Environmental Review Team Report

Ashford Lake Subdivision

Eastford, Connecticut

RC&D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

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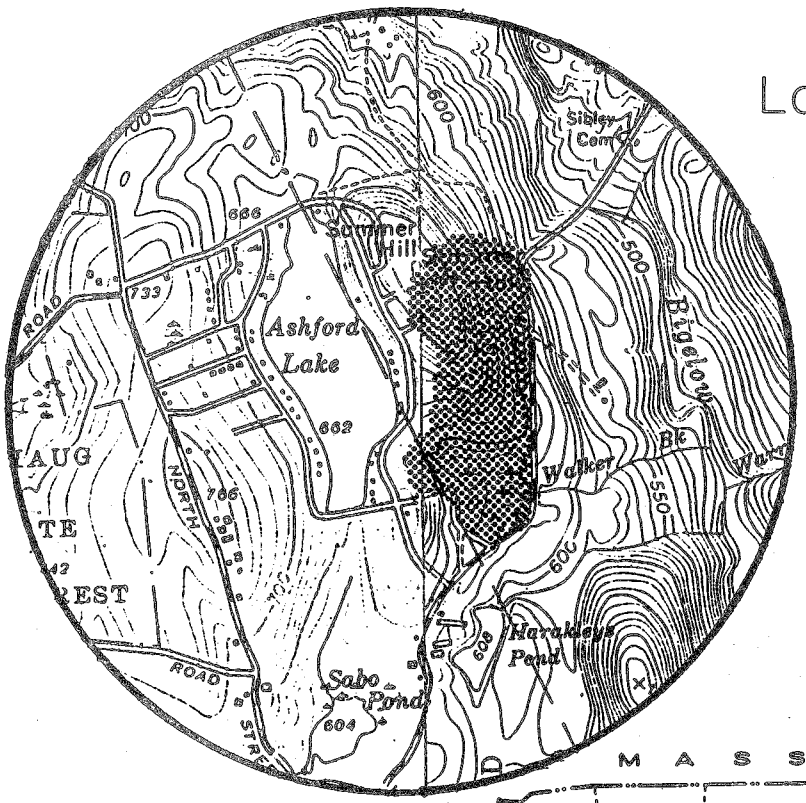
Eastford, Connecticut

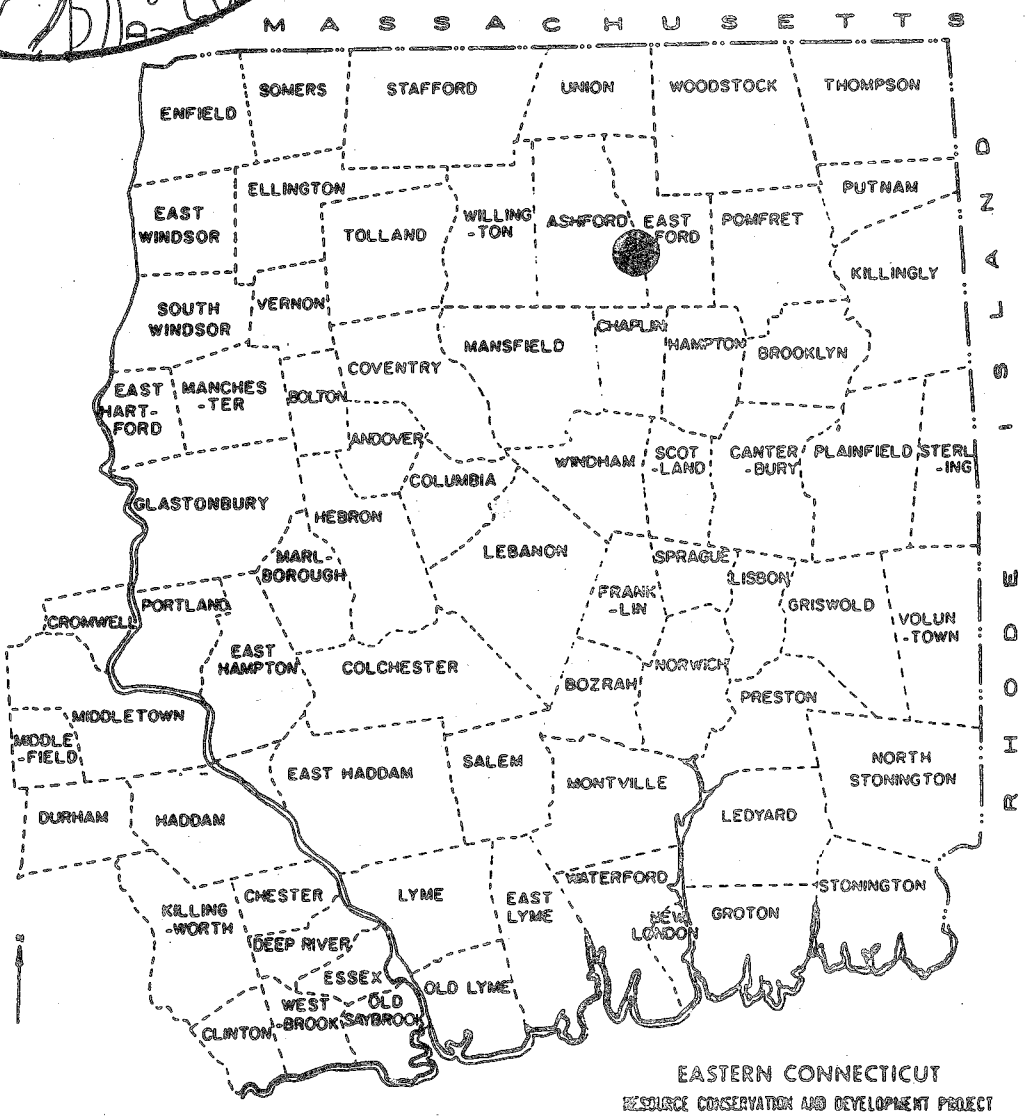
January 1983

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

Location of Study Site

ASHFORD LAKE ASSOCIATES SUBDIVISION
EASTFORD, CONNECTICUT





EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
ASHFORD LAKE ASSOCIATES SUBDIVISION
EASTFORD, CONNECTICUT

This report is an outgrowth of a request from the Eastford Planning 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 States Department of Agriculture, Soil Conservation Service (SCS). Reproductions of the soil survey map, a table of soils limitations for certain land uses and a topographic map showing property boundaries were distributed to all Team members prior to their review of the site.

The ERT that field-checked the site consisted of the following personnel: Howard Denslow, District Conservationist, Soil Conservation Service (SCS); Richard Hyde, Geologist, Connecticut Department of Environmental Protection (DEP); Dick Raymond, Forester, (DEP); Maureen Peters, Regional Planner, Northeast Connecticut Regional Planning Agency; Don Capellaro, Sanitarian, State Department of Health; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

