PEQUOT FARMS SUBDIVISION

STONINGTON, CONNECTICUT

JANUARY 1990

EASTERN CONNECTICUT ENVIRONMENTAL REVIEW TEAM

EASTERN CONNECTICUT
RESOURCE CONSERVATION
AND
DEVELOPMENT AREA, INC.

PEQUOT FARMS SUBDIVISION

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REVIEW DATE: NOVEMBER 14, 1989

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ENVIRONMENTAL REVIEW TEAM

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ENVIRONMENTAL REVIEW TEAM REPORT
ON

PEQUOT FARMS SUBDIVISION

STONINGTON, CONNECTICUT

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

The ERT met and field checked the site on Tuesday, November 14, 1989. Team members participating on this review included:

Peter Aarrestad	Fisheries Technician DEP - Division of Inland Fisheries
Patrice Beckwith	Soil Conservationist USDA - Soil Conservation Service
Nick Bellantoni	State Archaeologist CT Museum of Natural History
Carla Harvey	Environmental Analyst DEP - Inland Water Resource Management
Steve Hill	Wildlife Biologist DEP - Eastern District Headquarters
Kevin McBride	Archaeologist Past, Inc.
Pete Merrill	Forester DEP - Patchaug State Forest
Richard Serra	Regional Planner Southeastern CT Regional Planning Agency
Elaine Sych	Environmental Review Team Coordinator Eastern Connecticut RC&D Area, Inc.
Bill Warzecha	Geologist/Sanitarian DEP - Natural Resources Center

Prior to the review day, each Team member received a summary of the proposed project, a list of the town's concerns, a location map, a topographic map, and a soils map and various Team members received consultant reports. During the field review the Team members were given plans and a groundwater report. The Team met with, and were accompanied by representatives from the Inland Wetlands Commission, the Assistant Town Planner, the owner/developer and several of his consultants and engineers. Following the review, reports from each Team member were submitted to the ERT Coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site designs or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project -- all final decisions rest with the Town and landowner. This report identifies the existing resource base and evaluates its significance to the proposed development, and also suggests considerations that should be of concern to the developer and the Town. The results of this Team action are oriented toward the development of better environmental quality and the long-term economics of land use.

The Eastern Connecticut RC&D Executive Council hopes you will find this report of value and assistance in making your decisions on this proposed subdivision.

If you require additional information, please contact:

Elaine A. Sych
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1. SETTING, PROPOSED PROJECT AND LAND USE

The approximately 523 acre parcel is located between Al Harvey Road and Wheeler Road in northwest Stonington. Of the 523 acre parcel, 343 acres will be divided into 136 single-family homes. The remaining acreage is comprised of open space, natural or preservation areas, which includes the Pequot Golf Course.

The proposed subdivision site is bounded by Al Harvey Road on the west, wooded, undeveloped land on the north, Wheeler Road on the east and the Pequot Golf Course on the south.

Town officials noted on the review day that the property is currently zoned RR-80. This zone allows single-family homes on lots of 80,000 square feet or larger which is about 2 acres. Each lot will be served by individual on-site septic systems and wells and there is approximately 162 acres of dedicated open space, preservation and natural areas.

Present plans indicate that house lots will be clustered so that the important natural resources of the site are preserved. In order to achieve this, 74 lots or 54% of the proposed lots were reduced by 25% to 50% in size from the 80,000 square foot requirement. This arrangement can be considered as per section 7.5 of the Zoning Regulations.

Access to the single-family development will be accomplished by a road that meanders through the site from Al Harvey Road to Wheeler Road. A cul-de-sac, serving lots 129-135 in the northeast corner will come in from Wheeler Road.

The site and vicinity have historically been used for low density single-family homes and agricultural purposes. Except for 32 acres (not including the golf course acreage) of open fields in the southern parts, the parcel consists of wooded land. Numerous stonewalls, which transect the property, give testimony to past agricultural usage of the land. Every effort should be made to preserve these stonewalls where possible. There are three family cemetery plots on the site.

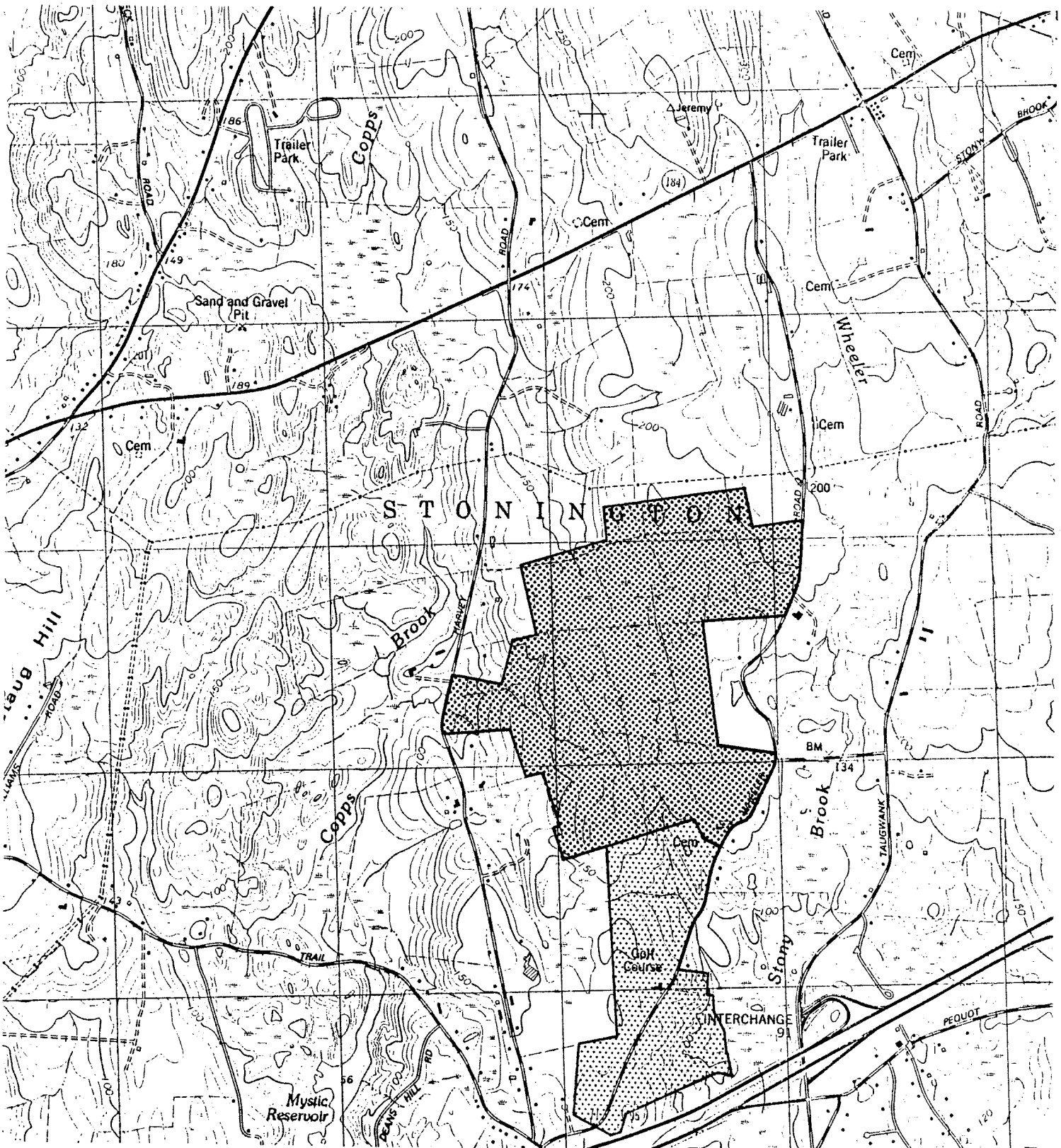
The land use in the area has seen a decrease in active farm land and an increase in residential properties.

LOCATION MAP

Scale 1" = 2000'

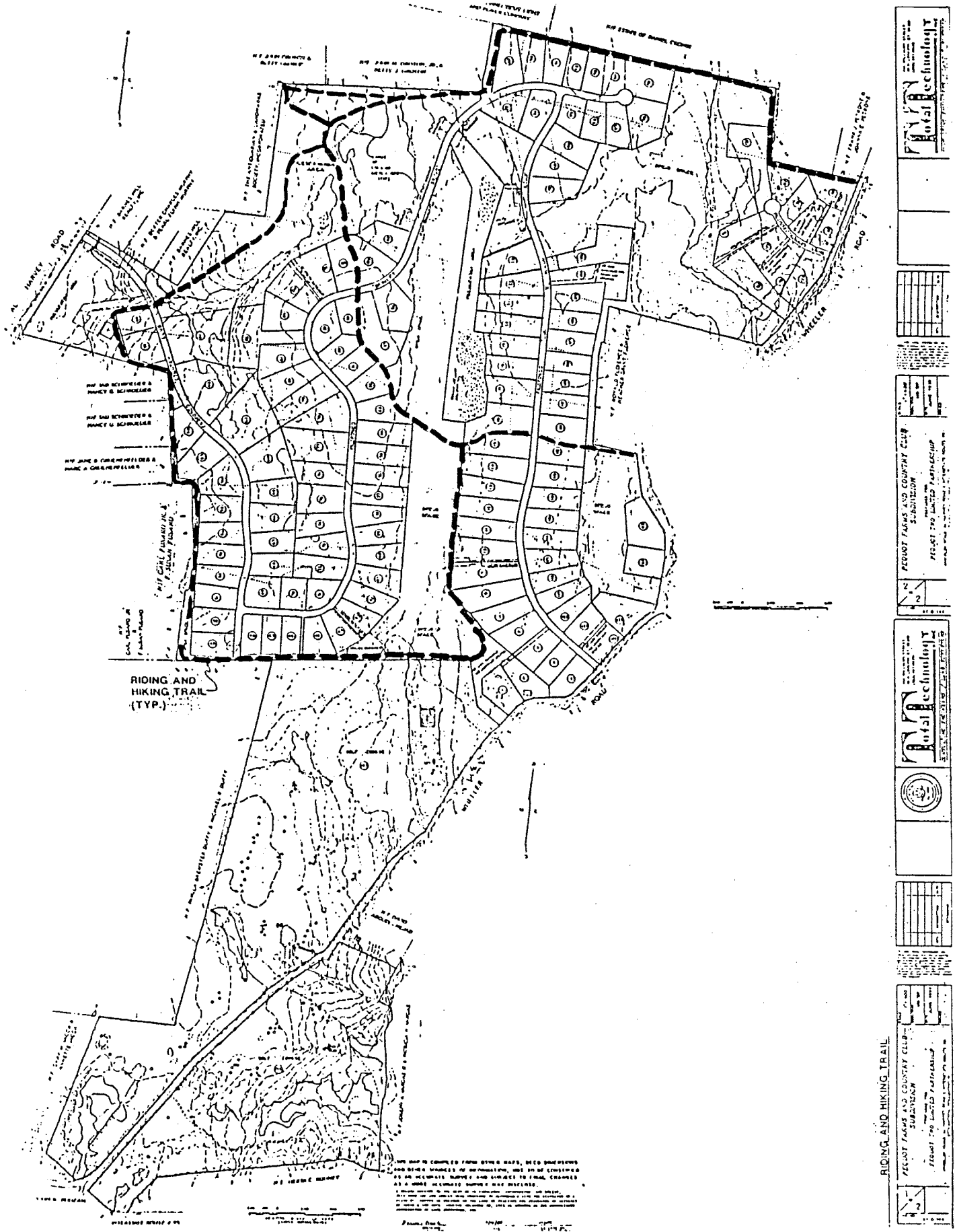
Site Proposed for subdivision

Remainder of site (Golf Course)



