ENVIRONMENTAL REVIEW TEAM REPORT

WOOD HOLLOW SUBDIVISION
CHESHIRE, CONNECTICUT

KING'S MARK
RESOURCE CONSERVATION AND DEVELOPMENT AREA

KING'S MARK
ENVIRONMENTAL REVIEW TEAM REPORT

On

WOOD HOLLOW SUBDIVISION
CHESHIRE, CONNECTICUT

JULY 1979

King's Mark Resource Conservation & Development Area

Environmental Review Team

P.O. Box 30

Warren, Connecticut 06754

ACKNOWLEDGMENTS

The King's Mark Environmental Review Team operates through the cooperative effort of a number of agencies and organizations including:

Federal Agencies

U.S.D.A. SOIL CONSERVATION SERVICE

State Agencies

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEPARTMENT OF HEALTH
DEPARTMENT OF TRANSPORTATION
UNIVERSITY OF CONNECTICUT COOPERATIVE EXTENSION SERVICE

Local Groups and Agencies

LITCHFIELD COUNTY SOIL AND WATER CONSERVATION DISTRICT
NEW HAVEN COUNTY SOIL AND WATER CONSERVATION DISTRICT
HARTFORD COUNTY SOIL AND WATER CONSERVATION DISTRICT
FAIRFIELD COUNTY SOIL AND WATER CONSERVATION DISTRICT
NORTHWESTERN CONNECTICUT REGIONAL PLANNING AGENCY
VALLEY REGIONAL PLANNING AGENCY
LITCHFIELD HILLS REGIONAL PLANNING AGENCY
CENTRAL NAUGATUCK VALLEY REGIONAL PLANNING AGENCY
HOUSATONIC VALLEY COUNCIL OF ELECTED OFFICIALS
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Bruce M. Ridgway, Chairman
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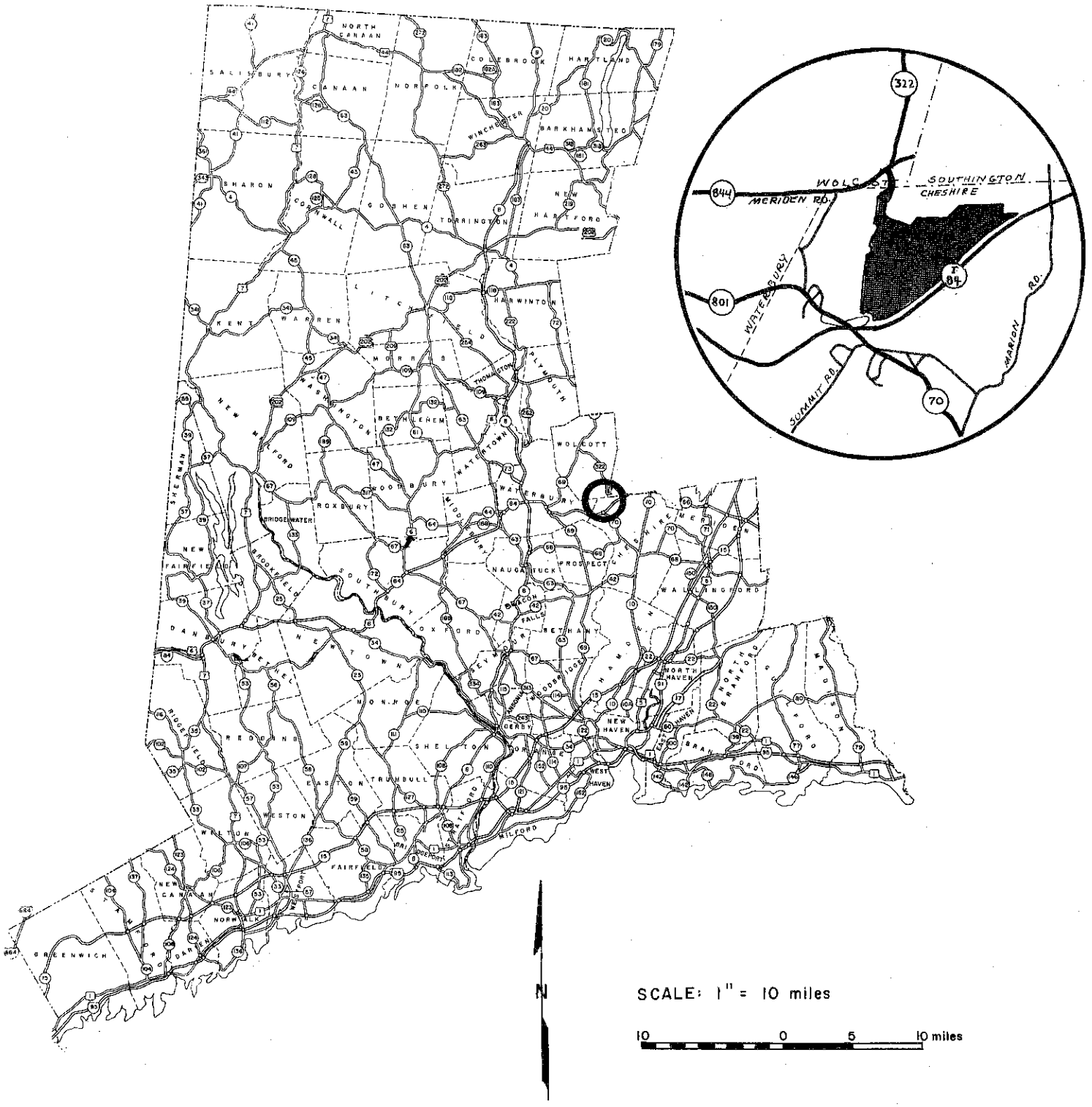
CHESHIRE, CONNECTICUT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
WOOD HOLLOW SUBDIVISION
CHESHIRE, CONNECTICUT

I. INTRODUCTION

The town of Cheshire, Connecticut is presently reviewing an application for subdivision of ± 360 acres of land. The subject site is located in the northwestern corner of town near the Waterbury and Wolcott town lines.

The subdivision plan calls for 77 lots and the construction of a network of interior roads (see Figure 1). Access to the parcel is proposed off Meriden Road in the Town of Wolcott. Domestic water supply is proposed to be supplied by individual wells on each lot. Waste disposal is proposed to be handled by on-site septic systems.

The Inland Wetlands Commission from the Town of Cheshire requested the assistance of the King's Mark Environmental Review Team to help the town in analyzing the proposed development. Specifically, the ERT was asked to identify the natural resources of the site and to highlight opportunities and limitations for development of the land. Major concerns raised by the town in requesting this review included the impact of the project on soils, vegetation and storm water drainage.

The ERT met and field reviewed the site on May 30, 1979. Team members for this review consisted of the following:

