

Environmental Review Team Report

# Blackwell Terrace

Brooklyn, Connecticut



EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

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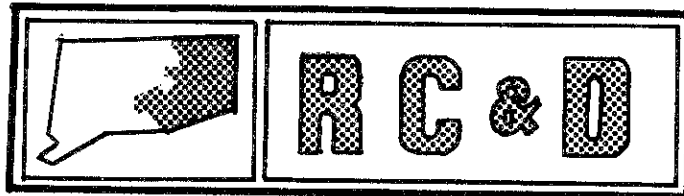
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Environmental Review Team  
Report  
on

Blackwell Terrace  
Brooklyn, Connecticut

May 1978



eastern connecticut resource conservation & development area

environmental review team

139 boswell avenue

norwich, connecticut 06360

A detailed map of Southern New England, showing the states of Massachusetts, Connecticut, and Rhode Island. The map includes major cities, towns, and villages, as well as major highways. A large black circle is drawn around the city of Springfield, Massachusetts. The map also shows the coastline of the region, including Long Island Sound and the Narragansett Bay.

**MASSACHUSETTS**

**CONNECTICUT**

**RHODE ISLAND**

**MAJOR CITIES AND TOWNS:** STAFFORD, UNION, WOODSTOCK, THOMPSON, PUTNAM, EASTFORD, POMPRIET, WILLINGTON, ASHFORD, MANSFIELD, CHAPLIN, HAMPTON, COVENTRY, BURLINGTON, KILLINGLY, COLUMBIA, WINDHAM, SCOTLAND, CANTERBURY, PLAINFIELD, LEBANON, SPRAGUE, FRANKLIN, LISBON, COLCHESTER, NORWICH, BOZRAH, GRISSWOLD, VOLUNTOWN, EAST HADDAM, SALEM, MORTVILLE, PRESTON, NORTH STONINGTON, LYME, EAST LYME, WATERFORD, LEDYARD, GROTON, STONINGTON, OLD LYME, NEW LONDON.

**MAJOR HIGHWAYS:** 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, 41, 42, 43, 44, 45, 46, 47, 48, 49, 50, 51, 52, 53, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 69, 70, 71, 72, 73, 74, 75, 76, 77, 78, 79, 80, 81, 82, 83, 84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95, 96, 97, 98, 99, 100.

ENVIRONMENTAL REVIEW TEAM REPORT  
ON  
BLACKWELL TERRACE  
BROOKLYN, CONNECTICUT

This report is an outgrowth of a request from the Brooklyn Conservation and Inland Wetlands Commission, to the Windham County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource Conservation and Development (RC&D) Area Executive Committee for their consideration and approval as a project measure. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

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

The ERT that field-checked the site consisted of the following personnel: Mike Zizka, Geologist, Department of Environmental Protection (DEP); Donald Smith, Forester (DEP); Mallory Gilbert, Soil Conservationist, Soil Conservation Service (SCS); Ernest Julian, Sanitarian, State Department of Health; Tom Maziarz, Regional Planner, Northeastern Connecticut Regional Planning Agency; Frank Grosso, Northeast District Department of Health; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field-checked the site on Thursday, April 20, 1978. Reports from each Team member were sent to the ERT Coordinator for review and summarization for the final report.

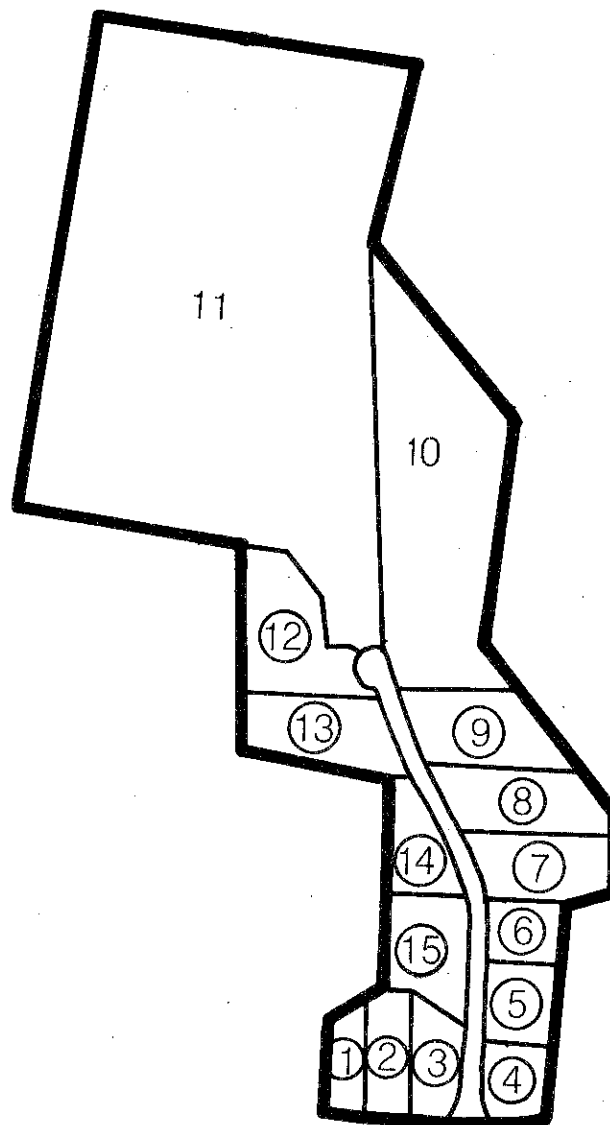
This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the developer and the Town of Brooklyn. The results of this Team action are oriented toward the development of a better environmental quality and the long-term economics of the land use.

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

If you require any additional information, please contact: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360, 889-2324.

# FINAL SUBDIVISION PLAN

BLACKWELL TERRACE  
BROOKLYN, CONNECTICUT



ALL LOT LINES SHOWN ARE APPROXIMATE.

## INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to study a road and subdivision proposal for a 68-acre parcel located to the north of U.S. Route 6, less than one mile west of Brooklyn Center (junction of Routes 6 and 169) and in the private ownership of Robert Welch, President of Welco Construction, Inc. This parcel has approximately 730 feet of frontage on Route 6.