SITE PLAN

No Scale



2. TOPOGRAPHY

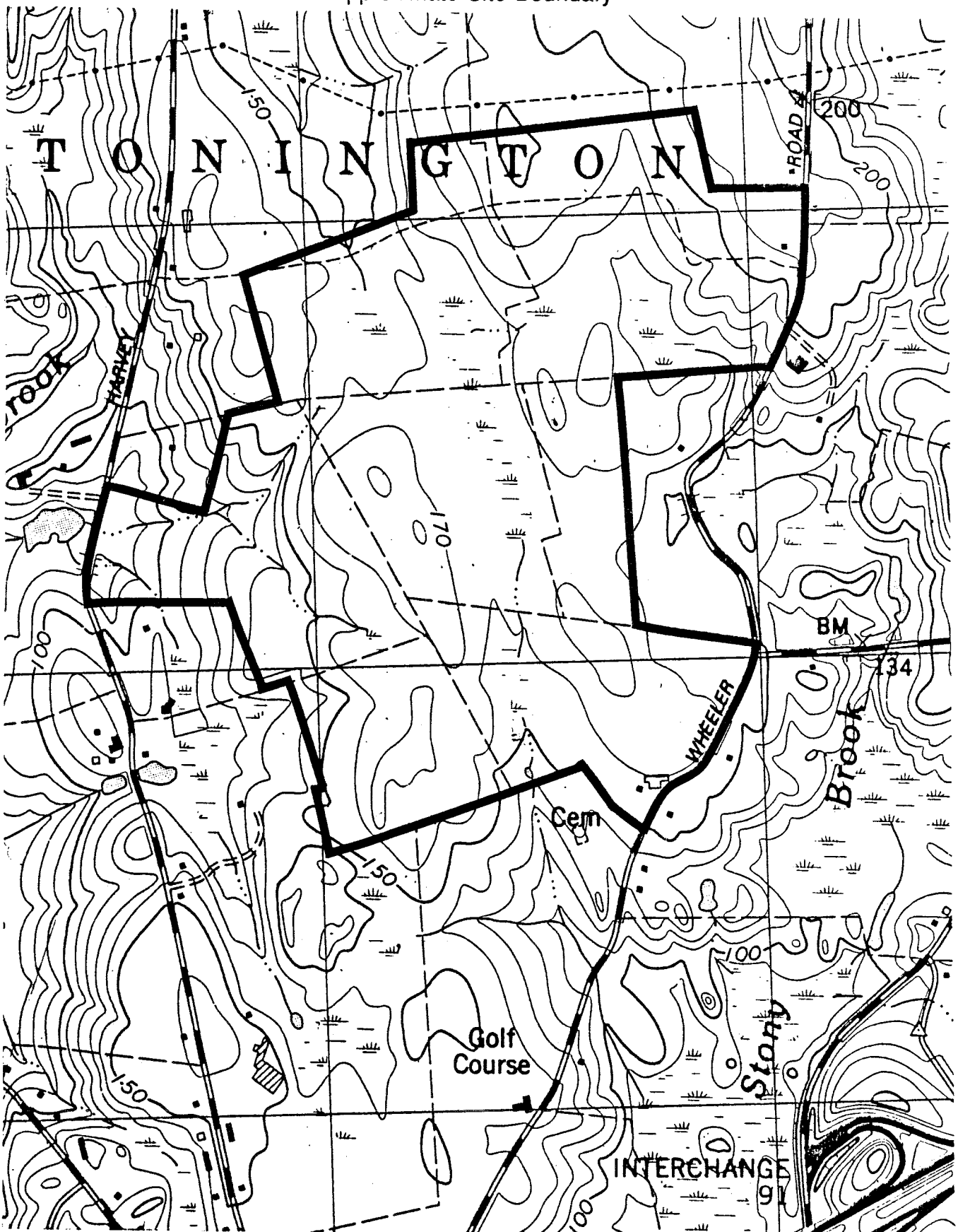
The site encompasses a flat-topped, upland area situated between the Copps Brook and Stony Brook Valleys in northwest Stonington. It is bisected by an unnamed intermittent streamcourse and its accompanying wetlands. The site's topography consists of generally flat to gentle slopes. An area of moderate slope (about 8%) occurs at the site's western limits.

Elevation on the site ranges from a high of 200 feet above mean sea level at the site's northern property boundary to a low of about 30 feet above mean sea level at the site's western boundary near Al Harvey Road.

The generally flat conditions that characterize the site will help reduce the amount of cuts and fills for road and driveway construction. Also, it should help to minimize the amount of disturbed areas, which will reduce the chance for erosion and sedimentation problems. However, because of widespread flat slopes and a seasonally high water table condition across the site, which is assumed to have little or no hydraulic gradient, the potential exists for wet basements and unfavorable conditions for on-site subsurface sewage disposal.

TOPOGRAPHIC MAP

Scale 1" = 1000'



3. GEOLOGY

The subdivision site is located entirely within the Old Mystic topographic quadrangle. A bedrock geologic map (I-1524, by R. Goldsmith, 1985) for the quadrangle has been published by the U.S. Geological Survey. No surficial geologic map for the quadrangle has been published to date, but there is preliminary information on file at the Department of Environmental Protection's Natural Resources Center in Hartford. The Soil Survey of New London County, technical information supplied by the applicant, and the unpublished Surficial Materials Map, (Stone et. al., 1985) were all cited for the surficial geology section of this report.

Bedrock Geology

Except for a few single outcrop areas, mainly near the subdivision site's southern border, bedrock is not well exposed on the site. The majority of it is covered by a relatively thick blanket of unconsolidated materials that may exceed 15 feet thick. The logs of two borings in proximity of the site (northwest) penetrated 110 feet and 48 feet of unconsolidated material before reaching bedrock.

According to Goldsmith, most of the subdivision site is underlain by Potter Hill Granite Gneiss, that is described as a light-pink to gray, tan-weathering, fine to medium-grained, well foliated granitic gneiss. The principal minerals in the rock include quartz, calcic plagioclase, microcline and biotite. Accessory minerals are magnetite, muscovite and apatite. The southern limits of the site and the golf course are underlain by interlayered light to dark-gray, medium-grained gneisses and amphibolites. Lastly, the Potter Hill Granite Gneiss in the northeast corner was intruded by younger Narragansett Pier Granite about 272 million years ago. It is described as a pink to red, medium- to coarse-grained massive granite.

Bedrock was encountered at a depth of 60" or less in five deep test holes excavated on the site for subsurface sewage disposal exploration. 243 deep test holes were excavated on the site for this work. Bedrock was encountered between four and five feet below ground surface on Lot 126 in the northeast corner. In general, nearly all of the deep test holes on the site advanced through 7 feet or more of unconsolidated material without reaching bedrock or refusal.

Because bedrock is relatively deep across the site and because flat to gentle slopes will reduce the chance for cut areas, the underlying bedrock should not pose a major problem in terms of residential development of the site. Little or no blasting is anticipated.

Bedrock is the major source of water to homes in the area and will likely be the sole source of water to new homes in the proposed subdivision since municipal water is not available to this section of Stonginton. [See **WATER SUPPLY** section]

Surficial Geology

The subdivision is covered entirely by a glacial sediment known as till. It consists of varying proportions of sand, silt, gravel, clay and boulders. Particles of different sizes are generally mixed together in a complex fashion. The till which is gray to gray-tan colored was deposited directly onto the underlying bedrock without much grading or sorting of particles.

In consideration of soils mapping data for the subdivision site and deep test information supplied by the applicant, the texture of most of the till covering the site is stony to very stony, moderately compact and fine-grained (silt, clay and fine sand). A sandier, looser till, which is also stony to very stony occurs in the southwest corner of the subdivision site. Bedrock is believed to be near the ground surface in this area.

The presence of a moderately compact or hardpan layer commonly results in a seasonally high water table condition, soil mottling (staining of the soil particles which is used as an indicator of high groundwater table) just above the compact soil zone and moderately slow to slow percolation rates. Deep test hole data supplied to Team members verified that the till covering the site includes one or more of these conditions. Also, many standpipes, installed for monitoring purposes, and located throughout the site revealed high water table conditions during the field walk. The seasonally high water table will be an important design constraint with respect to on-site sewage disposal, especially in flat areas, where little or no hydraulic gradient exists.

Wetland soils on the site, which are post-glacial have been mapped by a certified soil scientist. The boundaries for the wetland soils have been superimposed onto the

plans made available to Team members. The regulated (wetland) areas on the site are generally long and narrow and parallel the streamcourses on the site. Except for a small wetland in the northeast corner that comprises Adrian and Palms Muck (Aa), most of the wetland soils on the site are identified as Ridgebury-Leicester-Whitman, extremely stony, fine sandy loams (Rn). This undifferentiated unit is comprised of very deep, loamy soils that formed in glacial till. The Ridgebury and Whitman soils develop in the compact glacial till while the Leicester soils develop in the more friable till. They range from poorly drained (Leicester and Ridgebury) to very poorly drained (Whitman). In general, the Leicester and Ridgebury soils are nearly level or gently sloping soils in drainageways and low-lying positions of till covered uplands. The Whitman soils occur in nearly level to gently sloping depressions and drainageways on till covered uplands.

The major concern of these soils from an engineering standpoint focuses on a seasonally high water table (wetness). A high water table condition is at or near ground surface in the Leicester and Ridgebury soils generally between November and May. In the Whitman soils, a high water table condition, at or above ground surface, occurs September through June.

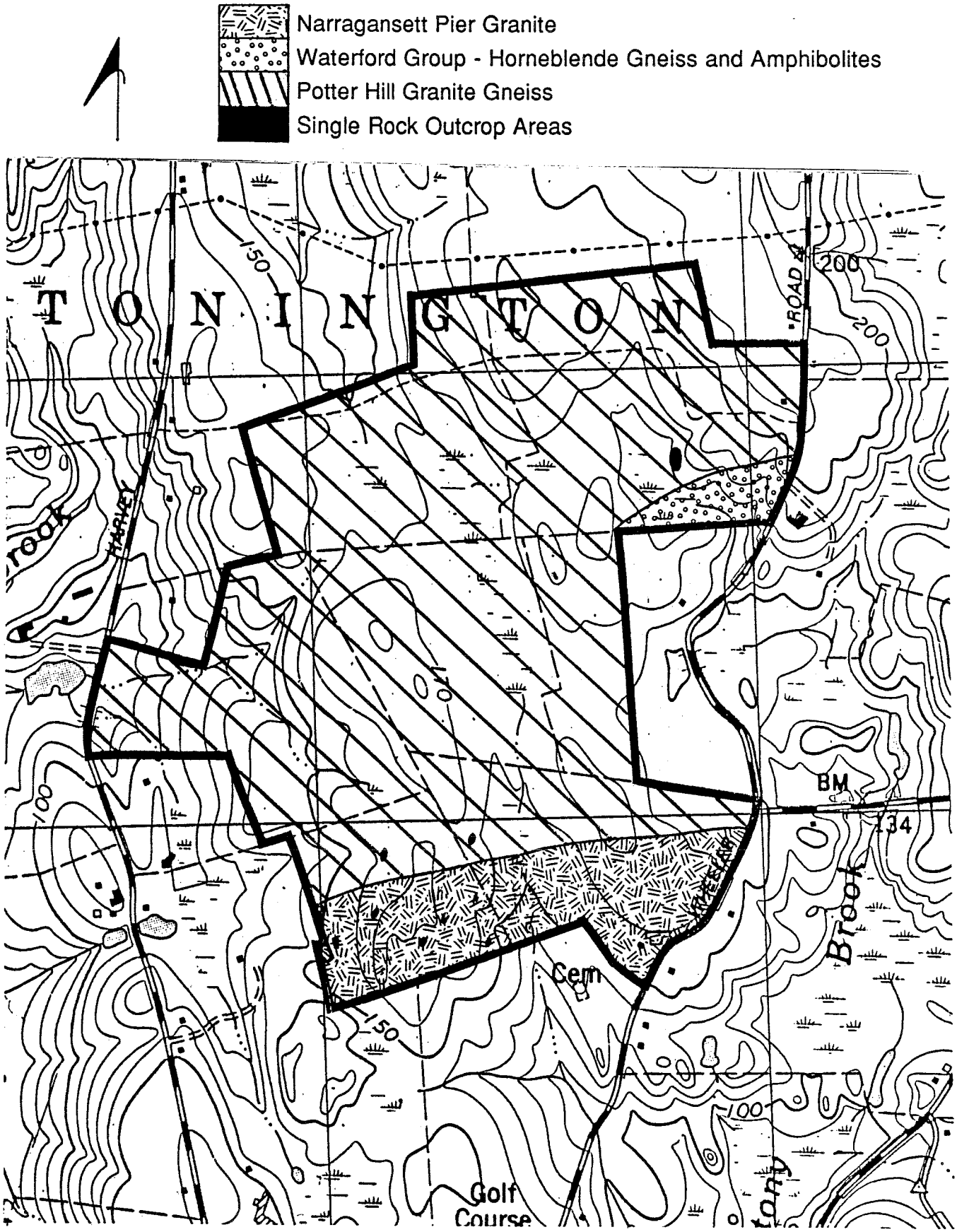
The Adrian and Palms Muck (Aa) consist of nearly level, very poorly drained soils that occur in a depression and along a streamcourse in the northeast corner. Typically, the Adrian soils have a surface layer of black and very dark gray muck 12 inches thick. The subsurface layer is black muck 21 inches thick. The substratum is gray, gravelly sand to a depth of 60 inches or more. The Palms soils typically have a layer of black muck 9 inches thick. The subsurface layer is very dark brown and black muck 21 inches thick. The substratum is gray and grayish brown silt loam and fine sandy loam to a depth of 60 inches or more.

