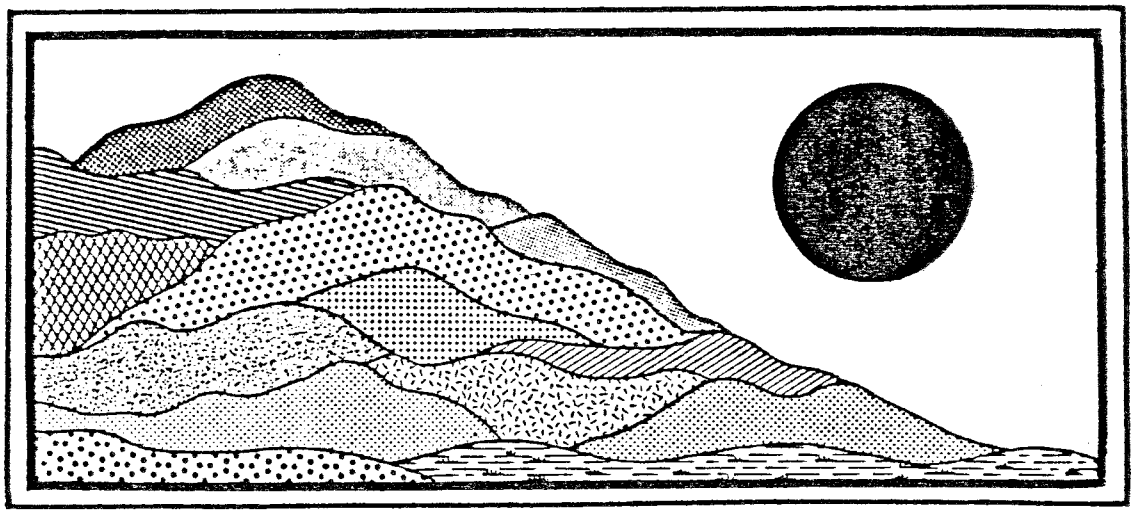
Gold Star Triangle

Groton, Connecticut

August 1987



ENVIRONMENTAL REVIEW TEAM REPORT

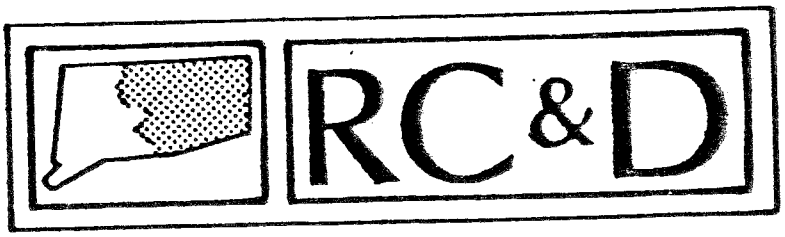
EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Gold Star Triangle