It is the intent of the developer to subdivide the tract into 15 lots and to provide one road, to be known as Blackwell Terrace, with 28 feet of paved surface and a 50 foot right-of-way, which will extend 1,100 feet to the north of Route 6 and terminate in a cul-de-sac. The major portion of this parcel extends north beyond the cul-de-sac to Wolf Den Road. This portion of the property is divided into two large lots, 10 and 11, on the proposed plan. Thirteen of the lots are between 40,000 and 88,000 square feet. Lot 10 is 16 acres in size and lot 11 is 34 acres in size. Both lots have access to Blackwell Terrace on the cul-de-sac. A residential structure already exists on lot 3. No city water or sewers are available. Wells and on-site septic disposal systems are proposed for this development.

The physical site poses a difficult design problem. Large sections of the site are covered by wetlands and land with slopes in excess of 10% (often in excess of 15%). Blackwell Brook, a Class A trout stream, borders the eastern edge of the property. Wetlands associated with the brook extend to within 140 feet of Blackwell Terrace at some points. The steepest slopes are found between these wetlands and Blackwell Terrace. An intermittent stream and its associated wetlands traverse the subdivision from west to east, entering lots 15, 5, 6, and 7.

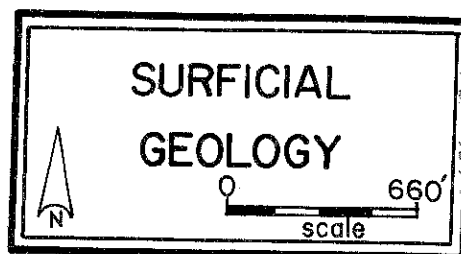
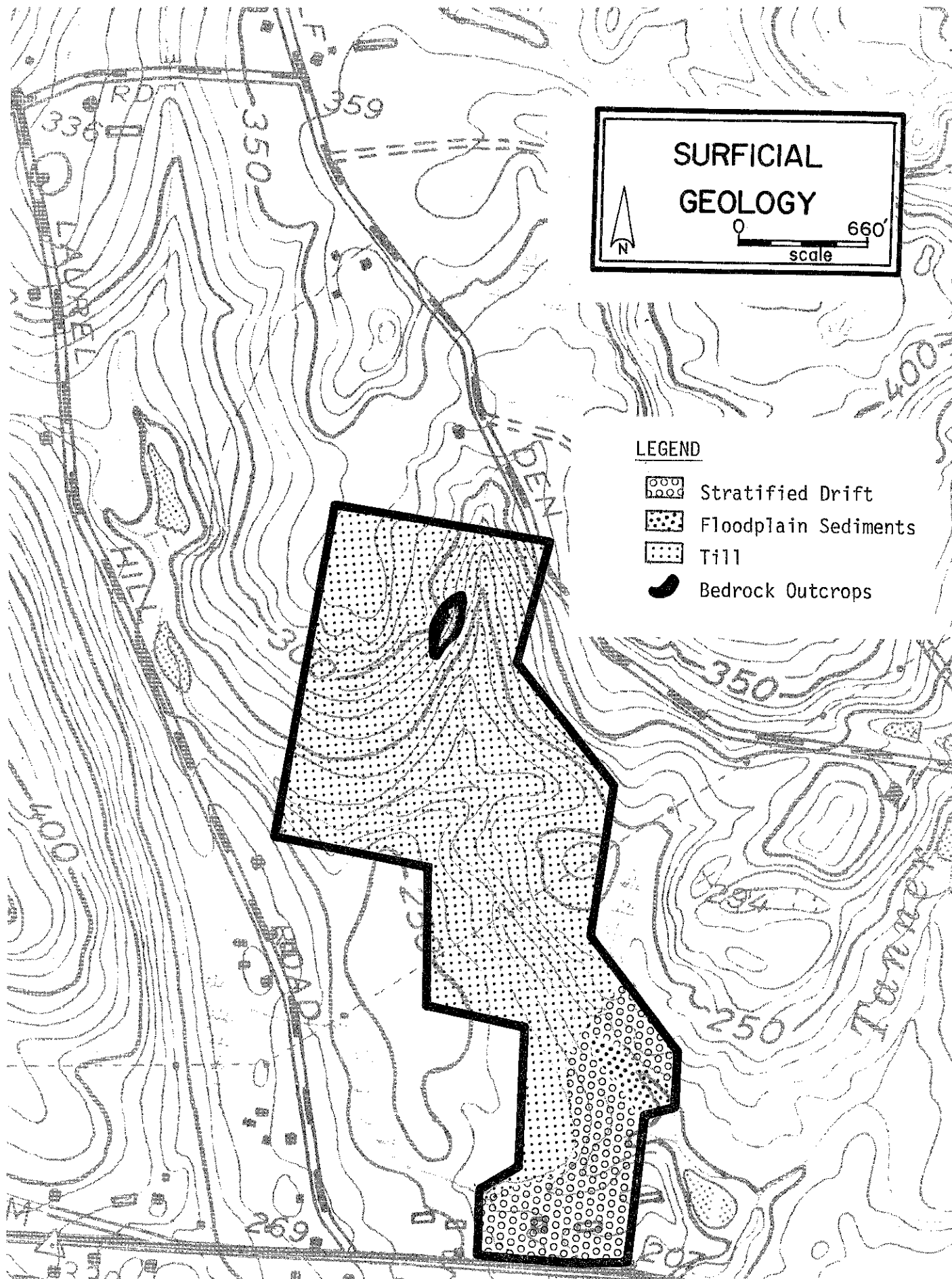
The Team is concerned with the difficulty in developing this tract of land due to the steep slopes and wetland soils on this site. This problem is compounded since wells and on-site septic systems must be used in this development. The present subdivision plan does not appear to take the existing soil limitations into account, as many of the lots are unsuitable for septic systems. Given the problems of developing this land, the proposed plan is not a very desirable solution. Lots 6, 7, 8, and 9 are particularly troublesome, and lots 10, 11, and 15 may also pose problems if the houses and support systems are not carefully designed.

The key factor to consider in the overall evaluation of the proposed subdivision is the unique character of Blackwell Brook. At a time when heavy pressure is being exerted on these types of natural resources it is imperative that the ecology and nature of this stream be protected. Excessive disturbances or discharge of pollutants in the wetlands adjacent to it could have significant adverse effects, even if only temporarily.





## ENVIRONMENTAL ASSESSMENT

### GEOLOGY

No bedrock outcrops were observed on the southern part of the property, but several outcrops in the northern part appear in U.S. Geological Survey Map GQ-696, entitled Bedrock Geologic Map of the Danielson Quadrangle, by H.R. Dixon (1968).



