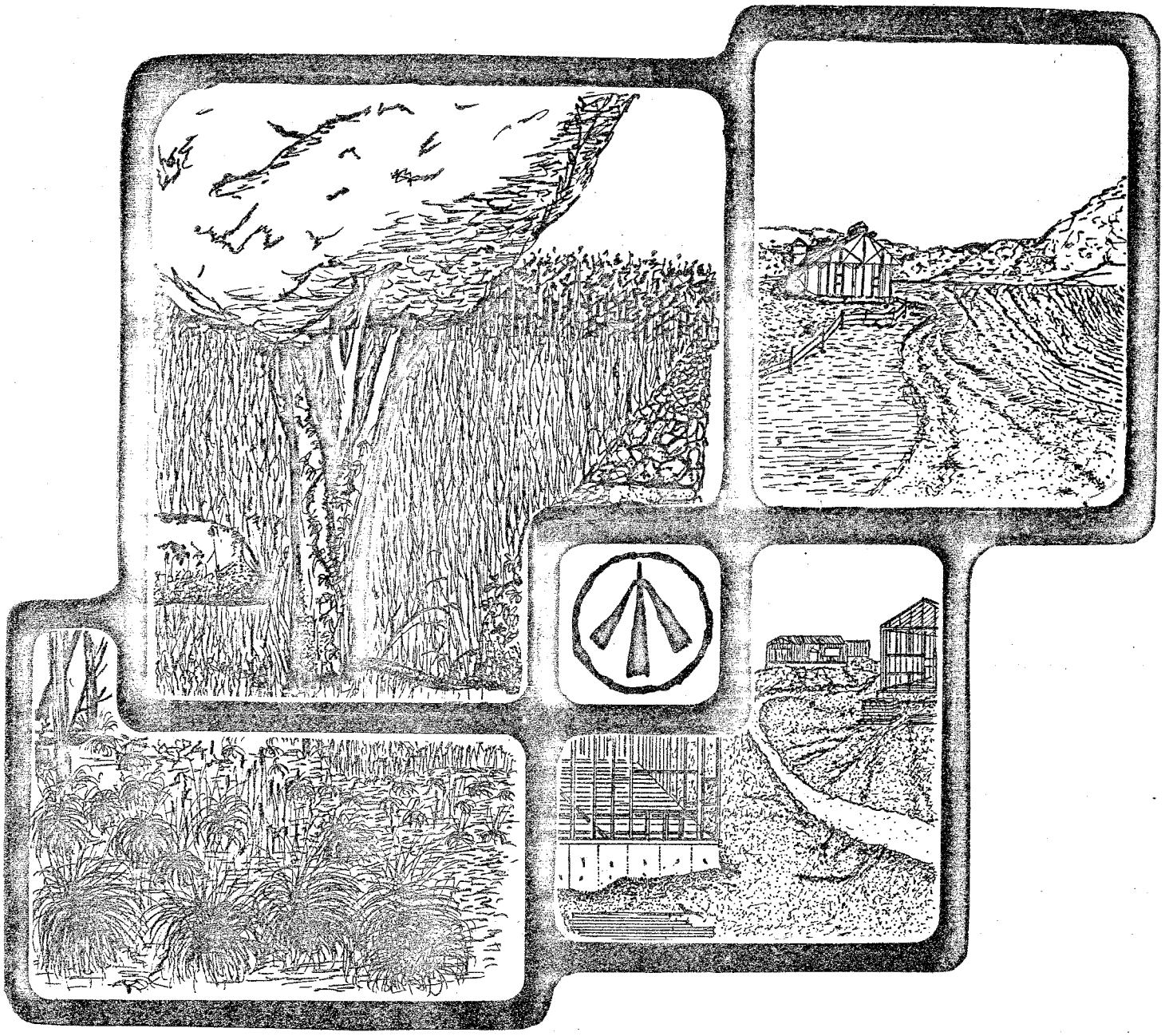
ENVIRONMENTAL REVIEW TEAM REPORT



THE KNAPP PROPERTY
PROSPECT, CONNECTICUT

KING'S MARK
RESOURCE CONSERVATION & DEVELOPMENT AREA

KING'S MARK
ENVIRONMENTAL REVIEW TEAM REPORT

THE KNAPP PROPERTY
PROSPECT, CONNECTICUT
OCTOBER, 1982

King's Mark Resource Conservation and Development Area
Environmental Review Team
Sackett Hill Road
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
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
Central Naugatuck Valley Regional Planning Agency
