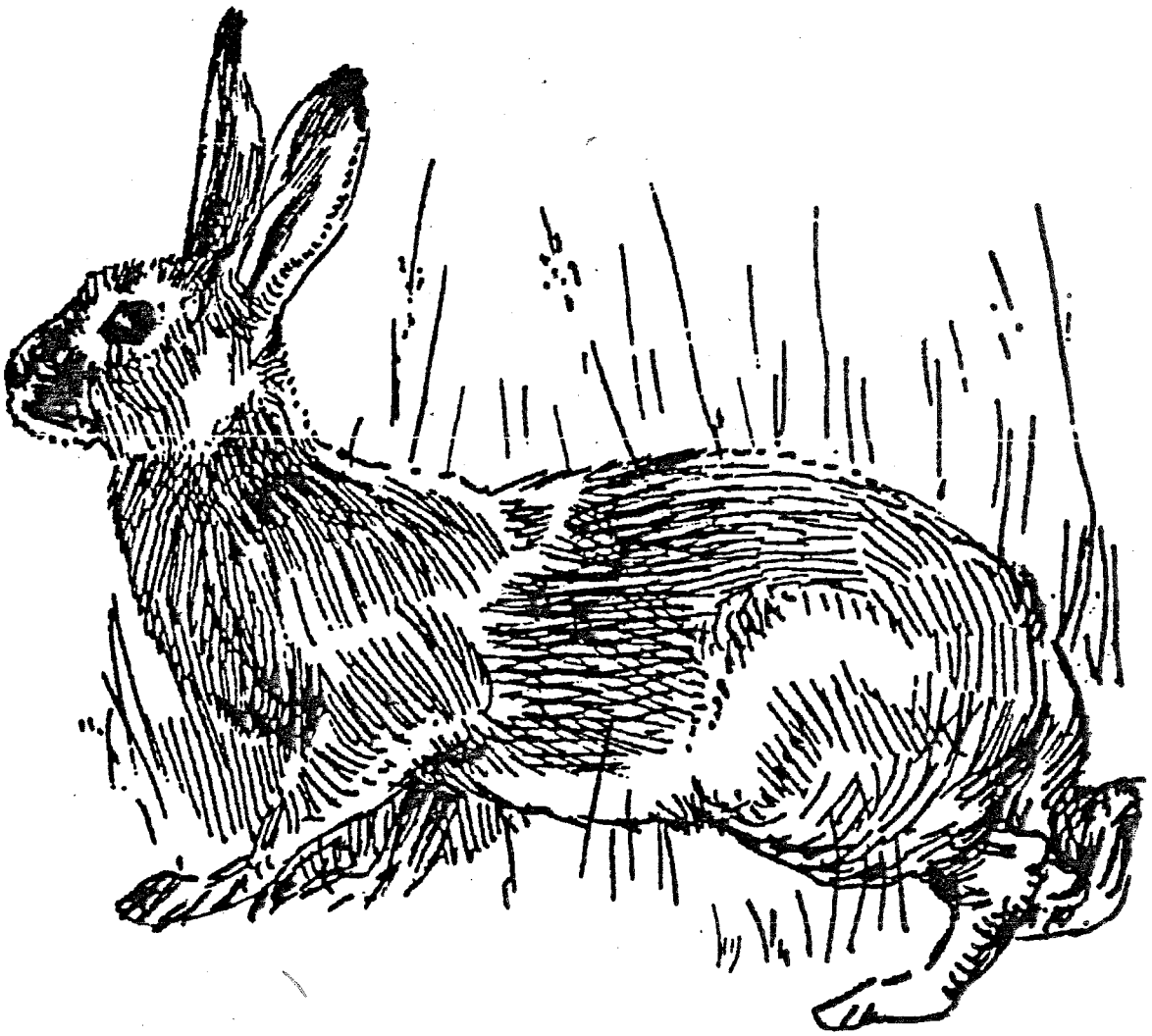
KING'S MARK ENVIRONMENTAL REVIEW TEAM



REPORT FOR

STONINGTON COUNTRY CLUB

STONINGTON,
CONNECTICUT

King's Mark Resource Conservation and Development Area, Inc.

STONINGTON COUNTRY CLUB

STONINGTON, CONNECTICUT

Environmental Review Team Report

Prepared by the King's Mark Environmental Review Team
of the King's Mark Resource Conservation
and Development Area, Inc.

Wallingford, Connecticut

for the

Stonington Inland Wetlands Commission

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 Inland Wetland Commission and the Town. The results of the Team action are oriented toward the development of a better environmental quality and long-term economics of the land use. The opinions contained herein are those of the individual Team members and do not necessarily represent the views of any regulatory agency with which they may be employed.

JULY 1989

ACKNOWLEDGMENTS

The King's Mark Environmental Review Team Coordinator, Nancy Ferlow, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this study:

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I would also like to thank Susan Anderson, Secretary of the King's Mark Environmental Review Team for assisting in the completion of this report.

Finally, special thanks to the Stonington Inland Wetlands Commission and Planning and Zoning Commission, Ian Camfield, developer, Arthur Hayward, Hayward-Holbrook Engineers and Surveyers, Peter Gardner, land surveyer, Linda Steere, Applied Bio-Systems, and Leon Gorski, Environmental Management Corporation, for their cooperation and assistance during this environmental review.

EXECUTIVE SUMMARY

Introduction

The Stonington Inland Wetlands Commission has requested that an environmental review be conducted on the Stonington Country Club, a 165-acre site proposed for a golf course. The site contains a house, several out buildings, old farm fields and second growth hardwood and softwood forests with some open areas. The site is relatively flat with several areas of wetlands.

The proposed development includes an 18-hole golf course, a club house/ restaurant with associated parking, tennis courts, paddle tennis courts, a swimming pool and changing area and 7 new ponds, 6 of which will impact the wetlands. The development would rely on on-site sewage disposal and wells.

The review process consisted of 4 phases: (1) inventory of the site's natural resources; (2) assessment of these resources; (3) identification of resource problem areas; and (4) presentation of planning and land use guidelines. Based on the review process, specific resources, areas of concern, development limitations and development opportunities were identified. The major findings of the ERT are presented below:

Location, Setting and Zoning

The site is located in northcentral Stonington near the Anguilla Brook aquifer. The aquifer is a potentially important groundwater source for the Town. The site is bounded by wooded and agricultural land. Land use in the area is either residential or agricultural. The site has an agricultural past. Surrounding land is zoned residential. If the club is nonprofit, it is permitted within the zone. This should be confirmed with the Planning Commission.

Topography

The site flanks the east side of a drumlin. The site has gentle slopes. Maximum and minimum elevations are 240 feet above mean sea level and 140 feet above mean sea level, respectively.

Geology

The site is located in the Old Mystic Quadrangle. A bedrock geology map for the quadrangle is available, but no surficial geology map has been published to date.

Bedrock Geology

Bedrock underlying the site consists mainly of granitic gneisses. Bedrock is exposed in the northeast and southeast corners. The rock formations include Potter Hill Granite Gneiss, Mamacoke Formation, Hope Valley Alaskite Gneiss and the Narragansett Pier Granite. The depth to bedrock is unknown. It is shallowest in the northeast and southeast corners and deepest in the northwest corner.

Surficial Geology

The site is covered by till. The till on most of the site is silty and compact (hardpan). The hardpan has low permeability and is characterized by a seasonally high water table. Cut slopes in the hardpan will have seeps in the wet periods and subsurface drainage may be required. The Rainbow and Woodbridge soils are very stony and will be a hindrance to landscaping and excavation. Sandy till, which lacks a hardpan, is located in the northeast and southeast corners.

Wetland soils have been identified in the field. They parallel the seasonal and permanent watercourses on the site. Based on the present plan, the fairways and golf cart paths will cross the wetlands in many areas. Wetland impacts could be reduced by utilizing existing wetland crossings, combining golf cart crossings, shifting fairways away from wetlands and utilizing narrowest points for wetland crossings. The applicants should re-evaluate the present golf course layout and reduce wetland disturbances. All wetland activity that takes place on the site should be done during the dry time of year, should be properly engineered and should include provisions for effective erosion and sediment control.

Water Supply

The most dependable water supply on the site is the bedrock aquifer. The till on the site has low potential for water supply because of the low hydraulic conductivity and seasonal water supply. The bedrock wells along Taugwank Road produce about 7020 gallons of water per day. The proposed development includes a clubhouse, pool, tennis courts and a restaurant. The golf course will need irrigation water for fairways and landscaping. It is likely that the water demand will exceed 7000 gallons a day. More that an single well may be needed to serve the development. The applicant will need to develop a water budget for the project in order to determine the amount of water needed. The proposed well(s) must be approved by the State Department of Health Services and the Department of Public Utilities Control.

Groundwater in the area is classified as GA, and the quality is expected to be good. Each well should be located on a high portion of the site and properly separated from sewage disposal systems and other potential pollutants. The well(s) should be cased with steel pipe to protect water quality.

Sewage Disposal

The development will rely on on-site sewage disposal. Sewage flows have not been calculated to date. In order to determine the State agency responsible for permitting the system, flow figures are needed. The Department of Health Services permits flows between 2000 and 5000 gallons per day and the DEP Water Compliance Unit permits flows over 5000 gallons per day. The local Health Department plays an important roll in the review of plans and the inspection of the system. Before a permit can be issued, the applicant must show the hydrogeologic conditions in the disposal area, the design of each system, a hydraulic analysis of the disposal site and

an analysis of the probable impact on any nearby water resources and aquifers. The sewage disposal system must meet the State Public Health Code requirements.

Subsurface information was limited. Further testing will be needed to determine the site for the septic system. Soil data indicates that the hardpan will be the major hindrance to septic system development. In some cases, specially designed septic systems can be put in hardpan soils. These systems will need groundwater control drains and/or placement of soil to elevate the system above the groundwater table. Every effort should be made to protect the groundwater quality and the Anguilla Brook aquifer.

Hydrology

Surface runoff for most of the site drains to Anguilla Brook. The northwest corner drains to Wheeler Brook, and the southwest corner drains to an unnamed tributary of Stony Brook. Development of the property will result in an increase in runoff during periods of rainfall. No hydrologic study has been conducted to date. The study should include stormwater management plans, runoff calculations and a plan to route water laden with pesticides and fertilizers. The Anguilla Brook aquifer is an important water source. Runoff from the site may be high due to the hardpan soils. The applicant should contact the DEP Pesticide Unit to discuss the management of pesticides and fertilizers on the site. It is important to protect the groundwater and Anguilla Brook aquifer.