Because of low strength and a high water table condition for most of the year, the (Aa) soils hold low potential for residential development and should be left undisturbed.

Based on the present road layout, the primary road will need to cross about 630 linear feet of (Rn) soils and their through flowing streams on the site. In addition, grading for roads may, in places, infringe on the regulated wetland soils.

BEDROCK GEOLOGIC MAP

Scale 1" = 1000'

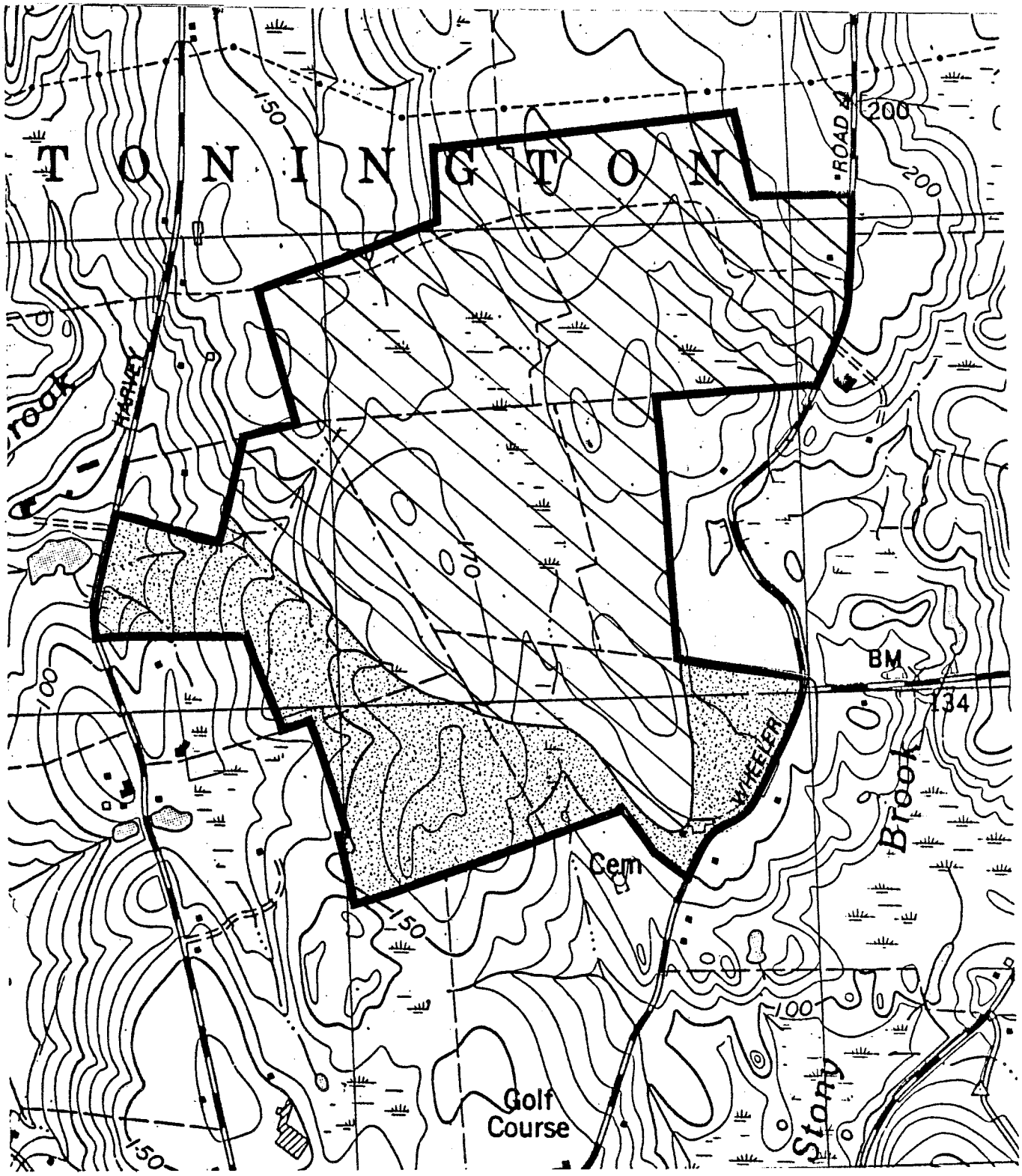


SURFICIAL GEOLOGIC MAP

Scale 1" = 1000'

Thick Till (Generally 10' - 40' thick)

Thin Till (Generally 10' thick or less)



4. SOIL RESOURCES

The predominant soil type on this site is the Rainbow very stony silt loam. Severe wetness, slow percolation rate and a high water table contribute to the low suitability for septic systems and basement excavation. Corrective measures would include: filling, providing curtain drains and drainage swales, and designing an absorption field to distribute effluent over a larger area. A larger lot may be required to accommodate both a larger leaching field as well as an on-site well.

On the day of the site walk many of the test wells showed the water table near to the surface. It is a concern that extensive subsurface drainage may adversely alter the natural flow of the groundwater. Because of the relatively flat terrain, outletting tile drains may present a problem. The frost action potential is severe for local roads and streets. Correct subgrade preparation would be required.

At the preliminary conference, the town expressed concern over wet areas that had not been mapped as wetland soils. On the site walk, the consulting soil scientist justified his mapping. As the Team investigated the specific areas of concern, the Team was in agreement that these areas although wet, were not morphologically wetland soils. Thus, the mapping in these instances was accurate. These areas are of particular concern because the tendency to pond would be a hazard to dwellings and house lot development. The areas investigated were lot numbers 15 and 107. [Please see **WETLAND REVIEW** section for further comment]

Storm water calculations were not submitted to the New London County SCS office however, it should be noted that storm water should not outlet on 9% slopes, as on lots 84 and 85. According to the Connecticut Guidelines Chapter 8, Outlet Protection, a stable downstream channel is necessary. Unless this area is rock outcropping, ledge or paved, it is not considered stable. Outlet protection and level lip spreaders will not prevent outflow from returning to channel flow.

SOILS MAP

Scale 1" = 1320'

Approximate Boundary

EROSION AND SEDIMENT CONTROL PLAN WORKSHEET

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 Pequot Farms

Materials received _____

Total Area 523 acres Location Wheeler Road, Stonington

Engineer Total Technology

Date Received 11/14/89 Site Visit 11/14/89 Reviewed by SCS

Submitted by Stonington Conservation Commission

NARRATIVE SECTION DESCRIBING:

* The development
_____ Major land uses of adjoining areas
* The number of [redacted] 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: _____

EROSION AND SEDIMENT CONTROL PLAN WORKSHEET CONTINUED

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 drainage ways 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 year) 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 at 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
_____ Temporary erosion control method for protection of disturbed areas when time of year or weather prohibit establishment of permanent vegetative cover
_____ Seedbed preparation (including topsoiling specifications)
_____ Fertilizer and lime application rates
_____ Mulch application rate
_____ Mulch anchoring measures

EROSION AND SEDIMENT CONTROL PLAN WORKSHEET CONTINUED

Drainage System

_____ Existing and planned drainage pattern
_____ Drainage areas used in design of storm water management system
_____ Size and location of culverts and storm sewers
_____ Drainage calculations for review by town engineer
_____ Storm water 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

SOILS DESCRIPTIONS

PEQUOT FARMS ERT

Aa - Adrian and Palms mucks

These nearly level, very poorly drained soils are in pockets and depressions of stream terraces, outwash plains, and glacial till uplands. Slopes range from 0 to 2 percent. Adrian soils have a high water table which is at or near the surface for most of the year. Permeability is moderately rapid in the organic layers and rapid in the substratum. Palms soils have a high water table which is at or near the surface for most of the year. Permeability is moderately rapid in the organic layers and moderately slow in the substratum. The available water capacity is high for these soils. Runoff is very slow or ponded. These soils are strongly acid through slightly acid. These soils are not suited to cultivate crops. These soils are suited to trees. Windthrow is common because of shallow rooting depth above the water table. These soils are poorly suited to community development.

These soils are in capability subclass VIw.

* Brb - Broadbrook silt loam, 3 - 8 percent slopes

This gently sloping, well drained soil is on drumloidal glacial till uplands. Permeability of the Broadbrook soil is moderate in the surface layer and slow or very slow in the substratum. The available water capacity is high. Runoff is medium. The soil warms up and dries out rapidly in spring. Unless limed, the soil is strongly acid or medium acid. This soil is well suited to cultivated crops. The hazard of erosion is moderate. This soil is suited to trees.

This soil is in capability subclass IIe.

CcB - Canton and Charlton very stony fine sandy loams, 3 - 8 percent slopes

These gently sloping, well drained soils are on glacial till upland hills, plains, and ridges. Stones and boulders cover 1 - 8 percent of the surface. Permeability of the Canton soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. Permeability of the Charlton soil is moderate or moderately rapid. The available water capacity of these soils is moderate. Runoff is medium. These soils warm up and dry out rapidly in the spring. The soil is strongly acid or medium acid. These soils are not suited to cultivated crops. These soils are suited to trees.

These soils are in capability subclass VIs.

SOILS DESCRIPTIONS

CrC - Charlton-Hollis fine sandy loams, very rocky, 3 - 15 percent slope

This gently sloping to sloping complex consists of somewhat excessively drained and well drained soils on glacial till uplands. Rock outcrops cover up to 10 percent of the surface. Stones and boulders cover 1 - 8 percent of the surface. Permeability of the Charlton soil is moderate or moderately rapid, the available water capacity is moderate. Permeability of the Hollis soil is moderate or moderately rapid above the bedrock, the available water capacity is low. The runoff of this complex is medium or rapid. It warms up and dries out rapidly in the spring. It is strongly acid or medium acid. These soils are not suited to cultivated crops. The hazard of erosion is moderate to severe. These soils are suited to trees. Windthrow is common on the Hollis soil because of the shallow rooting depth. The major limiting factor for community development is the shallow depth to bedrock.

These soils are in capability subclass VIs.

NgB - Narragansett very stony silt loam, 3 - 8 percent slopes

This gently sloping, well drained soil is on glacial till upland hills, ridges, and plains. Stones and boulders cover 1 - 8 percent of the surface. Permeability of the Narragansett soil is moderate in the surface layer and subsoil and moderately rapid or rapid in the substratum. The available water capacity is high. Runoff is medium. Narragansett soil warms up and dries out rapidly in the spring. It is very strongly acid through medium acid. This soil is not suited to cultivated crops. The hazard of erosion is moderate. This soil is suited to trees. This soil is suited to community development.

This soil is in capability subclass VIs.

NlC - Narragansett-Hollis complex, very rocky, 3 - 15 percent slopes

This gently sloping to sloping complex consists of somewhat excessively drained and well drained soils on glacial till uplands. Rock outcrops cover as much as 10 percent of the surface. Stones and boulders cover 1 - 8 percent of the surface. Permeability of the Narragansett soil is moderate in the surface layer and subsoil and moderately rapid or rapid in the substratum, the available water capacity is high, it is very strongly acid through medium acid. Permeability of Hollis soil is moderate or moderately rapid above the bedrock, the available water capacity is low, it is strongly acid or medium acid. Runoff of these soils is medium to rapid. These soils warm up and dry out rapidly in the spring. These soils are not suited to

SOILS DESCRIPTIONS

cultivated crops. The Hollis soil has a shallow rooting depth above the bedrock and is droughty. The hazard of erosion is moderate to severe. These soils are suited to trees. Windthrow is common on the Hollis soil because of the shallow rooting depth. The major limiting factors for community development are the steep slopes, shallow depth to bedrock, and rock outcrops.

These soils are in capability subclass VIs.