Housatonic Valley Council of Elected Officials
Southwestern Regional Planning Agency
Greater Bridgeport Regional Planning Agency
Regional Planning Agency of South Central Connecticut
Central Connecticut Regional Planning Agency
Capitol Regional Council of Governments
American Indian Archaeological Institute
Housatonic Valley Association

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FUNDING PROVIDED BY
State of Connecticut

POLICY DETERMINED BY
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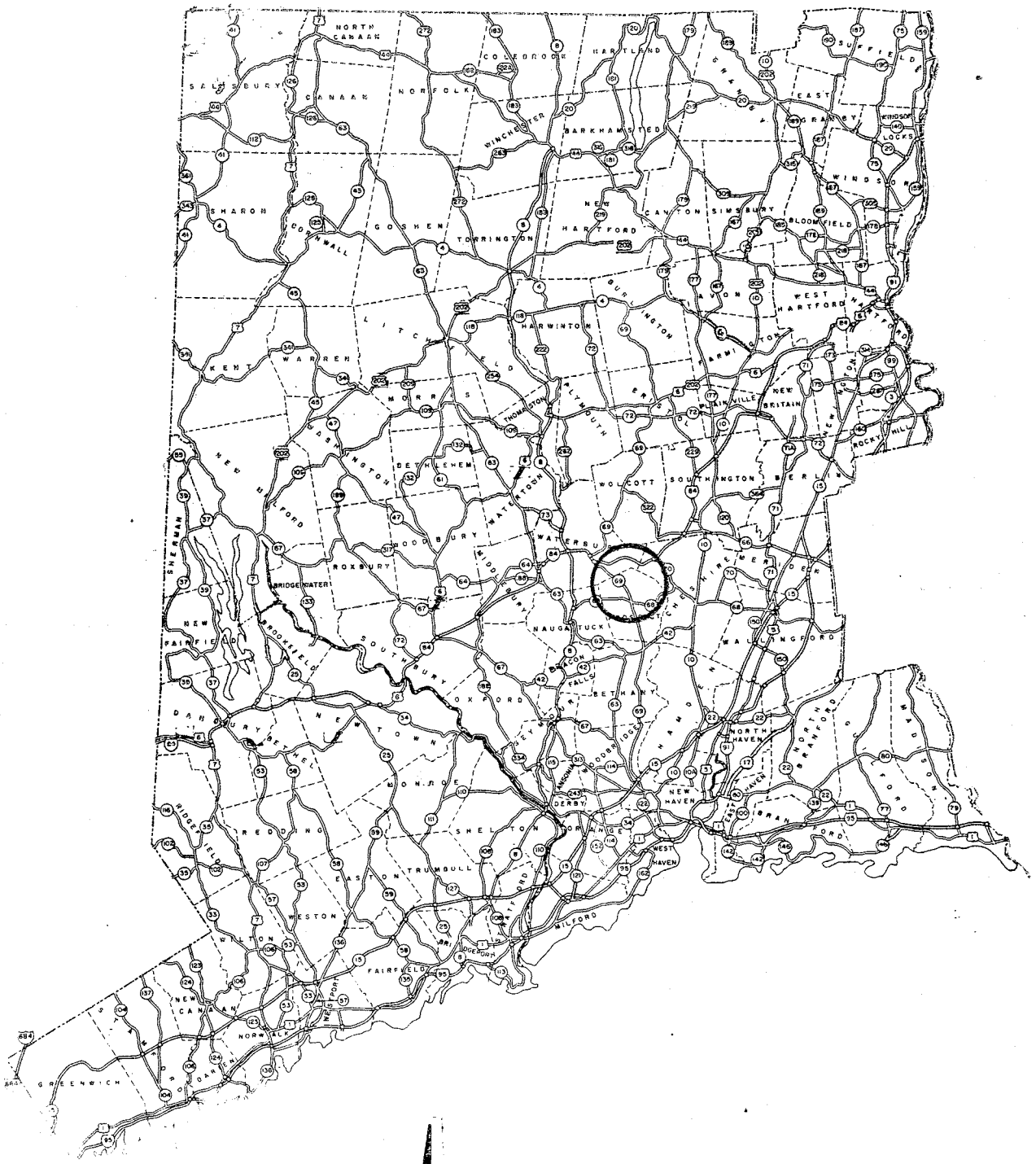
TABLE OF CONTENTS