The site plans indicate that 7 ponds are proposed for irrigation and aesthetics. These ponds can also be used for detention and sedimentation. The ponds should be placed so that runoff from the fairways is captures and reused for irrigation. This could reduce the transportation of pesticide laden water off-site. The ponds will be excavated below the water table, which is seasonally high. During the spring, the water level of the ponds should be high. During the summer when precipitation is low and evapotranspiration is high the water level will be low or non-existent. These ponds are planned for irrigation. Monitoring wells should be installed and tracked for a picture of the groundwater table. There may be inadequate water for irrigation. The applicant might investigate using the Anguilla Brook aquifer if an additional source of water is needed. A DEP Water Resource Unit Diversion Permit will be needed if more that 50,000 gallons of water per day are drawn from a well.

Soil Resources

The site is located on Woodbridge and Ridgebury soils. Some of the soils are stony, and some are wet or seasonally wet. High phosphorus fertilizers are bound very tightly to the soil, but are released when washed into a waterbody. Sediment and erosion controls are crucial. Silt barriers should be placed before construction. Construction phasing is recommended with each area stabilized before moving to the next. The method of land clearing should be specified. Plans should include all areas to be graded, locations of wells, locations of septic systems, areas for all buried materials and topsoil stockpile areas. Plans should also include specific vegetative methods for erosion control. Pond design should be specific for each pond. Details for grading, outlets and disposal of materials should be included. The engineer

should be aware of the disturbance to wetlands and water tables in the area of each pond. Erosion and sediment controls are outlined on the plans. Some of the wetland areas may have been left unprotected. Areas which need protection are all wetland crossings and disturbances and wetland areas downhill from grading and excavations.

Wetland Considerations

The wetlands found on-site are associated mainly with the watercourses. Wetland functions include water storage, pollution abatement and wildlife habitat.

Of the 7 ponds proposed, 6 will impact the wetlands. Creation of an open body of water usually does not increase the diversity of habitat, but replaces one habitat type with another. The species that use the open water will increase, but those who use the former habitat will decrease. Also, the ponds will be acting as detention basins and may become unattractive to wildlife. This habitat replacement is not an acceptable alternative to wetland loss when others exist. Ponds could be altered and reconfigured to minimize the wetland impacts. Eleven of the 18 fairways will impact the wetlands. Some will alter the fringes while others will cross the wetlands. Curtain drains will alter the water flow in the wetlands and direct the water to the ponds. This may dewater the wetlands. The clearing of vegetation and replacement with turf will eliminate the function of wildlife travel corridor. Suggestions for alternatives include scaling down the project, altering the configuration for the wetlands and removing the curtain drains from the wetlands.

Wildlife Considerations

The wildlife habitat on the site includes forested wetlands, riparian zones, grass fields, upland agricultural land and hardwood forest. Agricultural areas and wetland/riparian zones are beneficial to wildlife because they provide sources of food and cover. They also provide valuable edges which increase the diversity of the habitat. The major impact of the golf course will be the fragmentation of the habitats, the substitution of turf for other vegetation and an increase in chemical runoff to the wetlands. Fragmentation will displace certain species and the fairways may be barriers to other species. Canada Geese may increase use of the area. Runoff of chemicals will impact the ponds and the wetlands and may limit use of these habitats. Suggestions to mitigate the impacts to wildlife include a buffer of 100 feet around the wetlands, reviewing and monitoring the chemical inputs to minimize the impacts, putting turf around only those portions of the ponds that are in the fairway and leaving the remaining edges forested, using native plants and providing bluebird boxes.

Threatened and Endangered Plant and Animal Species

According to the DEP - Natural Diversity Database, there are no Federally listed Endangered Species or Connecticut "Species of Special Concern"on the site.

Archaeological Considerations

Review of the maps of the area indicate an unidentified prehistoric Indian site in the project area. The site was listed by an amateur archaeologist and the exact location is unknown. Collected artifacts consist of flint projectile points. In addition there are 5 archaeological sites found in the immediate area along Anguilla Brook and Stony Brook. The flat slopes and the proximity to the wetlands make this area favorable for archaeological sites. The Office of State Archaeology recommends a professional reconnaissance survey in order to locate any prehistoric areas. This survey should include subsurface testing. The house across from the entrance to the property possesses historic and architectural importance. The project should be designed to be in harmony with the rural character of the land.

Planning Considerations

The site is located in the Greenbelt Residential district of Stonington. Minimum lot sizes of 130,000 square feet are required by the zoning. The Regional Development Plan designates this area as suitable for low density uses. Other zoning in the area includes manufacturing and rural residential. Based on the number of parking spaces, a rough trip generation table was prepared. The sight lines at the entrance will require clearing to the north. Zoning regulations list clubs as a permitted use in a residential district. Restaurants are not listed. It is not clear whether this facility is permitted in the Greenbelt Residential District.

The "recreational" aspects of this proposal are compatible with the Regional Development Plan. The transportation impact resulting from this proposal is difficult to ascertain due to lack of information on the specific facilities. Based on the number of parking spaces, the number of trips to and from the site each day would equal developing the site into approximately 100 residences. This generation may require upgrading of Taugwank Road. More information is required, and a complete Traffic Analysis Report should be submitted for analysis with the development application. Additional soil suitability information is needed to ascertain the capability of the site for the number and size of proposed facilities. There seems to be a discrepancy in permitted uses in the Zoning Regulations which must be clarified with regard to the wide range of facilities proposed.

TABLE OF CONTENTS

ACKNOWLEDGMENTS ii

EXECUTIVE SUMMARY iii

LIST OF APPENDICES ix

LIST OF TABLES ix

LIST OF FIGURES x

INTRODUCTION

Introduction 1

The ERT Process 2

PHYSICAL CHARACTERISTICS

Location, Setting and Zoning 5

Topography 6

Geology 6

Bedrock Geology 6

Surficial Geology 10

Water Supply 13

Sewage Disposal 15

Hydrology 17

Soil Resources 21

BIOLOGICAL RESOURCES

Wetland Considerations 26
Development Proposal 26
General Site Features 26
Wetland Functions and Values 26
Major Project Impacts to Regulated Areas 27
Pond Construction 27
Fairways 28
General Comments and Recommendations 29

Wildlife Considerations 30
Wildlife Habitat Descriptions 30
Wildlife Use of Habitat 31
Agricultural Land 31
Wetland/Riparian Zone 31
Effects of Development on Wildlife 31
Factors Mitigating Degree of Impact 32

Threatened and Endangered Plant and Animal Species 32

ARCHAEOLOGICAL RESOURCES

Archaeological Considerations 34

LAND USE AND PLANNING CONSIDERATIONS

Planning Considerations 36
Proposal/Site 36
Transportation 36
Local Zoning 37
Summary 37

LIST OF APPENDICES

Appendix A: Sediment and Erosion Control Checklist

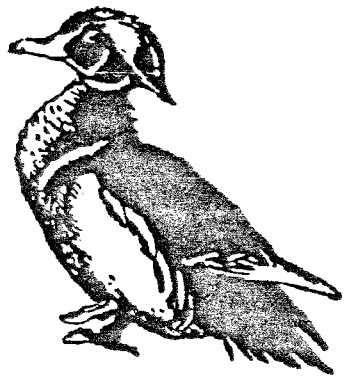
LIST OF TABLES

Table 1: Trip Generation 39

LIST OF FIGURES

1. Location of Study Site 3
2. Proposed Site Plan 4
3. Topography 7
4. Bedrock Geology 8
5. Surficial Geology 11
6. Watershed Boundary 18
7. Soils 23

INTRODUCTION



THE ERT PROCESS

Through the efforts of the Stonington Inland Wetlands Commission, the developer's representative and the King's Mark ERT, this environmental review and report was prepared for the Town. This report primarily provides a description of on-site natural resources and presents planning and land use guidelines. The review process consisted of 4 phases:

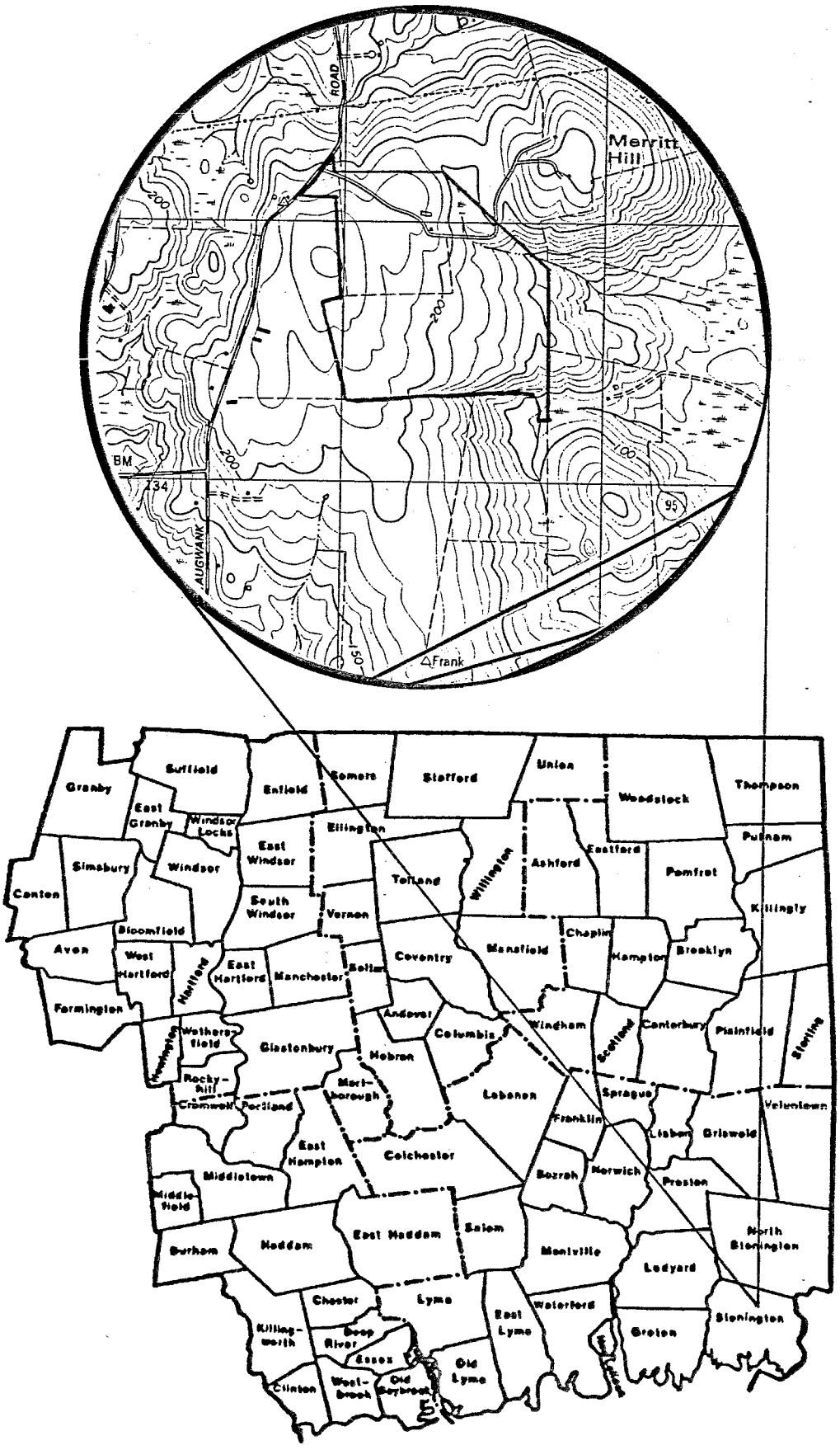
1) Inventory of the site's natural resources (collection of data);
2) Assessment of these resources (analysis of data);
3) Identification of resource problem areas; and
4) Presentation of planning and land use guidelines.