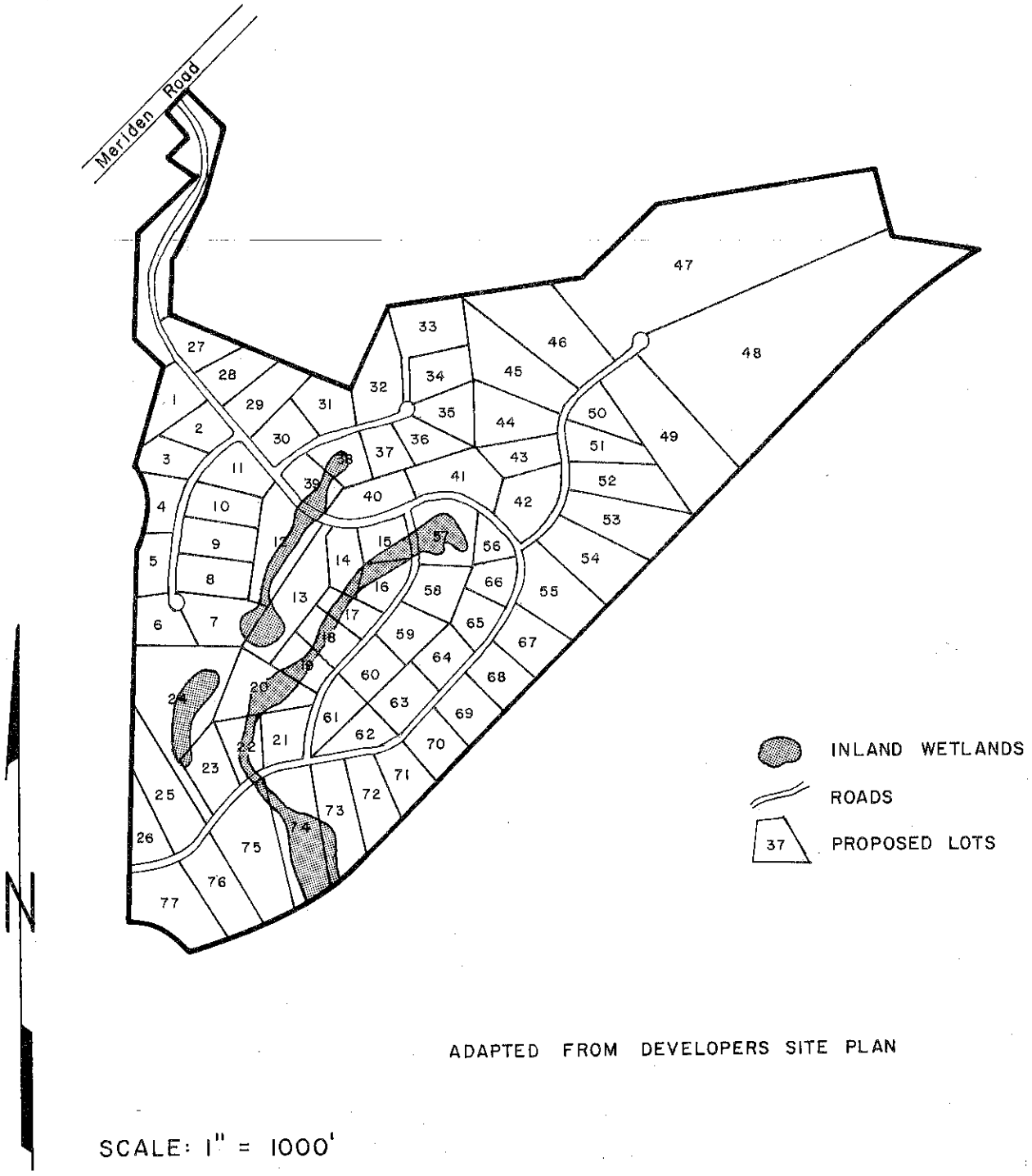
William Carey	Soil Conservationist	U.S.D.A. Soil Conservation Service
Robert Rocks	Forester	State Department of Environmental Protection
Jeffrey Schmaltz & Andy Loranger	Wildlife Biologist	State Department of Environmental Protection
Michael Zizka	Geohydrologist	State Department of Environmental Protection

Prior to the review day, each team member was provided with a summary of the proposed project, a checklist of concerns to address, a detailed soil survey map, a soils limitation chart, a topographic map, and a simplified site plan of the development proposal. Detailed plans and documents prepared by the developer as part of his application were made available to the team the day of the field review. Following the field review, individual reports were prepared by each team member and forwarded to the ERT Coordinator for compilation and editing into this final report.

This report represents the team's findings and recommendations. It is important to understand that the ERT is not in competition with private consultants, and hence does not perform design work or provide detailed solutions to development problems. Nor does the team recommend what ultimate action should be taken on a proposed project. The ERT concept provides for the presentation

FIGURE I.

SIMPLIFIED SITE PLAN



ADAPTED FROM DEVELOPERS SITE PLAN

SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

of natural resources information and some preliminary land limitation considerations. All conclusions and final decisions rest with the town and developer. It is hoped the information contained in this report will assist the Town of Cheshire and the landowner/developer in making environmentally sound decisions.

If any additional information is required, please contact Richard Lynn, (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P. O. Box 30, Warren, Connecticut 06754.

* * * * *

II. SUMMARY

- *Much of the site is characterized by steep slopes and shallow to bedrock soils. These conditions have resulted in the formation of numerous small streams and wetland areas on the property. Due to the spotty distribution of wetlands throughout the parcel, it is suggested that a re-investigation of all the wetlands on the property be made to insure the proper boundaries. This will facilitate the protection of important wetland areas in site planning and development.*

- *The majority of the soils on the property present severe limitations for residential development. Major limiting factors for various soils throughout the site include shallowness to bedrock, severe slopes, seasonally high water tables, and stoniness. Although these limiting conditions do not necessarily preclude development of the proposed project, they do indicate the developer will face formidable difficulties and have to implement a number of precautions to assure an environmentally sound development.*

- *Development of the site will generate additional stormwater runoff. The hydrologic system within the site is presently adjusted to the rugged topographic and geologic conditions and would be very sensitive to changes in those conditions. Any final development scheme should include the consideration of what to do with surface runoff and how best to avoid erosion and sedimentation problems.*

- *The Wood Hollow site is completely forested and consists of four major vegetation types--mixed hardwoods/midslope, oak ridge, mixed hardwoods/low slope, and disturbed land. Efforts should be made,with development of this property, to preserve where possible the larger, healthier trees on the tract. An intermediate harvest in the hardwood stands, removing one-third of the volume, would be desirable for forest health reasons.*

- *The site contains two types of wildlife habitat--hardwood forest and disturbed land. The proposed development will enhance the suitability of the area for wildlife species associated with homesites such as skunks, raccoons, opossums, house sparrows, robins, and starlings. On a regional basis however, the loss of another hardwood forest decreases overall habitat diversity.*

- *Most of the soils on the property present severe constraints for the proper placement and operation of septic systems. Analysis by the Chesprocott Health District indicates that many of the proposed lots will be able to accommodate a septic system but most of these same lots will require specifically prepared engineered systems to overcome natural limiting conditions.*

II. SETTING, TOPOGRAPHY, LAND USE

The ± 360 acre "Wood Hollow Subdivision" site is located in the northwestern corner of town about four miles northwest of the center of town. I-84 abuts the property on its southern boundary and the northern tip of the property is located off Meriden Road in the Town of Wolcott. Elsewhere the property is surrounded primarily by vacant, wooded land.

The subject site is presently undeveloped and completely forested. Numerous small streams and wetland areas are present throughout the tract. The topography of the site is complex with the majority of the slopes on the site ranging from moderate to steep (see Figure 2). In general, the elevation of the site increases from south to north. Minimum and maximum elevations are 250 feet and 750 feet respectively.

III. GEOLOGY

The proposed subdivision lies within the Southington quadrangle. The bedrock geology and surficial geology of that quadrangle have been mapped and described in two publications of the U.S. Geological Survey: they are, respectively, Map GQ-200 by C. E. Fritts and Map GQ-146 by A. M. LaSala, Jr.

Three major bedrock units underlie or crop out on the site: two subunits of the Prospect Gneiss and one subunit of the Southington Mountain Schist. The Prospect Gneiss is a coarse-to-medium-grained, well-lineated, well-foliated gneiss (gneisses are crystalline rocks in which bands of granular minerals alternate with bands of flaky or elongate minerals). The two subunits differ slightly in mineralogy: the granodiorite phase contains many large crystals of microcline; the quartz monzonite phase generally lacks such crystals but contains a wider variety of accessory minerals. The Southington Mountain Schist on the site consists largely of interbanded medium-grained gneiss and medium-to-fine-grained mica schist (schists are crystalline rocks that tend to split readily into flakes or thin slabs). The approximate geographical distribution of the three rock units is shown in Figure 3.

The surficial geologic materials on the site (those unconsolidated materials overlying bedrock) consist largely of till. Till is a nonsorted glacial sediment composed of rock particles and fragments of all shapes and sizes. These materials accumulated on, within, or beneath a moving ice sheet as it passed over a preexisting land surface, and they were redeposited directly from the ice without being substantially reworked by meltwater. Most of the sediments were derived from local bedrock, but some particles may have been transported for many miles. On the site, most of the till probably has a very stony, sandy, loose texture with occasional lenses of well-sorted sand and gravel existing as inclusions. At depths of four feet or more, the till may become less stony, more compact, and siltier. The surficial materials on the site are generally thin, as demonstrated by the numerous bedrock outcrops and the steep, irregular topography. The approximate location of bedrock outcrops is shown in Figure 4.

FIGURE 2.