LEGEND

-  Stratified Drift
-  Floodplain Sediments
-  Till
-  Bedrock Outcrops



The predominant rock types are schists and gneisses; the latter is more common in the area reserved for lots 1-9 and 12-15 (approximately the southern third of the property). The surficial geology of the property, modified from USGS Map CG-660, entitled Surficial Geologic Map of the Danielson Quadrangle, by A.D. Randall and Fred Pessl, Jr. (1968), is shown in the accompanying illustration. Most of the site is covered by till, a glacially-derived, poorly sorted mixture of rock fragments ranging in size from clay to boulders; however, much of the area proposed for the thirteen southern lots contains stratified drift, a deposit which was derived from glacial meltwater and which consists principally of sand and gravel with some silt. The depth of overburden on the property is not known. At least 8 feet of material was exposed in test holes on lots 1 and 2. The topography and the distribution of outcrops suggest that the surficial deposits become progressively thinner toward the northern portion of the site.

## TOPOGRAPHY

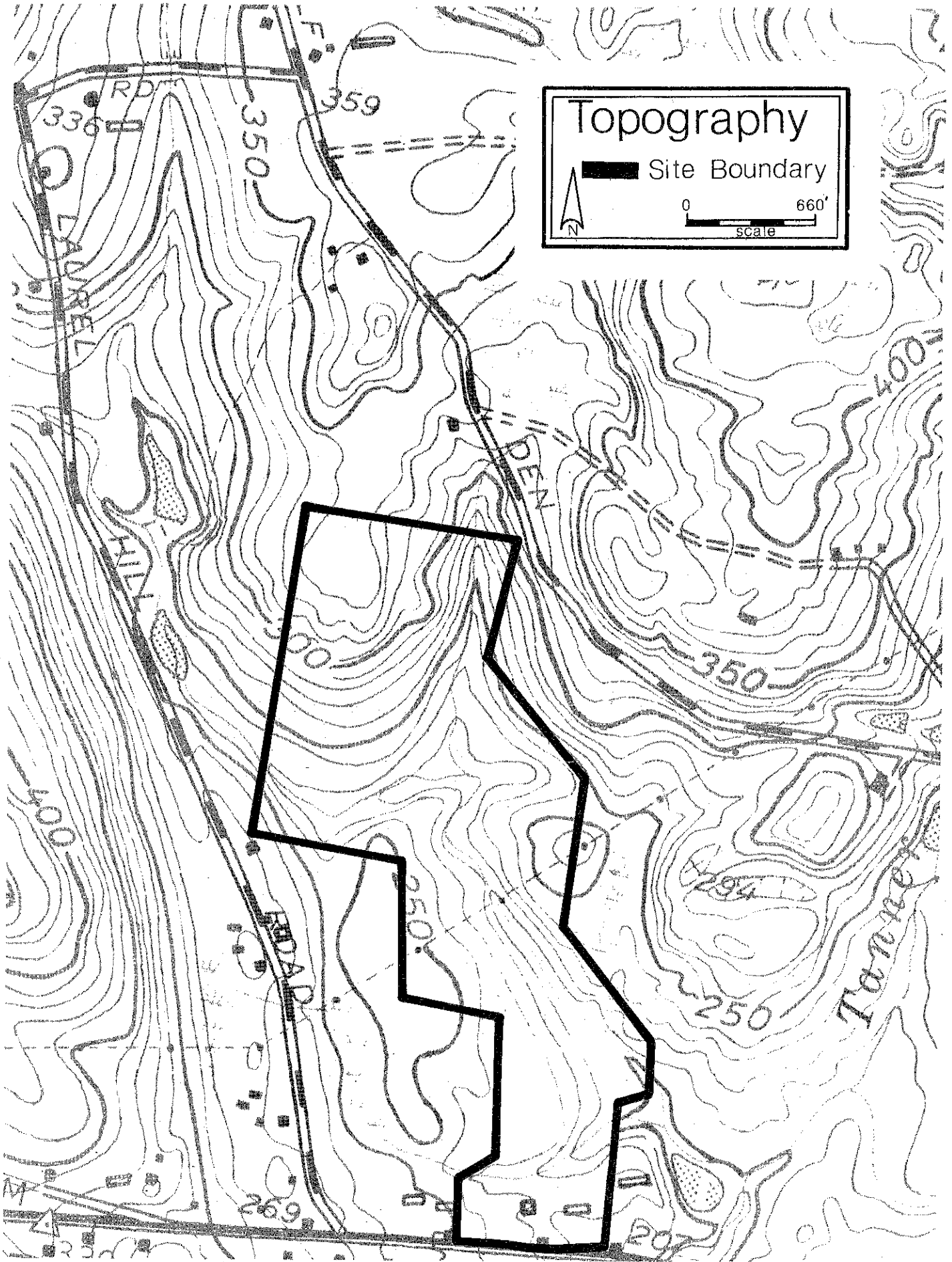
The northern half of the strip of land proposed for the new road lies along a distinct topographic break: west of the strip, the land is nearly level; east of the strip, the land drops steeply (slopes range from 17% to 48%) to the flatter floodplain area of Blackwell Brook. In the southern half of its extent, the road crosses a lowland, which is drained by a small brook, and terminates on a level to gently sloping surface at U.S. Route 6. The topography of the land reserved for lots 10 and 11 is irregular. A relatively level lowland exists at the confluence of Blackwell Brook and the unnamed brook that originates northeast of Wolf Den Road. Apart from this small section, most slopes are moderate to steep.