The data collection phase involved both literature and field research. The ERT field review took place on May 24, 1989. Field review and inspection of the proposed development site proved to be a most valuable component of this phase. The emphasis of the field review was on the exchange of ideas, concerns or alternatives. Mapped data or technical reports were also perused, and specific information concerning the site was collected. Being on-site also allowed Team members to check and confirm mapped information and identify other resources.

Once the Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. The results of this analysis enabled the Team members to arrive at an informed assessment of the site's natural resource development opportunities and limitations. Individual Team members then prepared and submitted their reports to the ERT Coordinator for compilation into the final ERT report.

Figure 1

LOCATION OF STUDY SITE



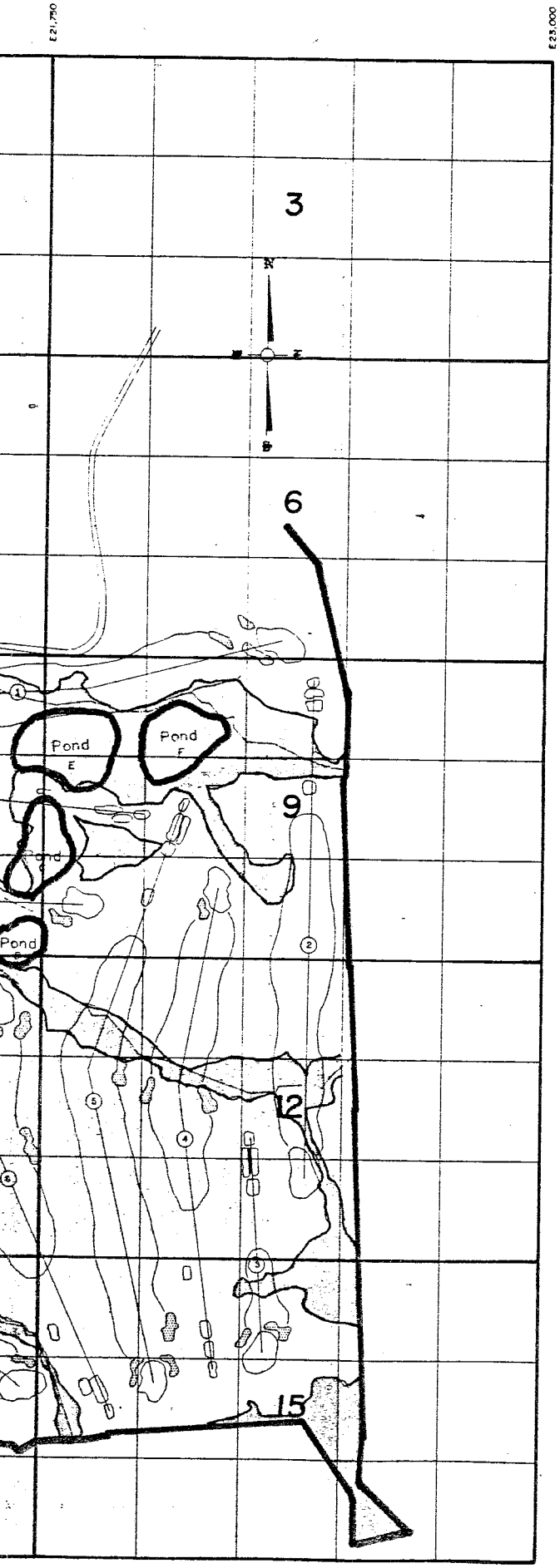


Figure 2

Legend

(Refers to Sheets 40/1 through 40/15)

- Wetland Limits
- Stonewall
- Existing Contour
- Finished Grade
- Tee with finished elevation
- Brook
- Direction of play, tee to green
- Cart Path
- Proposed Tree Line
- R/T P.V.C. Pipe w/ Riprap
- Perforated P.V.C. Pipe
- Erosion Control
- Testhole Location
- Catchbasin

Information from Hayward-Holbrook Engineers and Surveyers, Site Plan

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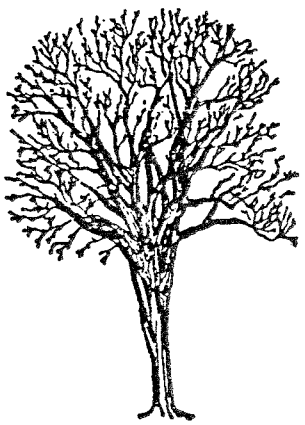
Scale: 1" = 400'

Proposed Site Plan

PHYSICAL CHARACTERISTICS



TOPOGRAPHY

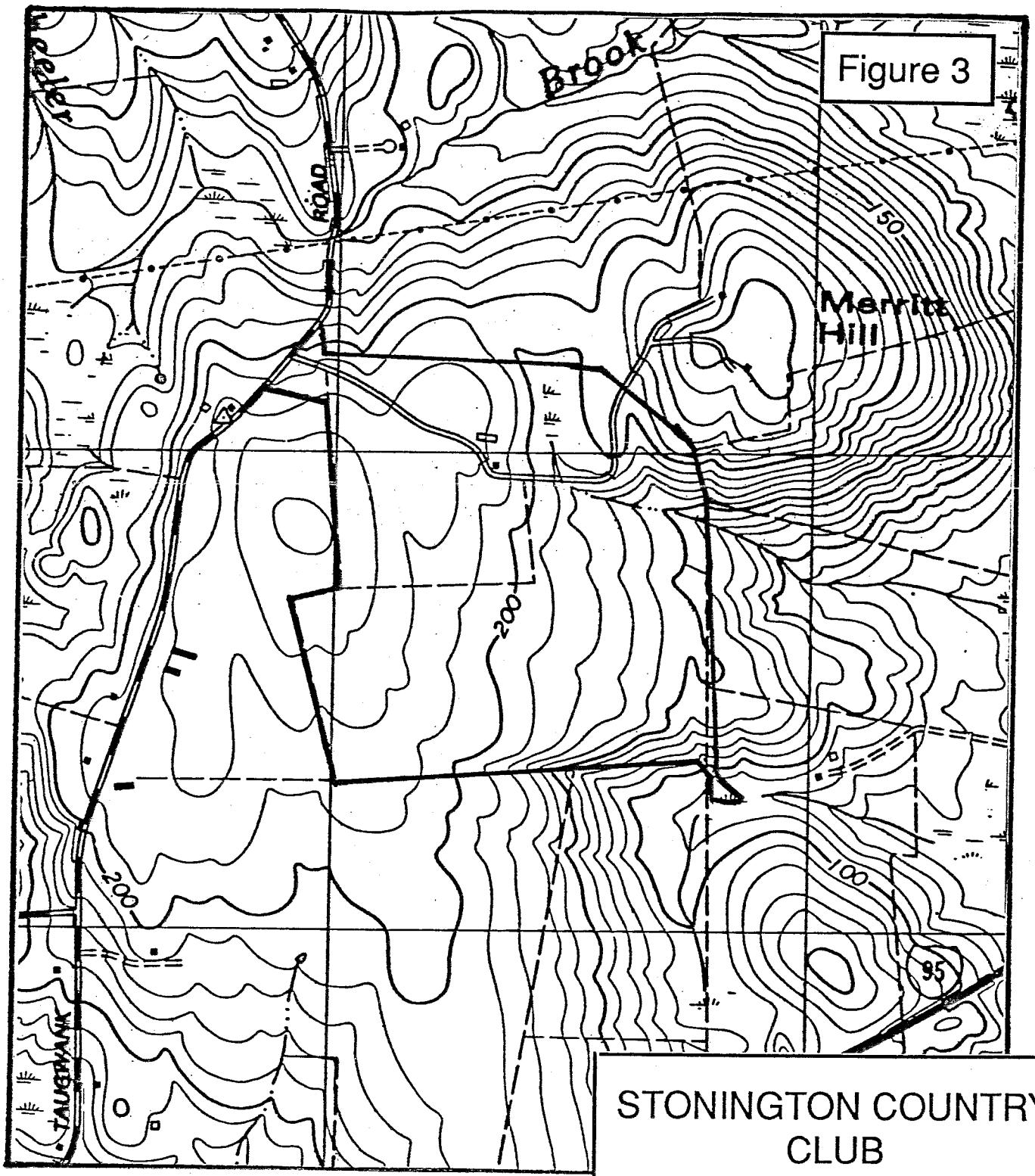
The site flanks the east side of a streamlined-hill (drumlin) which is oriented in a northwest-southeast direction. Land surface slopes gently eastward to Anguilla Brook. Steepest slopes occur at the southeast and northeast corners of the site. Maximum and minimum elevations on the site are approximately 240 feet above mean sea level and 140 feet above mean sea level, respectively (see Figure 3).

