what percolation rates were obtained. However, based on indicated square footage needed for leaching systems, they would not be excessively fast. Several of the proposed lots also contain extensive wetlands and have a high ground water condition. This is particularly evident in the vicinity of Merrick Brook. Seasonal ground water conditions could also be a factor on some of the upper lots due to the more compact underlying soil.

It is noted soil testing was done during the summer (August) when conditions are normally very dry.

The State Public Health Code requires the bottom area of any type of leaching system to be at least eighteen inches above maximum ground water. Therefore, it is important that the correct ground water elevation be established. As there could be a question as to the maximum ground water level, additional investigation would be warranted on those particularly questionable lots during the spring of the year. Also due to the extensive wetland area involving two of the proposed lots (5 and 6), it should be accurately determined that each lot would have sufficient suitable area in order to locate a house and water supply well, in addition to both a primary and reserve leaching system.

Perhaps the most critical aspect of a leaching system, in addition to being elevated above the high ground water level, is to have sufficient soil down-gradient of the systems in order to allow for flows or movement of the sewage effluent without having a lateral surface breakout or pollution problem due to inadequate soil treatment. Where a water course is downgrade of a system, a minimum separating distance of fifty feet should be maintained.

Due to the limiting or adverse factors in the wetland area of the property, if sufficient suitable area to establish the sewage disposal facilities remains marginal, it would be recommended serious consideration be given for eliminating, shifting lot lines or combining one or both lots (5 and 6) with adjoining ones.

ROADS AND DRIVEWAYS

The site proposed for subdivision is land fronting on the south side of Calvin Burnham Road and the contiguous land fronting on South Brook Street. Three new lots are proposed with yard frontage on South Brook Street, and one rear lot with fifty feet of frontage, as well as one lot for the existing house on the development parcel; eight lots are proposed with frontage on Calvin Burnham Road.

Calvin Burnham is an improved local dead end road which will provide access to subdivision Lots 1 through 8 to and from South Brook Street. South Brook Street, also an improved local road, will provide access to Lots 8, 9, 10, and 11. It currently provides access to the existing house on the parcel which fronts on South Brook Street.

South Brook Street intersects just south of the proposed development with Parish Hill Road, which leads to Chaplin and the Parish Hill School in Chaplin - the regional junior and senior high school for Hampton, Scotland and Chaplin.

Both Calvin Burnham Road and South Brook Street seem to be capable of accommodating the additional traffic loads which would be imposed by this 11-lot subdivision.

1980 statistics* indicate that Hampton had 771 passenger automobiles registered with a population of 1,322, making the average number of persons per car 1.71. That is the lowest occupancy rate of all the towns in the region. This indicates that Hampton has the highest number of cars per capita in the region. Being a rural community, where people are heavily dependent upon their cars, the two or more car family is the rule in Hampton, more so than in other towns in the region.

If each of the 11 new lots in the subdivision has an average single family house built on it, then an average of 10.6 vehicle trips per day** (5+ round trips) can be expected from each house. Thus, when the subdivision is fully developed, South Brook Street will be experiencing approximately 116 additional vehicle trips per day solely from residents of the subdivision. With the relative isolation of the proposed development from significant service facilities, it is likely that the subdivision will generate close to the maximum number of trips predicted.

Route 6 is the major collector highway in Hampton, and will provide the major access to South Brook Street which leads to the proposed subdivision. The intersection of Route 6 and South Brook Street will experience additional traffic due to the proposed subdivision. The potential exists for a significant increase in accidents at that intersection due to the relatively large increase in vehicle trips per day through that intersection caused by the new development. The current Y-shaped intersection there has two-way traffic on each of the legs of the Y, channeling traffic into and out of South Brook Street. The crossing traffic (conflicting turning movements) situation caused by this intersection currently presents a potential accident situation. With an increase in traffic volume at this intersection, the potential for accidents at this intersection will increase. Some action may become necessary to correct this potentially hazardous traffic situation.