PdB - Paxton and Montauk very stony fine sandy loams, 3 - 8 percent slopes

These gently sloping, well drained soils are on drumloidal, glacial till, upland landforms. Stones and boulders cover 1 - 8 percent of the surface. Permeability of the Paxton soil is moderate in the surface layer and subsoil and slow or very slow in the substratum. Permeability of the Montauk soil is moderate or moderately rapid in the surface layer and subsoil and slow or moderately slow in the substratum. The available water capacity of these soils is moderate. Runoff is medium. These soils warm up and dry out rapidly in the spring. Unless limed, they are strongly acid or medium acid. These soils are not suited to cultivated crops. The hazard of erosion is moderate. These soils are suited to trees. The major limiting factor for community development is very slow, slow, and moderately slow permeability in the substratum.

These soils are in capability subclass VIs.

* RaA - Rainbow silt loam, 0 - 3 percent slopes

This nearly level, moderately well drained soil is on drumloidal, glacial till, upland landforms. The Rainbow soil has a seasonal high water table at a depth of about 18 inches. Permeability is moderate in the surface layer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is slow. Rainbow soil warms up and driesor medium acid. This soil is well suited to cultivated crops. The hazard of erosion is slight. This soil is suited to trees. The major limiting factors for community development are the seasonal high water table and slow to very slow permeability in the substratum.

This soil is in capability subclass IIw.

RbB - Rainbow very stony silt loam, 0 - 8 percent slopes

This nearly level to gently sloping, moderately well drained soil is on drumloidal, glacial till, upland landforms. Stones and boulders cover 1 - 8 percent of the surface. The Rainbow soil has a seasonal high water table at a depth of about 18 inches. Permeability is moderate in the surface layer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is slow to medium. Rainbow

SOILS DESCRIPTIONS

soil warms up and dries out slowly in the spring. It is strongly acid or medium acid. This soil is not suited to cultivated crops. The hazard of erosion is moderate. This soil is suited to trees. The major limiting factors for community development are a seasonal high water table and slow to very slow permeability in the substratum.

This soil is in capacity subclass VIs.

Rn - Ridgebury, Leicester, and Whitman extremely stony fine sandy loams

These nearly level, poorly drained and very poorly drained soils are in drainageways and depressions of glacial till upland hills, ridges, plains, and drumloidal landforms. Stones and boulders cover 8 - 25 percent of the surface. The Ridgebury and Leicester soils have a seasonal high water table at a depth of about 6 inches. The Whitman soil has a high water table at or near the surface for most of the year. Permeability of Ridgebury and Whitman soils is moderate or moderately rapid in the surface layer and subsoil and slow or very slow in the substratum. The Ridgebury and Whitman soils are strongly acid through slightly acid. Permeability of Leicester soil is moderate or moderately rapid, it is very strongly acid through medium acid. Runoff for the Ridgebury and Leicester soil is very slow or slow. Whitman soil runoff is very slow, or the soil is ponded. The available water capacity for these soils is moderate. These soils are not suited to cultivated crops. The erosion hazard is slight. These soils are suited to trees. Windthrow is common because of the shallow rooting depth above the high water table. The major limiting factors for community development are the high water table and the slow or very slow permeability in the substratum.

These soils are in capability subclass VIIs.

SwB - Sutton very stony fine sandy loam, 0 - 8 percent slopes

This nearly level to gently sloping, moderately well drained soil is on upland glacial till plains, hills, and ridges. Stones and boulders cover 1 - 8 percent of the surface. The Sutton soil has a seasonal high water table at a depth of about 18 inches. Permeability is moderate or moderately rapid. The available water capacity is moderate. Runoff is slow or medium. Sutton soil warms up and dries out slowly in the spring. It is strongly acid or medium acid in the surface layer and subsoil and strongly acid through slightly acid in the substratum. This soil is not suited to cultivated crops. The hazard of erosion is slight or moderate. This soil is suited to trees. The major limiting factor for community development is the seasonal high water table.

This soil is in capability subclass VIs.

SOILS DESCRIPTIONS

* WxA - Woodbridge fine sandy loam, 0 - 3 percent slopes

This nearly level, moderately well drained soil is on drumloidal, glacial till, upland landforms. The Woodbridge soil has a seasonal high water table at a depth of about 18 inches. Permeability is moderate in the surface layer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is slow. This Woodbridge soil warms up and dries out slowly in the spring. Unless limed, it is strongly acid or medium acid in the surface layer and subsoil and strongly acid through slightly acid in the substratum. This soil is well suited to cultivated crops. The hazard of erosion is slight. This soil is suited to trees. The major limiting factors for community development are the seasonal high water table and the slow or very slow permeability in the substratum.
This soil is in capability subclass IIw.

WyB - Woodbridge very stony fine sandy loam, 0 - 8 percent slopes

This nearly level to gently sloping, moderately well drained soil is on drumloidal, glacial till, upland landforms. Stones and boulders cover 1 - 8 percent of the surface. The Woodbridge soil has a seasonal high water table at a depth of about 18 inches. Permeability is moderate in the surface layer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is medium. This Woodbridge soil warms up and dries out slowly in the spring. It is strongly acid or medium acid in the surface layer and subsoil and strongly acid through slightly acid in the substratum. This soil is not suited to cultivated crops. The hazard of erosion is moderate. This soil is suited to trees. The major limiting factors for community development are the seasonal high water table and the slow or very slow permeability in the substratum.
This soil is in capability subclass VIs.

WzC - Woodbridge and Rainbow extremely stony soils, 3 - 15 percent slope

These gently sloping and sloping, moderately well drained soils are on drumloidal, glacial till, upland landforms. Stones and boulders cover 8 - 25 percent of the surface. The Woodbridge and Rainbow soils have a seasonal high water table at a depth of about 18 inches. Permeability of these soils is moderate in the surface layer and subsoil and slow or very slow in the substratum. Runoff of these soils is medium or rapid. These soils warm up and dry out slowly in the spring. The available water capacity of Woodbridge soils is moderate. The Woodbridge soils are strongly acid or medium acid in the surface layer and subsoil and strongly acid through slightly acid in the substratum. The Rainbow soils are strongly acid or medium acid.

SOILS DESCRIPTIONS

The available water capacity is high in Rainbow soils. These soils are not suited to cultivated crops. The hazard of erosion is moderate. These soils are suited to trees. The major limiting factors for community development are the seasonal high water table and the slow or very slow permeability in the substratum.

These soils are in capability subclass VIIs.

* Prime Farmland Soils

5.HYDROLOGY

The subdivision site is located on the drainage divide between two major streamcourses in the area; Copps Brook and Stony Brook. Their drainage areas are 6.86 square miles (4390 acres) and 2.81 square miles (1798 acres), respectively. For the most part, the drainage divide runs roughly north to south, bisecting the site. In general, surface water and groundwater on the site flows to discharge points such as wetlands and intermittent streamcourses on the site. Surface runoff in the western half of the site generally flows west and north and passes under Al Harvey Road enroute to Copps Brook, which is tributary to Palmer Reservoir. Surface runoff in the western parts of the site flows generally southward and passes under Wheeler Road enroute to Stony Brook. To a large extent groundwater flow beneath the site mimics surface flow.

According to the Water Quality Classification Map of Connecticut by J.E. Murphy, 1987, the watercourses that occur in the eastern parts of the site have not been classified by the Department of Environmental Protection, but are considered "A" water resources, by default. Class "A" resources may be suitable for drinking, recreational or other uses and may be subject to absolute restrictions on the discharge of pollutants, although certain discharges may be allowed. On the other hand, the watercourses in the western half of the site are tributary to a public water supply reservoir (Palmer Reservoir) which is a "AA" water resource. As such, surface waters in this designated area are also classified as "AA". "AA" water resources are regulated similarly to "A" water resources. [See copy of Section 19-13- B32, Sanitation of Watersheds (a-i) in **SEWAGE DISPOSAL** section].

Development of a 136 lot residential subdivision with its accompanying road system and driveways is expected to increase post-development runoff during periods of rainfall. These increases will ultimately depend on the final density of homes in the subdivision. The impacts of post-development runoff on and off the site should be clearly understood in terms of flooding and streambank erosion.

Present plans indicate that increased peak flows following construction of the development will be controlled by the creation of three detention basins. These control structures will be created in the southern, western and northcentral parts of the site. The latter detention area will be located in a regulated wetland and therefore requires a permit from the local inland wetlands commission. The remaining two

detention areas will be created on upland soils in proximity to wetlands, which they will outlet to. The applicant needs to demonstrate to the town that post-development peak discharges to the streamcourse on and off the site will not cause flooding problems. A stormwater management plan report that includes pre- and post-development runoff conditions should be prepared by the applicant for town review. Close examination of downstream culverts beneath Al Harvey Road and Wheeler Road is warranted.

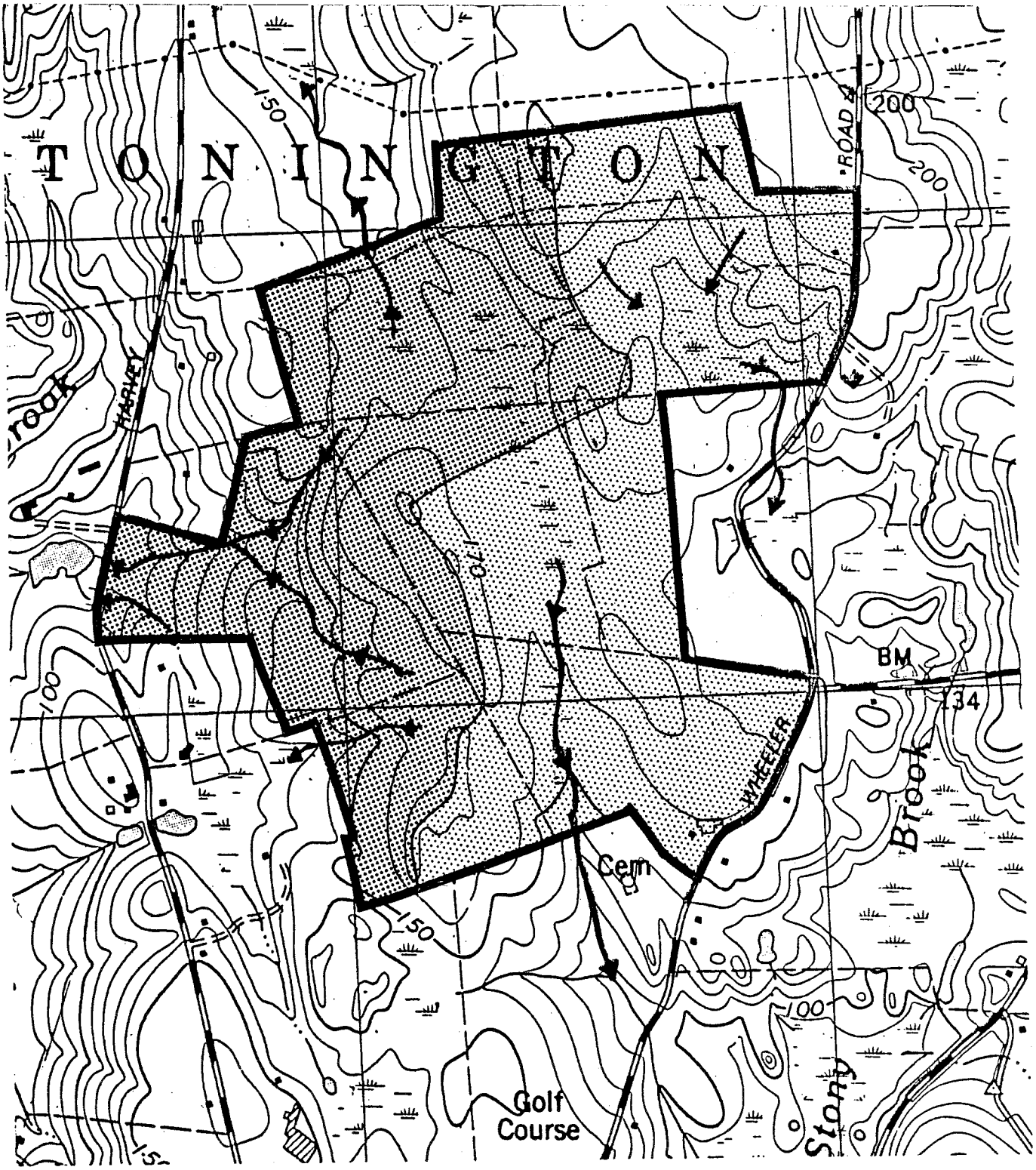
From time to time, the detention basins will need to be maintained, i.e., silt and sand removal, so that their storage capabilities are not diminished. Therefore, an access road for maintenance vehicles should be provided to each basin. Provisions need to be made to minimize sedimentation of silts and sands/turbidity, floating solids, and oils and greases from reaching watercourses. Hooded catch basins equipped with a sump should be considered for the proposed road system. They will help trap floatable solids and sediment. It should be noted that for effective operation the hooded catch basins need to be maintained regularly.