GEOLOGY

The site is located entirely within the Old Mystic topographic quadrangle. A bedrock geologic map (Map I-1524 by Richard Goldsmith) has been published for the quadrangle by the U.S. Geological Survey in 1985. No surficial geologic map has been published to date for the quadrangle. The Soil Survey of New London County, the unpublished Surficial Geologic Map of the Old Mystic Quadrangle (J.S. Gaffney, 1965) and the unpublished Surficial Materials Map of Connecticut (Stone et. al 1985) were used as references for the Surficial Geology section.

BEDROCK GEOLOGY

Bedrock underlying the site consists mainly of granitic gneisses. Bedrock is exposed at the northeast and southeast corner of the site. The remainder of the site is covered by unconsolidated materials of varying thicknesses (see Surficial Geology section). Goldsmith (1985) identified the major rock formation underlying the site as Potter Hill Granite Gneiss (see Figure 4). It is classified as a light pink to gray/tan



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Scale: 1" = 1000'

Topography

Information from USGS Topographic Maps,
Old Mystic Quadrangle

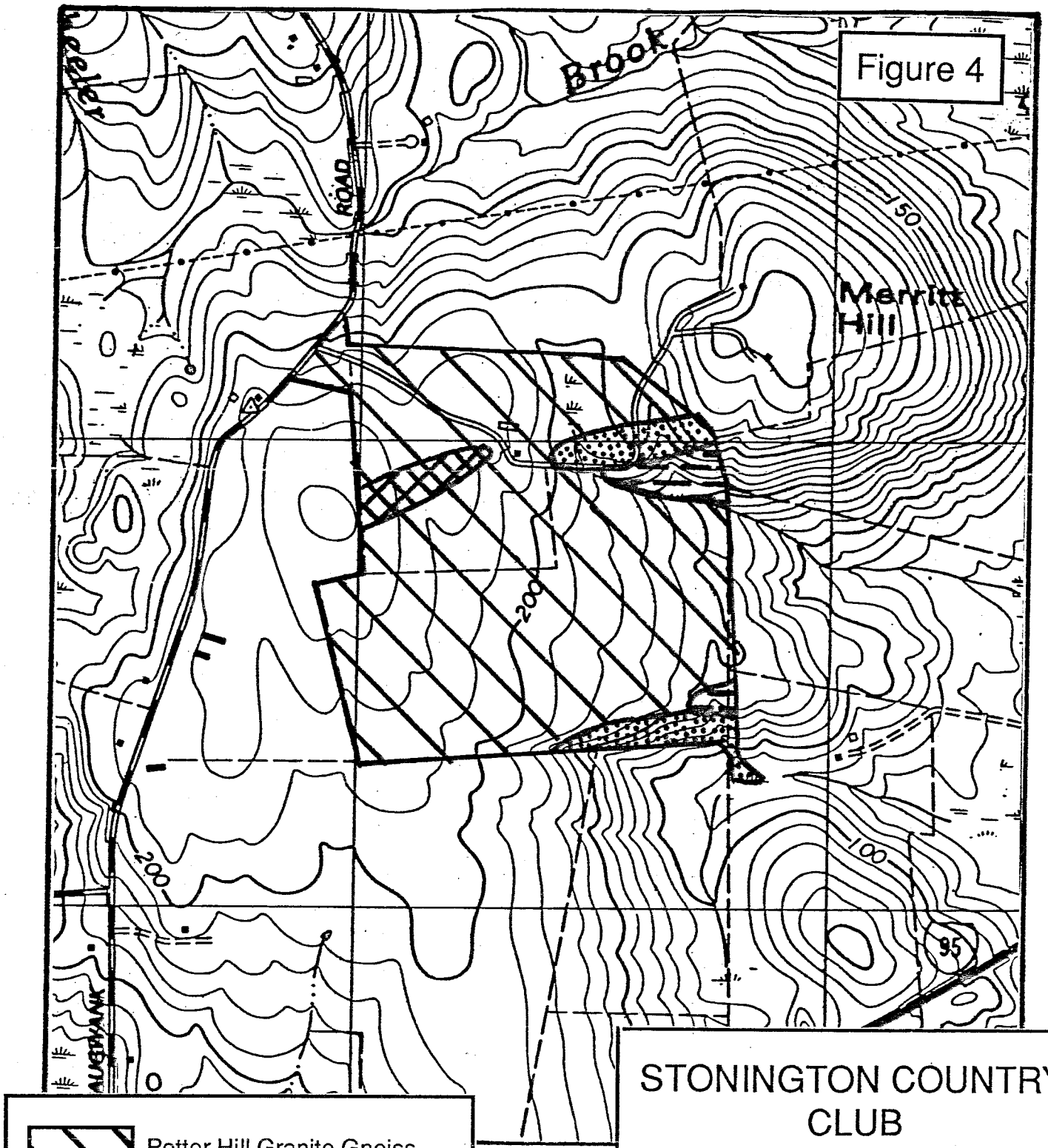
Figure 4
Brook
ROAD
150
Merritt
Hill
200
200
100
95
AUGHANK
Potter Hill Granite Gneiss
Narragansett Pier Granite
Mamacoke Formation
Hope Valley Alaskite Gneiss
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Scale: 1" = 1000'
N
Bedrock Geology
Information from USGS Topographic Maps,
Old Mystic Quadrangle

weathering, fine to medium grained, well foliated granitic gneiss. Major minerals include quartz, calcic oligoclase, microcline and biotite.

Other rock formations underlying the site include Narragansett Pier Granite, Mamacoke Formation and Hope Valley Alaskite Gneiss. Narragansett Pier Granite, a popular quarry rock in the region, consists of a pink to red, medium to coarse grained massive granite. Where quarried, it is used for dimension stone primarily for buildings. Narragansett Pier Granite occurs as a narrow finger in the northeast corner of the site. Hope Valley Alaskite Gneiss and Mamacoke Formation outcrop in small areas at the northeast and southeast corners of the site. The Mamacoke Formation consists of interlayered, light to dark gray, medium grained gneiss. The Hope Valley Alaskite Gneiss consists of light pink to gray, medium to coarse grained granite gneiss. In general, gneisses are coarse grained rocks characterized by the relative parallel orientation of mineral grains with massive to platy appearance.

The Potter Hill Granite Gneiss, the Hope Valley Alaskite Gneiss and certain subunits of the Mamacoke Formation have been quarried in the region as a source of stone for foundations and for rip-rap.

The Potter Hill Granite Gneiss, the Hope Valley Alaskite Gneiss and the Mamacoke Formation on the site were deposited as igneous rocks (rocks that were at some time in a hot molten state) during the Proterozoic geologic period (570-2500 million years ago). Following their deposition and solidification, these rocks were subjected to metamorphism (geologically altered by great heat and pressure within the earth's crust) which changed the texture of the rocks to their present form. The Narragansett Pier Granite shows no evidence of metamorphism because it postdates the surrounding rocks on the site. Goldsmith (1985) believes the Narragansett Pier Granite, which intruded the surrounding rocks as a molten material, is from the Permian geologic period (245-286 million years ago).

The exact depth to bedrock on the site is unknown. It is shallowest at the northeast and southeast corners, where outcrops occur. Greatest depths to bedrock probably occur at the northwest corner.

Bedrock is the likely source of water for the proposed development (see Water Supply section).

SURFICIAL GEOLOGY

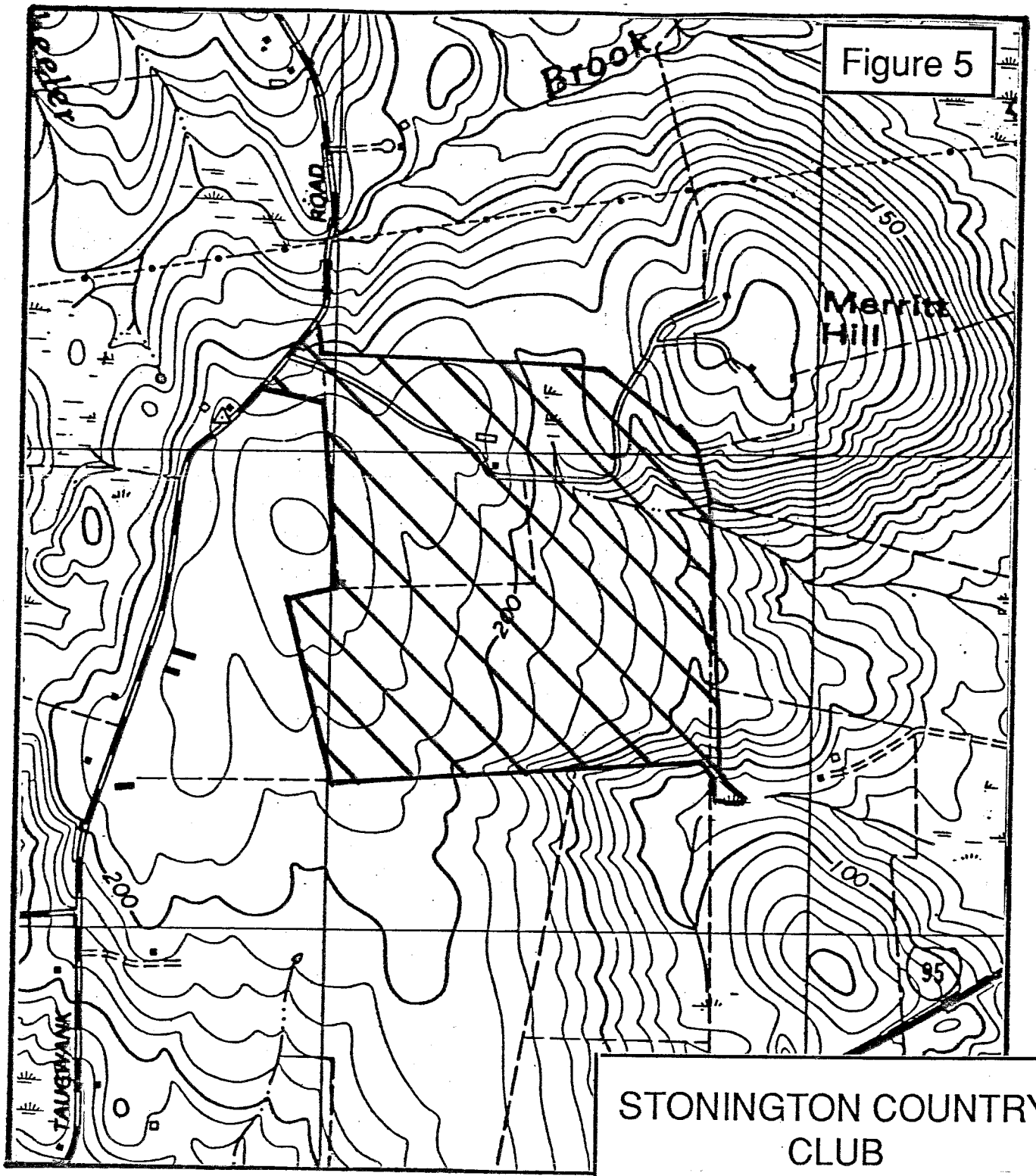
The proposed golf course facility site is covered by till (see Figure 5). Till is a glacial sediment that was deposited directly from glacier ice. The sediment consists of varying proportions of sand, silt, gravel, clay and boulders. Particles of different sizes are generally mixed together in a complex fashion.