TOPOGRAPHIC MAP

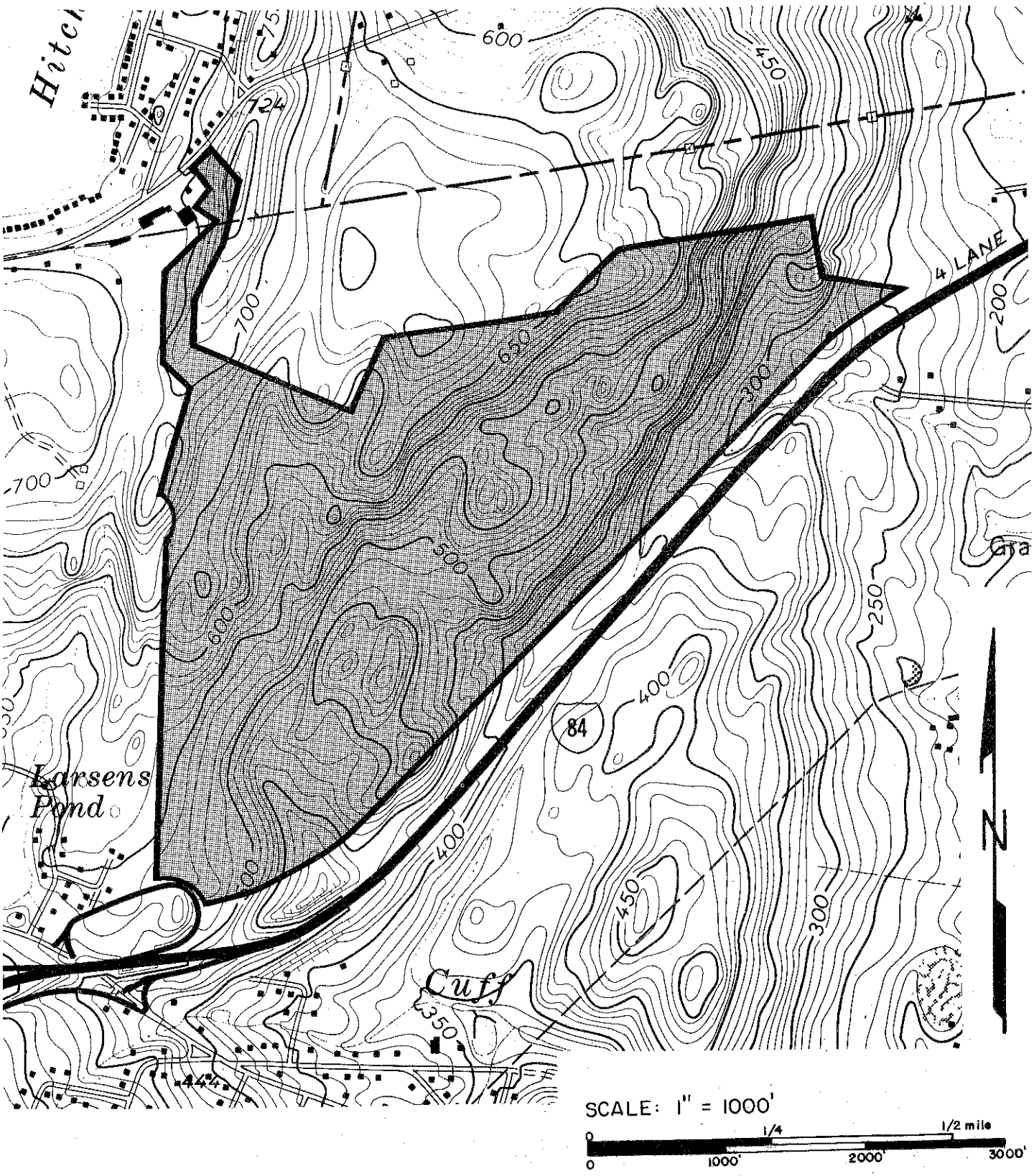
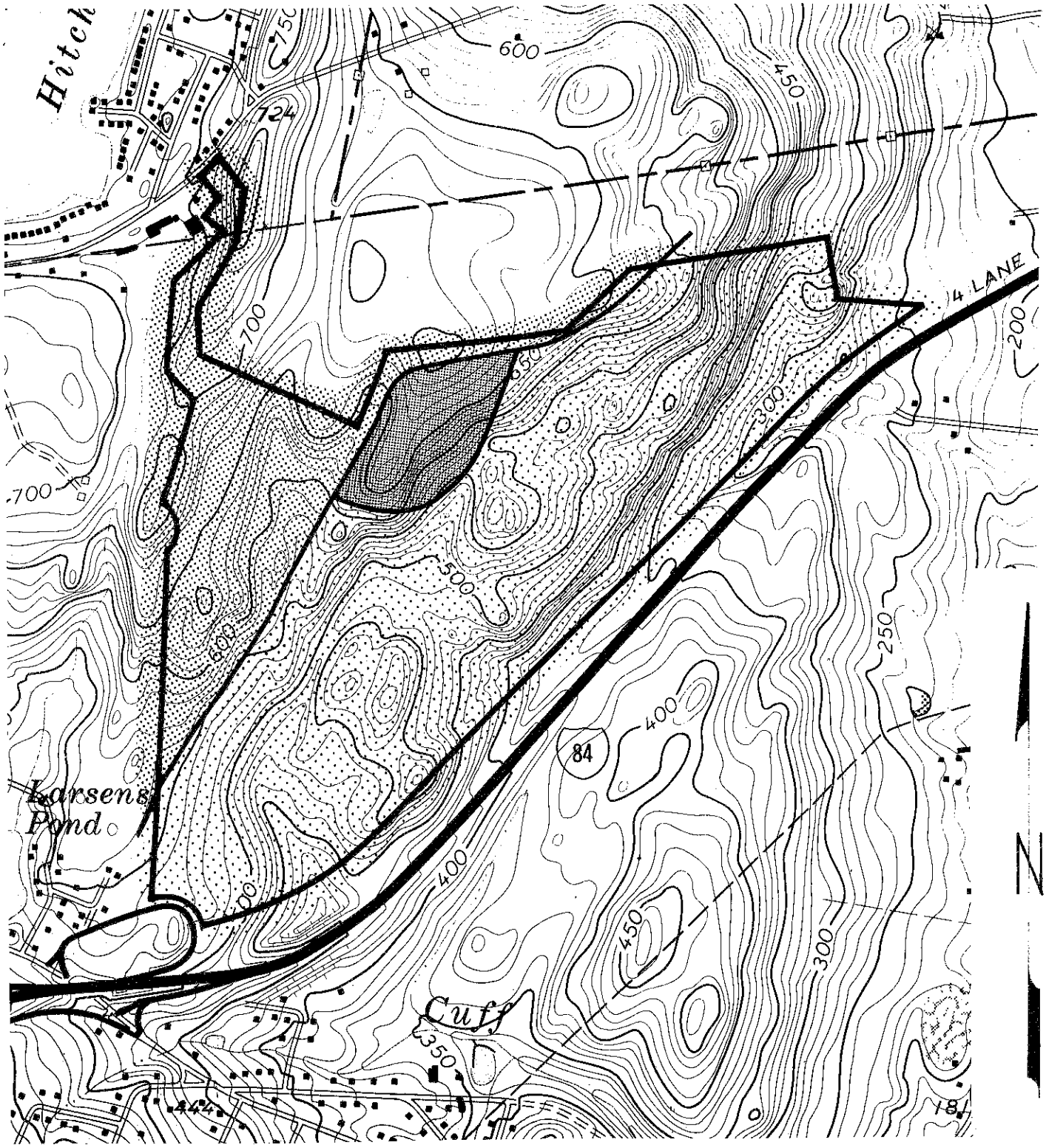


FIGURE 3.

BEDROCK GEOLOGY (Adapted from U.S.G.S. Map GQ-200)



SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

EXPLANATION

SOUTHINGTON MOUNTAIN SCHIST

PROSPECT GNEISS, QUARTZ MONZONITE SUBUNIT

PROSPECT GNEISS, GRANODIORITE SUBUNIT

FIGURE 4.

DISTRIBUTION OF BEDROCK OUTCROPS

(Adapted from U.S.G.S Map GQ-200)

EXPLANATION

INDIVIDUAL BEDROCK OUTCROPS

AREAS OF THIN TILL WITH NUMEROUS SMALL, CLOSELY SPACED OUTCROPS

SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

IV. HYDROLOGY

Because of steep slopes and shallow depths of soil to bedrock, many areas within the site have a high groundwater level, at least seasonally. These conditions have results in the formation of numerous small streams and wetland areas. Wet areas and watercourses that could be identified on aerial photographs are shown in Figure 5.