The other concern with post-development runoff is the potential for erosion (stream channel) and sedimentation problems. Because the till on the site may have a high silt and clay content, it is reasonable to expect that the soil would be susceptible to erosion, if not properly addressed, i.e., erosion and sediment control measures. The relatively flat slopes that characterize the site should help soften this potential problem. Nevertheless, in order to minimize erosion and surface water quality degradation on and off the site, a carefully designed and detailed erosion and sediment control plan should be developed, closely followed and periodically checked by town officials, especially following heavy periods of precipitation. Consideration should be given to anti-tracking devices, silt fences, hay bales, temporary sediment basins and minimizing disturbed areas.

WATERSHED BOUNDARY MAP

Scale 1" = 1000'

Portion of site that drains to Copps Brook
Portion of site that drains to Stony Brook
Watercourse showing direction of flow



6. WETLANDS REVIEW

Resource Material

The following is the list of resource material used in preparing this report:

Site Plans Prepared by Total Technology Inc. dated June 1989
Reports Prepared by Ground Water Inc. 2/27/89 and 9/27/89
Report Prepared by Priscilla W. Baillie, PhD, Ecologist, Botanist, Marine and Freshwater Research Service, Guilford, CT
National Wetlands Inventory Map, Quad 88
1983 USGS Topographic Map, Quad 88
1986 Aerial Photographs
Water Quality Classification Map of Connecticut

Development Proposal

The subdivision site is located between Al Harvey and Wheeler Roads, south of a utility right-of-way and north of an existing golf course. The site in its entirety (including the golf course portion) is approximately 523 acres in size, the subdivision portion of the site encompassing approximately 343 acres. Proposed to the north of the golf course are 136 house lots, all of which are to be served by on-site septic and water supply wells.

General Site Description

The irregularly shaped parcel is situated on a relatively flat land surface. The southcentral and southeastern areas of the site contain open fields. A large wetland corridor exists in a north/south orientation near the center of the parcel. Several other wetland areas are located near the northeast corner of the site as well as in the western portion of the site. Each wetland system is associated with meandering brooks and streams. The eastern half of the site drains into Stony Brook, while the western half of the site drains into Copps Brook to the west.

Description of Regulated Areas

The wetland soils on this site consist of Ridgebury, Leicester and Whitman extremely stony fine sandy loams (Rn) with pockets of Adrian and Palms mucks (Aa) interspersed at various locations. The wetlands are primarily forested swamp systems characterized as Palustrine, broad-leaved deciduous forests by the National Wetlands Inventory. The wetlands vary in their visual appearance from dense hardwood swamps with thick shrub and understory layers to more open areas with sparse shrubstorys and extremely stony ground surfaces. Areas of open or flowing water are common within the wetland complex and the entire site contains a network of watercourses. The biological communities inhabiting this property are those typically found in forested areas (i.e. there appear to be no rare or endangered species or species of special concern on this property).

Wetland Functions

The wetland areas on this site provide significant flood storage capability. The land surface is extremely flat and contains meandering watercourses that may serve to slow flood waters and decrease peak flows significantly. This water detainment function becomes increasingly important upon the introduction of impervious surfaces. i.e. paved roadways and rooftops.

The flat slopes and vegetative cover in the wetlands also serve to trap sediments, allowing them to settle out before reaching watercourses or waterbodies. Erosion from land surfaces resulting from the removal of vegetative cover may result in sediment reaching watercourses and waterbodies. This may have detrimental effects on waters downstream by inhibiting aquatic life and generally degrading the water quality. Wetland systems on this site may also function to filter pollutants such as chemical pesticides and fertilizer as well as oils and greases from runoff if the subdivision is approved. This function of water quality renovation is important since the Copps Brook watershed is a water supply watershed with a GAA rating.

The wetland system on this site provides good quality habitat for the area's population of wildlife. Forested wetlands are important to wildlife in the areas surrounding them because they offer a stable habitat. In times of drought surface water may generally be obtained by animals in wetlands. In times of a windy, cold winter, wetlands provide

windless refuges, producing seeds and fruits that may be consumed as food. Additionally, forested wetlands are often warmer than more open areas because of the close proximity of unfrozen and often flowing surface water and springs, combined with the windbreaking ability of the trees. Thus wetlands offer insurance for survival to animals in times of climatic extremes.

The wetlands on this site are connected to other wetlands by watercourses and are thus more valuable for wildlife since they can utilize the streambelts as travel corridors to other wetlands.

Project Impacts to Wetlands and Watercourses

This project involves several direct intrusions into wetland/watercourse areas as a result of the construction of the roadway. The most major disturbance activities are detailed as follows:

Crossing #1. According to the site plan dated June 1989, access to the site from Al Harvey Road is proposed to be accomplished by crossing a band of wetlands approximately 90 feet wide. In this vicinity, however, a large area of surface ponding has occurred as a result of the creation of a berm structure downstream. Crossing this ponded area will entail a great deal more impact than the crossing presently depicted on the site plan. Regardless of how the pond originated, it is now a regulated area. If the berm is in the applicant's property, then the wetland's commission may require that the applicant remove the berm to restore the natural drainage patterns. This would decrease the degree of surface ponding and decrease the complexity of the crossing at this location. If the commission opts to require the applicant to remove the berm, then it should be made a condition of the permit. If a crossing is approved at this location, the Guidelines for Soil Erosion and Sediment Control should be strictly enforced and Best Management Practices should be employed.

Crossing #2. The second crossing occurs where proposed Dawley Drive crosses a narrow band of wetlands just north of proposed lot 88. This wetland corridor is wet and very stony, exhibiting a very sparse shrubstory and understory. A crossing in this area would require the use of heavy machinery to excavate the large boulders. An alternative to the need for a crossing in this location would be

to cul-de-sac Dawley Road south of the proposed crossing area. This would require applying to the Zoning Commission for a variance on their cul-de-sac length. This would eliminate the need for this crossing as well as the crossing further to the north. This would also present the need for a cul-de-sac variance for the Proposed Jim Main Road on the east of the site.

One of the reasons for protecting narrow wetland/watercourse corridors or "streambelts" is to afford wildlife routes of passage that will supply their basic needs of water, food and shelter.

During the field walk, a significant area of surface ponding was observed in the vicinity of lot 107. The soil scientist's test hole indicated that the soils beneath the water were not wetland soils.

However, the definition of "watercourses" in the Stonington Inland Wetlands Regulations includes: "rivers, streams, brooks, waterways, lakes, ponds, marshes, swamps, bogs and all other bodies of water, natural or artificial, vernal or intermittent ...." This means that regardless of whether or not the soil conditions classify this area as wetlands, or how long the water has been retained there, it is still a regulated area under the criteria for the definition of "watercourses".

While the wetlands themselves are not a major barrier to development on this site, there are several other factors that may influence the success of a development of this nature. The geology and topography of the site pose serious constraints with respect to the proposed on-site septic systems for each lot.

The present lot and roadway layout does avoid the larger areas of wetlands on the site. By crossing at the narrowest points of the wetlands, providing for large tracts of open space and preservation areas and limiting the area of clearing for the individual house lots, this application demonstrates an effort to conserve the natural features of the site. However, if there are alternatives that could be explored that would further decrease the impacts to wetlands, then these alternatives must be evaluated. These alternatives include reducing the density of lots and shortening the roadways to avoid crossings of the northern wetlands.

To further protect the wetlands from the secondary impacts of development, deed restrictions and/or conservation easements should be placed on the individual lots containing wetlands. Additionally, a maintenance schedule for cleaning sediments out of detention basins and catch basins during construction should be established prior to any construction activity taking place. The details of who is responsible for maintaining these structures, as well as the cleaning schedule, can be made a condition of the permit.

Finally, this site may require a State Water Diversion Permit based upon the size of the watershed. The applicant should be directed to contact Robert Gilmore of the DEP Water Diversion Program for further information.

7. WATER SUPPLY

Based on the hydrogeologic setting and water supply in the vicinity of the site, the proposed subdivision will likely be served by individual wells that tap the underlying gneisses and amphibolites. Wells drilled in bedrock generally supply small (3-5 gallons per minute) but reliable yields of groundwater. Because the yield of a given well depends upon the number and size of water-bearing fractures that it intersects and because the distribution of the fractures is highly irregular, there is no practical way of predicting the yield of a well in a specific location, before drilling the well. Experience has shown that most water-bearing fractures occur in the top few hundred feet of the bedrock surface.

It is expected that the proposed subdivision should cause minor changes in recharge to the bedrock aquifer. Increases in impervious surfaces will probably be less than 5%, but this will depend upon the final lot and road layout.

Using some basic assumptions, the applicant's hydrogeologic consultant evaluated available recharge and predicted water use of the subdivision to estimate the potential impact on the bedrock aquifer. Specifically, recharge calculations show that the amount of water available to the site each day is about 250,000 gallons. This is based on groundwater recharge amounts of 9 inches per year for an upland, till-covered site and parcel size of 370 pervious acres, allowing for infiltration. Predicted water use at the site is estimated at 41,000 gallons per day. This is based on a 75 gallons per day per capita water usage. An assumption of 4 persons per single-family residence was used for a 136 lot subdivision.

Based on these figures, it is estimated that the planned subdivision will receive almost five times the recharge as is necessary to balance water demand. In addition, induced recharge by properly renovated septic system effluent (about 95%) plays an important role in the groundwater budget. This stresses the need for properly designed and installed septic systems.

It must be kept in mind that the computations prepared by the applicant's hydrogeologist assumes that the underlying bedrock is fractured and is capable of transmitting usable amounts of water to the proposed wells. This cannot be determined exactly without first drilling the well(s).

Where possible every effort should be made for spacing of about 200 feet between domestic wells in the proposed subdivision. This will provide about 1 acre of direct discharge to each well, which should help to minimize the chances for mutual interference between neighboring wells during pumping periods. As indicated above, the latter assumes the fractures in the underlying bedrock are saturated and capable of yielding water to a well. The reduction in lot sizes for the cluster concept may prohibit separation distances of 200 feet between neighboring wells and therefore, may increase the chance for mutual interference during pumping periods..

In the Lower Thames and Southeastern Coastal River basin (in which the site lies), 90% of the domestic wells tapping crystalline bedrock yielded 3 gallons per minute or more. In general, 3 gallons per minute is usually enough water for domestic purposes. For an 18-hour pumping period, this is equivalent to about 3,240 gallons of water.

In order to understand the water yielding capabilities of the bedrock aquifer in the vicinity of the site the applicant's hydrogeologist collected 28 well completion reports for properties located on Al Harvey Road, Wheeler Road and Sommers Lane. The yield of these wells ranged from 2 to 30 gallons per minute.

Each well should ideally be located on a relatively high portion of the lot, properly separated from the sewage disposal systems or any other potential pollutant (e.g., fuel oil storage tank, etc.) and in a direction opposite the expected direction of groundwater movement. They should all be cased with steel pipe into the underlying bedrock. 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.

The natural quality of groundwater should be satisfactory. Because of the mineralogy of the bedrock on the site, the chance for elevated amounts of iron and/or manganese minerals should not be overly problematic. If it is elevated with these constituents, there are suitable treatment filters available to ameliorate these potential water quality concerns.

Except for the western parts of the site that drain to Copps Brook, groundwater in the area is classified by the Department of Environmental Protection (DEP) as GA, which

means that it is suitable for private drinking water supplies without treatment. The western part of the site is classified as GAA, which means that it is presumed suitable for direct human consumption without treatment. Surface and groundwater in this area are tributary to Palmer Reservoir, an active public water supply reservoir for Connecticut-American Water Company Mystic Valley District.

Because of the site's ground and surface water quality and because leakage from underground fuel storage tanks is a frequent cause of groundwater contamination in the State, it is recommended that residential underground fuel storage tanks be prohibited on the site.