		Page
I.	INTRODUCTION	1
II.	SOILS	4
III.	INLAND WETLAND IMPACT	5
IV.	SEPTIC SYSTEM SUITABILITY AND SUGGESTIONS FOR SITE RE-DESIGN	5

LIST OF FIGURES

1	GENERAL SITE LOCATION	2
2	SIMPLIFIED SITE PLAN	3
3	SUGGESTIONS FOR SITE RE-DESIGN	6

LOCATION OF STUDY SITE



SCALE: 1" = 10 miles

10 0 5 10 miles

ENVIRONMENTAL REVIEW TEAM REPORT
ON
THE KNAPP PROPERTY
PROSPECT, CT

I. INTRODUCTION

The Prospect Inland Wetlands Commission is concerned about the possible impact of a proposed house lot on inland wetland resources. The subject site is known as the Knapp property and is located along Sherwood Drive in the northern portion of town. The site is about 1½ acres in size and characterized by inland wetland soils in the eastern half of the lot and soils with a seasonally high water table on the western half. Figure 1 shows the general location of the site. Figure 2 shows the proposed lot layout in simplified form. Concrete footings have been poured for the house foundation.

The ERT was requested to assist the Prospect Inland Wetlands Commission in determining the feasibility of the lot for residential development, and in assessing the impact of the construction on wetland resources. The King's Mark Executive Committee considered the Town's request, and approved the project for review by the Team.

The ERT met and field reviewed the site on September 21, 1982. Team members participating on this review included the following:

Frank Indorf.....District Conservationist.....U.S.D.A. Soil Conservation Service

Frank Schaub.....Sanitary Engineer.....Ct. Department of Health

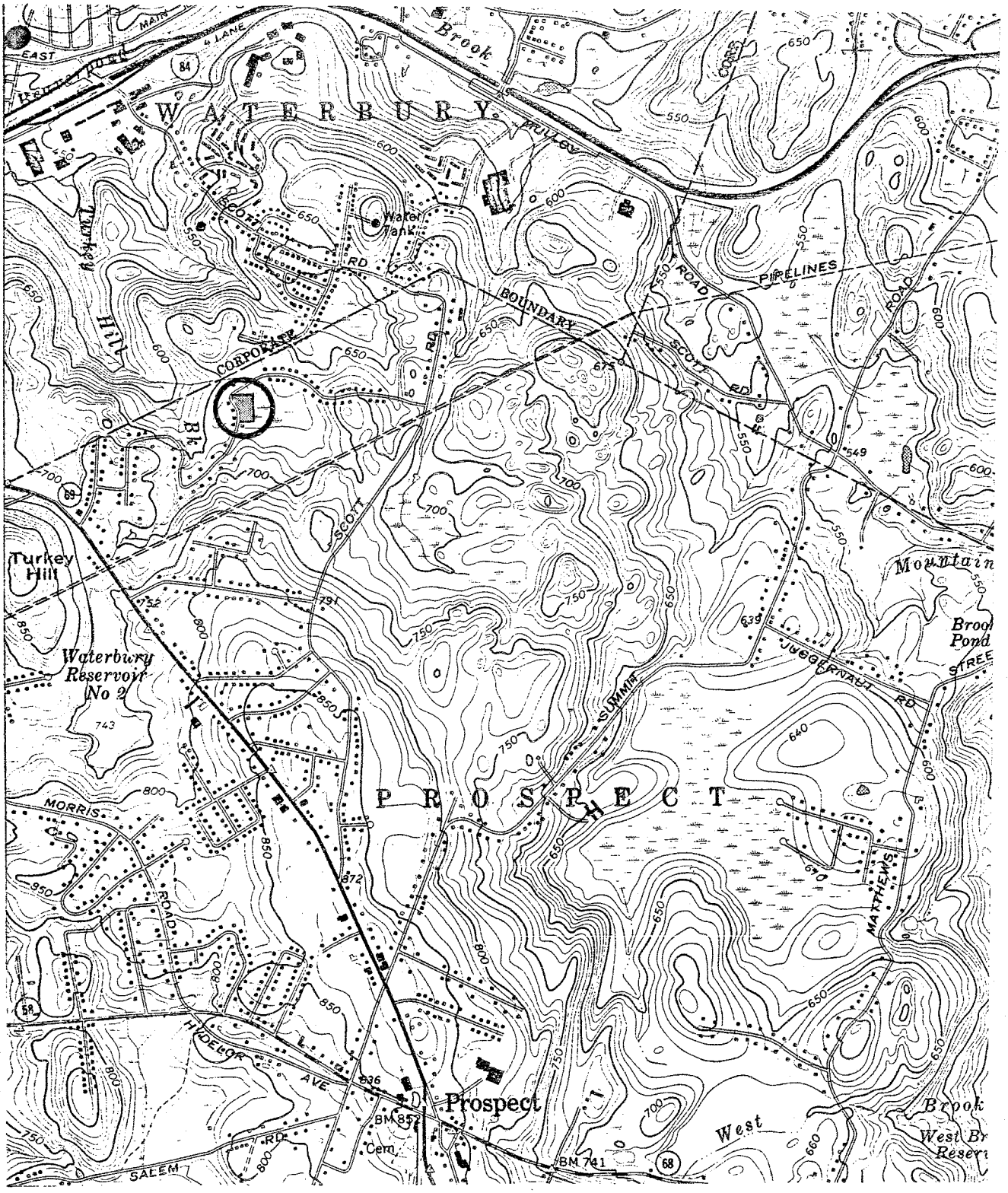
Steve Tessitore.....Soil Scientist.....Ct. Department of Environmental Protection

Prior to the review day, each team member was provided with a summary of the proposed project, a checklist of concerns to address, a general location map, and a simplified site plan of the development proposal. 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 presents 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 of natural resources information and preliminary development 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 Prospect and the landowner/developer in making environmentally sound decisions.

FIGURE 1.