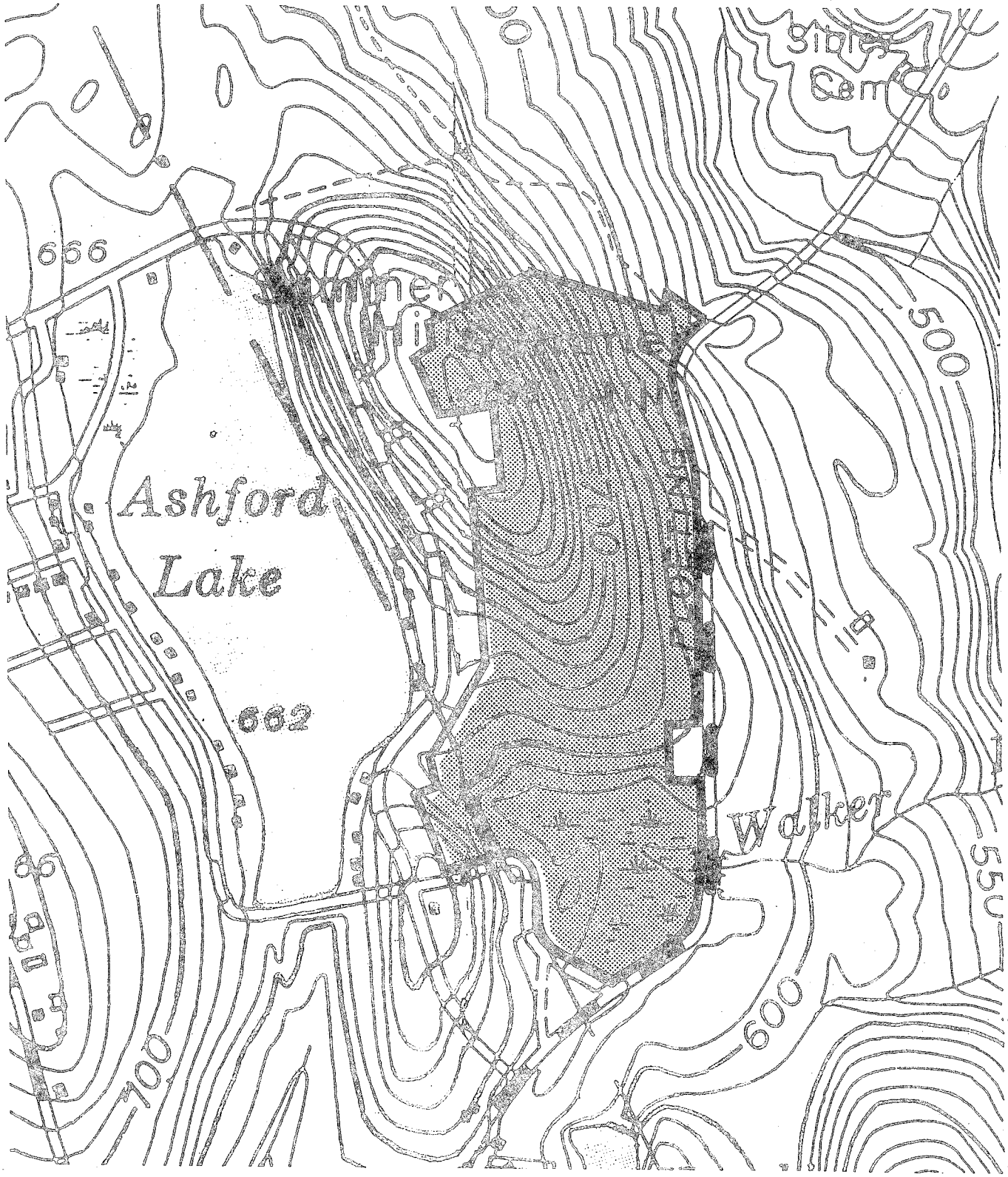
The Team met and field checked the site on Thursday, November 4, 1982. Reports from each contributing Team member were sent to the ERT Coordinator for review and summarization for the final report.

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

Topography	Site Boundary	0 660' scale	N



INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare an environmental assessment for a 16 lot subdivision in the towns of Eastford and Ashford. The study site was approximately 80 acres in size and is located on the western side of Floeting (Ashford) Road. The parcel is within close proximity to Ashford Lake, but drainage from the property runs into Bigelow Brook. Preliminary engineering plans have been prepared by Fuss and O'Neill.

These plans show the property divided into 16 lots of one or more acres each. All lots will have access to Floeting Road. All lots will also be served by on-site wells and on-site septic systems. Suitable locations for these facilities will be shown on the final plans. All construction will be done by the future lot owners. Houses will not be established on the site by the developer.

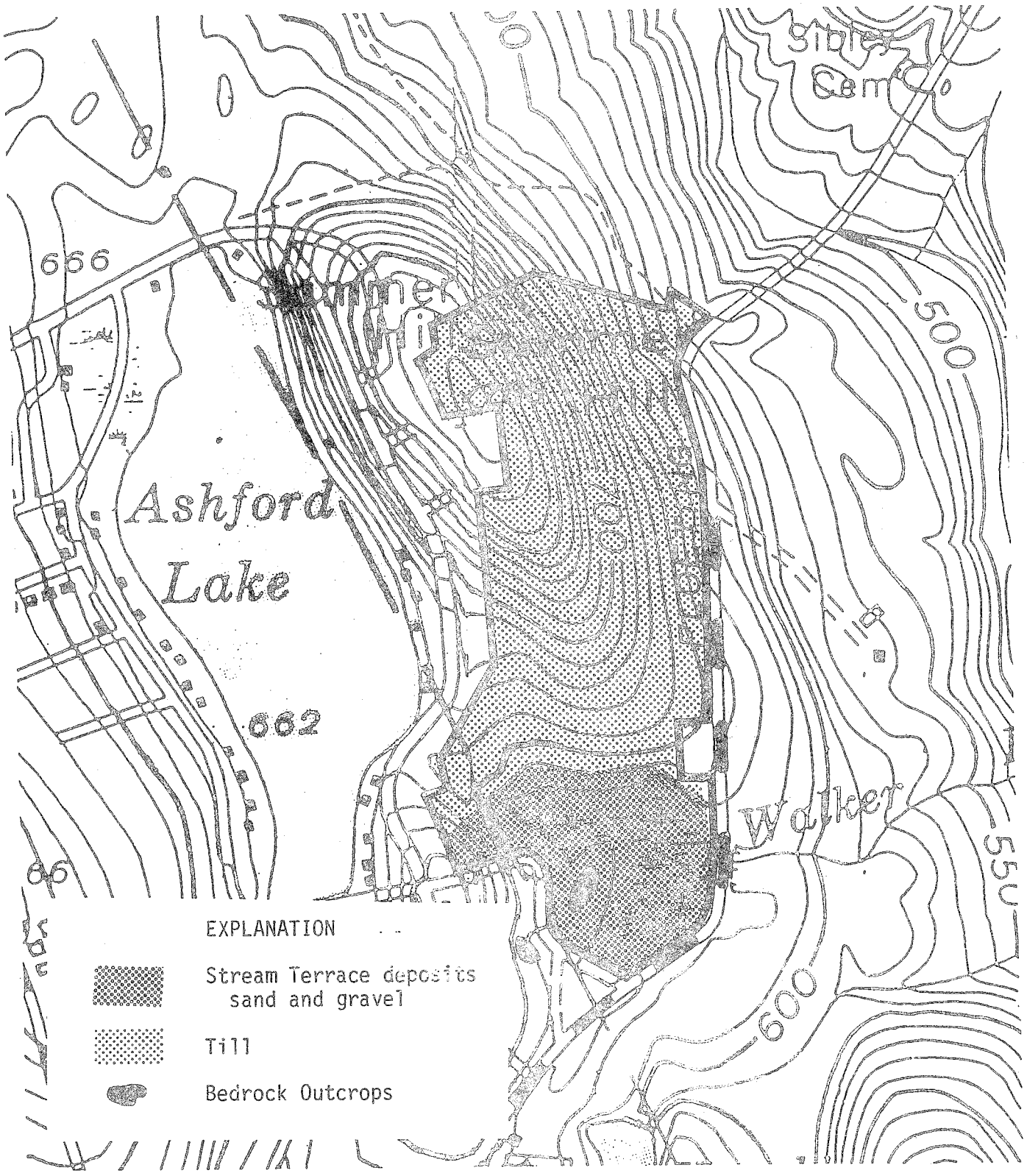
The property is entirely forested at present, although a timber harvest had taken place during the past several years. A brambly understory is present as well as a number of large trees. Topography of the site is extremely steep in some sections and moderately sloping in others, as can be seen in the accompanying illustration. An intermittent stream runs through the center of the property into a large wetland in the southern section of the site. A number of the proposed lots lie within this wetland area.

The Team is concerned with the impact of this proposed development on the natural resource base of this site. Although many severe limitations to development can be overcome with appropriate engineering techniques, these measures can become costly, making a project financially unfeasible for a developer. Several severe natural constraints to development exist on this site, these include wetlands and soils with seasonal high water tables; extremely steep slopes, and some areas of shallow depth of soil to bedrock. These restrictions will necessitate engineered designs for most septic systems on this site. Each system could potentially cost between five to ten thousand dollars or more for installation. Additional testing for suitable septic system location will be needed on lots 12, 13, 14, and 15. These tests should be conducted in the spring.