Care should be taken in the placement of driveways for each lot in the proposed development, to ensure that:

i. hidden driveways are not created which create dangerous traffic situations. Lot 11 seems to have the potential for a hidden driveway. Lot 11 is a rear lot with a 50-foot wide strip of land providing access to the major part of the lot in the rear. The currently proposed driveway parallels a stone wall, and slopes up to South Brook Street from the rear lot. Since any structure placed on Lot 11 will not be particularly visible from the street, motorists might not be as aware of traffic entering onto South Brook Street from Lot 11, as from other lots with homes or other structures. Careful design of the driveway and perhaps a sign indicating a hidden driveway should be considered.

---

* Table X, Passenger Automobile Registration 1979 & 1980, Transportation Planning Data for the Windham Region, WRPA, June 1981.

** Source: Trip Generation Study of Various Land Uses, CONNDOT, 1974.

ii. driveway access for rear Lot 11 will involve removing part of an existing stone wall. The developer stated he may remove about 50 feet of the wall which is parallel to the lot line leading from South Brook Street to the major portion of Lot 11 in the rear. If other options exist, as much of that stone wall as possible should be preserved. Another stone wall paralleling South Brook Street, which seems to create the lot line between Lot 11 and Lots 9 and 10, will need some small portion removed to provide access into the bulk of Lot 11. However, the amount which is removed should be limited to that portion necessary to allow adequate passageway for fire apparatus, cars, and trucks into the rear lot. The stone walls add to the natural beauty of the parcel and are historic features of the land which should be preserved.

iii. crossing of wetlands by driveways should be avoided. Proposed Lots 5 and 6 seem very wet along their frontages on Calvin Burnham Road. As currently shown on the preliminary subdivision plans, the driveway proposed for Lot 5 lies over these wet areas. A better option for driveway placement on higher and drier ground exists if the driveway would be placed close to Lot 4, leaving the naturally wet areas free to function as natural drainage courses rather than artificially obstructing the wetland with a filled driveway, which otherwise would be necessary.

COMPATIBILITY WITH SURROUNDING USES

The proposed development is located in a very rural town in a sparsely developed area near the border of Hampton and Chaplin, remote from the town centers of either. The surrounding land uses consist of low density scattered residences in wooded or agricultural setting. There is one existing colonial farmhouse on the site which will make up the 12th lot in the subdivision parcel. This is the only existing structure directly abutting the proposed subdivision. On the north side of Calvin Burnham Road, across from Lot 1, there is a farm complex and residence which faces the proposed development. Design of the subdivision should be sensitive to these existing residences.

While the proposed development of 11 new house lots and homes will significantly increase the current overall population density around the site, and while such a "development" is not typical of the surrounding sporadic and sparse residential development, the 2+ acre lots proposed assure a relatively 'rural' environment will be maintained.

The subdivision could potentially be compatible with surrounding uses if individual house designs and sites are sensitive to the character of each site, and adjacent sites. However, since the proposed house sites for Lots 1-4, and 6, 7, and 8 are in old agricultural/grazing fields with few trees, any house, other than underground houses, will be relatively obtrusive in these open fields. Development of such sites provides great potential for even this small subdivision with "large" lots, to provide the monotonous effect of a typical suburban subdivision with houses in a row. Design alternatives to minimize this visual effect should be explored and encouraged. Some methods to

present a more rural and less densely developed visual effect might include, among others:

i. encouraging large setbacks of the homes from Calvin Burnham Road, nestling the house sites into the woods at the edge of the fields to make the homes less visually obtrusive.

ii. encouraging variation in setback from the road for these lots, to minimize the 'house in a row' effect.

iii. encouraging siting of homes with foci on various features other than the road. (For example, front door and the mass of the house on Lot 6 facing the Merrick Brook, rather than the road.)

GENERAL DESIGN CONSIDERATIONS

The proposed development has some environmental considerations which potentially present design problems. These problems include:

i. much of Lots 5 and 6 seem to be wet as indicated by site inspection and soils maps which designate soils 825 and 754 as wetland soils. Even though percolation tests might indicate an adequate site on each of these lots for a septic system, other limitations may be overridingly significant, including soils limitations for homes with basements due to potential flooding, and minimal useable or functional yard areas in each of these lots due to wet soil conditions.

ii. lots 9 and 10 have severe soils limitations for septic tank absorptions fields, lawns and landscaping due to stoniness. Engineered septic systems are proposed to overcome this problem.

iii. the back section of Lot 11 along the Merrick Brook is wet, as are some parts of the rear sections of Lots 1, 2, 3, and 4.

iv. the Inland Wetlands Commission voices concerns that Lots 5, 6, 9, 10, and part of 11 may be unsuitable for development or building.