8. SEWAGE DISPOSAL

Although a municipal sewer line is located about one mile from the site the applicant has taken a strong direction towards sewer avoidance. Also, it is understood that the town takes a similar position. Therefore, each lot in the proposed subdivision will need to be served by individual on site sewage disposal systems.

Based on visual observations of standpipes across the site during the field walk, existing soils maps, and review of deep test hole information by the applicant's engineer, the Pequot Farms and Country Club Subdivision property is not particularly favorable for sewage disposal purposes. The major concern or problem is one of a seasonally high water table condition as indicated by water in standpipes during the field walk and shallow mottling or groundwater tables noted in the deep test hole data. This perched water table is caused by a relatively shallow compact layer of slowly permeable soil across much of the site. In addition, the site, in places, is restricted by flat or nearly level conditions. The concern here is that the soils surrounding the septic system may not be able to handle the sewage flow. Also, there is little or no opportunity for curtain drain installation, which will help protect the septic system area by intercepting groundwater before it reaches the septic system area.

Considering the quantity of sewage discharged for single family residences, one to two acre lots would normally be considered of sufficient size to accommodate both a well and septic system. However, where unfavorable soil conditions (high water table, slow percolation rates, etc.) and/or terrain exists, considerably larger lots (i.e., lower density of development) should be provided. It should be pointed out that large lots themselves do not necessarily assure the availability of sufficient suitable area for sewage disposal purposes. This can only be demonstrated by adequate on-site testing.

Due to site limitations (wetlands) and the retention of more open space area, clustering of the houses on smaller parcels (±1 acre) would seem to have certain merits. However, because of unfavorable subsurface conditions (seasonally high water table) and flat slopes, there is a concern for locating sufficient suitable area for sewage disposal purposes, particularly on the small lots (between 1 and 2 acres in size) where there is a large number of septic systems in a concentrated area. Further soil testing, which includes hydraulic analyses is suggested to demonstrate that the

maximum capacity of the leaching system on each lot can disperse septic tank effluent into the surrounding soil without breakout.

While on-site sewage disposal may be achieved, design, location and installation will be of paramount importance. Undoubtedly, most, if not all septic systems will require detailed plans prepared by a registered professional engineer. The plans should be prepared for each lot prior to issuance of building permits. If thorough testing of any proposed lot fails to identify a satisfactory leaching area and suitable conditions as identified in Section 19-13-B103(a)(3) of the Public Health Code, the lot should be combined with adjacent properties or eliminated. Some of the proposed lot lines may require adjustment prior to approval by the Planning and Zoning Commission. This work may result in a reduction in the number of building lots presently proposed.

Due to widespread high groundwater conditions most leaching systems will probably require the placement of select fill material to provide sufficient separating distances above the local high groundwater table. Septic systems will probably be large and where topography permits, spread out over the slope contours to enhance lateral dispersal of the sewage effluent. Curtain drains, which intercept groundwater before it rises up into the leaching system and impairs its hydraulic capacity, may be a useful safeguard but only if topography permits. Curtain drains may be connected to building footing drains, depending upon house and septic system locations.

The presence of high groundwater tables throughout the site warrants the installation of building footing drains around all homes. This should help protect basements from becoming wet. Construction practices that include slab on grade foundations or raised ranches may be necessary in order to stay above the seasonal high water table.

The western half of the site drains to Palmer Reservoir, a public water supply reservoir which is operated by the Connecticut-American Water Company Mystic Valley District. This underscores the need for careful planning, design and installation of septic systems in this area. Included with this part of the report is Section 19-13 B32, Sanitation of Watersheds (a-i) which addresses the protection of water quality from subsurface sewage disposal systems and storm drainage systems in public water supply watersheds.

Sec. 19-18-B32. Sanitation of watersheds. Unless specifically limited, the following regulations apply to land and watercourses tributary to a public water supply including both surface and groundwater sources.

(a) As used in this section, "sewage" shall have the meaning found in section 19-13-B20(a) of the public health code: "Toxic metals" shall be arsenic, barium, cadmium, chromium, lead, mercury, and silver, and the salts thereof; "high water mark" shall be the upper limit of any land area which water may cover, either standing, or flowing, at any time during the year; watershed shall mean land which drains by natural or man-made causes to a public drinking water supply intake.

(b) No sewage disposal system, cesspool, privy or other place for the deposit or storage of sewage shall be located within one hundred feet of the high water mark of any reservoir or within fifty feet of the high water mark of any stream, brook, or watercourse flowing into any reservoir used for drinking purposes.

(c) No sewage disposal system, cesspool, privy or other place for the deposit or storage of sewage shall be located on any watershed, unless such facility is so constructed that no portion of the contents can escape or be washed into the stream or reservoir.

(d) No sewage shall be discharged on the surface of the ground on any watershed.

(e) No stable, pig pen, chicken house or other structure where the excrement of animals or fowls is allowed to accumulate shall be located within one hundred feet of the high water mark of a reservoir or within fifty feet of the high water mark of any watercourse as above mentioned, and no such structure shall be located on any watershed unless provision is made in a manner acceptable to the commissioner of health services for preventing manure or other polluting materials from flowing or being washed into such waters.

(f) No toxic metals, gasoline, oil or any pesticide shall be disposed of as waste into any watercourse tributary to a public drinking water supply or to any ground water identified as supplying a public water supply well.

(g) Where fertilizer is identified as a significant contributing factor to nitrate nitrogen occurring in excess of 8 mg/l in a public water supply, fertilizer application shall be made only under current guidelines established by the commissioner of health in cooperation with the state commissioner of agriculture, the college of agriculture of the University of Connecticut and the Connecticut agricultural experiment station in order to prevent exceeding the maximum allowable limit in public drinking water of 10.0 mg/l for nitrate plus nitrate nitrogen.

(h) Where sodium occurs in excess of 15 mg/l in a public drinking water supply, no sodium chloride shall be used for maintenance of roads, driveways, or parking areas draining to that water supply except under application rates approved by the commissioner of health, designed to prevent sodium content of the public drinking water from exceeding 20 mg/l.

(i) The design of storm water drainage facilities shall be such as to minimize soil erosion and maximize absorption of pollutants by the soil. Storm water drain pipes, except for crossing culverts, shall terminate at least one hundred feet from the edge of an established watercourse unless such termination is impractical, the discharge arrangement is so constructed as to dissipate the flow energy in a way that will minimize the possibility of soil erosion, and the commissioner of health finds that a discharge at a lesser distance is advantageous to stream quality. Special precautions shall be taken to protect stream quality during construction.

9. VEGETATION

Vegetation Cover Types

There are three general cover types that can be distinguished on this property; upland, with oaks, hickories and maples; red maple swamp type and old field type with red cedar and hardwoods.

Upland Oak-Hickory:

The overstory is usually a mixture of red and black oaks with scattered white oak. The hickory is usually mockernut or pignut with a few shagbark. Lesser species include white ash, red and sugar maple, tulip, sassafras and black gum. The understory varies according to the density of the overstory and the closeness to the wetlands. Some areas are very sparse with only a few saplings of hornbeam, flowering dogwood, red maple,sugar maple and azalea. Other area are thickets of greenbriar. Closer to the wetlands blueberry, spicebush and sweet pepperbush are more prevalent.

Red Maple Swamps:

These vary widely from areas of red maple, tulip popular, black gum, white ash and yellow birch to areas almost exclusively of red maple.

The understory varies also. The less wet areas have blue beech, witch hazel, blueberry, service berry, spicebush and sweet pepperbush. The wettest areas have some grass clumps, blueberries and spicebush.

Old Field:

This was field and pasture in the not too distant past. The most notable species is red cedar, although there is considerable red maple, scarlet and black oak, and black birch. Lesser species would include apple trees, grey birch and sassafras.

In many areas there is a tangle of bittersweet both on the ground and climbing in the trees. Some sumac and gray dogwood are still surviving along with some flowering dogwood. Blackberry and greenbriar are still prevalent in some of the openings.

Management and Concerns

In the proposed subdivision expected tree problems are directly related to the soil types. In the Narragansett, Canton and Charleton series most of the problems will be from dead and dying trees (oaks) associated with past insect problems and some breakage due to opening up of so many roads and house lots. Fortunately these soils only make up a small part of the proposed development area. Most of the proposed building sites are on Rainbow or Paxton soils. Because of the seasonal high water tables trees growing on these sites tend to be shallow rooted. This makes them very subject to windthrow when patches of trees are cleared for roads and house lots. Also, because of the shallow root systems, the roots of adjacent trees are easily damaged by construction equipment. The most serious threat is probably from the amount of fill that will have to be brought in for both the roads/driveways and the engineered septic systems. Filling will smother the tree roots and the soil compaction will change the slow subsurface runoff causing longer than normal high water tables.

These changes can be expected to have a profound effect on the residual tree population and the closer these disturbances are together (high density of housing and roads) the greater the impact on the remaining desirable vegetation. Minimal ground disturbance and careful attention to details, such as the smallest drainage pattern, will lessen the impact. Fortunately in most areas the trees are fairly young (50 years or less) and still vigorous. They will be a little more tolerable of the encroachment; however, noticeable mortality may be expected at the edge of openings and along road fills. Pockets of mortality should be expected if there is a permanent water table change.

10. WILDLIFE RESOURCES

Habitat Type Descriptions

The habitat types on these properties include mixed hardwood forest, open field, wetland area. The variety of habitat types provides for a diversified wildlife population. Examples of wildlife species in each habitat is provided along with an appendix of species likely to be found in these areas.

Mixed Hardwood Forest: This habitat consists of a variety of hardwood species including red maple, beech, red oak, elm, hickory and birch. Understory vegetation includes witch hazel, elderberry, multiflora rose, grape, blackberry and hardwood regeneration. Wildlife frequenting such habitat types include deer, fox, raccoon, gray squirrel, woodpeckers (pileated, hairy and downy), ovenbirds, scarlet tanangers, black-throated blue and green warblers, barred owls, broad-winged hawks and various non-game species such as porcupines, shrews, voles and snakes.

Open Field: Open land habitat is very beneficial to wildlife. Vegetation provides food as well as structural diversity, creating cover for a great array of wildlife ranging from mice and shrews to deer. Fields also attract numerous insects, a major food item of various wildlife species such as birds and small mammals including bats. Another important feature of fields is the edge created where fields meet forest. This valuable zone for food and cover consists of dense berries, shrubs and grasses. Wildlife utilizing open field habitat include deer, woodcock, woodchuck, fox, raccoon, skunk, mourning dove, bluebirds, eastern kingbirds, mockingbirds, flycatchers, blue and golden-winged warblers, robins, kestrels, red-tailed hawks, eastern screech owls and cottontail rabbits.

Wetland/Riparian Zone: This habitat type consists of various combinations of intermittent streams/brooks and a red maple/oak wetland area. Associated vegetation includes red maple, birch, alder, dogwood, jewel-weed, spicebush, sweet pepper bush, skunk cabbage, false helebore, and various grasses and sedges. Wildlife using such sites include deer, fox, raccoon, skunk, muskrat, mink, woodducks, swallows, red-winged blackbirds, grackles, kingbirds, cedar waxwings, hooded and wilson's warblers, titmice, woodpeckers, and numerous amphibians and reptiles including water and garter snakes, salamanders, and spotted and painted turtles.

Impacts of Development

Wetland/Riparian Zones: Wetlands support a high diversity of wildlife due to the complexity of the vegetative structure, high productivity and abundant food supply which allow for a high carrying capacity (Brown et. al. 1978). There are many species that require access to streams or water body margins for survival even though they may spend much of their time in other habitats (Milligan and Raedeke 1986). Part of the food supply for many vertebrates is the high abundance and diversity of insect populations that are typical of wetland ecosystems (Brown et al. 1978).

Wetlands presently provide important habitat for a variety of wildlife species and function as areas for absorption of natural runoff. Any planned diversion of stormwater into wetlands will increase water flow, sedimentation and pollution. This will alter the present ecological structure of the wetland and reduce species diversity. Even though stormwater retention and filtration plans may alleviate some of these problems, the long term effects of stormwater diversion into wetlands tend to be negative. Retention and filtration systems may still allow fine silt and pollutants to enter.