The texture of most till on the site is silty and tightly compact. The compact zone is encountered below the weathered and rooted surficial soil zone (1.5-2.5 feet below ground surface). Above the compact soil zone, the texture of soil is normally loose or only moderately compact.

The compact till (hardpan) is characterized by seasonal high water tables and is slowly permeable. Cut slopes in the hardpan soils will likely have seeps during wet periods and subsurface drainage may be required. The hardpan soils denoted as WyB (Woodbridge Soils) and RbB (Rainbow Soils) on the soils map for the site are very stony. This will be a hindrance for landscaping and excavating.

A sandy till which lacks a hardpan occurs primarily at the southeast and northeast corners of the site. Bedrock is at or near ground surface in these areas.

Wetland soils on the site have been mapped by a certified soil scientist. The boundaries of the wetland soils have been superimposed onto a site plan. According to the site plan, most wetland soils parallel seasonal and permanent watercourses on



Glacial Till

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Scale: 1" = 1000'

Surficial Geology

Information from USGS Topographic Maps,
Old Mystic Quadrangle

WATER SUPPLY

The most dependable aquifer found on the site, which is suitable for water supply purposes, is the underlying bedrock (granitic gneisses). Because of its low hydraulic conductivity, the till covering the site would have low potential for groundwater development. Additionally, the water table fluctuates significantly in the till, making it unreliable as a water supply source, particularly in the summer and fall months.

The granite gneisses underlying the site respond to geologic forces such as faulting, folding and uplift by fracturing and forming seams, fractures and cracks in the rock. The solid part of the granitic gneisses underlying the site is impermeable for the most part. Water that saturates the cracks, seams or fractures in the rock provides a potential water supply source for drilled wells that intersect these openings. In general the fractures, seams or cracks are found in the upper 200-300 feet of the bedrock surface.

The random nature of the fractures and seams prevents prediction of well yields in bedrock except on a statistical basis. For this reason, it is extremely difficult to predict the yield of a bedrock well prior to drilling. Water Resources Bulletin No. 15 (Lower Thames and Southeastern Coastal River Basin) indicates that 9 out of 10 bedrock wells yield at least 3 gallons per minute.

Well completion reports for 12 domestic wells which tap the underlying granitic gneisses, drilled between 1966 and the present along Taugwank Road, revealed yields ranging from negligible amounts (1.5 gallons per hour) to 20 gallons per minute. The median yield of all wells considered is about 6.5 gallons per minute or 7,020 gallons per day (18-hour pumping period). Depths of the wells ranged between 120 feet and 500 feet below ground surface. Of the wells reviewed, the highest yields were attained in wells that were drilled between depths of 100 and 300 feet below grade.

Based on present plans, the proposed development, which includes a clubhouse, swimming pool and country club, indoor/outdoor tennis courts, restaurant, etc., will need to be served by on-site wells. This excludes a water supply source for irrigation and landscaping purposes at the golf course. It is likely that the water demand for the proposed project may exceed 7,000 gallons per day. As a result, more than a single well may be necessary to adequately meet the water demands of the project.

No water consumption data for the proposed development was available for Team members at the field review. In order to determine whether or not the underlying bedrock can satisfy the demands of the proposed development, the applicant needs to ascertain water usage figures for peak periods. It is suggested that flow figures from a similar sized facility be metered and used as a guideline. It is likely that some adjustments to flow figures will be required depending on final densities. A breakdown of flow rates for all proposed facilities using water should be calculated. Once the water budget for the proposed development is known and other hydrogeologic investigations of the bedrock aquifer are made, the applicant's technical staff will be able to determine whether or not the bedrock can provide a reliable amount of water to the development.

The proposed well or wells will first require approval by the State Department of Health Services (Public Water Supply Section) and the Department of Public Utilities Control.

Information on projected needs of the development for water quantity, water quality testing and plans for pumpage, storage, treatment (if necessary) and the distribution system would also be necessary for a community water supply. Consideration should be given in advance to providing for proper operation and maintenance of the community water supply system (i.e., takeover by a private or municipal water supply company).

According to the Department of Environmental Protection (DEP) Water Quality Classification Map of Connecticut (Murphy, 1987), groundwater on the site is classified as GA, which means that it is suitable for private drinking water supplies without treatment. The natural quality of the groundwater is expected to be generally good.

Ideally, each well should be located on a relatively high portion of the site, properly separated from the sewage disposal system(s) or any other potential pollutant (e.g., road drainage, curtain drain, runoff potentially laden with pesticides used on the golf course, pesticide storage facilities, etc.) and in a direction opposite the expected direction of groundwater movement. They should all be cased with steel pipe into the underlying bedrock. One well completion report for a domestic well drilled on Taugwank Road noted a relatively shallow caving zone. In order to provide adequate protection of the quality of bedrock water, all wells will need to be properly installed in accordance with all applicable State Public Health Code and Connecticut Well Drilling Board regulations. In addition, the Town sanitarian will need to inspect and approve well locations.

SEWAGE DISPOSAL

Since municipal sewers are not available to this remote part of Town, the proposed development would be served by on-site subsurface sewage disposal systems. Sewage flow figures for the proposed development have not been calculated to date. In order to determine the State agency (DEP or Health Services) responsible for issuing a permit for the sewage disposal system, flow figures for sewage effluent generated by the proposed development should be determined. This can be accomplished by metering a similarly sized golf course facility. Based on present plans, it seems likely that wastewater flows for the proposed development would

exceed 5,000 gallons per day. If so, the DEP Water Compliance Unit must issue a permit.

Before the DEP can act on a permit application, the applicant's technical consultant must provide detailed technical information on the hydrogeologic conditions in the disposal area, the design of each sewage disposal system, a thorough hydraulic analysis of the disposal areas and analysis of the probable impact on any nearby water resources and the underlying aquifer from a drinking water quality standpoint. This last requirement should include an analysis of bacterial travel, virus removal and nitrate and phosphate transport. The "burden of proof" is clearly upon the developer to show that the proposed sewage disposal system(s) will function properly and not threaten the environment or public health. The applicant should make arrangements for ownership, operation and maintenance of the sewage disposal system. The local Health Department will also play an important role in the permit application, review of the plans and inspection of the sewage disposal system(s) during installation.

If flows range from 2,000 to 5,000 gallons per day, the plan for subsurface sewage disposal needs to be submitted for review and ultimate approval by the State Department of Health Services.

The applicant's engineering firm must demonstrate that the sewage disposal system meets the minimum soil standards set forth in Section 19-13B103e(a)(3) of the State's Public Health Code and Technical Standards. The process should be a coordinated effort between the design engineer, the Town sanitarian and the State Department of Health Services sanitary engineer. Plans for the design of the subsurface sewage disposal facilities (along with the placement of each on-site well water supply) must be prepared by a professional engineer and submitted to the Health Department for review and approval by their certified staff. The project

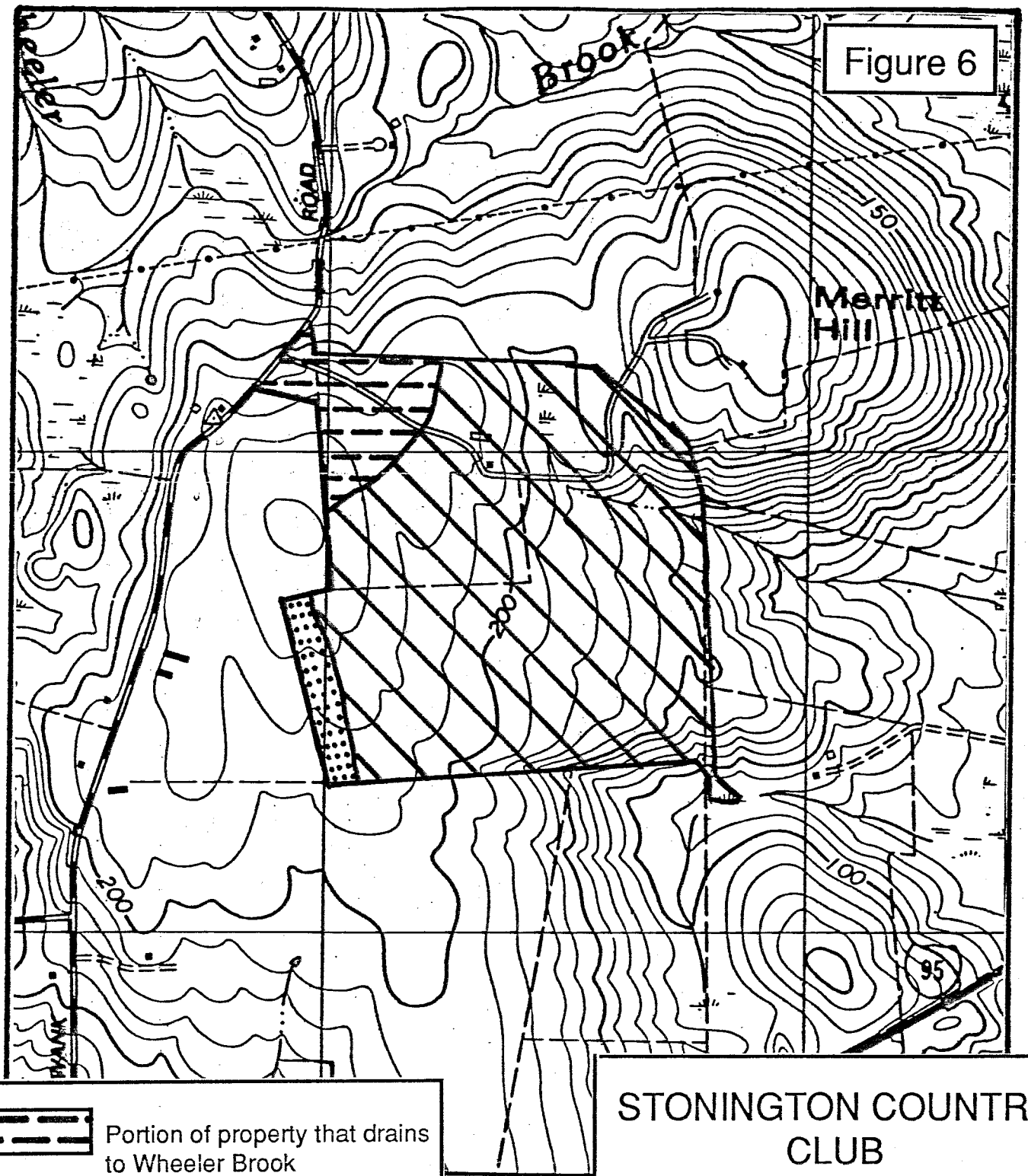
should not be approved until the local and State Health Departments are assured that the leaching field site meets all State Health Code requirements.