All of these problems point to some partial unsuitability of almost every lot in the proposed subdivision for development. Engineering solutions may overcome any or all of these problems. However, these problems could more easily be overcome if a cluster design were applied to this development parcel.

A cluster design concept for this 32+ acre site could:

i. avoid development in the areas with soils limitations (wet and stony areas), instead using such areas as common open space in a natural, parklike, undeveloped state for passive recreation.

ii. cluster the proposed houses on smaller lots where soils are more suitable for their development.

iii. leave some of the suitable soils for active recreation area (ball fields, garden plots, etc.)

iv. potentially allow an aesthetically pleasing cluster development which might fit into the site less obtrusively than a standard large lot subdivision.

v. potentially allow more ecologically sensitive use of the parcel, than might be possible with a standard large lot subdivision.

However, Hampton's zoning and subdivision regulations do not provide for cluster development at this time.

Some options for minimizing the development constraints posed by the soils and wetlands, while working within the design framework of a standard subdivision, might include:

- Eliminating Lots 5 and 6, incorporating the land area of those lots into surrounding Lots 4, 7, and 11.
- Eliminate Lots 5 and 6 and incorporate their land area into remaining Lots 1-4, 7-11 by expanding each of these lots.
- Eliminate Lot 6, dividing its land area between Lots 5 and 7.
- Increase the buildable area of Lot 6 by adding some of the buildable land from Lot 11 to it.
- Redesign Lots 6 and 7 as front and rear lots with both having frontage on the brook.
- Other subdivision lot layouts and designs which would minimize soils, wetlands and design constraints.

AESTHETICS AND PRESERVATION

The site of the proposed development is not so unique in natural features as to recommend development not occur. However, the variation in topography and the presence of Merrick Brook running through the parcel makes it an interesting parcel for residential development. The combination of flat, and gently to moderately sloping fields, wetlands, woodland, a small pond, and the brook present features which should be incorporated through careful site planning into the layout of the development, rather than simply worked around or altered. Again, this site would lend itself well to cluster development because of these interesting features which nevertheless present development limitations.

The stone walls in and along proposed Lots 9, 10, and 11 exemplify the historic use of the land as a farm. As much of those walls as possible should be left intact.

SERVICES TO SUPPORT DEVELOPMENT

Hampton is the second smallest town in the Windham Region, in terms of population with only 1,322 persons in 1980 living in 487 housing units. (Scotland is the smallest with 1,072 people in 383 units.)

Most of the town's services will not be significantly impacted by the proposed 11-lot subdivision, especially if the developer carries through with the intention to develop no more than two lots per year. However, the cumulative effect of a number of similarly sized developments could put pressure on the town's ability to provide services to support development.

With ten new homes proposed to be built over a 5-year period (one new home on Lot 2 is currently in the process of being erected), there will be little impact on town government functions or fire protection (which is provided by a volunteer fire department).

Road maintenance and plowing will not be highly impacted as no new roads are proposed, although increased traffic volumes due to the new subdivision may precipitate some additional road maintenance over time.

Solid waste from homes in Hampton is brought by the homeowner, or collected by private contractor at homeowner's expense and brought to the privately-owned and operated Donahue Landfill in Hampton. The landfill serves Hampton, Chaplin and Scotland. The town pays a yearly fee for using the landfill. The Donahue site was estimated in 1977 to have sufficient capacity for current level of use through the year 1988.

Every additional new solid waste generator using the landfill shortens the overall expected life of the landfill. The proposed subdivision will not generate significant amounts of waste, but it and/or other new developments in the three towns may force the towns to find new disposal alternatives to the Donahue Landfill sooner than the 1988 anticipated life of that landfill.

The largest potential impact of the development is on educational services. The actual impact will vary depending on the cost and size of the homes built and the type of families who move into them. If families with grown children move into the houses, there will be no impact on the school system's capacity to accommodate the subdivision.