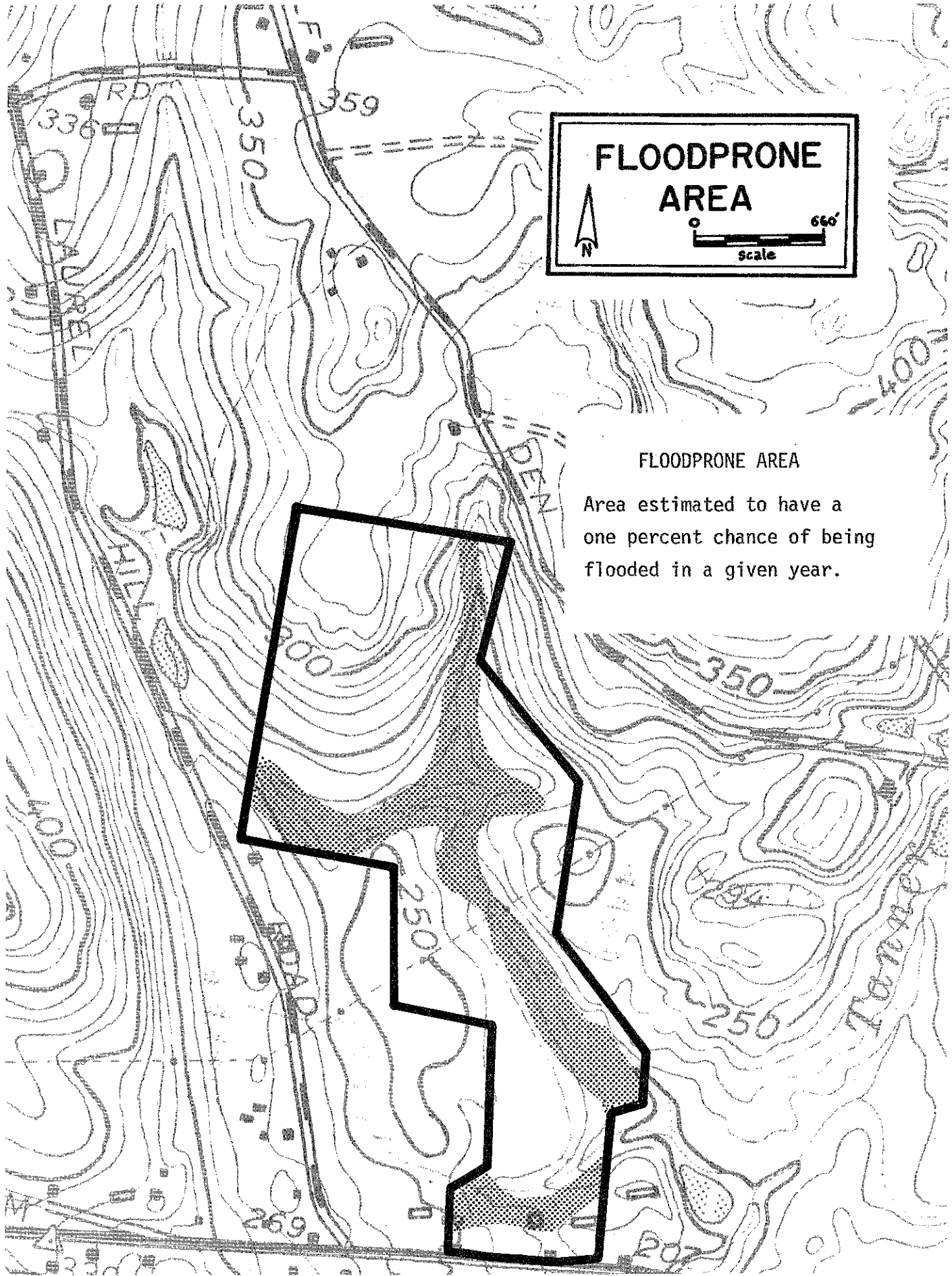
## HYDROLOGY

Blackwell Brook is the principal drainage line crossing the property. To the point of its passage under U.S. Route 6, the brook is supplied by a drainage area of approximately 14 square miles that includes several small tributaries within the proposed subdivision. Although no streamflow measurements were made at Route 6, records are available from a water-stage recorder 1.4 miles downstream near Connecticut Route 169. These records, published in part in U.S. Geological Survey Water-Data Report CT-76-1, show that flow at that point has been as high as 1,100 cfs (cubic feet per second) and as low as 0.40 cfs (records have been kept only from 1961-1976). The total drainage area of the brook to the point of the recording station is 17 square miles. Assuming an equal distribution of runoff throughout the Blackwell Brook watershed, the flows at Route 6 can be estimated as approximately 14/17, or 82%, of the concurrent flows at Route 169. Hence, flow at Route 6 probably has been as high as 906 cfs and as low as 0.33 cfs since 1961.

It is likely that peak flows in the brook, at times before records were kept, actually have exceeded the high flows mentioned above. The major storm events of 1938 and 1955, for instance, are not reflected by the available data. The gage height for the maximum recorded flow was 7.76 feet. Assuming that the gage datum level is the streambed elevation, it can be projected that a 100-year interval storm event would produce a water level at least 8 feet higher than the bed. On this basis, floodprone areas within the property can be mapped approximately as shown in the accompanying illustration.

The developer has proposed installing two 30-inch drainage pipes under his new road to handle flow from the small tributary of Blackwell Brook that lies within





## FLOODPRONE AREA



### FLOODPRONE AREA

Area estimated to have a  
one percent chance of being  
flooded in a given year.

0.1 mile of Route 6. The drainage area of the tributary as far as the recommended culvert is estimated to be approximately 66 acres. It seems likely that the proposed piping would be adequate to accommodate most runoff, but some backup may occur during exceptional storms, such as the 24-hour, 100-year rainfall event. Because such backup would affect lot 15 as well as some areas to the west, the developer and his engineer should determine the probable peak flow in the tributary for the 100-year storm and provide an assessment of the pipes' ability to handle such flow. Various methods may be employed for determining peak flow; one method is detailed in Technical Release No. 55 of the Soil Conservation Service.

Other effects of the piping would be to remove a very small portion of the present wetland and to increase slightly the flow velocity of the tributary stream. It seems unlikely that either effect would cause more than a nominal change to the overall hydrologic system.

## WILDLIFE

Blackwell Brook is a natural perennial stream having a total watershed in excess of 17 square miles. The stream is considered a Class A stream with excellent values for fish and wildlife. In addition to native fish populations which include black nose dace, pickerel, fallfish and brook trout, the State of Connecticut DEP fish and waterlife unit supplements these with additional trout stockings. In 1977, stocking included 1,200 brook trout, 3,730 brown trout and 660 rainbow trout. The anticipated stocking figures for 1978 are similar. Fishing pressure is high along all sections of the stream and can be expected to increase during the future.

The streambed is composed of gravel and cobble-sized stone. This provides excellent habitat for bottom dwelling organisms which act as fish food. There is potential for spawning activities in the stream where gravel deposits are present. Native brook trout utilize these areas during fall spawning.

Stream current is moderate during most of the year. The stream produces large size trout, especially in the lower reaches.