Subsurface exploration for on-site sewage disposal is limited at present. Deep test hole information was not available to Team members at the field review. Further testing of the soils in the area of proposed septic system(s) is necessary in order to determine whether or not they can handle the projected sewage flows. Soil mapping data and geologic maps indicate that the major hindrance to on-site subsurface sewage disposal is the widespread presence of compact till (hardpan). Hardpan soils are characterized by slow percolation rates and seasonally high water tables. Although the soils in the southeast and northeast corners may be more favorable for on-site sewage disposal, they are far away from the area likely to be used for the leaching system(s). Additionally, shallow to bedrock conditions may also prevail in these areas which will be a hindrance to on-site subsurface sewage disposal.

In some cases, specially designed (engineered) septic system(s) may be able to surmount the seasonally high water table and soils characterized by low percolation rates. Sewage disposal systems typically constructed in compact soils need to be protected by groundwater control drains and/or placement of well-drained soil to elevate leaching systems above seasonally high groundwater tables. Special care must be taken not to overload the soil with too great a volume of wastewater, which could lower surface and groundwater quality in the area. Every effort should be made to protect the water resources on the site and the Anguilla Brook aquifer.

HYDROLOGY

Surface runoff on most of the site drains eastward to Anguilla Brook (see Figure 6). Approximately 18 acres in the northwest corner of the site drain northward to Wheeler Brook which is tributary to Anguilla Brook. A narrow portion of the site in



Information from USGS Topographic Maps,
Old Mystic Quadrangle

degraded. The DEP Pesticide Unit should be contacted as early as possible to discuss the following:

1) The types of pesticides to be used at the proposed golf course (some may not be permitted because they pose too great a risk to surface or groundwater or may require licensing by the DEP);

2) The location of pesticide and fertilizer storage facilities;

3) Period of operation and application rates of pesticides and fertilizers;

4) The need for a groundwater impact assessment based on hydrogeologic analysis and a detailed monitoring program;

5) The need to monitor the water below the root zone under a green to measure the potential for leaching of pesticides and fertilizers to groundwater; and

6) Action to be taken if pesticide or nitrate levels increase or exceed hazardous levels.

The site plan indicates that 7 new ponds will be used for irrigation (drilled bedrock wells may also be used depending on water demands) and aesthetic purposes. These ponds may also be used for detention, if necessary, and sediment retention, if strategically placed. The ponds and/or irrigation wells should be placed so that runoff is captured from the fairways and re-used on the golf course for irrigation and landscaping purposes. This could reduce transporting pesticide laden water off-site, particularly to Anguilla Brook aquifer.

All ponds will be created by excavating below the water table. Except for the pond located between fairway 10 and 17, all ponds will be constructed partially in regulated wetland soils and will require a permit from the Town's Inland Wetland Commission. The water table in the area of proposed ponds is seasonally high. During spring months when precipitation is at its highest, water levels in the ponds are expected to be good. However, during the summer months when evapotranspiration is high and precipitation levels low, water levels will probably be

low or non-existent. As a result, pond construction must proceed with extreme caution, especially for irrigation ponds. Prime irrigation months are June-September when water levels in the ponds will probably be at their lowest. Monitoring wells, which measure groundwater levels in the proposed pond areas should be installed and monitored through the summer months. Surface water levels may be augmented by water drawn from bedrock wells.

There is a potential for inadequate volumes of water for irrigation purposes for the golf course. An estimate of water for irrigation purposes should be made by the applicant. An 18-hole golf course with a similar hydrogeologic setting should be checked for irrigation needs. This will give the applicant's technical staff a "ball park" figure for irrigation. If the need is high, the applicant might investigate utilizing the Anguilla Brook aquifer as a water supply source for irrigating the golf course. The Anguilla Brook aquifer may be capable of yielding moderate amounts of water to individual wells (100 gallons per minute or more). If any well on- or off-site withdraws more than 50,000 gallons of water per day, a diversion permit will be required by the DEP Water Resources Unit.

SOIL RESOURCES

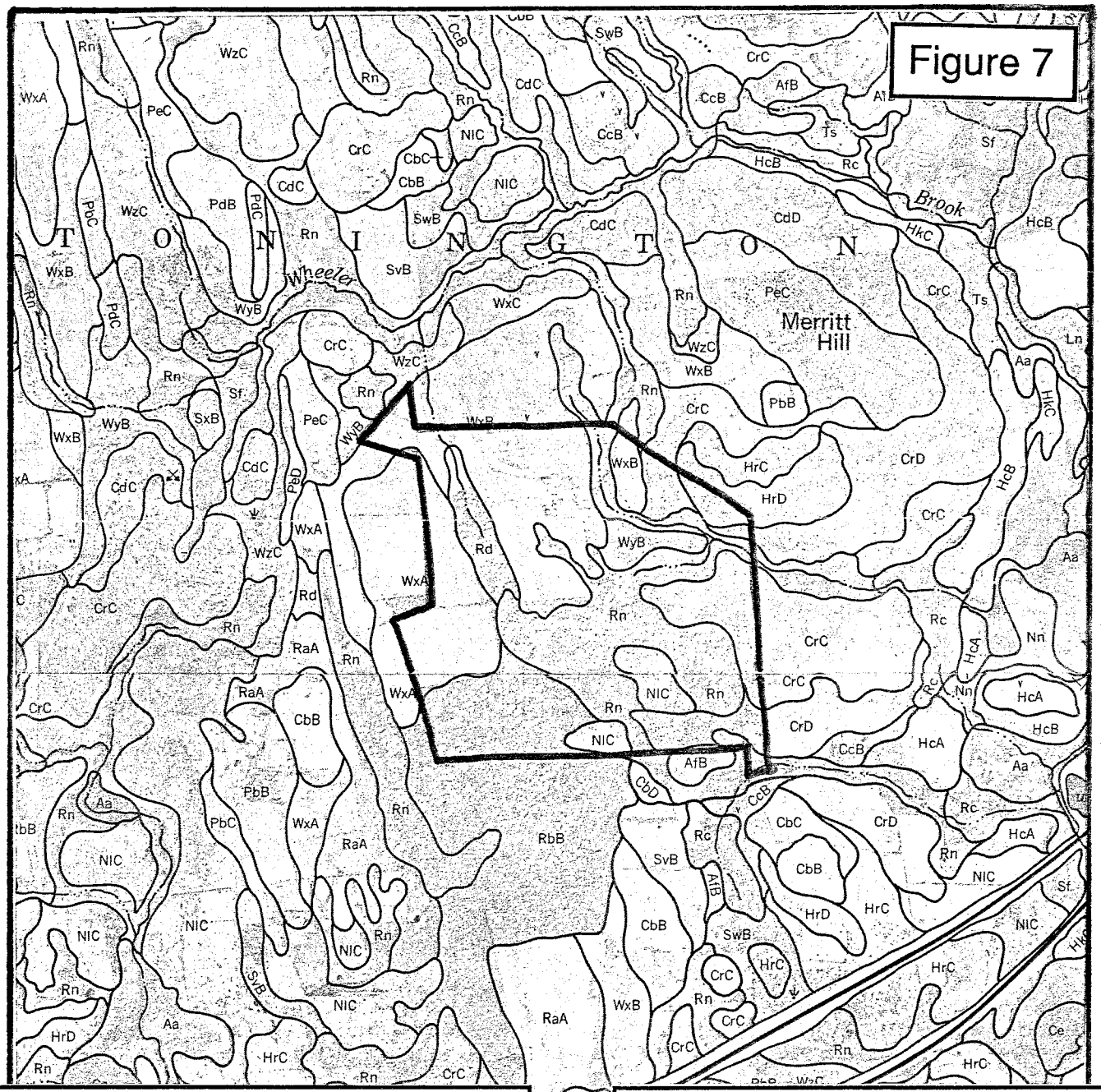
The site is located primarily on Woodbridge Series and Ridgebury Series soils (see Figure 7). Some of the soil units are very stony, and both are wet or seasonally wet. Woodbridge soils typically display high water tables and slow percolation rates. Ridgebury complex soils are wetland soils. Because of these characteristics, permeability is slow, and runoff is rapid with direct access to surface waters. Any moderately well drained loamy soils overcapping sands and gravels have a high contamination potential.

High phosphorous in a fertilizer, such as the type proposed in this plan, is held very tightly by soil particles. Therefore very little phosphorous is leached in most soils. However, contamination of surface waterbodies occurs when eroded soil particles wash phosphorous to a waterbody. For this reason, sediment and erosion control measures are particularly important.

The Construction Notes should state that siltation barriers are in place before the start of construction. It is recommend that a long-lived, UV protected silt fence be used. There should be a proposed time table set for the start and completion of construction activities. Construction phasing is recommended with a large project which includes extensive land clearing and grading necessary for developing a golf course. Area stabilization is preferred before moving on to the next phase.