However, a single family home might produce an average of .71 school children.* Therefore, an 11-home subdivision might produce eight school age children. If the current ratio of grade breakdowns continues, then it can be anticipated that 30% or two to three children would be of high school age; 31%, or two to three children of junior high school age; and 39%, or about three children of elementary school age.

The capacity of the Hampton Consolidated Elementary School is approximately 160 students. 1981 enrollment is 166 students. The Parish Hill School - a combined junior and senior high school facility in Chaplin, is a regional

---

* Table III, School Pupils per Dwelling Unit by Type, Town of Hampton, The Mobile Home Dilemma: A Case Study, WRPA, January 1979.

school shared by Chaplin, Hampton, and Scotland. Its capacity is approximately 500 students. Current 1981 enrollment is 371 students with approximately one-third from Hampton. One hundred and thirty more students in total, or about 43 more students from Hampton could be accommodated.*

Parish Hill School could accommodate the potential increase in students precipitated by this proposed development. However, the elementary school is currently at or over capacity. Additional students from this or other developments in Hampton will increase the existing overcapacity situation in the elementary school.

ALTERNATIVE LAND USES

Due to the presence of soils poorly suited for development (wetlands and stony soils), the site is more suited to a cluster home development of single family homes than a standard large lot subdivision, if residential development is to be pursued.

---

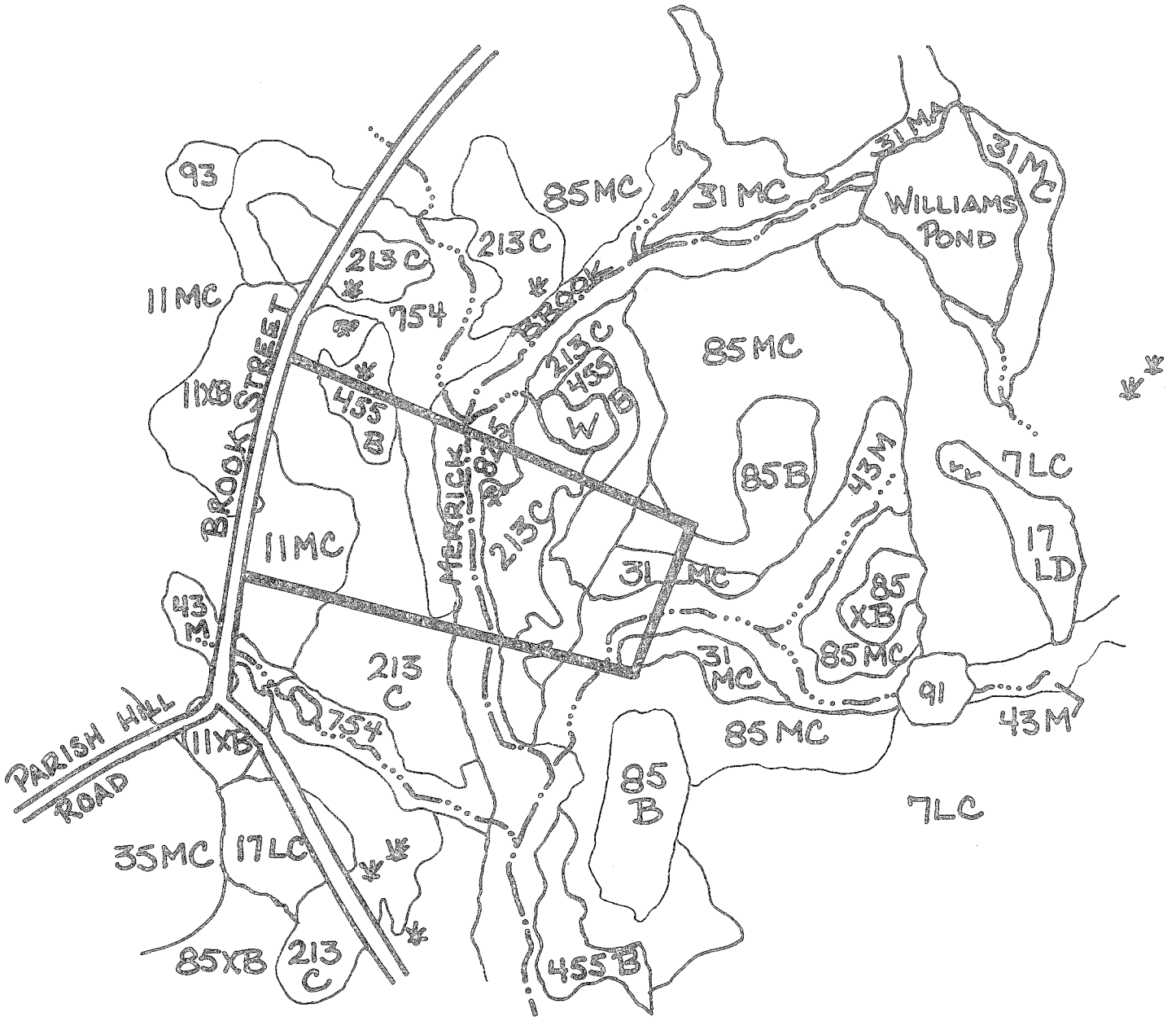
* Enrollment and capacity figures from Hampton Superintendent of Schools, December, 1981.