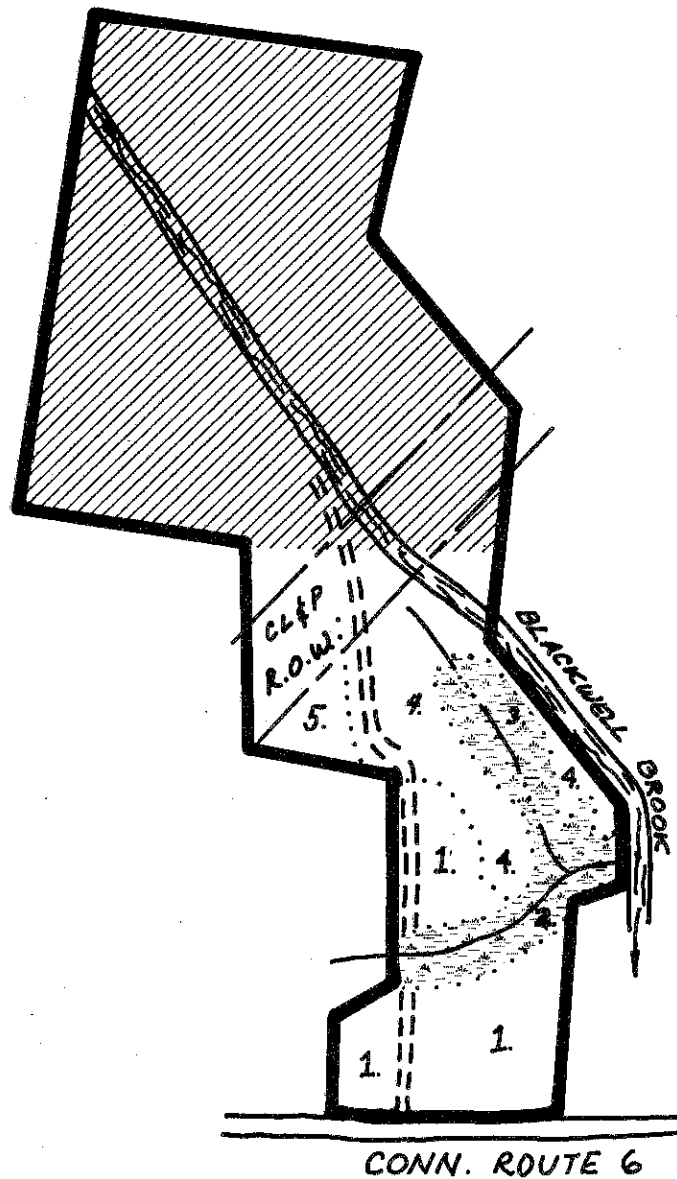
Development of any type should consider fisherman access and buffering from a standpoint of adjacent landowners. This stream presents an excellent opportunity for implementing the "streambelt concept." A buffer of 250 feet on all sides of the stream would provide a sight buffer, allow for fisherman access, and provide all important protection to the stream system. Specifically, filtration of sediment and organic materials from adjacent disturbed land. Special attention should be given to erosion and sediment control measures during development.

## FOREST RESOURCES

Forest resources for the Blackwell Terrace Subdivision site have been divided into five separate stands. These stands are shown in the accompanying illustration.

**STAND ONE:** This open field area consists of five acres. Here, forested areas are limited to hedgerows and lanes, dominated by red maples, sugar maples, red oaks, white oaks, white ash, black birch and grey birch. The understory in this area is composed of hardwood saplings. Portions of this area could be planted in a variety of softwoods such as white pine or Canadian hemlock to provide visual diversity and windbreaks for the proposed subdivision.

# FOREST STAND MAP



## LEGEND

- == Improved Roads
- Unimproved Roads
- ... Stand Boundaries
- - - Powerline R.O.W.
- Watercourses
- Wetlands
- //// Unserved Area



Prepared by D.H. Smith, DEP.

STAND TWO: This area is a one acre open wetland. The area immediately surrounding the watercourse is vegetated by hardwood saplings and wetland shrubs. As this area has great wildlife value, it should be disturbed as little as possible during development of this parcel. Perhaps rerouting of the main access road to utilize the existing laneway at the western boundary of the stand should be considered.

STAND THREE: Stand three is a four acre hardwood swamp. The wetland is fully occupied by pole to sawlog size red maple with occasional white ash and sugar maple. The shrubby understory consists of spicebush and witch hazel. Reproduction in this area is negligible.

STAND FOUR: This five acre mixed hardwood area is dominated by pole to sawlog size red maple, sugar maple, white ash, red oak, white oak and black cherry. Scattered hemlock frequent the stream banks. The understory consists of sapling sugar maples, ash and hemlocks. Sugar maple, ash and hemlock should be encouraged to mature in this area.

STAND FIVE: This two acre old field is in early stages of forest succession. It is dominated by red cedar, red oak, white oak and poplar. The understory consists of oak regeneration, occasional hickory regeneration and juniper. Development in this area should encourage oak and hickory reproduction. Cedar should be retained as an aesthetic contrast. Poplar should be discouraged as it is a fast growing species with propensity towards storm damage.

## SOILS

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

The soils most representative of the Blackwell Terrace site include the Saco series, Charlton series, Charlton-Hollis series, Gloucester series and the Hinckley series. Development limitations associated with these soils are related to wetness, frost action, slope and large stones.

The Saco series are very poorly drained soils developed in recent floodplain sediments. These sediments, normally deeper than 10 feet, are high in silts and very fine sands. Stratified sands and gravels may occur below 20 inches. They flood frequently and have moderate permeability in the subsoil. The water table is normally at surface during most of the year. Most use problems are related to flooding and high water table.

The Charlton series are well drained soils developed in upland till normally deeper than five feet. These soils are moderately permeable in the subsoil, but slowly to very slowly permeable layers may be present below 40 inches. The water table usually is below 40 inches most of the year. The Charlton soils are naturally stony and contain few to many stones throughout the soil. Most use problems are related to slopes and stoniness.

The Charlton-Hollis series consists of these two soil types which are moderately steep to steep and occur in patterns too intricate to separate in mapping. Approximately 50 percent of the unit is similar to the soil described for the Charlton series. Hollis soils make up about 30 percent of the mapping unit and occurs when soil is a few to 20 inches deep to bedrock. The remaining part of the mapping unit is an unnamed soil that ranges from 20 to 40 inches to bedrock.

The Gloucester series are somewhat excessively drained soils developed in upland till mainly from granitic bedrock. These soils are normally deeper than five feet. They are rapidly permeable. Below 60 inches slowly permeable layers may be present. The water table normally is below 60 inches during most of the year. The Gloucester soils are naturally stony and contain few to many stones throughout the soil. Gravel size rock fragments generally make up 10 to 30 percent of the surface and subsoil. Most use problems are related to slope and stoniness.