As the landowner/subdivider will not altimately be the developer of each lot a unified approach to sediment and erosion control will be possible. Therefore sediment and erosion control measures should be planned for each individual lot and implemented prior to commencement of construction. Due to steep slopes involved in some of the lots, a significant amount of sediment could reach Floeting Road, obstructing not only the road but also the drainage ditch on its western side. Wetland areas should also be protected from sedimentation as much as possible.

Wetland areas and soils with seasonal high water tables will effect not only placement and functioning of septic systems, but also may cause temporary flooding of basements. In order to avoid wet basements or cracked foundations from these

Surficial Geology



natural conditions, curtain drains can be installed around foundations to help lower water tables.

More detailed discussion of these natural constraints and related planning concerns can be found in the following sections of this report.

ENVIRONMENTAL ASSESSMENT

TOPOGRAPHY

The property proposed to be subdivided, is located on the eastern and southern slopes of Summer Hill in Eastford. The property covers essentially the greater portion of the eastern half of the hill which is a northwest by southeast trending drumloidal topographic feature. The land surface elevation of the property is 786 feet above sea level at its highest point and slopes down to 600 feet to the east and 610 feet to the south. The steepest slopes are found in the northern one-third where they may reach 30% in places. The landslope of the middle one-third declines to 10% and 5% and the southern third grades into lowland swamp. Elevations were taken from the published Eastford and Westford topographic maps.

GEOLOGY

The bedrock underlying the property is classified as following within the upper member of the Southbridge formation. The upper member is described as a medium to light gray, fine to medium grained quartz plagioclase biotite schist and banded gneiss. Schists and gneisses are rocks formed under conditions of high temperature and pressure formed deep within the earth.

Today these rocks are relatively near the land surface indicating they were uplifted and the overlying rocks eroded away over hundreds of millions of years of earth history. In terms of this development proposal, the rock characteristics will have little influence except in terms of on-site water supply and water quality. Bedrock information was taken from "Geologic Map of the Eastford Quadrangle", GQ-1023 and "Geologic Map of the Westford Quadrangle", GQ-1214.

Soil and overburden deposited on top of the bedrock are fairly thick in this area and probably is in excess of forty feet near the top of Summer Hill and probably ranges from 20 feet to 30 feet along Floeting Road. Within the overburden there is a tremendous amount of unattached rock and boulders which were deposited through glacial action. Large quantities of boulders are particularly evident along Floeting Road extending almost half way up the northeastern flank of Summer Hill. The concentration and size of so many boulders creates extreme site prepa-

ration difficulties, particularly in terms of site development and in this case, septic system placement and operation.

The overburden material forming the Summer Hill drumlin is classified as glacial till which is a lag deposit remaining in place after the glacier melted. The material is common throughout eastern Connecticut, except along major water courses, and is described as an unsorted and unstrafified heterogenous mixture of clay, silt, sand, gravel and boulders varying widely in size and shape. Summer Hill is a smooth rounded, elongated mound of compact glacial till, a drumlin, which was shaped by the flow of readvancing ice over an older deposit of till. This overriding process compacted the older material forming what is sometimes referred to as "hardpan". The presence of such conditions aggravate the normal development and use of a site by imposing water infiltration and drainage restriction on water movement.

The large wetland in the southern portion of the property is underlain by glacial-stream terrace deposits. Sand, gravel and silt deposited by melt-water streams flowing into a waterbody partly in contact with stagnating ice blocks. As the ice melted high energy streams carried sediments, into this quiet ponded area where particles settled into layers. The several bedrock outcrops that were mapped by the field geologist indicate that this deposit probably is fairly shallow, ten feet or less to rock.

HYDROLOGY

The compacted till accepts rainwater very slowly and once saturated the water moves laterally downhill at a painfully slow pace. For this reason, the groundwater table remains close to the land surface for extended periods of time. Normally, rainwater is able to infiltrate the thin upper, more friable weathered zone at the land surface, but once reaching the compact till, water tends to travel laterally downhill along its upper surface. As the water builds up in the soil, it breaks out at the land surface in the form of spring seeps and intermittently streams especially during hard rains and periods of frequent precipitation. Such conditions are evident throughout the entire parcel to some degree or another but is particularly evident in lots 15, 14 and 13 where the surface and subsurface drainage is funneled from lots to the south and the upper portions of Summer Hill. The southern lots adjacent to the large wetland area also seem potentially very wet. Overland flow and saturated ground conditions could be a serious problem during heavy rains or even in winter when the ground is frozen, resulting in flooded basements and erosional damage to lawns and driveways. During the development process careful thought and action should concentrate on adequate water drainage control and retention measures.

It appears many lots contain numerous inclusions of wetland soil which have been lumped by the soil scientist into the Woodbridge and Paxton soil types. These areas always present obstacles to development and could be identified to a greater degree of accuracy with additional mapping. The town Wetland's Commission might wish to better delineate these areas to accommodate questions that will arise once a future lot owner proposes building a structure on the property.

Much of the property along Floeting Road has many hydrogeological problems that may be overcome by pushing development farther back off the road, by combining lots and/or changing the proposal to include a road to obtain access to the interior of the property. The alternative is very expensive engineering and site modification.

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 and detailed soils descriptions. As the soil map is an enlargement from the original 1,320 feet/inch scale to 660 feet/inch, the soil boundary lines should not be viewed as absolute boundaries, but as guidelines to the distribution of soil types on the site. The soil limitation chart indicates the probable limitations for each of the soils for on-site sewerage, buildings with basements, buildings without basements, streets and parking, and landscaping. However, limitations, even though severe, do not preclude the use of the land for development. If economics permit large expenditures for land development and the intended objective is consistent with the objectives of local and regional development, many soils and sites with difficult problems can be used. The soils map, with the publication 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.

A major portion of the property lies on Paxton (PeC,PeD) and Woodbridge (WzC) soils having a hardpan layer at a depth of 24 inches or less. This layer perches water, absorbed into the soil layer above it, during winter and spring. Any excavations into slopes for foundations, septic systems, land grading to level lots, or for driveways, can be expected to "bleed" groundwater if this hardpan perching a seasonally high water table is intercepted. Intercepting this water with subsurface drainage tile above a cut slope, above a septic leaching field, and at a foundation footing should be considered. An appropriate outlet location for such subsurface tile is important. It appears existing road-side drainage ditches in front of lots 10-16 could accept such up-slope drainage without causing problems. Stabilizing excavated slopes is difficult on hardpan soils. An excavated slope of greater than 2 horizontal to 1 vertical cut will bleed water and often slip. Slopes 2 to 1 or flatter are suggested. They should be stabilized by seeding and mulching or other mulch, such as wood chips.

Wetland soil (Rn) is found in the front of lots 1, 2, and 3, and small areas of it in the front of lot 16. Since driveways and building would be on the higher drier soils rearward on lots 1 and 2, and beside wetlands on lot 3, wetlands should not be harmed. It is suggested a buffer width of existing natural vegetation be left between the edge of the flagged wetland and any disturbance on a lot. The flow of Walker Brook should be protected. If any crossing of it is intended a culvert of adequate size could be installed. On lot 16 the wetlands would have to be crossed if entrance from Floeting Road is considered.

Special Concerns

Driveway access to lot 1 from Hillcrest Drive in Ashford will require large volumes of fill. Entrance from the drive to the road may present a visual obstruction problem. Grading for a home should not affect Walker Brook and its' associated wetlands. A buffer width should be retained.

Access to lots fronting Floeting Road at the north end of the parcel is of concern. Several of the lots climb steeply from the road. A steep drive for at least a short distance will be required. Preventing wash-out will be a problem since the soils are moderately wet (hardpan) and steep.