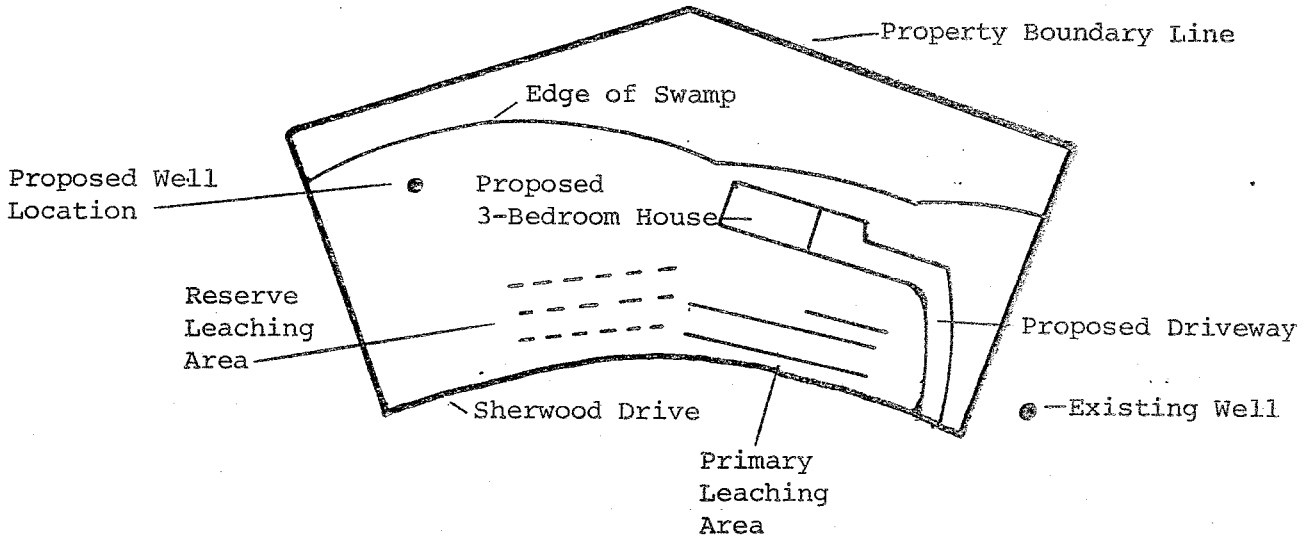
GENERAL LOCATION SITE



SCALE 1" = 2000'

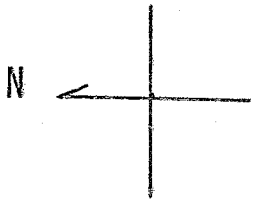
FIGURE 2.

SIMPLIFIED SITE PLAN



Notes:

1) Adapted from Paul Associates Plan of 11-11-77.
2) "Edge of Swamp" shown on this plan does not conform to inland wetland boundaries as observed by the ERT. The wetlands on this property are more extensive than the swamp boundary shown on this plan.



Scale 1" = 100'

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

II. SOILS

According to the New Haven County Soil Survey, the Knapp Property is underlain by two soil types. These are discussed below.

1) Ce - Carlisle Muck - This nearly level, very poorly drained, deep organic soil occupies the eastern half of the subject site. The organic layers of this soil type range from 50 inches to more than 30 feet in depth. Slopes are 0 to 3 percent but are dominantly less than 1 percent.

Typically, the surface layer is very dark brown muck 10 inches thick. The subsurface is dark reddish brown muck 19 inches thick. The bottom layer, described to a depth of 70 inches, is dark reddish brown and dark brown muck.

This soil has moderately rapid permeability. It has a high available water capacity. Runoff is very slow. This soil remains wet most of the year and is ponded for several weeks from fall to spring and after heavy rains in summer. Unless limed, the soil ranges from medium acid through neutral.

This soil has poor potential for community development. It has a high water table most of the year and is subject to flooding or ponding. The organic layers have very low strength and stability. In many places, they are too deep to be feasibly removed. If this soil is drained, subsidence causes the organic material to shrink, thus lowering the surface of the soil. Excavating is difficult because the side slopes are very unstable and slough readily. Onsite septic systems are not feasible on this soil.

2) SxC - Sutton extremely stony fine sandy loam, 3 to 15 percent slopes. This moderately well drained soil occupies the western portion of the property adjacent to Sherwood Drive. In most places this soil has slopes of less than 8 percent. It has 3 to 25 percent of the surface covered with stones and boulders.

Typically, the surface layer is very dark grayish brown fine sandy loam 6 inches thick. The subsoil is dark brown and yellowish brown, mottled fine sandy loam 22 inches thick. The substratum, described to a depth of 60 inches, is brown and light olive brown fine sandy loam and gravelly fine sandy loam with a few firm lenses up to 4 inches thick.

This soil has a seasonal high water table at a depth of about 20 inches from late in fall until mid-spring. This soil has moderate or moderately rapid permeability. The available water capacity is high. Runoff is medium to rapid. This soil tends to dry out and warm up rather slowly in the spring. It has a low shrink-swell potential. In areas that are not limed, this soil is very strongly acid through medium acid.