The Hinckley series are excessively drained soils developed in stratified sandy, gravelly and cobbly water deposits. These deposits, normally deeper than 10 feet, are located on undulating to rolling terrace topography above the present overflow of large streams. They have rapid to very rapid permeability in the subsoil. The water table is below 60 inches during most of the year. Most use problems are related to texture, droughtiness and rapid to very rapid permeability.

As the soils limitation chart shows, approximately 23% of the site consists of Saco soils, a regulated wetland soil under Public Act 155. These soils are severely limited for development of on-site septic systems, dwellings with or without basements, roads and streets, and lawns and landscaping, due to their constant wetness, and susceptibility to flooding and frost action. Gloucester soils comprise approximately 12% of the site. These soils impose moderate limitations for on-site sewage, dwellings, roads and streets, and lawns and landscaping due to the slope and large stones common to this soil. The Charlton soils make up approximately 29% of the soils on the site. These soils are moderately limited for development considerations, except in areas where large stones and slope are a significant factor.

Should any filling be required in wetland soils on this site, a permit will be needed from the Brooklyn Inland Wetlands Commission and possibly a 404 permit may be required from the U.S. Army Corps of Engineers. The 404 permit deals with any filling operation to be done in a watercourse, or wetland contiguous to a watercourse, that averages more than 5 cfs flow.

It is hoped that a development schedule could be submitted as part of an erosion and sediment control plan. Connecticut's Erosion and Sediment Control Handbook published by the Soil Conservation Service will aid both the developer and the Town in preparing and approving an adequate erosion and sediment control plan. Standards and specifications for both mechanical and vegetative practices listed within the Handbook are available at the Windham County Soil Conservation Service office, Brooklyn, Connecticut.

## FOUNDATION DEVELOPMENT/GRADED CONDITIONS

Present soil conditions present severe limitations for the use of full basements on most lots. Foundation drains would be needed on lots where basements are feasible. This would further reduce suitable area for subsurface sewage disposal.

Severe erosion could be a hazard in any attempt to develop the area in the vicinity of Lots 8, 9 and 10. Eroded material could flow into the wetland beneath these lots and then into Blackwell Brook which is a Class A stocked trout stream. No attempt should be made to develop houses or septic systems on such severe slopes.

## WATER SUPPLY

Drinking water is proposed to be provided by on-site wells at all lots. Because domestic requirements are relatively small, no problems should be encountered in locating adequate supplies. Dug wells may be suitable at lots 1-5 if the saturated part of the stratified drift is at least 10 feet deep; drilled wells into bedrock would be more reliable in other lots. Water quality is likely to be acceptable, although Connecticut Water Resources Bulletin No. 8 shows that the property is located near an area wherein bedrock causes locally high concentrations of iron and manganese. To minimize the risk of septic effluent contamination of potable water supplies, wells on lots 1-5 should not be placed north of any waste disposal systems, and wells on lots 12-14 should not be placed east of such systems, to be in accordance with the Public Health Code (Section 19-13 BZ0f) wells would have to be located a minimum of 75 feet from all sewage disposal systems and reserve areas. Also, wells on lots 2 and 3 should be dug prior to house construction to assure the availability of a satisfactory water supply, as these areas were previously used as a chicken farm and stable and high nitrate levels may be encountered in the water supply.

## WASTE DISPOSAL

The developer proposes to install on-site subsurface waste disposal systems on each lot. The suitability for septic systems of the northern part of the total parcel is not considered here, as development there is not presently being proposed. On the southern part of the parcel, lots 1, 2, 4 and 5 seem well suited to on-site sewage in their existing condition. All other lots have severe limitations for on-site subsurface sewage disposal. Many of the lots are comprised almost entirely of wetland soils, and other lots, such as lots 8, 9 and 10, have such severe slope that subsurface sewage disposal is not feasible. Test pits have been done since the initial site inspection and have been witnessed by the Northeast District Department of Health. Complete soil information can be obtained from that office.

Proposed lots 6, 11, 12, 13, 14, and 15 are unsuitable at this time for sewage disposal due to high groundwater conditions. At the time of inspection, lots 6, 11, 12, and 13 were at field capacity (saturated to the surface) with groundwater breaking out at the surface in several areas. The altitude and direction of groundwater flow appears to be in a westerly direction. In the area of the proposed road, groundwater was seeping to the surface and flowing down the slope onto proposed lots 8, 9, and 10. Since the water table slopes toward lots 8, 9, and 10, waste disposal systems located on lots 11, 12, and 13 could pose a threat to wells on these lots due to the proximity of the groundwater discharge area. Since sewage disposal systems will not adequately treat or dispose of liquid waste when



flooded by high groundwater, these sites are unsuitable for on-site sewage disposal at this time.

Large portions of lots 7, 8, 9 and 10 contain flood plain and are unsuitable for sewage disposal in those areas. The easterly portions of lots 8, 9, and 10 are severely sloped (with high groundwater and seepage from the slope evident) and are unsuitable for sewage disposal in those areas. Lot 7 is somewhat less sloped, but unsuitable for sewage disposal at this time.

## ROADS

The developer is proposing to construct a road through a wetland area for access to interior lots. Construction of this proposed road would require deep cuts and considerable fill and will be a source of a large amount of sediment eventually being washed into Blackwell Brook. Therefore, if work progresses as proposed, extreme care should be taken to contain sediment. It is strongly recommended that work be done during a period of low flow (usually August and September). This access road is shown as having a paved width of 28 feet and a subbase of 12 inches, which complies with subdivision regulations for a local road.

In an effort to make lots 7-10 more suitable for building, perhaps the proposed road could be moved some feet to the west. Lots 12, 13 and 14 could then be combined into two longer (N-S) lots resulting in more buildable land in lots 7-10.

Another possibility may be relocation of the road to the western property line on an existing, though unimproved, roadbed. Lots with fewer engineering and zoning encumbrances could then be made by redividing the parcel north of the wetland crossing, into longer (E-W) sections. In terms of protecting Blackwell Brook, this may be one of the better alternatives.

Also, it is assumed that supporting engineering calculations could be presented to substantiate the adequacy of the twin 30 inch culverts which are proposed under this roadway. This data would be very helpful if presented with the final subdivision proposal.