Lot 16 does not have reasonable access from the road because of the very steep and rocky slope. Any access road going up the steep slope would wash out unless it could run with the topography (graduals curve) and there is insufficient lot width to do this. Access may be possible from one of the "paper roads" at the west end of the lot. They are not completed as yet. This lot could be divided to include the upper portion with lot 11 and the lower portion with lot 15.

Since the town is concerned over road drainage problems incurred by development and potential harm to the wetlands, Walker Brook, and Bigelow Brook the following is suggested: Buffer widths protecting wetlands from disturbance, and a final grading plan addressing runoff and erosion control, i.e. excavation or fill stabilization on all lots, be required as any lot is developed. The Windham County Soil and Water Conservation District would be willing to review final grading plans with an appropriate Eastford official. The Northeast District Department of Health would, of course, have jurisdiction over the septic systems.

WILDLIFE

The study site consists primarily of mixed hardwoods, much of it lumbered in the past few years, and wooded wetland areas. The south and southwestern side of the property offers open cutover woodland with abundant sprouting and browse for deer. However, lack of winter cover here and in adjoining areas (with possible exception of wetland edges) probably discourages heavy wildlife use. Most dead and dying wood has been removed, as has the variety of species and the mast crop, present before lumbering. Numerous nesting songbird species inhabit the area and with well landscaped building would not be too disturbed by development. Areas heavily cut and grown into brambles present the same situation for wildlife: abundant browse - little grazing and loss of variety of food producing plants. Winter cover is scarce. Game birds would be attracted by the addition of cover. The hill top - consisting of more sugar maple and oaks has the advantage of possible winter cover, grazing in addition to browsing food and more variety in ground cover and shrub layer vegetation. This hill top is in itself an "edge-type" habitat offering suitable food and cover for open space and woodland species.

The slope along the northern property line shows the least disturbance. The presence of coniferous trees, a variety of tree and shrub species and an uneven

aged forest provides roosting spots for birds of prey and nesting habitat for a variety of songbird species and small mammals.

The land abutting Floeting Road is similar habitat to the southwestern woods but with more species variety and age differences.

Opportunistic logging has made the bulk of the property borderline habitat for many wildlife species that would normally be found. It does have potential for wildlife development and thoughtful clustered development would most likely not be detrimental to existing populations.

VEGETATION

The tract proposed for subdivision by Ashford Lake, Incorporated may be divided into two major vegetation types. These include mixed hardwoods which total 62± acres and a hardwood swamp/streambelt of 18± acres.

Vegetation Type Descriptions

Type A - (Mixed Hardwoods) Medium to good quality pole and sawtimber - sized red, black and white oak, red and sugar maple, white ash, black cherry with scattered white pine and hemlock are present in this 52± acre stand. Stocking varies greatly due to a logging operation completed within the last four years. Sawtimber volumes are below the commercial level with cordwood volumes averaging 10 cords per acre. Hardwood tree seedlings and a dense mass of raspberry and blackberry form the understory.

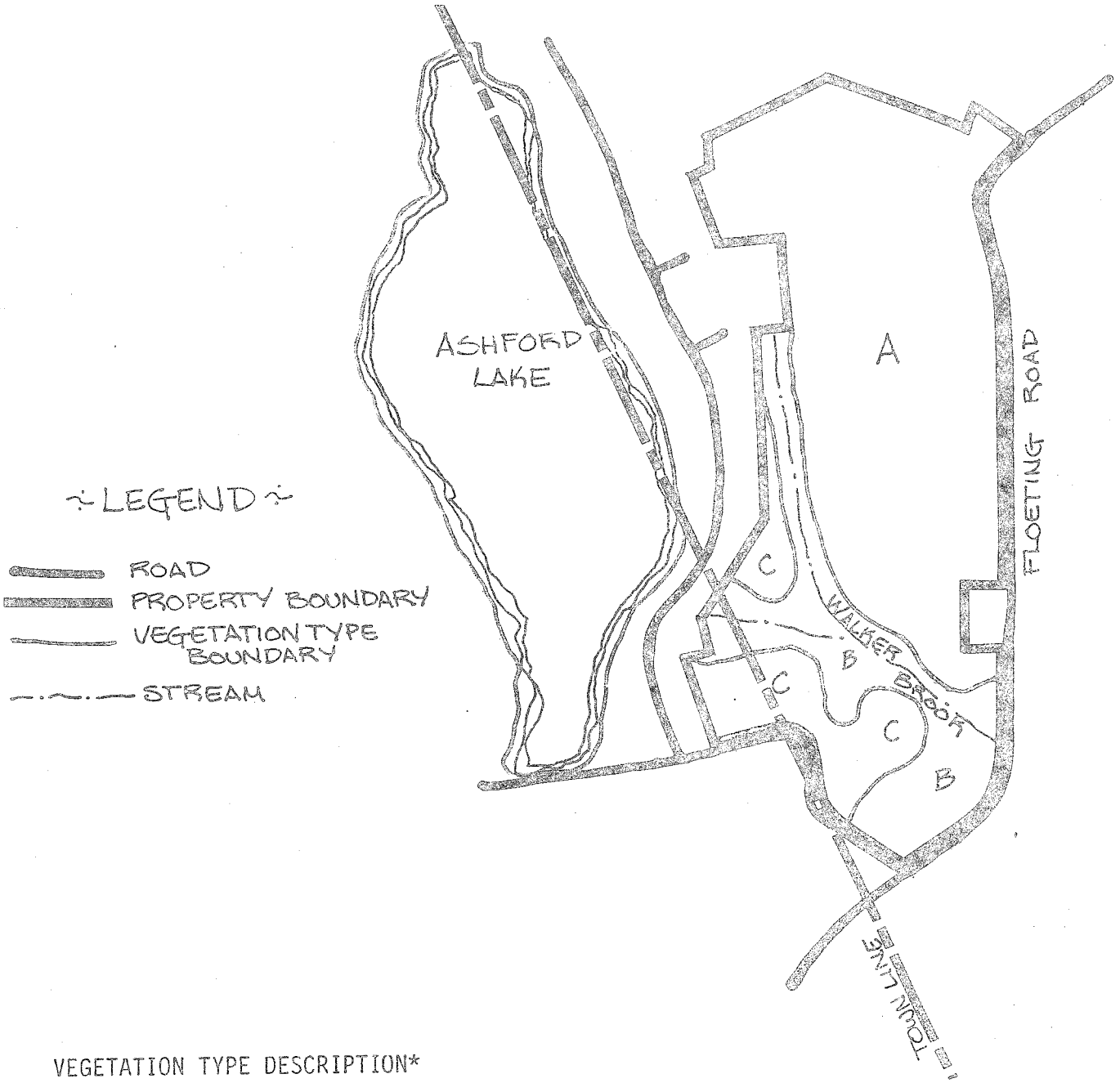
Type B - (Hardwood Swamp/Streambelt) Pole to sawtimber - sized red maple and occasional yellow birch, American elm, white ash and white pine occur in this overstocked stand of 18± acres. Trees are poor to fair in quality. An understory of spicebush and swamp alalea is present. Ground cover consists of mosses, ferns and skunk cabbage.

Type C - (Mixed Hardwood) This 10± acre well stocked stand is composed of medium quality pole-sized black, red and white oak, red and sugar maple, shagbark hickory and scattered white pine. An occasional sawtimber - sized tree exists. The total volume varies between 15 to 15 cords per acre. The understory contains maple leaved viburnum and hardwood tree seedlings.

Many of the larger healthy trees which are scattered throughout the parcel have high aesthetic and shade value. These large trees should be retained whenever possible.

Trees are very sensitive to the condition of the soil within the entire area under their crowns. Development practices near trees such as excavating, filling and grading for construction of roadways and buildings may disturb the balance between soil aeration, soil moisture level and soil composition. These disturbances may 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

Vegetation



VEGETATION TYPE DESCRIPTION*

Type A. Mixed Hardwood, 52± acres, variably stocked, pole to sawtimber-size.

Type B. Hardwood Swamp/Streambelt, 18± acres, overstocked, pole to sawtimber-size.

Type C. Mixed Hardwood, 10± acres, fully stocked, pole-size.