Not only are wetlands important to wildlife, they are also important to humans. Various functions of wetlands include flood control, ecological integrity, fish and wildlife habitat, nutrient and sedimentation trappings, educational potential, visual/aesthetic quality, recreation, groundwater use potential and botanical sites. There are usually inherent limitations in developing wetlands due to poorly drained and unstable soil types.

Vegetation removal in wetlands may have severe impacts on wildlife, especially reptiles and amphibians. One or several of the cover, food, breeding habitat, and hibernation areas may be altered. Species dependent on specialized habitat are eliminated and more adaptable species are reduced in numbers (Campbell 1973). Barriers, such as roads, to seasonal movement and population dispersal are also serious threats (Campbell 1973). To minimize impact maintain a 100 foot wide buffer zone of vegetation around wetland/riparian areas. This buffer zone will help filter and trap silt and sediments, provide excellent wildlife cover and be an aesthetic and educational asset to the community.

The diversified habitats at this site provide for the needs of a wide variety of wildlife species that inhabit the general area. As the demand for land increases and land is

developed, there will be an immediate and lasting negative impact on wildlife. The primary impact is the direct loss of habitat due to buildings, roads, driveways, parking areas, walkways, recreational facilities and other structures. Loss of habitat also occurs where cover is cleared for lawns and landscaping. Additional impact occurs with increased human presence, vehicular traffic and the number of free roaming cats and dogs. Development of this area will decrease the amount of habitat simply because the land will be occupied by physical buildings and roads. Human activity in the area will greatly increase, even after construction is completed. Some species of wildlife will not tolerate increased human activity and will emigrate from the area. Other species, tolerant of human activity, might be attracted to the area, and may become a nuisance to area residents (i.e. raccoons, skunks, moles).

Upland Wooded Areas: Fragmentation of habitat may lead to a decline in species diversity and richness. Sensitive, interior species that require large tracts of undisturbed forest, such as veeries, ovenbirds and scarlet tanangers may decrease and no longer occupy the area.

Mitigation of Disturbances

There are several management guidelines which should be considered during the planning process in order to minimize adverse impacts on wildlife:

1. Make use of natural landscaping techniques (avoid and/or minimize lawns and chemical applications) to lessen acreage of lost habitat and possible wetland contamination.

2. Maintain a 100 foot wide buffer zone of natural vegetation around wetland/riparian areas to help filter and trap silt and sediments. These vegetated zones provide excellent wildlife cover and travel corridors.

3. Stone walls, shrubs and trees should be maintained along field borders.

4. During land clearing care should be taken to maintain certain forestland wildlife requirements:

    a. Encourage mast producing trees (oak, hickory, beech).

b. Leave 3-5 snag/den trees per acre as they are used by many birds and mammals for nesting, roosting and feeding.
c. Exceptionally tall trees are used by raptors as perching and nesting sites and should be encouraged.
d. Trees with vines (fruit producers) should be encouraged
e. Brush debris could be windrowed to provide cover for small mammals, birds and amphibians and reptiles.
f. Removal of dead and down woody material should be discouraged where possible. The existence of many wildlife species (salamanders, snakes, mice, shrews and insects) depends on the presence of dead trees (Hassinger 1986).

5. Implementation of backyard wildlife habitat management practices should be encouraged. Such activities involve providing food, water, cover and nesting areas.

On small acreages with many buildings, landscaping can do a great deal to provide habitat and make an area attractive to wildlife. First, leave as many trees as possible around the buildings. This will not only benefit wildlife by providing food, cover and nesting sites (i.e. especially for songbirds), but will also be more aesthetically pleasing for the residents of the development. Plant trees and shrubs which are useful to wildlife and landscaping. Large expanses of lawn with no trees or shrubs present should be discouraged.

Planting shrubs that are less palatable to deer may lessen problems with nuisance deer. Shrubs less palatable to deer include evergreen hybrid rhododendrons, American Holly, Scotch pine, White and Norway Spruce, Japanese cedar, Flowering dogwood, mountain laurel, Common lilac and White pine. Taxus spp. (yews) experience a greater degree of damage as they are preferred winter foods of deer (Conover, 1988).

6. In most cases, natural marshes are of more value than constructed ponds and ditches because of vegetative composition, gentle sloping edges and shallow water depths (6"-3'). If any pond work is planned they should be small (1/4) acre, shallow ponds to remove thick cattail stands.

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APPENDIX

REPTILES

Common Snapping Turtle
Painted Turtle
Spotted Turtle
Wood Turtle
Eastern Box Turtle
Eastern Worm Snake
Eastern Ribbon Snake
Northern Black Racer
Northern Ringneck Snake
Black Rat Snake
Eastern Milk Snake
Eastern Smooth Green Snake
Northern Redbelly Snake
Eastern Garter Snake

AMPHIBIANS

Jefferson's Salamander
Spotted Salamander
Marbled Salamander
Northern Dusky Salamander
Northern Two-lined Salamander
Northern Spring Salamander
Four-toed Salamander
Redback Salamander
Slimy Salamander
Mudpuppy
Red-spotted newt
Eastern American Toad
Norhtern Spring Peeper
Gray Treefrog
Bullfrog
Green Frog
Pickerel Frog
Northern Leopard Frog
Wood Frog

MAMMALS

Opossum
Masked Shrew
Water Shrew
Smoky Shrew
Short-tailed Shrew
Least Shrew
Hairy-tailed Mole
Eastern Mole
Beaver
Deer Mouse
White-footed Mouse
Boreal Red-backed Vole
Meadow Vole
Woodland Vole
Muskrat
Southern Bog Lemming

Star nosed Mole
Little Brown Bat
Keen's Myotis
Silver-haired Bat
Eastern Pipistrelle
Big Brown Bat
Red Bat
Hoary Bat
Eastern Cottontail
Eastern Chipmunk
Woodchuck
Gray Squirrel
Red Squirrel
Southern Flying Squirrel

Norway Rat
House Mouse
Meadow Jumping Mouse
Woodland Jumping Mouse
Porcupine
Coyote
Red Fox
Gray Fox
Raccoon
Short-tailed Weasel
Long-tailed Weasel
Mink
Striped Skunk
River Otter
White-tailed Deer

BIRDS

Northern Goshawk
Broad-winged Hawk
Rough-legged Hawk
American Kestrel
Ring-necked Pheasant
Wild Turkey

Killdeer
Mourning Dove
Yellow-billed Cuckoo
Eastern Screech Owl
Barred Owl
Short-eared Owl
Common Nighthawk
Whip-poor-will
Ruby-throated Hummingbird
Red-headed Woodpecker
Yellow bellied Sapsucker

Red-shouldered Hawk
Red-tailed Hawk
Sharp-shinned hawk

Ruffed Grouse
Northern Bobwhite
American Woodcock

Common Barn-Owl
Great Horned Owl
Long-eared Owl
Northern Saw-whet Owl
Chuck-will's-widow
Chimney Swift
Belted Kingfisher
Red-bellied Woodpecker
Downy Woodpecker

Hairy Woodpecker
Pileated Woodpecker
Eastern Wood-Pewee
Acadian Flycatcher
Willow Flycatcher
Eastern Phoebe
Eastern Kingbird
Purple Martin
Northern Rough-winged Swallow
Cliff Swallow
American Crow
Black-capped Chickadee
Red-breasted Nuthatch
Brown Creeper
House Wren
Marsh Wren
Northern Mockingbird
Eastern Bluebird
Gray-cheeked Thrush
Hermit Thrush
American Robin
Ruby-crowned Kinglet
Cedar Waxwing
Loggerhead Shrike
White-eyed Vireo
Ye11ow-throated Vireo
Philadelphia Vireo
Blue-winged Warbler
Tennessee Warbler
Nashville Warbler
Yellow Warbler
Yellow-rumped Warbler
Magnolia Warbler
Black-throated Blue Warbler
Pine Warbler
Palm Warbler

Northern Flicker
Olive-sided Flycather
Yellow-bellied Flycatcher
Alder Flycatcher
Least Flycatcher
Great Crested Flycatcher
Horned Lark
Tree Swallow
Bank Swallow
Blue Jay
Fish Crow
Tufted Titmouse
White-breasted Nuthatch
Carolina Wren
Winter Wren
Gray Catbird
Brown Thrasher
Veery
Swainson's Thrush
Wood Thrush
Golden-crowned Kinglet
Blue-gray Gnatcatcher
Northern Shrike
European Starling
Solitary Vireo
Warbling Vireo
Red-eyed Vireo
Golden-winged Warbler
Orange-crowned Warbler
Northern Parula
Chestnut-sided Warbler
Black-throated Green Warbler
Cape May Warbler
Blackburnian Warbler
Prairie Warbler
Bay-breasted Warbler

Blackpoll Warbler
Black-and-White Warbler
Prothonotary Warbler
Ovenbird
Louisana Waterthrush
Connecticut Warbler
Common Yellowthroat
Wilson's Warbler
Yellow-breasted Chat
Northern Cardinal
Indigo Bunting
Rufous-sided Towhee
Chipped Sparrow
Vesper Sparrow
Fox Sparrow
Lincoln's Sparrow
White-throated Sparrow
Dark-eyed Junco
Red-winged Blackbird
Rusty Blackbird
Brown-headed Cowbird
Northern Oriole
Purple Finch
Red Crossbill
Common Redpoll
American Goldfinch
House Sparrow

Cerulean Warbler
American Redstart
Worm-eating Warbler
Northern Waterthrush
Kentucky Warbler
Mourning Warbler
Hooded Warbler
Canada Warbler
Scarlet Tanager
Rose-breasted Grosbeak
Dickcissel
American Tree Sparrow
Field Sparrow
Sharp-tailed Sparrow
Song Sparrow
Swamp Sparrow
White-crowned Sparrow
Bobolink
Eastern Meadowlark
Common Grackle
Orchard Oriole
Pine Grosbeak
House Finch
White-winged Crossbill
Pine Siskin
Evening Grosbeak

Species potentically inhabiting habitats of study area.

*** Connecticut Wildlife checklist of birds, mammals, reptiles and amphibians.**

11. FISH RESOURCES

Site Description

The proposed residential subdivision includes a total of 136 single family housing lots that will be served by on-site wells and septic systems. The entire parcel of 523 acres is relatively flat and contains 124 acres (23.6%) that have been delineated as inland wetlands. The existing golf course that currently abuts the site to the south will remain in use, but will become the two largest lots (48 and 91 acres) of this subdivision. One hundred and one acres will be designated as open space (40 acres of which is non-wetland). This project was designed in accordance with local "cluster" regulations and as such will generate an additional 58 acres of "preservation area" (32 acres of which are non-wetlands). Five wetland crossings are proposed. A total of 2.8 miles of new roads will be created. This report will address potential impacts to aquatic resources and suggest measures to minimize such impacts.

Aquatic Resources

A. Stony Brook

The headwaters of Stony Brook originate within the property and the majority of this project falls within the Stony Brook watershed. The stream's riparian zone on the proposed development site is primarily wetland habitat.

Surface waters of Stony Brook are classified by the Department of Environmental Protection (DEP) as "Class A". Designated uses for this classification are: potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply, and other legitimate uses.

Due to the streams small size, no fisheries resources are expected to exist in Stony Brook within the proposed development site. Downstream sections would be expected to support native brook trout, American eel, tessellated darter, and white sucker.

Stony Brook empties into the estuarine environment at Quanaduck Cove, an upper arm of Stonington Harbor. The cove supports diverse groups of finfish and shellfish that are of recreational and commercial importance. Examples of finfish include striped bass, winter flounder, tomcod, snapper bluefish, river herring (alewife and or blueback herring) and rainbow smelt. Blue crab and concentrations of hard clam exist within the cove.

B. Copps Brook

An unnamed tributary of Copps Brook originates within the western side of the project property. The stream's riparian zone is primarily wetland habitat.

Surface waters within the Copps Brook watershed upstream of and including Mystic Reservoir are classified by the DEP as "Class A" (see uses above). Surface waters downstream of Mystic Reservoir are designated as "Class AA". Designated uses for this classification are: existing or potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply, and other purposes.

Although viable fish populations exist year round downstream of Harvey Road, they would only be expected to enter the project property seasonally. Freshwater fish species expected to inhabit Copps Brook include wild brook trout, hatchery reared brook trout (DEP stocks over 200 yearlings annually) common shiner, blacknose dace, fallfish, American eel, tessellated darter and white sucker. Warm water species typical of lentic environments are expected to exist within the privately owned pond immediately downstream of Harvey Road. Examples of such include largemouth bass, bluegill sunfish, chain pickerel, golden shiner, and brown bullhead.