The developers should be specific about the methods of land clearing. The grading plan for the roads and all other areas to be graded should be outlined on the site plan. Burying tree stumps and other woody vegetation is not a preferred method of disposal. During decomposition of this material "sink holes" are formed and excessive erosion may accompany the disturbed area. Decomposition cause organics to leach. These organics, although not harmful to wildlife or humans, do cause undesirable odors. If the developer decides to bury tree stumps on the site, these areas should be designated on the site plan. Areas for stockpiling topsoil should also be delineated. These stockpiles should be protected from erosion.

Although vegetative measures for soil and erosion control have been copied from the Connecticut Guidelines, the plan narrative does not explain how these practices will be applied to the site. In the materials section of the narrative, the "Greens putting surface is applying 2.5 pounds of" what material "per 1000 feet." Recommended seeding dates for New London County are April 15-June 15 and August 15-October 1. There are specific methods of protecting and planting trees



- CrC - Charlton-Hollis fine sandy loams, very rocky, 3-15% slopes
- HrD - Hollis-Charlton Rock outcrop complex 15-45% slopes
- NIC - Narragansett-Hollis complex, very rocky, 3-15% slopes
- RbB - Rainbow very stony silt loam, 0-8% slopes
- Rn - Ridgebury, Leicester and Whitman extremely stony fine sandy loams
- WxA - Woodbridge fine sandy loam, 0-3% slopes
- WxB - Woodbridge fine sandy loam, 3-8% slopes
- WyB - Woodbridge very stony fine sandy loam, 0-8% slopes

Information from New London County Soil Survey, Scale: 1"=1320'

STONINGTON COUNTRY CLUB

STONINGTON, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 1320'

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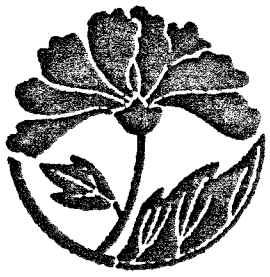
Soil Resources

Appendix A contains the sediment and erosion control checklist. This list indicates items that have not been incorporated into the final plans.

BIOLOGICAL RESOURCES



associated with the wetlands. The stormwater discharge ultimately flows off the property on the northeast and southeast to an aquifer area within the Anguilla Brook watershed. This storage function becomes increasingly important upon the removal of vegetation and construction of impervious and grassed surfaces which increase the rate of runoff.

In addition to water storage capabilities, the wetlands, by the nature of the soils and vegetation contained therein, also provide pollution abatement functions. Sediments and other pollutants entering the wetlands through runoff are filtered by the vegetation and allowed to settle out prior to entering into the major streams. The addition of chemical fertilizers, pesticides and herbicides for the maintenance of manicured greens and fairways, coupled with the fact that water from this site drains directly into an aquifer, makes this pollution attenuation function very important.

The wooded swamp wetlands provide very good habitat for the resident wildlife population by providing cover and a dense growth of understory shrubs for a food source. The wetlands exist in association with many stream corridors, resulting in narrow bands of wetlands transversing the property in numerous directions. These long, narrow expanses of wetlands provide travel corridors for the passage of wildlife and connect with neighboring wetland systems to the east and southeast. Furthermore, the high degree of vegetative interspersion (i.e., the mixing of vegetative types in a given area) provides for an increase in the wildlife habitat value of this area overall.

Major Project Impacts to Regulated Areas

Pond Construction: The applicant proposes to construct 7 ponds, 6 of which encroach upon the wetlands. The ponds will serve to collect sediments and nutrients from stormwater runoff as well as irrigate the golf course and provide an aesthetic setting. Ponds B, C, D and G are located partially in the wetlands, while Ponds E and

F have been placed completely within the wetlands. Creation of an open waterbody or pond in wetlands usually does not increase species diversity and overall habitat value, but rather replaces one type of viable habitat with another. This may lead to an increase in the number of species that utilize the open water environment. but may also result in a decline of the species that currently utilize the wetlands for shelter. cover, food and reproductive purposes. Also, because the ponds will be acting as settling basins on this site, collecting runoff containing chemical fertilizers and pesticides, they may become unattractive to wildlife that would otherwise inhabit an aquatic environment. This type of habitat replacement is not an acceptable alternative to wetland loss when the losses are otherwise avoidable (and in this project, they are). The construction of Ponds E and F would result in a permanent loss of wetland habitat and consequently the functions that this wetland provides in its natural state. In this particular project, the construction of Ponds E and F are strongly discouraged because of the irreversible and irretrievable commitment of wetland resources that would be involved. Alternative locations and configurations for Ponds B, C and G should be evaluated to reduce the scope of wetland impact. Finally. the applicant will need to apply to the DEP Water Resources Unit for a Water Diversion Permit for the construction of the proposed ponds and irrigation system. (Contact Robert Gilmore at 566-7160 for further information.)

Fairways: Out of the 18 fairways proposed on this site, Fairways 1, 2, 3, 4, 5, 7, 8, 9, 10, 13 and 14 will result in direct intrusions into the wetlands. The construction of Fairways 7, 10, 13 and 14 involve some filling along the fringes of the wetlands. The construction of Fairways 1, 2, 3, 4, 5, 8, and 9, which transect wetland/watercourse channels, will involve significant alterations of the wetlands and watercourses. For example, the wetland terrain on Fairway 1 is extremely stony and will require heavy machinery to remove the large boulders. Also, curtain drains placed in the wetlands will direct the flow of water into the ponds. This may have the effect of dewatering

the wetlands. The clearing of vegetation and subsequent replacement with turf in these areas will effectively eliminate their function as wildlife travel corridors. Additionally, the extensive placement of PVC pipes in these wetlands may virtually eliminate their existence on the eastern half of the property, leaving the man-made ponds as the only wet areas.

General Comments and Recommendations

The Inland Wetlands and Watercourses Act (CGS Sec. 22a-36 through 22a-45) provides for the preservation and protection of wetlands and watercourses from random, unnecessary and undesirable disturbances. This is to insure that the wetland and watercourse resources of the State can continue to provide their natural functions including providing terrestrial and aquatic wildlife habitats, minimizing the danger of flooding by detaining overland runoff, protecting water supplies by absorbing pollutants prior to their entrance into watercourses and providing recreational and aesthetic public values.

The current layout of the fairways and the placement of proposed ponds are not consistent with best design methodology for wetlands protection as envisioned in the State legislation. However, this site can accommodate a golf course and still maintain the natural character and functions of the wetlands and watercourses as they presently exist. The Wetlands Commission should require the submission of alternative configurations of the course that would be more sensitive to the wetland/watercourse resources on the property. Pursuant to CGS Sec. 22a-41(b), a permit should not be issued by the Wetlands Commission if a feasible and prudent alternative exists.

The alternatives that should be examined by the applicant include the following:

1) Scale down the project to a 9-hole golf course. This would reduce the number of ponds required for irrigation and the scope of the impact to the wetlands.

2) Evaluate alternate configurations for the fairways. This could involve reducing the length of the fairway (reducing the par on some of the holes), doglegging some of the holes to avoid wetland crossings and eliminating some of the associated facilities (driving range. paddle tennis court, swimming pool, etc.) to place 1 or 2 fairways in those areas.

3) Remove the curtain drains from the wetlands. Placing curtain drains in the wetlands to direct the flow of water into the proposed ponds will have a negative impact to the wetlands. If the water supply is not sufficient to keep the ponds adequately filled, perhaps a well could be drilled to insure a sufficient supply of water to the ponds.

WILDLIFE CONSIDERATIONS

In a small, but heavily developed and highly populated State like Connecticut, available habitat continues to decline on a daily basis. It is critical to maintain and enhance existing wildlife habitat.

The diversified habitat at this site provides for the needs of a wide variety of wildlife species that inhabit the general area. Development of this site will result in fragmentation and elimination of habitat types which may in turn reduce species diversity and richness. Species that are sensitive to human disturbance may he forced to emigrate to adjacent habitat, resulting in competition with species already occupying the area and a decline in species richness. Many species may also be forced to inhabit less desirable habitat, decreasing survivorship.

Wildlife Habitat Descriptions

The major habitat types at this 165-acre site include forested wetland, riparian zones, grass fields, upland agricultural land and hardwood forest. The wetland vegetation and wildlife associated with the site have been identified and classified in detail by Environmental Evaluation of Connecticut and Applied Bio-Systems of Rhode Island.

Wildlife Use of Habitat

Agricultural land: This open land habitat is very beneficial to wildlife. Crops provide food and cover for a great variety of wildlife ranging from mice and shrew to deer. The windrows dividing the fields add additional, valuable edge habitat. Insects and small mammals that inhabit agricultural land provide an important food source for edge dwelling birds and mammals such as bluebirds, red-tail hawks, owls, fox and bats.

Wetland/Riparian Zone: This habitat includes intermittent streams and red maple swamp. Vegetation and wildlife in these areas are noted in the wildlife report prepared by Applied Bio-Systems.

Effects of Development on Wildlife

The major impacts of the proposed golf course will be the fragmentation of the wetland area, the substitution of turf for streambank vegetation and agricultural land and an increase of chemical (herbicides and fertilizers) runoff into the wetland areas. Additional disturbances will occur during construction.

Fragmentation may result in the displacement of certain species and some, due to the increase in human activity, may no longer occupy the site. The sharp-shinned hawk will most likely disappear from the area. Fairways will act as barriers to movement for some species.

As stated in the wildlife report, turf provides limited food sources and no cover. Canada Geese, however, may increasingly use this area. The application of chemical fertilizers and herbicides to the fairways could, over a period of time, have adverse impacts on the vegetation and amphibian and reptile populations within the wetland areas. Runoff of these chemicals into the constructed ponds may effect the vegetation and reptile and amphibian populations in these habitats and, consequently, the species that feed in the ponds (i.e., wood ducks, Canadian geese, mallards). A combination of lime and fertilizers applied to the fairways may enter the constructed

ponds resulting in an increase in aquatic weeds. Herbicides applied to the ponds to control weed growth could have an adverse effect on wildlife utilizing this habitat.

Factors Mitigating Degree of Impact

1) Displacement of some species may be temporary due to the extensive woodland area surrounding the site in which suitable habitat may be located. Additional agricultural land surrounding the site is also available.

2) A buffer of 100 feet around wetland areas is recommended. The draft report by Environmental Evaluations states that Fairways 1 and 2 could be altered to avoid the wetland. This adjustment is recommended as well as maintaining a 100-foot buffer between the greens and the wetland areas where possible.