* Seedling-size = Trees less than 1 inch in diameter at 4½ feet above ground (D.B.H.)

Sapling-size = Trees 1 to 5 inches D.B.H.

Pole-size = Trees 5 to 11 inches D.B.H.

Sawtimber-size = Trees 11 inches and greater D.B.H.

hazardous and expensive to remove if near roadways, buildings or utility lines.

Care should be taken during the construction period not to disturb the trees that are to be retained. In general, healthy and vigorous trees should be favored as they are more resistant to the environmental stress brought about by the construction.

Where feasible, trees should be saved in small groups or "islands". This practice lowers the possibility of soil disturbance and mechanical injury. Individual trees and "islands" of trees should be temporarily, but clearly, marked so that they may be avoided during construction.

The very poorly drained soils present within Vegetation Type B (Hardwood Swamp/Streambelt) limit vegetative growth to species that are able to tolerate excessive moisture conditions. The red maple and occasional yellow birch and white ash that are able to survive in the swamp area are generally slow growing, shallow rooted and of poor quality. These areas have little value for timber production, however, under certain conditions, a limited quantity of fuelwood could be harvested.

The loss of trees due to windthrow is a potential hazard in Vegetation Type B. The soil is saturated with water for the greater part of the year causing soil aeration to be poor. These conditions result in unstable, shallow root systems which are unable to securely anchor the trees. The potential for windthrow is intensified by the crowded condition in the hardwood swamp. It should be noted that any clearings made in and around this area will increase the windthrow hazard by allowing the wind to pass through rather than over this area. If possible any clearing of vegetation in this type should be kept to a minimum.

The heavy mass of raspberry and black berry which has grown into Vegetation Type A following the sawtimber harvest is an inhibition to the recreational use of this area. If the parcel is used for any purpose other than woodland, these shrubs will have to be cleared. If left as woodland, the hardwood seedlings will shade out the berries within 10 years.

Management Considerations

The trees which are present in Vegetation Type B and in parts of Vegetation Type C are declining in health and vigor as a result of crowding. Periodic fuelwood thinnings that are focused on the removal of the poorest quality trees in the overstory, no more than 1/5 of the total volume in Vegetation Type B and up to 1/3 of the total volume in Vegetation Type C, will reduce the crowded condition 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 area should be implemented during the winter months when the ground is frozen or the summer months when the ground is dry.

At present, only trees that are dead or dying should be removed from Vegetation Type A. The stand should then be allowed to grow for at least 10 years.

WATER SUPPLY

In order to service the lots with potable water individual on-site wells would be deveopled. It has generally been recognized that lot sizes need to be at least an acre in size where both on-site water supplies and sewage disposal systems are being considered. It is mainly for this purpose that such a development should be within an acceptable density level in order not to be a contributing cause for possible degradation or contamination of the chemical or bacteriological quality of groundwater. Also large lots generally allow for better placement of necessary facilities and maintain all required minimum separating distances.

The most significant factors for well water protection are generally the type of well, and its location in terms of possible sources of pollution. Wells should basically be located towards the upper side of a lot and in a direction which would be away from the normally expected flow of contaminants. In the case of subsurface sewage disposal systems it would be expected that effluent would be substantially filtered and renovated by soil before it reached an impermeable substratum, fracture bedrock or the groundwater table. However, many factors from site evaluation to proper design and installation, enter and by having proper well locations the chance for any serious problems developing are minimal.

Drilled bedrock based wells, properly constructed, will usually provide for a greater degree of water protection and at the same time are generally more reliable as to well yield during prolonged dry periods or periods of little rainfall. Based on studies reported in "Water Resources Inventory of Connecticut, Part 2, Shetucket River Basin", Connecticut Water Resources Bulletin No. 11, 1967, statistics reveal about 90 percent of the bedrock wells will yield 3 gallons per minute or more, sufficient for a single family dwelling. Bedrock wells produce water by intersecting water filled cracks in the rock and as water is pumped from the well groundwater flows into the well to replace that which is drawn out. Just as water runs downhill on the land surface, the same gravitational forces move groundwater toward a lower water table in a well.

The natural quality of the groundwater as cited in Water Resources Bulletin No. 11 for this area probably has high concentrations of iron and/or manganese although source wells sampled had low concentrations. Whenever water is taken from the ground and exposed to the air, if the concentration of dissolved iron is more than 0.3 parts per million, the water becomes cloudy and an orange-brown film is deposited on the surface with which it is in contact. Over a period of time a film or scale forms that is difficult to remove, causing staining to laundered fabrics. Iron precipitate also tends to clog nozzles, filters, well screens and imparts a metalic taste to the water.

Manganese in concentrations greater than 0.05 parts per million will darken upon exposure to air or laundry bleach and causes a black film on porcelain sinks and kitchen utensils. Iron and manganese contamination problems can be mitigated by installation of appropriate filtration devices.

If a prospective buyer of any of these lots is concerned about possible problems of adequate water supply and its quality, it may be possible to learn

much by simply asking the owners of existing bedrock wells in the area. Some possibilities are those tapping the same bedrock aquifer, including homes to the west of Ashford Lake, along North Street and those few houses at the intersection of Westford and Floeting Roads.

WASTE DISPOSAL

Sewage disposal will be provided by on-site subsurface sewage systems. Based on topography, visual observations, soil mapping data and soil testing information the property in question is not particularly favorable for sewage disposal having several major constraints. Areas at both the north and south sides of the parcel have difficult conditions ranging from steeply sloping terrain to extensive wetlands. In addition most of the property, but especially the lower part (from about the middle down towards Floeting Road), has an underlying compact hardpan layer at a shallow depth which causes a perched water condition during the wet season. Due to this impermeable or relatively impermeable soil layer and the natural slope, entering water will tend to move in a lateral rather than a vertical direction. Therefore, there must be a certain depth of suitable naturally occurring soil (minimum of about 30 inches) above the hardpan in which leaching systems could be constructed providing filtration and renovation of the effluent along with means of satisfactory downgradient effluent dispersal. In conjunction with sewage leaching systems it would be important to control/intercept the ground or perched water by the use of curtain drains and proper surface grading and drainage. No doubt additional surface water runoff would also be contributed in a direct way to an existing drainage ditch which is located along Floeting Road. Improvements for this drainage facility would be needed in order to accommodate future driveways as well as for the containment and flow of ground and surface waters to the evevtual discharge point.

In view of the various conditions all lots should have special engineering design for the sewage disposal systems.

In most cases additional testing and monitoring for maximum groundwater levels would be warranted, as testing was conducted during a very dry time of the year.

In reference to the extreme northern end (lot 16) of the subdivision, possible access to the upper, more level rear area, seems highly questionable due to the intervening steep hillside slope, unless entrance can be gained from the back or west side of the property. To a lesser extent this may also apply for the very large lot (#11).

Regarding the south side of the property, several of the proposed lots (1, 2 and 3) are composed of considerable wetlands area with remaining usable land areas limited in size or having soil limitations. Also it appears that for the first two lots, entrance to the back or higher portion would have to be gained off a roadway in the adjoining town of Ashford.

Due to steep slopes and other pertinent factors, plans should include measures for soil erosion and sedimentation control.

Because special considerations or concerns would apply to the property, some modification of lot layouts would seem desirable. Larger lots to reduce the possible impact of significant unfavorable conditions or marginal areas will in the long term contribute to less public health and environmental problems. This is particularly important in a community where there are no public sewerage facilities and that careful evaluation of this as well as other subdivisions is needed if sewers are to be avoided for the long term.

PLANNING CONCERNS

The proposed subdivision of Ashford Lake Estates is designed in accordance with existing town regulations. The plot plan provides for the necessary minimum lot size, frontage requirements, distance from the road for building sites and septage disposal, on-site water supply and wetlands considerations. While the plans satisfy the town's minimum requirements (as stipulated in the subdivision regulations), the site is not without design constraints and the need for costly site modifications. Soils limitations, slope, large stones, and wetland areas on some lots impose limitations on the suitability of the lots for development.