Development of the site as planned will require some modifications of the present surface drainage pattern. At least seven road crossings of wetlands or watercourses would be needed. Moreover, development will generate additional runoff from the site. This runoff could lead to increased peak flows in local streams and, in combination with the disturbances of soil and the removal of vegetation, to erosion and sedimentation problems. Excavations for road beds may encounter the groundwater table, producing more surface runoff and additional erosion.

A calculation was made of the peak flows to be expected in an intermittent stream that flows northeastward along the southeastern boundary of the site. The design point used was the location at which the stream flows under Interstate Route 84. The overall drainage area (watershed) for this design point is shown in Figure 6. The method used in the calculations was one described in Technical Release No. 55 of the Soil Conservation Service. Rainfall amounts for the different design storms were taken from rainfall maps of Connecticut prepared by L. A. Weiss of the U. S. Geological Survey. The results are listed in Table 1. The individual peak flows listed may have only a "ballpark" level of accuracy: the table is most valuable when used to estimate relative changes in peak flows (i.e. percentage changes) from development. As Table 1 shows, the peak flow increases would be greatest in terms of percentage for the smaller, more frequent storms. The 24 percent increase estimated for the 2-year, 24-hour storm (a storm of 24 hour duration that occurs on a statistical average of once every 2 years) underscores the need for well-planned and stringently followed erosion and runoff control measures.

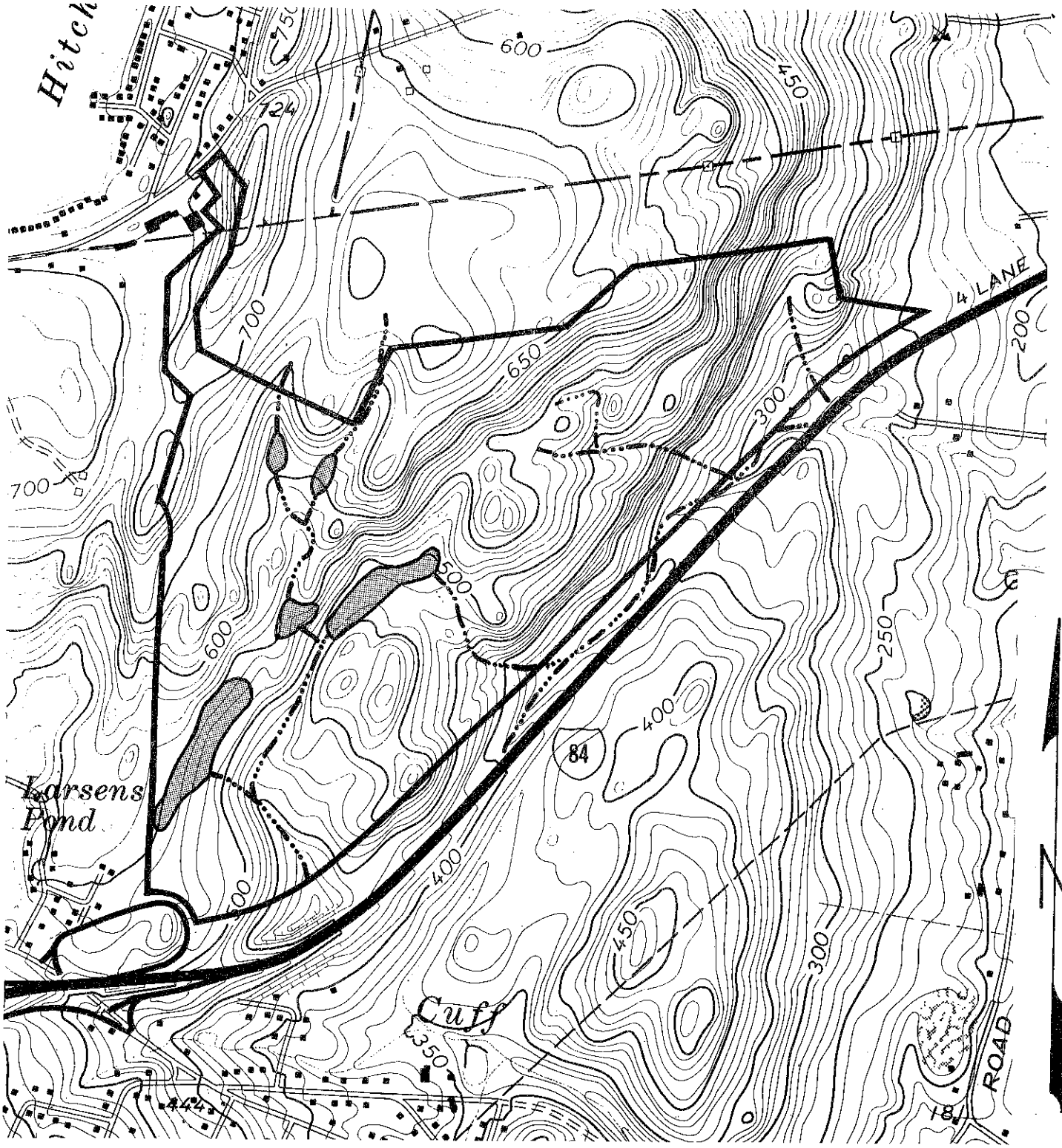
Table 1. Estimated peak flows, before and after development as planned, for the design point shown in Figure 6. All flows listed are in cubic feet per second (cfs). All design storms have a 24-hour duration.

	2-year storm	10-year storm	25-year storm	50-year storm	100-year storm
Before Development	119	400	594	972	1296
After Development	147	445	659	1058	1382
Percent Increase	24	11	11	9	7

FIGURE 5.

DISTRIBUTION OF STREAMCOURSES AND SWAMPY AREAS

(Interpreted from aerial photographs)



EXPLANATION

STREAMCOURSES

SWAMPY AREAS

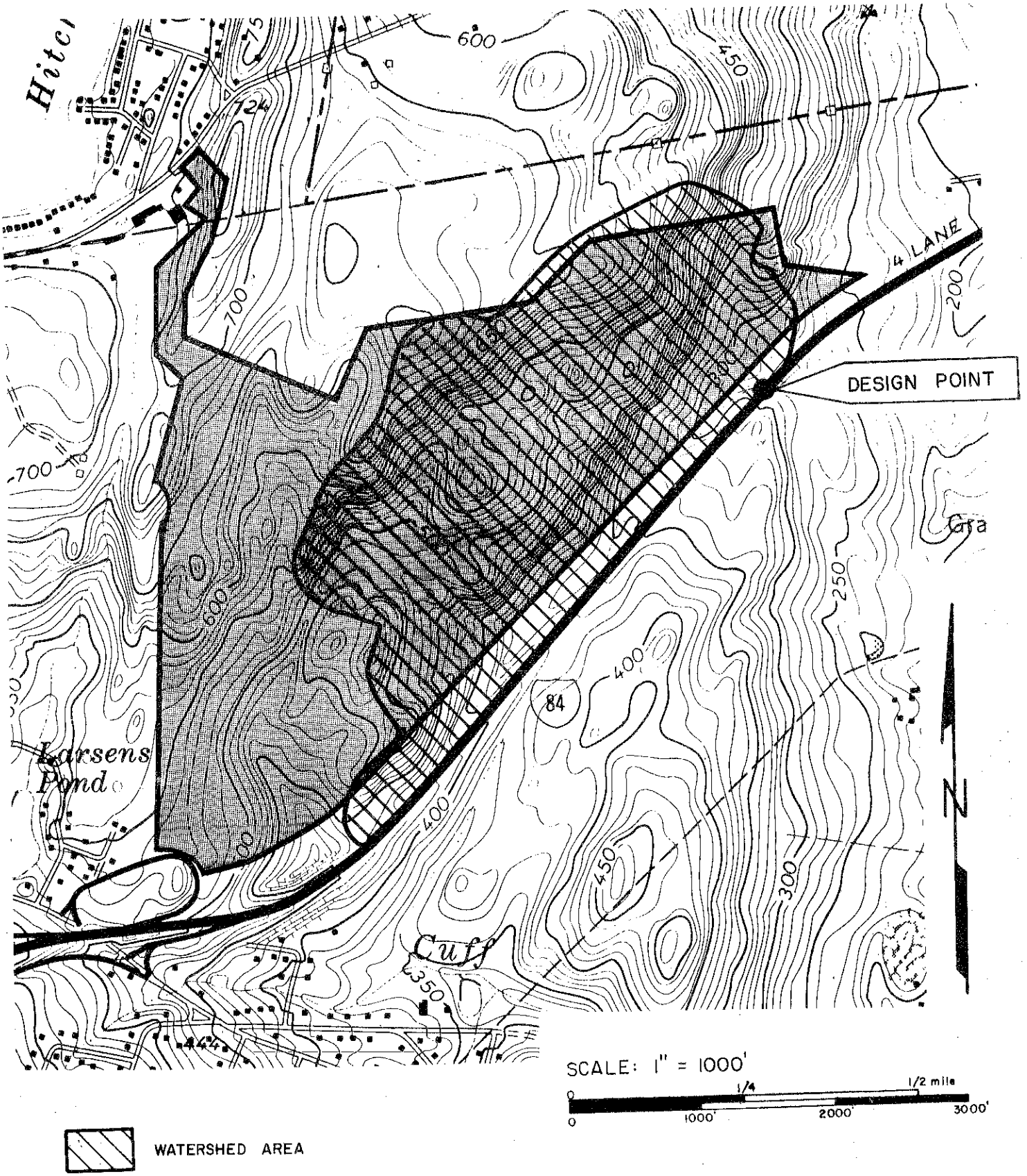
SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

FIGURE 6.