The potential for traffic problems always exists whenever a local road or a private drive enter onto a major arterial road. Both conditions exist with the proposed subdivision. U.S. Route 6 is the major east-west route through Brooklyn and is heavily travelled (5,000-9,999 vehicles/day, 1975). Much of the traffic is through-traffic travelling between the Hartford and Providence urban areas, often at speeds in excess of 45 miles per hour. Consideration should be given to design features that would minimize the potential for accidents. Curb cuts on Route 6 should be minimized. Access to lots 3 and 4 should be via Blackwell Terrace and not Route 6. Access to lots 1 and 2 is probably feasible only via Route 6. To eliminate the necessity of backing out onto Route 6, turnarounds could be provided in the driveways. The line-of-sight for cars entering Route 6 from Blackwell Terrace would appear to be adequate except for the possible visual obstruction caused by the moderate embankment on the north side of Route 6. Care should be taken to grade the embankment in such a way so as to eliminate any visual obstruction.

## CONFORMITY TO TOWN PLAN OF DEVELOPMENT

The application only partially conforms to the Brooklyn Plan of Development. The southern portion of the site is designated as medium density residential (one dwelling unit per acre) but the northern portion is designated as low density residential (no more than one dwelling unit per two acres).

In the Regional Plan of Development, the area is designated for future suburban development. The proposed subdivision is in conformity with this recommendation in the regional plan.

## CONFORMITY TO LOCAL ZONING REGULATIONS

The entire tract is within the Rural Residential Zone. The minimum lot size in the Rural Residential Zone is 40,000 square feet. All lots conform to this requirement. The minimum frontage requirement is 150 feet and all lots apparently conform to this.

There are some lots on which it may not be possible to meet minimum front yard (50 feet) and side yard (40 feet) requirements without placing the house on wetlands or on steep slopes. To meet minimum setback requirements on lots 7, 8, and 9 a house would probably have to be placed on land with slopes of 15% or greater. The placement of a house within setback limits on lot 6 appears to be physically impossible without having part of the foundation in the wetlands.

Sufficient data on topography and wetlands were not available (on subdivision map) for lots 10 and 11, to judge the suitability of those lots for development. However, it would appear that in order to comply with setback requirements, a house placed on lot 10 would have to be placed either on steeply sloping land or wetlands, but this is indeterminate. Lot 11 is an "interior lot" with 50 feet of frontage on the cul-de-sac. Slope at the site of the test pits appears to be about 10% but two foot contour lines were not shown so this is just an estimate.

The majority of lot 15 is in wetlands or in slopes of 10% or greater. The northwest corner, however, is relatively flat and dry. It may be possible to place a house in that corner and still meet minimum sideyard and backyard requirements.

Lots 1, 2, 4, 5, 12, 13, and 14 appear to be acceptable for building with regard to minimum setback requirements. Flat land that is not regulated wetlands is available within the setback requirements on each lot.

A house already exists on lot 3.

## SUITABILITY OF THE SITE FOR THE PROPOSED DEVELOPMENT

Lots 1-5, as shown in the existing plan view, pose few problems for development. The soils on these lots, the slope conditions, potential for on-site wells, etc., are generally favorable to development. The only caution here would be to locate wells a sufficient distance from those areas which had previously been used to stockpile poultry and animal wastes. Contamination of well water could be a concern.

Lots 6-10 are of particular concern for two specific reasons: proximity to

wetlands contiguous to Blackwell Brook and/or excessively steep slopes. It is questionable whether or not a home, septic system, and well could be arranged on these lots and conform to the Town of Brooklyn setback requirements from roads and wetlands. To more accurately assess the potential of these lots, any proposed cuts, fills or other proposed contour changes should be shown in a final subdivision plot plan; in addition to a plan for stabilizing the slopes on the eastern side of these lots. Careful engineering would be necessary to insure containment of septic effluent so that it does not enter the wetland at the top of the slope.

Also, although not shown on the plot plan, a natural drainageway exists in the area approximately between lots 9 and 10. This drainageway was actively flowing during the ERT field review. It was apparently carrying both surface runoff and water from ground seeps. These seeps were noted in the vicinity of the proposed road bed and in lots 12 and 13.

Lots 12 and 13 show evidence of a seasonally high water-table (standing and flowing surface water and/or percolation test holes with water in them). Consequently, based on deep test pit results, additional engineering may be necessary to facilitate placement of homes with basements (footing drains) and on-site septic systems.

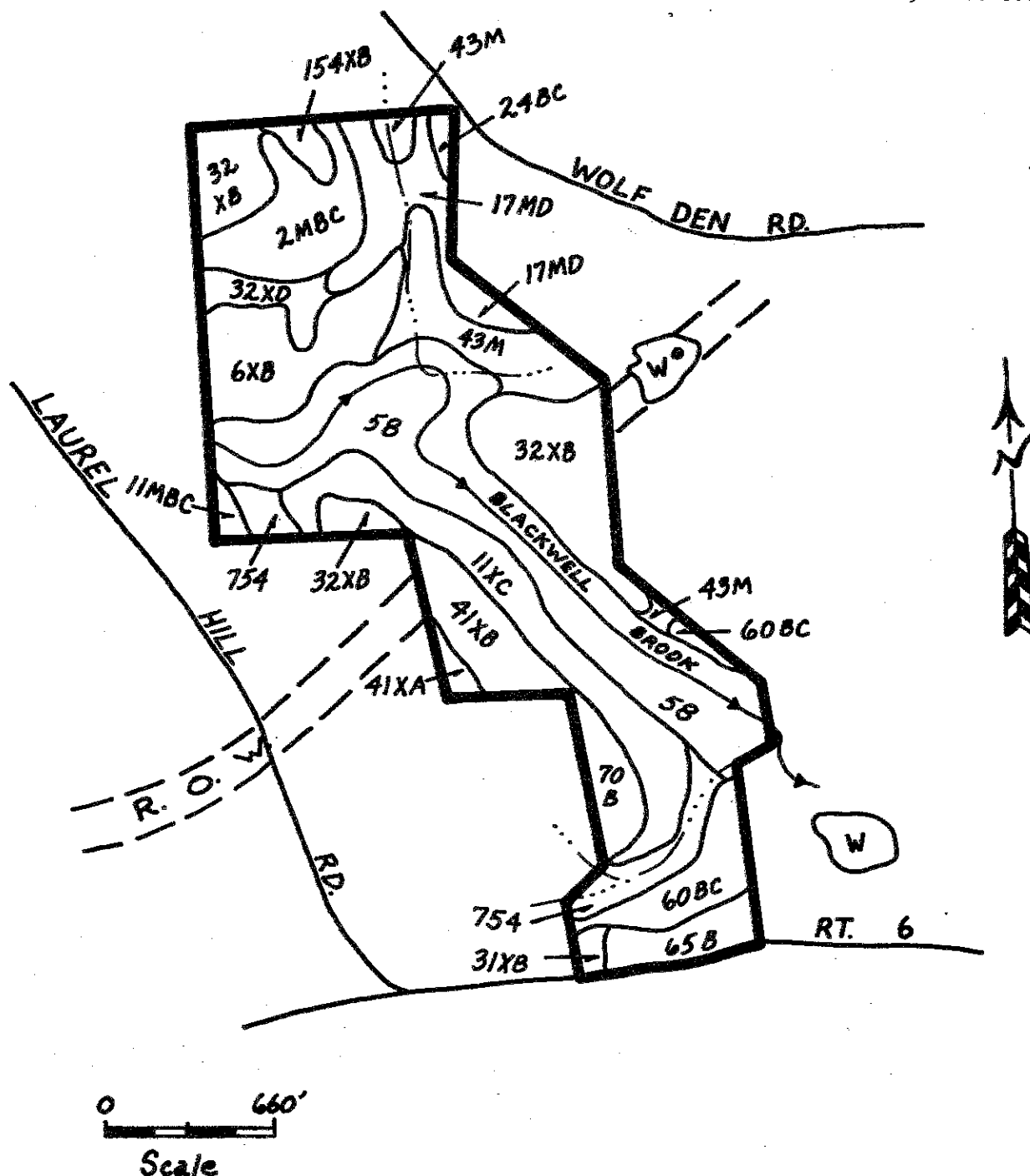
Lot 15 may also have some problems with positioning a home, septic system, and well in a manner which will conform to local regulations.