The wetland areas found on several of the lots greatly restrict the development of these lots. Wetland soils have obvious limitations for development due to the wetness of these soils, the slow percolation rate associated with the soils, and the tendency for ponding or frost action of the soils.

Aside from these inherent limitations of wetland soils, wetlands are protected under the Connecticut Inland Wetlands and Watercourses Act (of 1972). This act declared that, "The preservation and protection of wetlands and watercourses from random, unnecessary, undersirable and unregulated uses, disturbance or destruction is in the public interest and is essential to the health, welfare and safety of the citizens of the state," and thus limits permitted activities in wetlands and watercourses.

The lots with wetland areas would have to restrict building activity to the portion of the site that is not wetlands and would have to provide drainage design and erosion control measures that would ensure that the wetlands area would not be adversely affected. For some of the lots this would involve a major portion of the available acreage and thus greatly restrict the buyer's options for development.

Special consideration should be given in locating the house and driveway and planning for drainage on sites #4 and 5. A small stream - intermittent in parts - runs through these two lots. While this should not interfere with development of the lots, it should be considered when locating any buildings or driveways on the property and when designing drainage for the lot. Water levels in this stream, particularly in the spring, could cause problems for the homeowners if necessary precautions are not taken in design and construction.

The slope on several of the lots presents limitations for development. Some of the sites will require considerable amounts of fill and extensive grading work before they will be suitable for building. Where some of the lots (#'s 10 & 12)

have steep slopes over parts of the lot and are relatively level in other parts, the location of the house would be determined by this. On such sites the steep slopes to the rear of the house could present problems of surface water runoff and erosion. Consideration would have to be given to this problem and design would have to include measures to minimize surface water runoff and erosion damage.

The slope on some of the lots would also present a problem for siting driveways for some of the houses. Lots #'s 11 & 16 are large lots where the building site is likely to be to the far rear but which have minimal frontage onto Floeting Road and a narrow access to the building site. The steep slope on these lots and the narrow access would mean that an access from Floeting Road would have to be very long and could only be built as a straight and very steep driveway. It would seem more practical and safer to consider accessing these lots from roads to the rear of the property.

The existence of several large stones on some of the smaller exterior lots would mean that excavation and site modification would be necessary before building on these lots. These rocks do not prohibit development but would present an additional expense in developing the lots.

The steep slopes and soil characteristics may present severe limitations for septic system installations. Original site plans for the subdivision were revised to incorporate Health Department percolation test results to ensure that each lot had at least one test site which would be suitable for septic system location. This limits the possibilities for development on each of the sites by restricting the location of the septic system.

Some of the sites may still require costly engineered systems or large leaching areas to compensate for the limitations of the sites for subsurface sewage disposal. These engineered systems may be installed to comply with the requirements of the health code but that does not guarantee that they will not fail. Health department personnel must approve any system that satisfies the requirements of the health code, but the site constraints may be such that even engineered systems may fail unless frequent maintenance is practiced.

Development of this wooded area with houses and driveways would increase the impervious area, cut down on natural drainage, and present additional surface runoff. Drainage demands would be intensified as the homes are occupied and water use increased. It would be necessary to provide drainage for the development to prevent uncontrolled runoff onto adjacent lots and onto the existing roadway. Such uncontrolled runoff would cause problems of erosion and soil loss and could present hazards on Floeting Road from ponding, flooding and/or icing conditions.

While the proposed subdivision of Ashford Lake Estates satisfies the minimum requirements established in Eastford's existing town regulations, there is concern that these regulations do not sufficiently dictate development standards nor do they control land use on accepted lots. The town now has no effective means of controlling development or regulating land use and thus may have no legal justification for rejecting development proposals.

If a subdivision application complies with the established regulations of the town, the Planning Commission will have no alternative but to accept the proposal regardless of reservations of commission members or residents. Where this Ashford Lake proposal is relatively well planned and should have minimal adverse impacts on the local resources it does not present a tremendous threat to the town. However, the town would have no more control over a development that would have more serious consequences, provided that the proposal complies with the established standards.

The town should now address the issue of land use controls and land use planning to assure that local planning and environmental concerns are protected. While passing a zoning ordinance does not appear to be a popular alternative in Eastford, there are other mechanisms of land use control that should be considered for the town. Zoning by special district or adoption of a local land use control ordinance are options for regulating land use which may be less restrictive and more flexible than typical zoning ordianances.

Zoning by special district would allow the town to establish districts in town where land use controls are most needed or where the interest in zoning is greatest. These special districts could adopt the provisions of zoning ordinances regulating minimimum lot frontage, dimensional requirements, and compatible land uses without necessitating that they be applied to the entire town.

Adoption of a local land use ordinance is now an alternative available with the recent passage of Public Act 82-437 by the Connecticut General Assembly. This act allows any town which has not adopted zoning under Chapter 124 of the general statutes to, "...by ordinance, prescribe minimum land use regulations reasonably related to public health, safety and welfare..." This act is somewhat vague, but allows land use controls to be established on a local level without the requirements or restrictions of existing zoning ordinances. This would allow the town to determine how comprehensive the regulations should be, to establish what standards will be regulated, and to select their own procedure for issuing permits, holding hearings, hearing appeals, and amending the ordinance.

These mechanisms for land use control should be considered in order to protect the town from undersirable, unregulated growth and development that may destroy the character of the town and lessen the value of the property in the area.

TRAFFIC CONCERNS

The subdivision of Ashford Lake Estates to 16 residential lots should not present an undue burden of additional traffic volume on Floeting Road. The number of additional vehicles involved should not have a significant impact on local roads.

The concern that subdivision of the property would present, however, is not the number of additional vehicles, but the safety of the driveway access which the lots will have. A minimum of 10 (most likely 14) of the lots will access onto Floeting Road in a distance of just over ½ mile. The curves in the road and the hills in the area mean that several of the lots could have 'blind driveways' accessing

directly onto Floeting Road. The safety of these accesses should be considered and the friveways should be designed to minimize this danger - possibly by providing turnaround space in driveways, placing the driveways to take advantage of the best available site lines, or accessing as many lots as possible onto other roads.