This soil has fair potential for community development. It is limited mainly by its seasonal high water table and stoniness. This soil is fairly easy to excavate but in many places has stones and boulders below the surface as well as on the surface. The seasonal high water table frequently inundates excavations. Particular attention needs to be given to houses with basements

because the basements are generally below the depth of the water table. This results in wet basements unless the soil is drained. Waste disposal systems, such as onsite septic systems, generally will not function satisfactorily with only normal design and installation because of the seasonal high water table. Very careful and often costly design and installation are required to insure that onsite septic systems function satisfactorily and that they are not flooded by the water table. This soil is severely limited for landscaping because of its stoniness; however, large boulders are sometimes desired for their esthetic value and are left undisturbed. Removal of stones and boulders is costly. This soil may be soggy for several days after heavy rains. During construction of community developments, conservation measures are needed to prevent excessive runoff, erosion, and siltation.

III. INLAND WETLAND IMPACT

The wetland on the Knapp Property is part of a ± 30 acre wetland area draining northerly to Turkey Hill Brook. This type of wetland system provides wildlife habitat and serves to maintain the quality of surface and groundwaters. In addition, this type of wetland system because of soil type and topographic position may provide a significant role in flood storage during high flow periods. As previously discussed, soils within the wetland are very poorly drained and therefore subject to fluctuation of the watertable. It would be expected that the watertable within the wetland would be above the surface of the soil during the wetter portions of the year.

The concrete footing which has been poured for the proposed house on this property was observed by the ERT to be located within a partially disturbed inland wetland soil. The current proposal would require further fill within wetlands for construction of the lot. This would involve a direct loss of wetland acreage with a resulting loss of wetland functions. Specifically, the project will reduce wetland wildlife habitat, diminish the capacity of the wetland to improve water quality, and reduce the flood storage capability of the wetland. This last factor may be the most significant. The Sherwood Avenue Area of town has a history of flooding problems. Construction of the proposed house lot on fill material in the wetland will remove some floodwater storage area. In addition, the project will increase stormwater runoff to the wetland via the construction of additional impermeable surfaces (driveways, roofs, etc.).

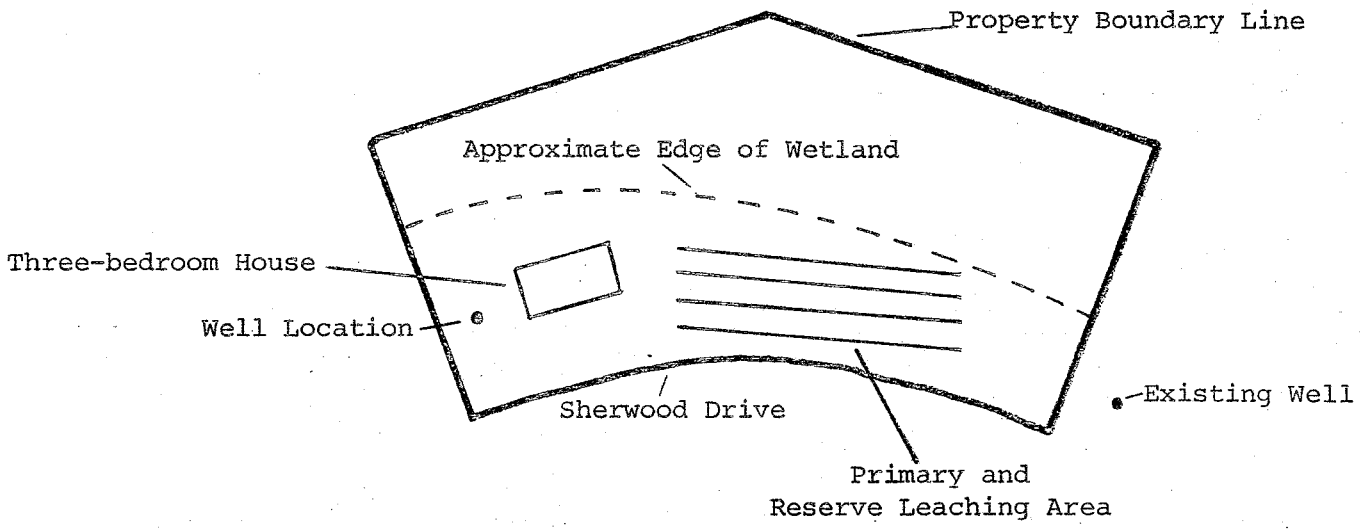
Consideration should be given by the Prospect Inland Wetlands Commission to requesting the applicant to provide: 1) a delineation of the wetland boundary on this property by a soil scientist, and 2) an analysis of the hydrological impacts of this project as they relate to flooding.