# Appendix

# SOILS

BLACKWELL TERRACE  
BROOKLYN, CONNECTICUT



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

Information taken from: Soil Survey, Windham County, Connecticut, 1975; Soil Survey Sheet No. 2067; prepared by: United States Department of Agriculture, Soil Conservation Service. Advance copy, subject to change.

BLACKWELL TERRACE  
BROOKLYN, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Soil Symbol	Approx. Acres	Percent of Acres	Principal Limiting Factor	Urban Use Limitations				
					On-site Sewage	Dwellings with Basements	Dwellings without Basements	Roads and Streets	Land-scaping and Lawns
Hinckley	60BC	5	6.8	Slope	2	2	2	2	2
Haven	65B	3	4.1		1	1	1	1	1
Merrimac	70B	2	2.7		1	1	1	1	1
Charlton	6XB	6	8.2	Large stones	2	2	2	1	2
Charlton	32XB	7	9.6	Large stones	2	2	2	1	2
Canton & Charlton	32XD	2	2.7	Slope, large stones	3	3	3	3	3
					3	3	3	3	3
Gloucester	11XC	9	12.3	Slope, large stones	2	2	2	2	2
Gloucester	11MBC	1	1.4	Large stones	3	3	2	2	2
Sutton	41XA	1	1.4	Wetness, frost action, large stones	3	2	3	2	2
Sutton	41XB	2	2.7	Wetness, frost action, large stones	3	2	3	2	2
Sutton	154XB	1	1.4	Wetness, frost action, large stones	3	2	3	2	2
Woodbridge	31XB	1	1.4	Wet, frost action, large stones, percs. slowly	3	3	3	3	2

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					On-site Sewage	Dwellings with Basements	Dwellings without Basements	Roads and Streets	Land-scaping and Lawns
Charlton* Hollis	2HBC	5	6.8	Slope	2	2	2	2	2
	2HBC				3	3	3	3	3
Hollis-Rock Outcrop	17MD	4	5.5	Slope, depth to rock	3	3	3	3	3
Scarboro#	754	4	5.5	Wet	3	3	3	3	3
Ridgebury & Whitman#	43M	3	4.1	Wetness, percs. slowly, frost action	3	3	3	3	3
Saco#	58	17	23.3	Floods, wetness, frost action	3	3	3	3	3

\* In some areas of this delineation depth to rock may change the interpretations.

# Wetlands by PA 155

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



## SOIL DESCRIPTIONS

Soil  
Map  
Symbol

SOIL NAME

60BC	Hinckley gravelly sandy loam, 3 to 15% slopes.
65B	Haven silt loam, 3 to 8% slopes.
70B	Merrimac sandy loam, 3 to 8% slopes.
6XB	Charlton very stony fine sandy loam, 3 to 8% slopes.
32XB	Charlton very stony fine sandy loam, 3 to 8% slopes. Rock outcrop.
11XC	Gloucester very stony sandy loam, 8 to 15% slopes.
11MBC	Gloucester extremely stony sandy loam, 3 to 15% slopes.
41XA	Sutton very stony fine sandy loam, 0 to 3% slope.
41XB	Sutton very stony fine sandy loam, 3 to 8% slopes.
154XB	Sutton very stony fine sandy loam, 3 to 8% slopes.
31XB	Woodbridge very stony fine sandy loam, 3 to 8% slopes.
17LC	Charlton-Hollis fine sandy loam, 3 to 15% slopes.
17MD	Hollis-Rock outcrop complex, 15 to 35% slopes.

WETLAND SOILS

754	Scarboro fine sandy loam.
43M	Ridgebury & Whitman extremely stony soils.
58	Saco silt loam..

## SOIL INTERPRETATIONS FOR URBAN USES

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

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

### Slight Limitations

Areas rated as slight have relatively few limitations in terms of soil suitability for a particular use. The degree of suitability is such that a minimum of time or cost would be needed to overcome relatively minor soil limitations.

### Moderate Limitations

In areas rated moderate, it is relatively more difficult and more costly to correct the natural limitations of the soil for certain uses than for soils rated as having slight limitations.

### Severe Limitations

Areas designated as having severe limitations would require more extensive and more costly measures than soils rated with moderate limitations in order to overcome natural soil limitations. The soil may have more than one limiting characteristic causing it to be rated severe.

# About the Team

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

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

## PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, sanitary landfills, commercial and industrial developments, sand and gravel operations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

## REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected officials of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the Chairman of your local Soil and Water Conservation District. This request letter should include a summary of the proposed project, a location map of the project site, written permission from the landowner allowing the Team to enter the property for purposes of review, and a statement identifying the specific areas of concern the Team should address. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

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