WATERSHED AND DESIGN POINT USED FOR PEAK FLOW CALCULATIONS



To sum, the hydrologic system within the site is presently adjusted to the rugged topographic and geologic conditions and would be very sensitive to changes in those conditions. Any final development scheme should include the consideration of what to do with surface runoff and how best to avoid erosion and sedimentation problems.

VI. SOILS

A detailed soil survey map and soils limitation chart of the tract is presented in the Appendix of this report. The soils map illustrates the geographic location of all soils identified on the property. The soils limitation chart identifies limiting factors for various land uses on individual soil types and also rates the severity of the limitations as determined by the U.S.D.A. Soil Conservation Service.

Soil Characteristics

Presented below is a brief description of the major soils which have been identified on the tract (refer to Figure 7).

Hollis Soils: The Hollis Series consists of shallow, well drained and somewhat excessively drained soils on uplands. They have developed from a thin mantle of glacial till and residuum from the underlying bedrock. Surface outcrops vary from a few to numerous, and varying amounts of surface stone and boulders are present in most places. The depth of soil varies from a few inches up to about 20 inches. The erodibility factor (K)* is .20 in the topsoil (low erodibility) and .43 in the subsoil (high erodibility). The high erodibility of the subsoil would designate this soil as a critical area during construction. Steep slopes, rock outcrop, and shallow to bedrock conditions impose severe limitations for residential development on this soil type.

Charlton Soils: Soils of the Charlton Series are well drained upland soils, developed in very friable to firm glacial till. The surface and subsoil textures are friable or very friable fine sandy loam, to a depth of 24 to 30 inches. The underlying till is sandy loam, fine sandy loam or the gravelly counterpart of these. The erodibility factor (K)* is .20 in the topsoil and .43 in the subsoil, thus making this soil a critical area for construction. Except where stoniness and slope are problems, this soil is well suited for homesites, landscaping, septic fields and roads.

Charlton-Hollis Soils: The Charlton-Hollis complex is interpreted as consisting of 60% Charlton soils and 40% Hollis soils. Depth to bedrock in this soil complex will range from 10 inches (Hollis soils) to greater than 60 inches (Charlton soils). Depending upon the extent and location of bedrock in these areas, these soils present moderate to severe limitations for residential development.

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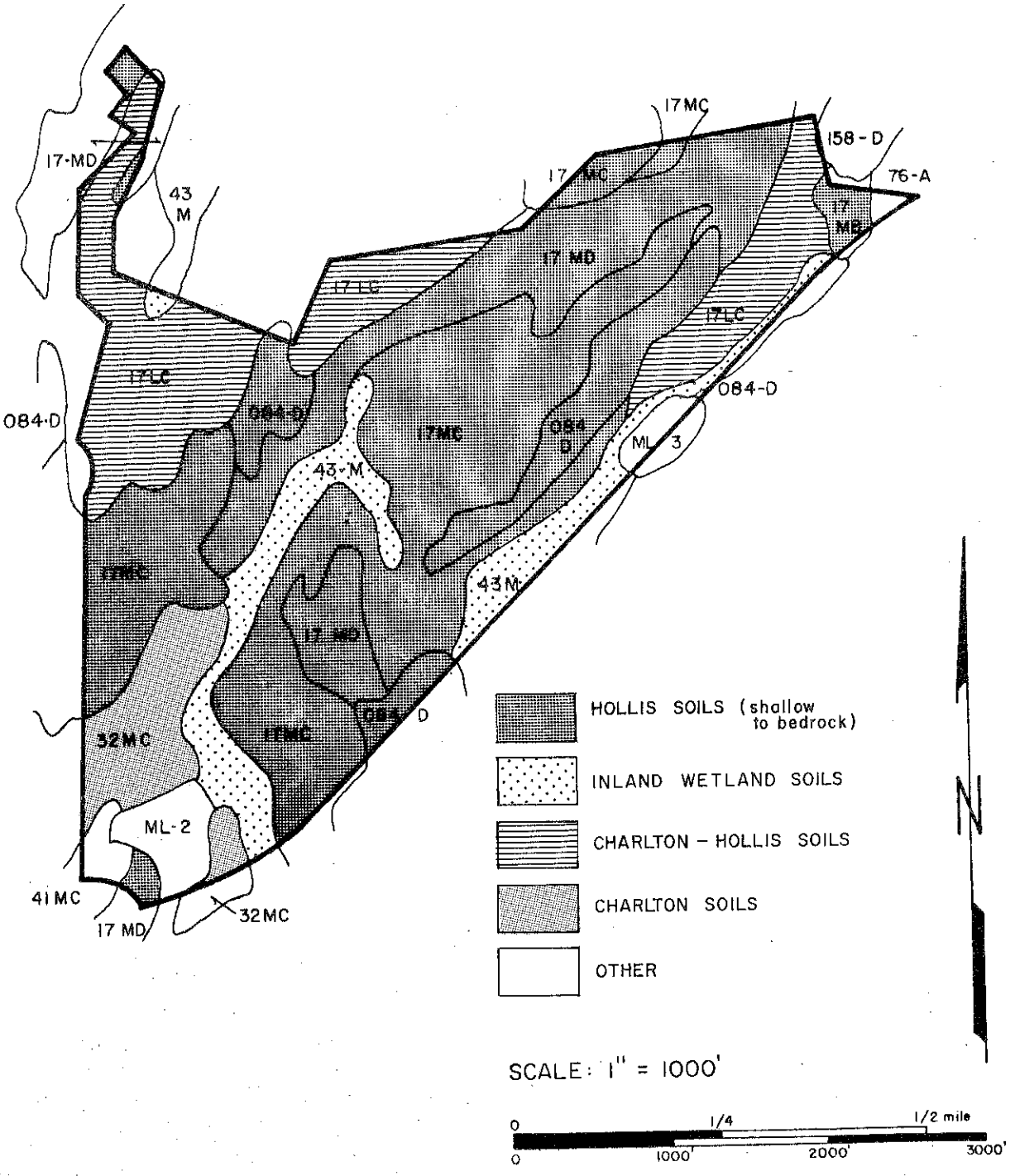
* K factors are an erodibility factor and can be grouped into three general ranges:

0.23 and lower - low erodibility
0.23 to 0.36 - moderate erodibility
0.36 and up - high erodibility

FIGURE 7.

MAJOR SOIL TYPES

ADVANCE COPY SUBJECT TO CHANGE
PREPARED BY U.S.D.A. – S.C.S. 1979



Inland Wetland Soils: The inland wetland soils mapped for this property consist of the Ridgebury, Whitman, and Leicester extremely stony soils. These soils are poorly and very poorly drained and are extremely stony on the surface and throughout the soil profile. More than three percent of the surface is covered with stones and boulders. These soils characteristically have a perched water table near the surface from fall to spring and after heavy rains during the summer.

The predominant soil in such mapping units are the Ridgebury and Whitman soils which are underlain by a fragipan at 20 to 25 inches. The topsoil and subsoil texture is a fine sandy loam. The fragipan is a very compact fine sandy loam. The upper solum above the fragipan has a moderate permeability and the fragipan itself has a slow to very slow permeability. The Ridgebury soil is poorly drained and the Whitman soil is very poorly drained. The Leicester soils are also a fine, sandy loam, but do not have a fragipan within 40 inches of the surface. All of these soils are considered wetland soil types as defined by Public Law 155, as amended. These soils are unsuitable for residential development.