IV. SEPTIC SYSTEM SUITABILITY AND SUGGESTIONS FOR SITE RE-DESIGN

In December 1977, the Connecticut Department of Health Services reviewed detailed engineering plans for the design of a sewage disposal system serving a single family three-bedroom dwelling on this property. Comments and recommendations made by the Health Services Department were incorporated in final plans prepared by Francis A. Paul, Consulting Engineer, in plans dated December 22, 1977. Based upon this final revision, a permit for septic system installation was issued by the Chesprocott Health District.

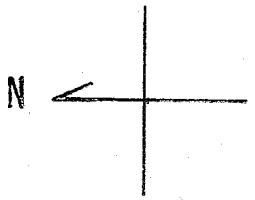
FIGURE 3.

SUGGESTIONS FOR SITE RE-DESIGN



Additional Comments:

1) Wetland boundary should be determined by soil scientist.
2) Stormwater runoff and peakflow changes and impact should be determined.
3) An erosion and sediment control plan should be prepared.



Scale 1" = 100'

A review of soil test data indicates that the proposed leaching area shown in Figure 2 is generally suitable for installation of a conventional sewage disposal system. However, based upon a field inspection of the site, it appears that the inland wetland soil boundary passes through the proposed location of the three-bedroom house.

Based upon a review of soil test results, soil borings made during the ERT's inspection, and general site conditions, several suggested lot development proposals are offered for consideration.

1. The proposed house should be shifted northerly into that section of the parcel which contains the least percentage of inland wetlands soils (see Figure 3). The house should be shifted in order to minimize disturbance of wetland areas and remove potential obstacles of subsurface ground water flow down gradient from a proposed leaching system.

2. The proposed well should be relocated to a higher elevation along the northerly property line. This would provide further protection for the water supply and remove the need for filling in order to protect the well site from seasonal flooding.

3. The primary and reserve leaching areas should be laid out along the westerly property lines. These leaching systems may be constructed in shallow depths of pervious gravel material in order to provide additional protection from seasonal flooding and improve sewage quality prior to application to underlying pervious soils. Installation of a shallow leaching gallery system may also be permitted in order to keep the leaching system closer to Sherwood Drive.

To conclude, it appears highly unlikely that a subsurface sewage disposal system constructed in good quality fill placed above existing permeable soils would adversely effect water quality of the adjacent wetlands. Proper design, site preparation, and installation of the leaching system would further reduce the impact upon the adjacent wetland. If the inland wetlands commission agrees to the concept of property development, then detailed engineering plans should be submitted to the Chesprocott Health District and State Health Department for review in compliance with the Public Health Code.

Redesign of the house lot along the lines suggested in Figure 3 will also serve to reduce the other inland wetland impacts discussed in Section III of this report. Delineation of the inland wetland boundary on the site by a soils scientist and consideration of runoff and peak flow impacts should nevertheless be requested of the applicant in order to provide the Prospect Inland Wetlands Commission with a firm basis for decision making. A complete erosion and sediment control plan to protect the wetlands from sediment damage during development of the lot should also be developed as part of the application.

* * * * *

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.