Appendix

Soils

0 660'
scale

N



THIS MAP WAS DEVELOPED FROM AN ORIGINAL SOIL CONSERVATION SERVICE SOILS MAP. SOIL DELINEATIONS ARE APPROXIMATE

United States Department of Agriculture | Soil Conservation Service | Agricultural Center Brooklyn, Connecticut 06234

774-0224

Assisting the Windham County Soil and Water Conservation District

SOILS

#85B	Canton & Charlton fine sandy loams, 3 to 8 percent slopes.
85MC	Canton & Charlton extremely stony fine sandy loams, 3 to 15 percent slopes.
11MC	Gloucester extremely stony sandy loam, 3 to 15 percent slopes.
##213C	Hinckley gravelly sandy loam, 3 to 15 percent slopes.
#455B	Sudbury sandy loam.
31MC	Woodbridge extremely stony fine sandy loam, 3 to 15 percent slopes.
*825	Rippowam fine sandy loam.

\# Prime Farmland
\#\# Additional Farmland of Statewide Importance
* Designated wetland soil by P.A. 155

Merrick Brook Estates

Brook Street

Hampton, Conn.

Principal Limitations and Ratings of Soils For

COMMUNITY DEVELOPMENT

Soil Symbol and Series	Houses with Basements	Local Streets	Septic Tank Absorption Fields	Lawns and Landscaping	Drainage
#85B Canton	Slight	Slight	Slight	Slight	Deep to water
Charlton	Slight	Slight	Slight	Slight	Deep to water
85MC Canton	Moderate,slope	Moderate,slope	Moderate,slope	Moderate,slope, large stones	Deep to water
Charlton	Moderate,slope	Moderate,slope	Moderate,slope	Moderate,slope, large stones	Deep to water
11MC Gloucester	Moderate,large stones,slope	Moderate,slope, large stones	Severe,poor filter	Severe,large stones	Deep to water
##213C Hinckley	Moderate,slope, large stones	Moderate,slope, large stones	Severe, poor filter	Severe,small stones	Deep to water
#455B Sudbury	Severe,wetness	Moderate,wetness,frost action	Severe,wetness, poor filter	Slight	Cutbanks cave
31MC Woodbridge	Severe,wetness	Severe,frost action	Severe, percs. slowly,wetness	Moderate,slope, large stones, wetness	Percs.slowly slope,frost action

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.

Merrick BRook Estates

Brook Street

Hampton, Conn.

Principal Limitations and Ratings of Soils For

COMMUNITY DEVELOPMENT

Soil Symbol and Series	Houses with Basements	Local Streets	Septic Tank Absorption Fields	Lawns and Landscaping	Drainage
*825 Rippowam	Severe, flooding, wetness	Severe, flooding, wetness, frost action	Severe, flooding, wetness, poor filter	Severe, wetness, flooding	Flooding, cutbanks cave, frost action

\# Prime Farmland
\## Additional Farmland of Statewide Importance
* Designated wetland soil by P.A. 155

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.