Soils vs. Proposed Land Use

As illustrated in the Soils Limitation Chart of this report (see Appendix) and the foregoing discussion, the majority of the soils on this property have severe limitations for residential development. Major limiting factors for various soils throughout the site include shallowness to bedrock, severe slopes, seasonally high water tables, and stoniness.

Due to the adverse soil conditions and topography of this area, the developer will clearly face formidable difficulties and have to implement a number of precautions to assure an environmentally sound development. Ideally, consideration should be given in residential development of this property to a cluster type development, concentrating development on the more favorable soils (Charlton, Charlton-Hollis soils). Such an approach would preserve the equilibrum of more of the site, reduce clearing requirements, and generally allow much better environmental control.

Due to the spotty distribution of wetlands throughout this parcel, it is suggested that a re-investigation of all the wetlands on the property be made to insure the proper boundaries. This will facilitate the protection of important wetland areas in site planning and development.

Erosion and Sediment Control

As indicated above, the combination of soil type and slope on this property make it imperative that advance planning be done to control accelerated erosion. With implementation of the proposed project, it is recommended that the following practices be implemented as part of a comprehensive erosion and sediment control plan:

1) All disturbed areas (including areas around homes, roadcuts and fills,and stockpiled topsoil) should be vegetated as follows:

   a) Permanent vegetation where final grading is completed in time for seeding dates, April 1st - June 15th/August 15th - September 30th. Also where areas will be exposed for twelve months or more.

b) Temporary vegetation where final grading is not completed in time for permanent seeding. Seeding dates are August - October 15th.

2) Road and driveways should be constructed as close to the contour as possible.

3) Road cuts and fills should be finished on 2:1 side slopes (3:1 for sandy or gravelly soils).

4) Hay bale erosion checks around all catch basins are suggested, especially before paving roads.

5) Topsoil should be stockpiled and spread over areas that would otherwise be critical to establish in vegetation because of adverse soil conditions.

It is suggested that a separate sediment and erosion control plan for the entire development be composed. Erosion and sediment control practices are described in the "Erosion and Sediment Control Handbook--Connecticut", U.S.D.A. Soil Conservation Service, 1976 . Additional assistance is available at the New Haven County Soil and Water Conservation District.

VII. VEGETATION

The ± 360 acre tract proposed for the Wood Hollow Subdivision is completely forested. Four stands are described below; however, because each stand gently grades into another, the boundaries and acreages are only approximate. A wide transition zone exists between stands where the same species are found in both stands. Site conditions, such as soil depth to bedrock and soil moisture levels, dictate species composition and to some extent total height of trees and tree quality.

Vegetation Stand Descriptions (refer to Figure 8)

STAND A. Mixed hardwoods/mid slope. This 182-acre stand is dominated by medium to high quality sawlog-size red oak, black oak, shagbark hickory, black birch, tulip tree, red maple and occasional sugar maple. The trees in this stand are excessively tall for their diameters and crown sizes, and are also becoming crowded and losing vigor. The understory vegetation consists of hardwood tree seedlings, chestnut sprouts, maple leaf viburnum, blue beech, witch hazel, sassafras and scattered patches of mountain laurel. Ground cover vegetation in this area is dominated by club mosses, Canada Mayflower, and several species of wild flowers.*

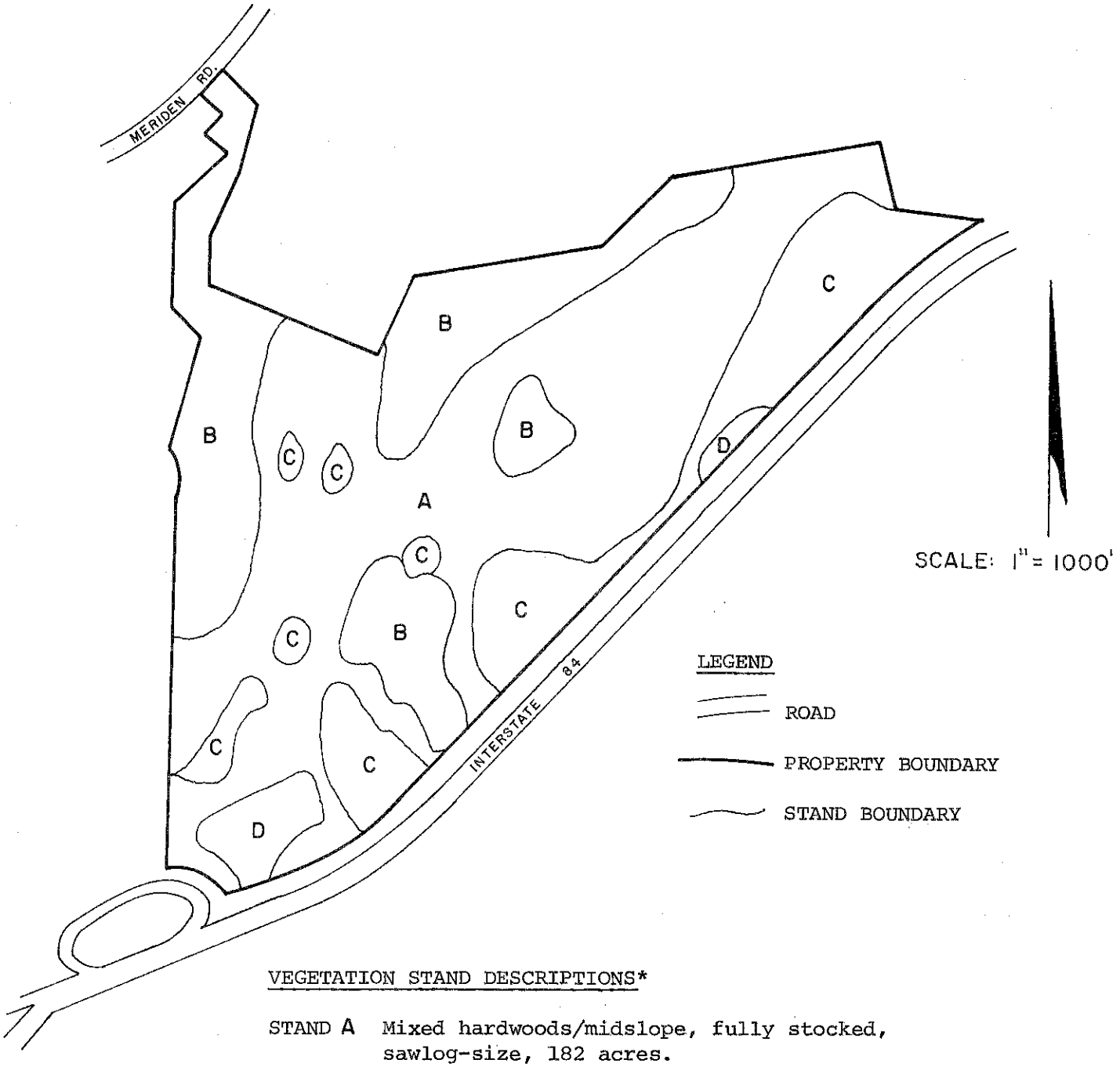
STAND B. Oak Ridge. Poor quality, pole to small sawlog-size chestnut oak, scarlet oak and occasional hickory and black birch are present in this uncrowded fully stocked 85-acre stand. The understory vegetation is made up of hardwood tree seedlings, mountain laurel and chestnut sprouts. Huckleberry, lowbush blueberry, hairy cap moss, club moss and grasses form this stand's ground cover.

*Wildflowers observed during field investigation:

Bedstraw	False Solomon's Seal	Raspberry	Violet
Boneset	Jack-in-the-pulpit	St. Johnswort	Wild Geranium
Cinquefoil	Mustard	Solomon's seal	
Dewberry	Pink Lady's Slipper	Trillium	

FIGURE 8.

VEGETATION TYPE MAP



VEGETATION STAND DESCRIPTIONS*

STAND A Mixed hardwoods/midslope, fully stocked, sawlog-size, 182 acres.

STAND B Oak ridge, fully stocked, pole to saw-log size, 85 acres.

STAND C Mixed hardwoods/lowslope, fully stocked, sawlog-size, 72 acres.

STAND D Disturbed land. Pioneer species, 11 acres.