Appendix

Soils

0 660'
scale

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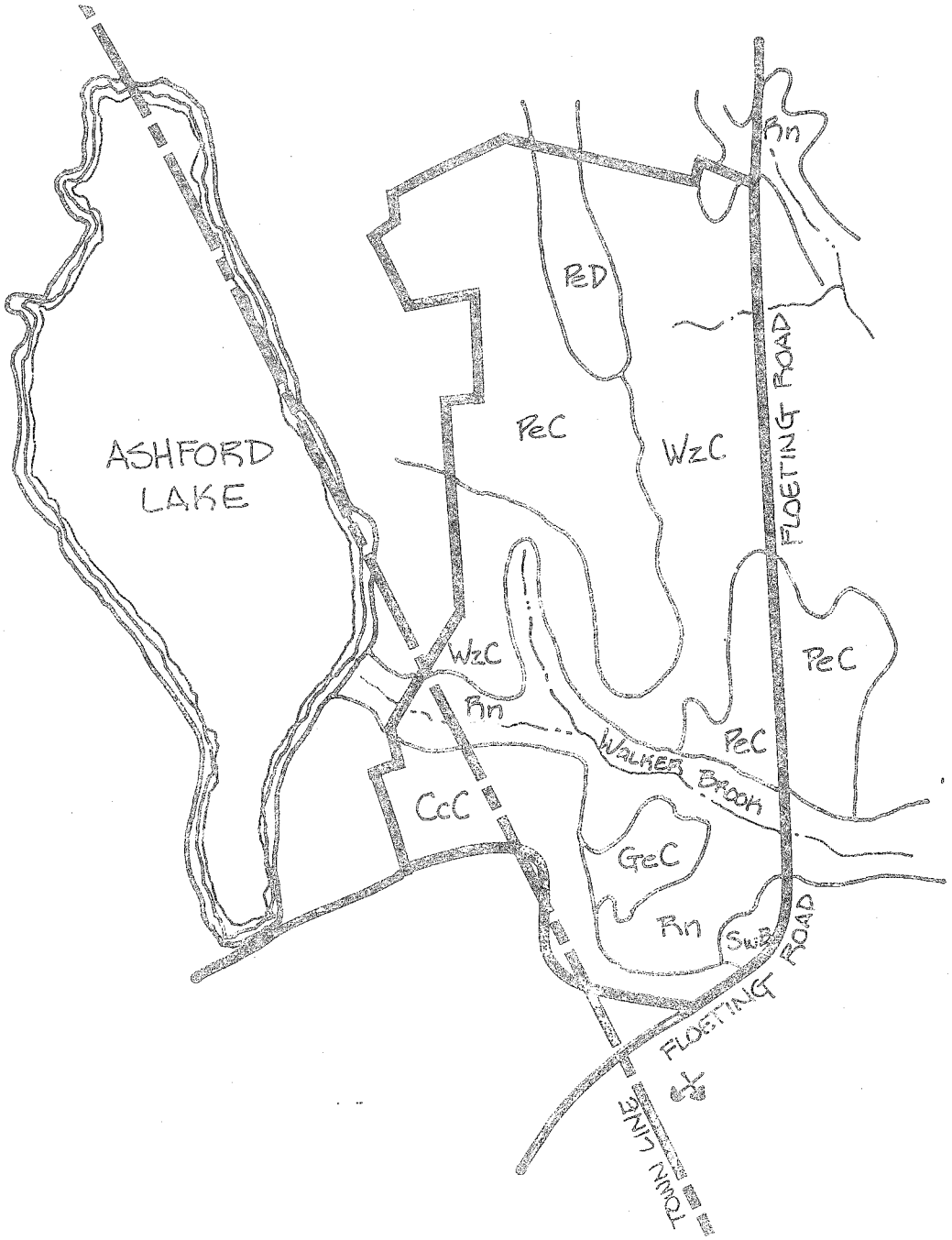

Ashford Lake Estates

Floeting Road

Eastford, Conn.

Principal Limitations and Ratings of Soils For

COMMUNITY DEVELOPMENT

Soil Name and Map Symbol	Dwellings with Basements	Local Roads and Streets	Lawns and Landscaping	Septic Tank Absorption Fields	Drainage
CcC Canton	Moderate:slope	Moderate:slope	Moderate:large stones, slope	Moderate:slope	Deep to water
Charlton	Moderate;slope	Moderate:slope	Moderate:large stones, slope	Moderate:slope	Deep to water
GeC Gloucester	Moderate:large stones, slope	Moderate:slope, large stones	Severe:large stones	Severe: poor filter	Deep to water
PeC Paxton	Moderate:slope, wetness	Moderate:slope, frost action, wetness	Moderate:slope, large stones	Severe: percs. slowly	Deep to water
PeD Paxton	Severe:slope	Severe:slope	Severe:slope	Severe:slope, percs. slowly	Deep to water
SwB Sutton	Severe:wetness	Moderate:frost action,wetness	Moderate:large stones	Severe:wetness	Slope
WzC Woodbridge	Severe:wetness	Severe:frost action	Moderate:slope, large stones, wetness	Severe:percs. slowly,wetness	Percs. slowly, slope, frost action
*Rn Ridgebury	Severe:wetness	Severe:wetness, frost action	Severe:wetness	Severe:percs. slowly,wetness	Percs. slowly, frost action

Ashford Lake Estates

Floeting Road

Eastford, Conn.

Principal Limitations and Ratings of Soils For

COMMUNITY DEVELOPMENT

Soil Name and Map Symbol	Dwellings with Basements	Local Roads and Streets	Lawns and Landscaping	Septic Tank Absorption Fields	Drainage
*Rn Leicester	Severe:wetness	Severe:wetness, frost action	Severe:wetness	Severe:wetness	Frost action
*Rn Whitman	Severe:ponding	Severe:frost action,ponding	Severe:ponding	Severe:percs. slowly,ponding	Percs. slowly, frost action

* Designated wetland soil by Public Act 155

SOIL INTERPRETATIONS FOR URBAN USES

The ratings of the soils for elements of community and recreational development uses consist of three degrees of "limitations":slight or no limitations; moderate limitations; and severe limitations. In the interpretive scheme various physical properties are weighed before judging their relative severity of limitations.

The user is cautioned that the suitability ratings, degree of limitations and other interpretations are based on the typical soil in each mapping unit. At any given point the actual conditions may differ from the information presented here because of the inclusion of other soils which were impractical to map separately at the scale of mapping used. On site investigations are suggested where the proposed soil use involves heavy loads, deep excavations, or high cost. Limitations, even though severe, do not always preclude the use of land for development. If economics permit greater expenditures for land development and the intended land use is consistant 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 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.

SOIL DESCRIPTIONS

CcC - Canton and Charlton very stony fine sandy loams, 8 to 15 percent slopes. This unit consists of sloping, well drained soils on ridges, hills, and side slopes of glacial till uplands. Stones cover 1 to 8 percent of the surface. About 45 percent of the total acreage of this unit is Canton soils, 40 percent is Charlton soils, and 15 percent is other soils. Some areas of this unit consist almost entirely of Canton soils, some almost entirely of Charlton soils, and some of both. The soils were mapped together because they have no significant differences in use and management.

Typically, the Canton soils have a surface layer of very dark grayish brown fine sandy loam about 2 inches thick. The subsoil is yellowish brown fine sandy loam, gravelly fine sandy loam, and gravelly sandy loam 21 inches thick. The substratum is pale brown gravelly loamy sand to a depth of 60 inches or more.

Typically, the Charlton soils have a surface layer of dark yellowish brown fine sandy loam 5 inches thick. The subsoil is yellowish brown fine sandy loam and sandy loam 20 inches thick. The substratum is light yellowish brown and light brownish gray sandy loam to a depth of 60 inches or more.

Included with these soils in mapping are small areas of somewhat excessively drained Gloucester and Hollis soils, well drained Paxton soils, and moderately well drained Sutton soils. A few areas have a compact substratum at a depth of 40 to 50 inches.

The water table in these Canton and Charlton soils is commonly at a depth of more than 6 feet. 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. Both soils have moderate available water capacity and rapid runoff, and both are very strongly acid to medium acid.

The soils of this unit are too stony for cultivation. Stone removal makes the soils suited to cultivated crops but is difficult. The soils are well suited to woodland, but the Charlton soils have higher productivity than the Canton soils.

Slope is the main limitation of the soils for community development, especially for onsite septic systems. Slopes of excavations are unstable. The stones on the surface limit landscaping.

GeC - Gloucester extremely stony sandy loam, 3 to 15 percent slopes. This soil is gently sloping to sloping and somewhat excessively drained. It is on ridges and hills of glacial till uplands. Stones and boulders cover 8 to 25 percent of the surface.

Typically, this soil has a surface layer of very dark grayish brown sandy loam 4 inches thick. The subsoil is dark yellowish brown and yellowish brown gravelly sandy loam and loamy sand 21 inches thick. The substratum is light olive brown and light brownish gray gravelly loamy coarse sand to a depth of 60 inches or more.

Included with this soil in mapping are small areas of excessively drained Hinckley soils and well drained Canton, Charlton, and Paxton soils. Also included are a few nearly level areas and small areas where stones and boulders cover less than 8 percent of the surface. Included areas make up about 15 percent of the unit.

The water table in this Gloucester soil is commonly below a depth of 6 feet. The available water capacity is low. Runoff is medium. The soil has rapid permeability and is very strongly acid to medium acid.

This soil generally is too stony and too droughty for cultivation. The soil is suited to woodland, but droughtiness causes a high rate of seedling mortality and the stones and boulders on the surface hinder the use of some woodland harvesting equipment.

This soil is generally suited to community development, but slope is a limitation for onsite septic systems and the rapid permeability causes a hazard of groundwater pollution in areas used for septic tanks. Some slopes of excavations in this soil are unstable. The stones on the surface hinder landscaping.