3) A review of the chemicals to be used on the site and their potential effects should be implemented. Levels of chemicals in the wetlands should be monitored regularly so adjustments can be made promptly.

4) Open water ponds typical of golf courses offer less valuable wildlife habitat than red maple swamp. Ponds located on the edge of fairways and forested wetlands offer a unique opportunity to diversify this edge habitat. Open water with a turf edge could be maintained in the fairway for waterfowl use. The forested edge of the pond should remain forested or an emergent vegetation transition should be provided to the forested area. This will require a gradient of less than 3:1.

5) Other mitigating factors such as native plantings in areas cleared as rough and placement of bluebird boxes are outlined in the wildlife report prepared by Applied Bio-Systems.

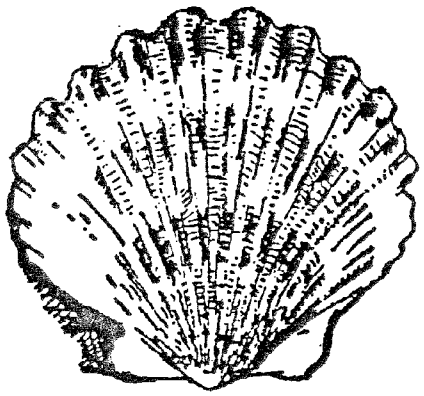
THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

According to the Natural Diversity Data Base, there are no known extant populations of Federally Endangered and Threatened species or Connecticut "Species of Special Concern" occurring at the site.

Natural Diversity Data Base information includes all information regarding critical biologic resources available at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's

Geologic and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultation with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

ARCHAEOLOGICAL RESOURCES



In summary, the project area has been known to yield prehistoric stone artifacts of flint. Natural high-quality flints for stone tool manufacturing do not exist in Connecticut. As a result, the archaeological sites in the project area can provide significant information on prehistoric trade relations with Connecticut Indians in the last 2,000 years. The area also contains a house and barn of historic significance. It is strongly recommended that an archaeological survey of the property be undertaken, including subsurface testing procedures. All feasible efforts should be made to identify and ensure the preservation and conservation of the cultural resources in the project area.

LAND USE AND PLANNING CONSIDERATIONS

approximately 1,214 trips to and from the site on a weekday, 1,067 trips on a Saturday and 1,104 trips on a Sunday. These figures were arrived at by analyzing both 9- and 18-hole golf courses, many of which had no clubhouses or other facilities. The trip generation figures for restaurants per 1,000 square feet of gross floor area range from 95 on weekdays to 71 on Sundays. There are also trip generation figures for golf courses per employee which range from a low of 20.6 on Weekdays to a high of 25.2 on Saturdays. The size of the clubhouse and the number of employees were not available, so no analyses were made.

One aspect of transportation considerations which was noted on-site was the sight clearance at the intersection of the access road and Taugwank Road. While the southerly sight distance was unobstructed, the northerly sight distance was hampered by trees and brush and requires clearing.

Local Zoning

Zoning Regulations list clubs as a permitted use in residential districts. The Regulations do not define "club." Activities such as restaurants, etc. are not listed.

Specific listings of public and private recreational facilities and restaurants are included in Tourist Commercial (TC-80), Local Shopping (LS-5), General Commercial (CG-60) and Development Area (DB-5) Districts, also public and private recreational facilities excluding restaurants are listed in Convenience Shopping (CS-5) Districts. It is not clear whether a facility such as proposed with its wide range of uses is permitted in a Greenbelt Residential District at present.

Summary

The "recreational" aspects of this proposal are compatible with the Regional Development Plan. The transportation impact resulting from this proposal is difficult to ascertain due to lack of information on the specific facilities. Based on the number of parking spaces depicted alone, the number of trips to and from the site each day would equivocate developing the site into approximately 100 residences.

This generation may require upgrading of Taugwank Road. More information is required, and a complete Traffic Analysis Report should be submitted for analysis with the development application. Additional soil suitability information is needed to ascertain the capability of the site for the number and size of proposed facilities. There seems to be a discrepancy in permitted uses in the Zoning Regulations which needs to be clarified with regard to the wide range of facilities proposed.

TABLE 1

TRIP GENERATION

Institute of Transportation Engineers, 4th Edition, 1987.

Golf Course - Trips per parking space.

Weekday	Saturday	Sunday
6.6	5.8	6.0

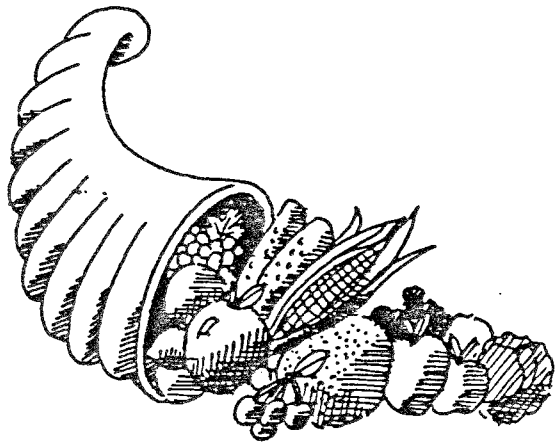
Golf Course - Trips per employee.

Weekday	Saturday	Sunday
20.6	25.2	23.2

Restaurant - Trips per 1,000 square feet of gross floor area.

Weekday	Saturday	Sunday
95.6	91.7	71.9

APPENDICIES



Appendix A: Sediment and Erosion Control Checklist

EROSION AND SEDIMENT CONTROL PLAN WORKSHEET

This is a guide for the development and review of erosion and sediment control plans. Local commissions should be consulted for regulatory requirements concerning erosion and sediment planning.

Checked ( ) items are those that have been provided on the current erosion and sediment control plan. Items identified with a star (*) should be incorporated into final plans.

Name of development Stonington Country Club

Materials received Construction Requirements and Specifications, Erosion and Sediment Control Plan, Test Hole data, Pond Handbook, Wildlife Report, Archeological Survey, Environmental Analysis, Site Plan

Total Area 180 acres Location Taugwank Road, Stonington

Engineer Hayward & Holbrook Engineers

Date Received 6/2/89 Site Visit 5/24/89 Reviewed by SCS

Submitted by Nancy Ferlow, ERT Coordinator

NARRATIVE SECTION DESCRIBING:

___ The development
* Major land uses of adjoining areas
___ The number of total acres and acres to be disturbed in the project
* The schedule of grading and construction activities including start and completion dates.
* Application sequence of all E&S control measures
___ The design criteria for all proposed E&S control measures
___ Construction details and installation procedures for all proposed E&S control measures
* The operations and maintenance program for all proposed E&S control measures
* The name of the person or organization that will be responsible for the installation and maintenance of the E&S control measures
* Organization or person responsible for maintenance of permanent measures when project is completed. Measures include: ___

-CONTINUED-

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A SITE PLAN AT A SUFFICIENT SCALE SHOWING:

Natural Features

_____ Existing topography
_____ Existing vegetation
_____ Soils information, including test pit data if available
_____ Identification of wetlands, watercourses, major drainageways and water bodies on the site
_____ Name of soil scientist who performed wetlands delineations and flag numbers
_____ Rock outcrop areas
_____ Seeps, springs
_____ Major aquifers
_____ Floodplains (100 yr.) and floodways
_____ Channel encroachment line (DEP permit required)
_____ Coastal zone boundary
_____ Public water supply watershed boundaries
_____ Possible Army Corps Sec. 404 or Sec. 10 Permit Areas (Contact Corps @ 1-800-343-4789).

Project Features

_____ The location of the proposed development
_____ A plan legend
* Adjacent properties
_____ Property lines
_____ Lot lines and setback lines
_____ Lot and/or building numbers
_____ Planned and existing roads
_____ Proposed structures
* Location of existing and planned utilities
* Location of wells and septic systems
* Proposed Topography
_____ North arrow

Clearing, Grading, Vegetative Stabilization

_____ The sequence of grading, construction, and sediment and erosion control activities
* The location of and construction details for all proposed E&S control measures
_____ Recommended measures include _____
_____
_____
* Limits of disturbed areas
* Extent of areas to be graded
* Disposal procedure for cleared material
* Location of stockpiled topsoil and subsoil

-CONTINUED-

_____ Temporary erosion control in method for protection of disturbed areas when time of year or
_____ Weather prohibit establishment of permanent vegtative cover
_____ Seedbed preparation (including topsoiling specifications)
_____ Fertilizer and lime application rates
_____ Mulch application rate
_*_ Mulch anchoring measures

Drainage System

_____ Existing and planned drainage pattern
_____ Drainage areas used in design of stormwater management system
_____ Size and location of culverts and storm sewers
_____ Drainage calculations for review by town engineer
_____ Stormwater management measures and construction details
_____ Groundwater control measures (footing drains, curtain drains)
_____ Planned water diversions and dams (DEP permit may be required)

House Site Developments

_____ Sediment and erosion control measures for individual lot development

Additional Comments

NOTES

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, soil scientists, foresters, climatologists, landscape architects, recreational 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 - an 83-town area serving western Connecticut.

As a public service activity, the Team is available to serve towns and/or developers within the King's Mark RC&D Area - free of charge.

Purpose of the Environmental Review Team

The Environmental Review Team is available to assist towns and/or developers in the review of sites proposed for major land use activities. For example, the ERT has been involved in the review of a wide range of significant land use activities including subdivisions, sanitary landfills, commercial and industrial developments and recreational/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 site and highlighting opportunities and limitations for the proposed land use.

Requesting an Environmental Review

Environmental Reviews may be requested by the chief elected official of a municipality or the chairman of an administrative agency such as planning and zoning, conservation or inland wetlands. Environmental Review Request Forms are available at your local Soil and Water Conservation District and through the King's Mark ERT Coordinator. This request form must include a summary of the proposed project, a location map of the project site, written permission from the land owner/ developer allowing the Team to enter the property for purposes of review and a statement identifying the specific areas of concern the Team should investigate. When this request is approved by the local Soil and Water Conservation District and King's Mark RC&D Executive Committee, the Team will undertake the review. At present, the ERT can undertake approximately two (2) reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil and Water Conservation District or Nancy Ferlow, ERT Coordinator, King's Mark Environmental Review Team, King's Mark RC&D Area, 322 North Main Street, Wallingford, Connecticut 06492. King's Mark ERT phone number is 265-6695.