*SEEDLING SIZE - Trees less that 1 inch in diameter at breast height (d.b.h.)
SAPLING SIZE - Trees 1 to 5 inches in d.b.h.
POLE SIZE - Trees 5 to 11 inches in d.b.h.
SAWLOG SIZE - Trees 11 inches and greater in d.b.h.

STAND C. Mixed Hardwoods/Valleys and low slope. This 72-acre stand resembles Stand A, however due to somewhat deeper soils and greater soil moisture levels found at the lower elevations and valleys, larger numbers of pole to sawlog size tulip tree, red oak and red maple are present. The trees in this stand are also becoming crowded and are starting to lose vigor. The understory is dense and consists of maple leaf viburnum, azalea, witch hazel, spice bush, sweet pepper bush and high bush blueberry. Ground cover vegetation is made up of Christmas fern, sensitive fern, cinnamon fern, skunk cabbage, wild geranium and wild flowers.*

STAND D. Disturbed land. Seedling to sapling-size pioneer species, such as big tooth aspen, quaking aspen, gray birch, blue beech and red maple are becoming established in this 11-acre understocked stand. Pussy willow, sweet fern, bayberry, steeple bush, staghorn sumac, goldenrod, ragweed and assorted weed species are also abundant on this site.

Aesthetics & Preservation

Efforts should be made to preserve, where possible, the larger, healthier trees which are present on this tract. These trees are valuable for aesthetics, shade and to some extent wildlife habitat. Recent research has shown that trees present on a house lot may enhance the value of that house as much as twenty percent.

Limiting Conditions

The shallow to bedrock soils located over the ridge tops throughout this property are somewhat excessively drained and have restricted moisture reserves. These conditions become critical limiting factors during the rapid growth season. At this time the demand for water is greater than the supply, and as a result the chestnut oak and scarlet oak, which can survive under these conditions, do not grow fast and are stunted in appearance. Management of these areas for timber production is not economically feasible.

Potential Hazards and Mitigating Practices

The variable topography of this tract will necessitate extensive excavating, filling and grading for the constructing of roads, driveways and buildings. Trees are sensitive to changes in the aeration, moisture level and physical composition of the soil under their crowns. Soil disturbances near trees and direct mechanical injury may cause a decline in tree health and vigor and even death within three to five years. Dead trees reduce aesthetics and may be hazardous if near roadways, utility lines or buildings.

Care should be taken not to disturb trees that are to be preserved for aesthetic or shade purposes. In general, healthy, high vigor trees should be favored because they are more resistant to environmental stresses than unhealthy slow growing trees. Where possible, trees should be saved in small groups or islands; this lowers the chances of soil disturbances or mechanical injury. When individual trees are being preserved, they should be temporarily, but clearly marked so they may be avoided during construction.

Windthrow is a potential hazard throughout this entire tract. It is most critical on the lower slopes where moisture levels are high and trees are tall and becoming crowded (Stands A and C). In these areas, root systems are shallow and trees rely on each other for support. Openings created for roadways, houselots and septic systems will allow wind to pass through rather than over these areas increasing the windthrow hazard. An intermediate harvest prior to development in these stands will stimulate crown and root growth and also help to increase tree wind firmness and stability.

Suggested Management Techniques

An intermediate harvest in Stands A and C removing one-third of the volume would reduce the competition between trees for space, sunlight, water and nutrients. In time, the residual trees would become healthier, more stable and better able to withstand the environmental stresses brought about by development. The increased crown and root growth would also improve wind-firmness, reducing the windthrow hazard.

If implemented, this harvest should focus on removing unhealthy, poor quality trees, undesirable species such as red maple and those trees which are directly competing with healthy, high quality trees.

Regardless of whether or not this harvest takes place, the trees cleared during road construction should be utilized for sawlogs and/or fuelwood.

If the suggested harvest is agreed to, a consultant forester should be contacted to mark the trees to be removed and also oversee the operation. Revenues generated by this harvest will easily cover consultant costs.

VIII. WILDLIFE

The Wood Hollow site contains two types of wildlife habitat. Mature hardwood forest predominates; while a small area in the southern sector (Stand D in figure 8) has been recently disturbed, apparently for gravel removal.

As discussed in the preceeding section, tree species in the forest habitat include oaks, maples, tulip, ash, and hickory. The understory density ranges from sparse to moderate. Food-bearing shrubs such as blueberry, viburnam, and dogwood are also present. White-tailed deer, grey squirrel, ruffed grouse, wood thrush, ovenbird, and wood frog are examples of wildlife species utilizing this habitat type.

Shrubs such as willow and sweetfern and saplings of grey birch and trembling aspen have become established on the disturbed land. This habitat type provides feeding areas for several woodland wildlife species such as white-tailed deer and ruffed grouse. It also provides nesting areas for numerous songbirds such as the blue-winged warbler, field sparrow, yellow throat, and rufous-sided towhee.

Wildlife is benefitted by a wide variety of habitat types. This is expecially true when one habitat type is surrounded by or in contact with several other types. This situation provides ample opportunity for different wildlife species to obtain food and cover. For this reason, the proposed development of this area will enhance its suitability for wildlife species associated with homesites such as skunks, raccoons, opossums, house sparrows, robins, and starlings. Portions of the mature

forest would be converted into open land, thereby encouraging growth of new herbaceous and shrub vegetation at the forest-open land interfaces. Establishment of lawns and planting of ornamental shrubs will also provide new habitat.

On a regional basis however, the loss of another hardwood forest decreases overall habitat diversity. This may be an especially important consideration in this case since relatively few forest areas remain locally.

In any suburban development, there is a potential for wildlife problems if vegetable gardens are planted and if garbage can lids are not secured.

IX. WATER SUPPLY

Individual on-site wells have been proposed to serve the subdivision. The lack of suitable sand-and-gravel deposits on the site indicates that bedrock would be the primary water source. Wells tapping bedrock derive their water from any fractures in the rock that intersect the well. The distribution of fractures within bedrock is widely variable and depends upon such factors as the type of rock involved and the localized effects of geologic stresses. A highly fractured rock section may be located near a virtually non-fractured section. It may be stated, however, that the amount of fracturing in a bedrock unit tends to decrease with depth, so that low-producing wells that have been extended 200 feet into the rock will probably remain low-producing even with deeper drilling.

Although no adequate method exists for predicting the yield of a bedrock well drilled to a certain depth, it may be safely stated that most wells in the proposed subdivision should be able to achieve yields of 3 gallons per minute or more. Connecticut Water Resources Bulletin No. 19, which contained an analysis of the yields of 294 wells tapping crystalline bedrock in the lower Housatonic River basin, indicated that 75 percent of those wells yielded 3 gpm or more, 85 percent yielded 2 gpm or more, and 95 percent yielded 1 gpm or more. Although a yield of 3 gpm is generally considered to be adequate for an average home, smaller yields may be offset by the provision of storage space within the well. It is likely that wells drilled into the Prospect Gneiss will have slightly better yields than wells drilled into the Southington Mountain Schist.

The initial quality of groundwater derived from the bedrock will probably be good. Some wells may have higher-than-desirable concentrations of iron, but suitable filtration methods could alleviate such problems. The quality of the groundwater may deteriorate, however, if septic systems are poorly designed or improperly installed. This risk would be highest in shallow-soil areas.

X. WASTE DISPOSAL

As shown in the Soils Limitation Chart of this report (see Appendix), most of the soils on this property present severe constraints for the proper placement and operation of septic systems. High groundwater levels, shallow depths of soils to bedrock, and steep slopes are the most significant limiting factors. The potential problems of septic system usage on the site were made clear by the presence of surfaced sewage effluent on an adjoining parcel, although that parcel was apparently being used for disposal of a substantial volume of wastewater.

Potential problems from high groundwater levels include flooding of drainage trenches, backups of effluent, and surfacing of effluent. Wastewater generally will not be properly purified unless it can filter through a few feet of aerated soil. Hence, in both shallow-to-bedrock soil areas and high groundwater areas, effluent renovation may be incomplete unless careful engineering is used to overcome these limiting conditions. This concern is amplified by the possibility that unpurified wastewater will enter the bedrock fracture system and be drawn up into a local well.

The Chesprocott Health District has been involved extensively in the review of soil test data completed on this parcel by the developer. The Health District has also conducted an on-site physical examination of the site. The District analysis according to a 7/5/79 telephone conversation with Charles Motes of that office, indicates that many of the proposed lots will be able to accommodate a septic system but most of these same lots will require specifically prepared engineered systems to overcome natural limiting conditions. For a more specific review of the suitability of this site for subsurface sewage disposal (including the results of percolation tests and deep test pits conducted on each lot), the interested reader is referred to data and analysis compiled by the Chesprocott Health District.