PeC - Paxton extremely stony fine sandy loam, 3 to 15 percent slopes. This soil is gently sloping to sloping and well drained. It is on the tops and side slopes of drumlins and large hills of glacial till uplands. Stones and boulders cover 8 to 25 percent of the surface.

Typically, the surface layer is dark brown fine sandy loam 7 inches thick. The subsoil is yellowish brown and dark yellowish brown fine sandy loam 18 inches thick. The substratum is very firm to firm, olive brown fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of somewhat excessively drained Hollis soils, well drained Charlton soils, moderately well drained Woodbridge soils, and poorly drained Ridgebury soils. A few small areas have no stones on the surface, and a few large areas have a substratum of loamy sand. Included areas make up about 15 percent of the unit.

This Paxton soil has a seasonal high water table perched at a depth of about 2 feet for several weeks in the spring. This soil has moderate permeability in the surface layer and subsoil and slow to very slow permeability in the substratum. Runoff is medium to rapid. The soil has moderate available water capacity and is very strongly acid to slightly acid.

This soil generally is too stony for cultivation. Stone removal makes the soil well suited to cultivated crops but is difficult. Maintaining a permanent plant cover helps to control a moderate to severe erosion hazard in cultivated areas.

The soil is well suited to woodland, but the stones on the surface hinder the use of some types of harvesting equipment.

Slope and the slow or very slow permeability of the substratum limit this soil for community development, especially for onsite septic systems. Steep slopes of excavations in this soil slump when saturated. Lawns are commonly soggy in autumn and spring.

PeD - Paxton extremely stony fine sandy loam, 15 to 35 percent slopes. This soil is moderately steep to steep and well drained. It is on side slopes of drumlins and hills of glacial till uplands. Areas on this soil are mostly oval or long and narrow and range from 5 to 25 acres. Stones and boulders cover 8 to 25 percent of the surface.

Typically, the surface layer is dark brown fine sandy loam 7 inches thick. The subsoil is yellowish brown and dark yellowish brown fine sandy loam 18 inches thick. The substratum is very firm to firm, olive brown fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of somewhat excessively drained Hollis soils, well drained Charlton soils, and moderately well drained Woodbridge soils. Also included are a few large areas where stones cover less than 8 percent of the surface and a few areas that have a substratum of loamy sandy. Included areas make up about 15 percent of the unit.

The Paxton soil has a seasonal high water table perched at a depth of about 2 feet for several weeks in the spring. This soil has moderate permeability in the surface layer and subsoil and slow to very slow permeability in the substratum. Runoff is rapid. The soil has moderate available water capacity and is very strongly acid to slightly acid.

This soil generally is too stony and too steep for cultivation. The soil is well suited to woodland, but the stones and slope hinder the use of some types of harvesting equipment.

Slope and the slow or very slow permeability of the substratum are major limitations of this soil for community development, especially for onsite septic systems. Steep slopes of excavations in this soil slump when saturated. Lawns are soggy in autumn and spring.

Rn - Ridgebury, Leicester, and Whitman extremely stony fine sandy loams. This unit consists of nearly level, poorly drained and very poorly drained soils in depressions and drainageways of glacial till uplands. Stones cover 8 to 25 percent of the surface. About 40 percent of the total acreage of this unit is Ridgebury soils, 35 percent is Leicester soils, 15 percent is Whitman soils, and 10 percent is other soils. Some areas of this unit consist of one of these soils, and some others consist of two or three. The soils of this unit were mapped together because they have no significant differences in use and management.

Typically, the Ridgebury soils have a surface layer of very dark brown fine sandy loam 8 inches thick. The subsoil is mottled, light brownish gray fine sandy loam 8 inches thick. The substratum is very firm to firm, grayish brown and light brownish gray fine sandy loam and sandy loam to a depth of 60 inches or more.

Typically, the Leicester soils have a surface layer of very dark brown fine sandy loam 7 inches thick. The subsoil is mottled, grayish brown and light olive brown fine sandy loam 23 inches thick. The substratrum is mottled, light olive brown and grayish brown sandy loam to a depth of 60 inches or more.

Typically, the Whitman soils have a surface layer of very dark gray fine sandy loam 9 inches thick. The subsoil is gray, mottled, light olive gray fine

fine sandy loam and sandy loam to a depth of 60 inches or more.

Included with this unit in mapping are small areas of moderately well drained Sutton and Woodbridge soils and very poorly drained Adrian and Palms soils. Also included are a few areas where stones cover less than 8 percent of the surface.

The Ridgebury soils have a seasonal high water table at a depth of about 10 inches from fall through spring. The permeability of the soils is moderate to moderately rapid in the surface layer and subsoil and slow to very slow in the substratum. Runoff is slow. The Ridgebury soils have moderate available water capacity and are very strongly acid to medium acid.

The Leicester soils have a seasonal high water table at a depth of about 10 inches from fall through spring. The permeability of the soils is moderate or moderately rapid. Runoff is slow. The Leicester soils have moderate available water capacity and are very strongly acid to medium acid.

The Whitman soils have a seasonal high water table at or near the surface from fall through spring. The permeability of the soils is moderate or moderately rapid in the surface layer and subsoil and slow to very slow in the substratum. Runoff is slow. The Whitman soils have moderate available water capacity and are very strongly acid to slightly acid.

The soils of this unit are too stony for cultivation. The unit is suited to woodland. However, the stones on the surface and the high water table hinder the use of harvesting equipment. The water table causes a high rate of seedling mortality and restricts rooting, causing a hazard of uprooting during windy periods.

The high water table and slow to very slow permeability are major limitations of the soils of this unit for community development. Steep slopes of excavations in these soils slump when saturated. The stones on the surface restrict landscaping, and lawns are soggy most of the year.

SwB - Sutton very stony fine sandy loam, 3 to 8 percent slopes. This soil is gently sloping and moderately well drained. It is near the base of slopes and in slight depressions in glacial till uplands. Stones cover 1 to 8 percent of the surface.

Typically, the surface layer is dark brown fine sandy loam 5 inches thick. The subsoil is mottled, yellowish brown fine sandy loam and sandy loam 30 inches thick. The substratum is mottled, light olive brown sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of well drained Canton, Charlton, and Paxton soils; moderately well drained Woodbridge soils; and poorly drained Leicester soils. A few areas do not have stones on the surface. Included areas make up about 15 percent of the unit.

This Sutton soil has a seasonal high water table at a depth of about 20 inches from fall to spring. This soil has moderate or moderately rapid permeability. Runoff is medium. The soil has moderate available water capacity and is very strongly acid to medium acid.

This soil generally is too stony for cultivation but is well suited to woodland. Stones hinder the use of farming equipment and are difficult to remove. The seasonal high water table, which causes the soil to dry slowly in the spring, is an additional limitation for crops.

The seasonal high water table is the main limitation of this soil for community development, especially for homesites and onsite septic systems. Lawns on this soil are soggy in autumn and spring.

WzC - Woodbridge extremely stony fine sandy loam, 3 to 15 percent slopes. This soil is gently sloping to sloping and moderately well drained. It is on the tops of large drumlins and hills on glacial till uplands. Stones cover 8 to 25 percent of the surface.

Typically, the surface layer is very dark grayish brown fine sandy loam 8 inches thick. The subsoil is mottled, dark yellowish brown and yellowish brown fine sandy loam 22 inches thick. The substratum is firm to very firm, olive gray fine sandy loam and gravelly fine sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of well drained Paxton soils, moderately well drained Sutton soils, and poorly drained Ridgebury soils. Included areas make up about 15 percent of the unit.

This Woodbridge soil has a seasonal high water table at a depth of about 20 inches from fall to spring. It has moderate available water capacity. The 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 generally is too stony for cultivation but is well suited to woodland. Stone removal makes the soil well suited to crops but is difficult. Seasonal wetness in fall and spring is an additional limitation for crops.

The water table and the slow or very slow permeability in the substratum are the main limitations of this soil for community development, especially for onsite septic systems. Lawns on this soil are soggy in the autumn and spring and after heavy rains.

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 activitis. 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.