Copps Brook enters the estuarine environment at Quiambog Cove, which supports a finfish community similar to that described for Quanaduck Cove. The shellfish community includes blue crab, and concentration areas of bay scallop and hard clam.

Impacts

The following impacts of the proposed subdivision on stream resources and associated wetlands may occur if proper mitigation measures are not implemented:

1. Construction site soil erosion and sedimentation through increased runoff from unvegetated areas : During construction, topsoil within the proposed building lots will be exposed and susceptible to runoff events. Erosion and sedimentation due to construction has been regarded as a major cause of stream degradation in eastern Connecticut. Excessive sediment deposition could damage downstream ecosystems by:

* *Reducing the amount of usable fish habitat used for spawning purposes.*
* *Reducing fish egg survival.*
* *Reducing aquatic insect production.*
* *Contributing to the reduction of dissolved oxygen.*
* *Adversely affecting "gill" function and feeding.*

2. Degradation of wetland habitat : Some minor degradation of wetlands can be expected due to the five road crossings proposed. These wetlands serve to protect the water quality of downstream areas. Wetlands serve to: (1) control flood waters by acting as a water storage basin, (2) trap sediment from natural and manmade sources of erosion, and (3) help filter-out pollutants from runoff before they enter watercourses.

Recommendations

The following recommendations should be considered by the Town of Stonington to mitigate impacts to these streams and their associated wetlands.

1. It is highly recommended that a 100 foot, naturally vegetated buffer zone be maintained along all wetland boundaries: This buffer can be an effective mitigation measure at this development location. All construction and alteration of existing habitat should be prohibited in this zone. Research has shown that 100 foot buffer zones help prevent damage to wetlands and stream ecosystems that support diverse fish and aquatic insect life (USFWS 1984;USFWS 1986;0DFW 1985). Impacts such as soil erosion, can be more effectively minimized if these areas are left in their natural condition. These buffers will absorb surface runoff and other pollutants before they can enter aquatic ecosystems.

2. Install and maintain proper erosion and sedimentation controls during site construction activities : Past stream siltation disturbances in Connecticut associated with residential housing developments have occurred when individual contractors either improperly deployed mitigation devices or failed to maintain these devices on a regular basis. Proper installation and maintenance of these devices are of critical importance.

3. All construction work near wetlands should take place during seasons of low precipitation : This strategy will help minimize the impact to aquatic resources. Reduced precipitation and streamflows during the summer and early fall provide the least hazardous conditions in which to work near sensitive aquatic environments.

4. Consider granting the variance requested by the applicant regarding reduction of road width : Reducing road width from 30 feet to 24 feet would lessen the amount of impervious surface and reduce runoff. Narrower roads would also reduce impacts at wetland crossings. Granting the variance regarding the elimination of sidewalks would have similar results, but could be negated by the detrimental effects of pedestrian traffic in vegetated areas. Excess pedestrian traffic may denude vegetation and result in erosion and sedimentation problems. Installation of pervious walkways may be a reasonable compromise.

References

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12. PLANNING REVIEW

The Regional Development Plan designates this area as suitable for "Low Density Uses", which are residential uses at less than one unit per 1.5 acres, agriculture, open space, recreational, and water supply uses. This classification is a result of the soil characteristics of the area.

The water supply watershed of the Mystic Reservoir encompasses a small portion of this property in the western section of the parcel.

Local zoning also recognizing the sensitive natural resources of the area and designates this area as Rural Residential requiring a minimum lot size of 80,000 square feet.

A significant aspect of this development proposal is to cluster the proposed residential units on the more suitable soils of the parcel on lots less than the minimum requirement while preserving other areas of the parcel as open space and preservation areas. The Planning & Zoning Commission may consider this development approach in Rural Residential 80 Districts as per Section 7.5 of the Zoning Regulations.

Traffic

The Traffic Impact Study by F.A. Hesketh & Associates, Inc. which was included with the review materials was submitted to the state for a State Traffic Commission Certificate of Operation. As such the report concentrates primarily on the impact on state roads. While the traffic generation volumes and distribution percentages are reasonable, their impact on Al Harvey Road, Wheeler Road, Sommers Road, and the Taugwank Road network should be considered. The report does describe the various vertical and horizontal alignment changes along the local roadways. Due to the various alignment and width changes an analysis of potential impact should be submitted to the Commission for review.

Minimizing curb cuts onto Al Harvey Road and Wheeler Road is important as it will minimize conflict points along these narrow winding roads. The proposal as reviewed

accomplishes this by providing access to lots by way of new subdivision roads, where possible, rather than existing roads. In any layout change this concept should be utilized.

Areas of Concern

The stormwater drainage system design and operation is important. It should not divert water from one drainage basin to another. The outlets should be capable of dispersing the anticipated flow without erosion.

Erosion and sedimentation controls as proposed should be strictly followed.

The lots should be capable of supporting on-site septic systems and wells as proposed. A high water table was observed on many proposed lots during the field walk (lot 25, 34, 35, 36, 107, 108 as an example). This may require reduction of the proposed number of lots.

Special attention should be given to the right of way of both Al Harvey Road and Wheeler Road. The vertical and horizontal alignment problems in the area of the site may need to be corrected in the near future and sufficient property to accomplish this should be deeded to the town.

Generally, the concept of Cluster Development would be desirable for this site, however, the widespread limitations, such as subsurface and topographic (flatness) constraints, would be expected to limit the actuality of employing this concept.

13. ARCHAEOLOGICAL REVIEW

The Office of State Archaeology reviewed the subdivision plans for this project last year and made an on-site investigation. They concluded that the project area had a reasonable likelihood for containing both prehistoric and historic archaeological sites and recommended that a reconnaisance survey be conducted. The Public Archaeological Survey Team was contacted to conduct the survey, which was performed in May and June of 1989. The survey consisted of historic document research, a walkover survey and subsurface testing.

The archaeological reconnaissance survey of the project area located three prehistoric sites and one historic period site. One historic period cemetery, the Dennison family burial ground, is located within the project area, but it will not suffer any direct impacts from road or house construction. The Stanton farmstead (Site 137-3 on map) is located in the northern portion of the project area at the intersection of two roads, within several proposed new house lots. The site will be impacted by construction activities. Artifacts recovered from this site suggest a late 18th-century to early 20th century occupation. The integrity of the site, which included the foundations of a house and several outbuildings, is excellent, and it has the capacity to yield additional information. For this reason, the site may be eligible for listing in the National Register of Historic Places. The foundations of two other outbuildings located within the project area, one near the Dennison cemetery and one west of the Richard Wheeler homestead, may also be impacted by construction activities. The age and function of these structures are unknown, nor is it known which, if any, of the local farms they are associated with. Their potential for yielding additional information is unclear.

Two prehistoric sites (137-4 and 137-5 on map) were found in the project area. Each of these sites yielded limited, undatable cultural material, even though additional test pits were excavated in their vicinity. Neither site is likely to yield additional data.

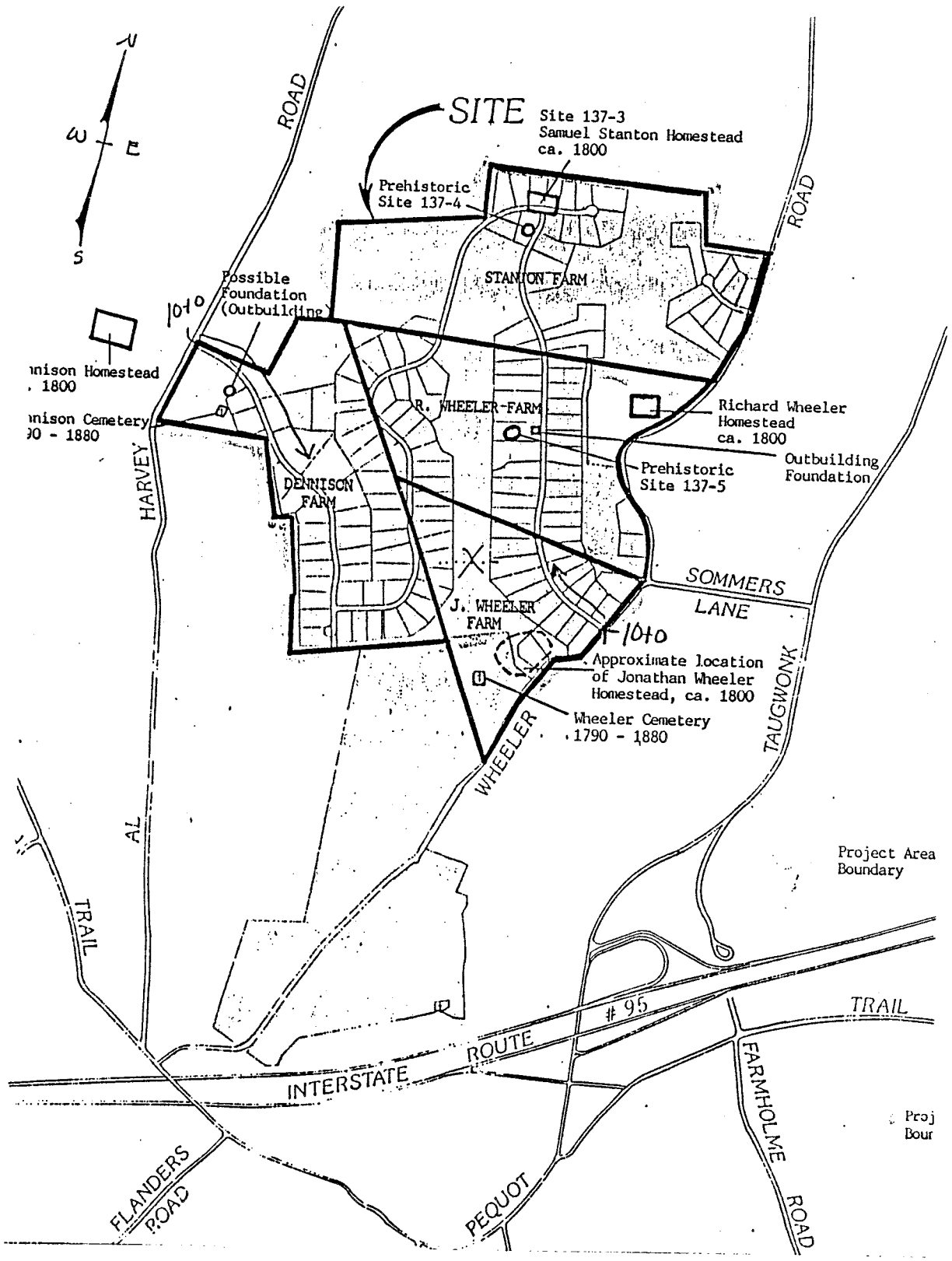
Based upon the potential impacts to the Thomas Stanton farmstead (Site 137-3) from potential road construction, it is recommended that further intensive surveys be conducted to identify more precisely the site limits and to assess the site's potential for inclusion in the National Register of Historic Places. If the site demonstrates eligibility for the Register and the road cannot be redesigned to avoid impacting a portion of the

site, it is further recommended mitigation of impacts through archaeological excavation and documentation of that portion of the site that will be impacted by the proposed road construction and preservation of those portions of the site that have the most potential for yielding information in the future. Steps should be taken to avoid as much of the site as possible during construction and to develop a long-term preservation plan for the site.

In summary, the Stanton farmstead may be eligible for the National Register of Historic Places. As a result, mitigation of this historic resource should be continued by additional archaeological excavations in areas were impact is unavoidable. A long-term preservation plan should be developed for areas of this site that will not be impacted by construction activities. No further work is recommended at the prehistoric sites.

SIGNIFICANT SITES

Not to Scale



ABOUT THE TEAM

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a varety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, foresters, soil specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area --- an 86 town region.

The services of the Team are available as a public service at no cost to Connecticut towns.

PURPOSE OF THE TEAM

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

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

REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected official of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the chairman of your local Soil and Water Conservation District and the ERT Coordinator. A request form should be completely filled out and should include the required materials. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information and request forms regarding the Environmental Review Team please contact the ERT Coordinator: 203-345-3977, Eastern Connecticut RC&D Area, P.O. Box 70, Haddam, Connecticut 06438.