XI. PLANNING CONSIDERATIONS

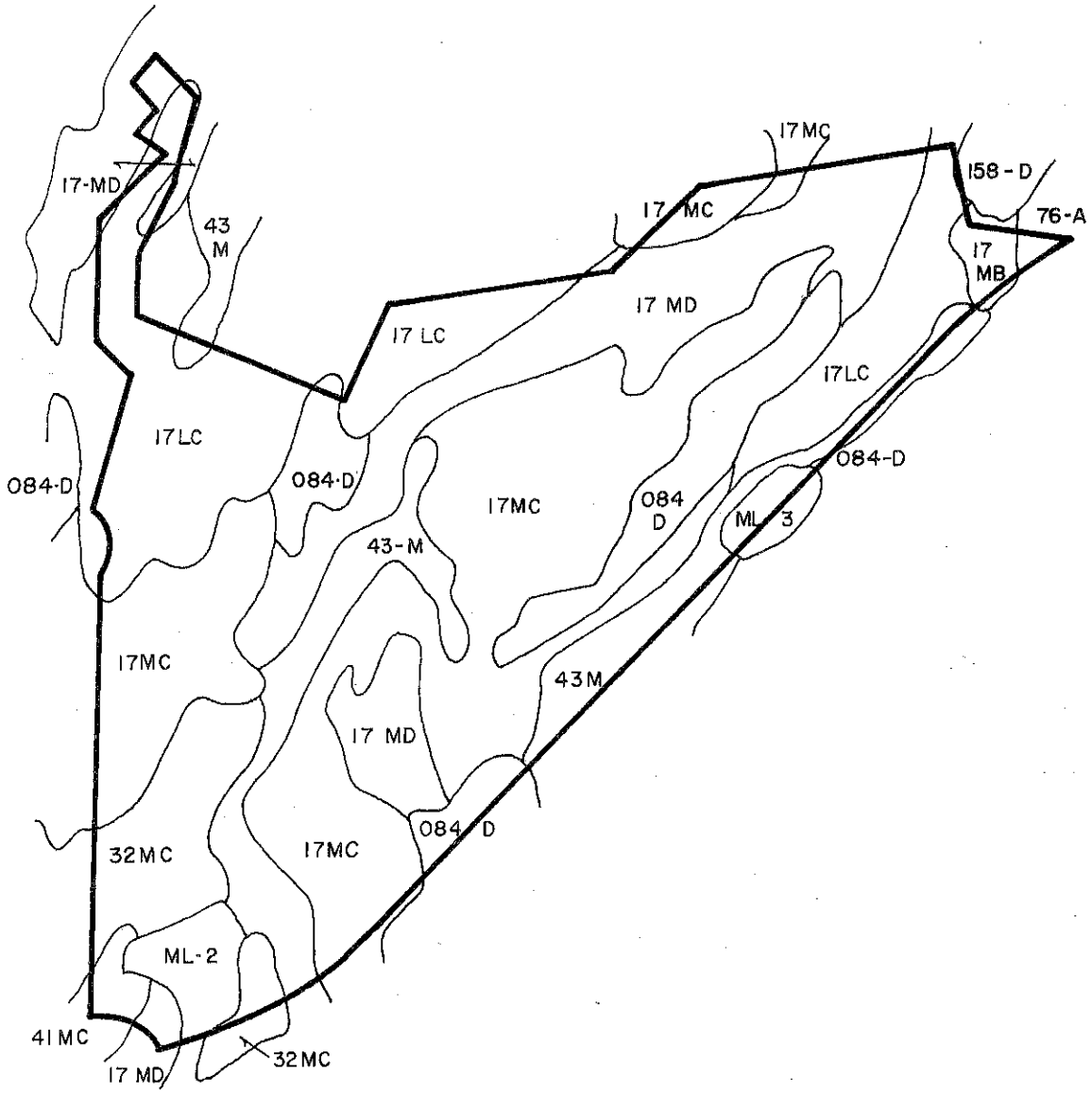
Environmental review of proposed subdivisions by the ERT typically include a "planning analysis" by a regional planner. However, in that the proposed "Wood Hollow Subdivision" will be referred to the Central Naugatuck Valley Regional Planning Agency for comment under Chapter 126, Section 8-26b of the General Statutes, a planning analysis is not included herein.

* * * * *

APPENDIX

SOILS MAP

ADVANCE COPY SUBJECT TO CHANGE
PREPARED BY U.S.D.A. – S.C.S. 1979



SCALE: 1" = 1000'

0 1/4 1/2 mile
0 1000' 2000' 3000'

SUITABILITY & LIMITATIONS OF THE SOILS FOR URBAN USES

Map Symbols & Soils Series Name	Suitability as a Source of:			Susceptibility To Frost Action	Slope	Limitations for:			
	Top Soil	Sand & Gravel	Road Fill			Septic tank Filter field	Homesite with Basement	Homesite Landscaping	Streets & Parking Lots
084D Rock Outcrop Hollis Complex	poor	poor	poor	low	----	severe; depth to rock	severe; depth to rock	severe; depth to rock	severe; depth to rock
17LC Charlton-Hollis	poor	poor	poor	moderate	3-15%	mod-severe; depth to rock	mod-severe; depth to rock	mod-severe; depth to rock	mod-severe; depth to rock
17MC Hollis Rock outcrop complex	poor	poor	poor	moderate	3-15%	severe; depth to rock	severe; depth to rock	severe; depth to rock	severe; depth to rock
17MD Hollis Rock Outcrop complex	poor	un-suited	poor	moderate	15-35%	severe; shallow slope	severe; shallow slope	severe; shallow slope	severe; shallow slope
32MC Charlton exst	poor	poor	good	low	3-15%	severe; stoniness	severe; stoniness	severe; stoniness	severe; stoniness
41MC Sutton exst	poor	poor	good	medium	3-15%	severe; stoniness seasonal water table	severe; stoniness seasonal water table	severe; stoniness	severe; stoniness seasonal water table
43M* Ridgebury Leicester & Whitman exst	poor	very poor	poor	high	----	severe; high water table stoniness	severe; high water table stoniness	severe; high water table stoniness	severe; high water table stoniness

SUITABILITY & LIMITATIONS OF THE SOILS FOR URBAN USES

Map Symbols & Soil Series Name	Suitability as a Source of: Top Soil	Sand	Road Gravel Fill	Susceptibility To Frost Action	Slope	Limitations for: Septic tank Filter field	Homesite with Basement	Homesite Landscaping	Streets & Parking Lots
158 D Hinckley and Manchester	poor	good	good	low	15-35%	severe: slope	severe: slope	severe: slope droughtiness	severe: slope
76A Ellington	poor wet	fair	poor wet	high	0-3%	severe: wetness	severe: wetness	slight	severe: frost action
ML2 ML3 Borrow & Fill Land	--			SOIL CHARACTERISTICS VARIABLE				--	

Explanation of Rating System:

1. SLIGHT LIMITATION: indicates that any property of the soil affecting use of the soil is relatively unimportant and can be overcome at little expense.
2. MODERATE LIMITATION: indicates that any property of the soil affecting use can be overcome at a somewhat higher expense.
3. SEVERE LIMITATION: indicates that the use of the soil is seriously limited by hazards or restrictions that require extensive and costly measures to overcome.

NOTE: Limitation Ratings Based Upon U.S.D.A. Soil Conservation Service Criteria

*: Inland Wetland

ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state, and regional agencies. Specialists on the team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, recreation specialists, engineers, and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - a 47 town area in western Connecticut.

As a public service activity, the team is available to serve towns and developers within the King's Mark Area --- free of charge.

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 the review of a wide range of significant activities including subdivisions, sanitary landfills, commercial and industrical developments, and recreation/open space projects.

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 official of a municipality or the chairman of an administration agency such as planning and zoning, conservation, or inland wetlands. Requests for reviews should be directed to the Chairman of your local Soil and Water Conservation District. This request letter must include a summary of the proposed project, a location map of the project site, written permission from the landowner/developer 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 King's Mark RC&D Executive Committee, the team will undertake the review. At present, the ERT can undertake two reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil Conservation District Office or Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P.O. Box 30, Warren, Connecticut 06754.