Groton, Connecticut

Review Date: MAY 7, 1987

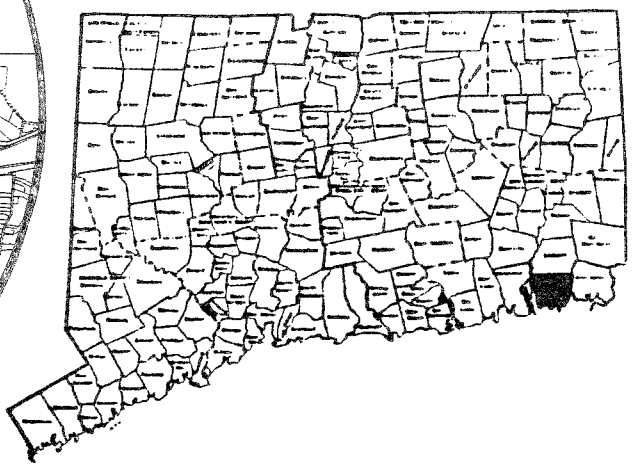
Report Date: AUGUST 1987

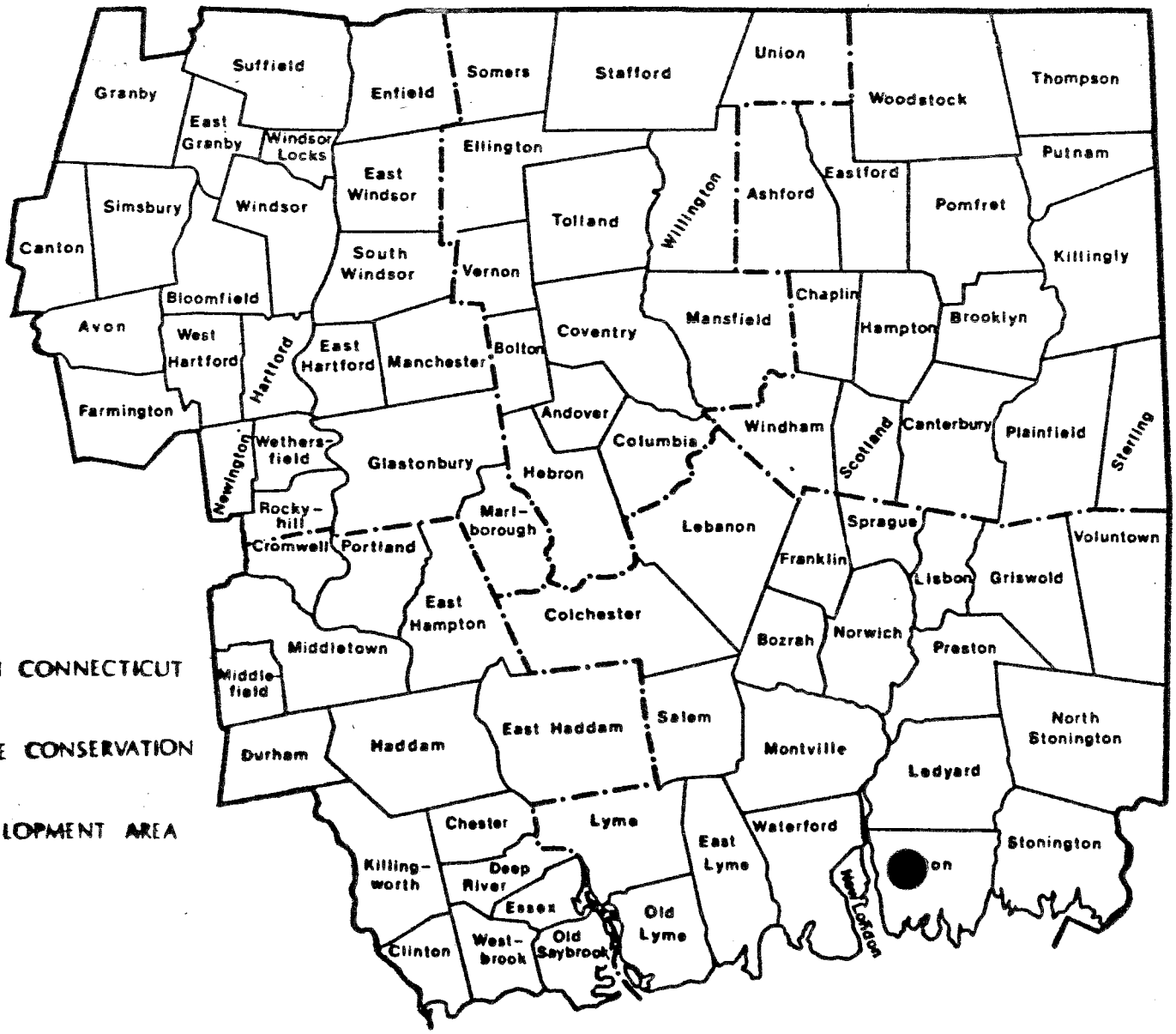


ENVIRONMENTAL REVIEW TEAM
PO BOX 198
BROOKLYN, CONNECTICUT 06234

Site Location

GOLD STAR TRIANGLE
GROTON, CONNECTICUT





EASTERN CONNECTICUT

RESOURCE CONSERVATION

& DEVELOPMENT AREA

ENVIRONMENTAL REVIEW TEAM REPORT

ON THE

GOLD STAR TRIANGLE

GROTON, CONNECTICUT

This report is an outgrowth of a request from the Groton Planning Department to the New London County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource Conservation and Development (RC&D) Area Executive Committee for their consideration and approval. 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 Thursday, May 7, 1987. Team members participating on this review included:

Gerry Amt	--Regional Planner - Southeast Connecticut Regional Planning Agency
Joseph Pulaski	--Principal Environmental Analyst - DEP Noise Control
Elizabeth Rogers	--Soil Conservationist - U.S.D.A., Soil Conservation Service
Harry Siebert	--Transportation Planner - ConnDOT, Bureau of Planning
Elaine Sych	--ERT Coordinator - Eastern Connecticut RC&D Area
William Warzecha	--Geologist - 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, location maps, a topographic map and a soils map. During the field review the team members were given zoning maps and information concerning proposed developments for the area. The Team met with, and were accompanied by members of the Groton Planning Department, the landowner/developer and his engineer. 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 and conclusions 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 Committee hopes you will find this report of value and assistance in making your decisions on this area known as the Gold Star Triangle.

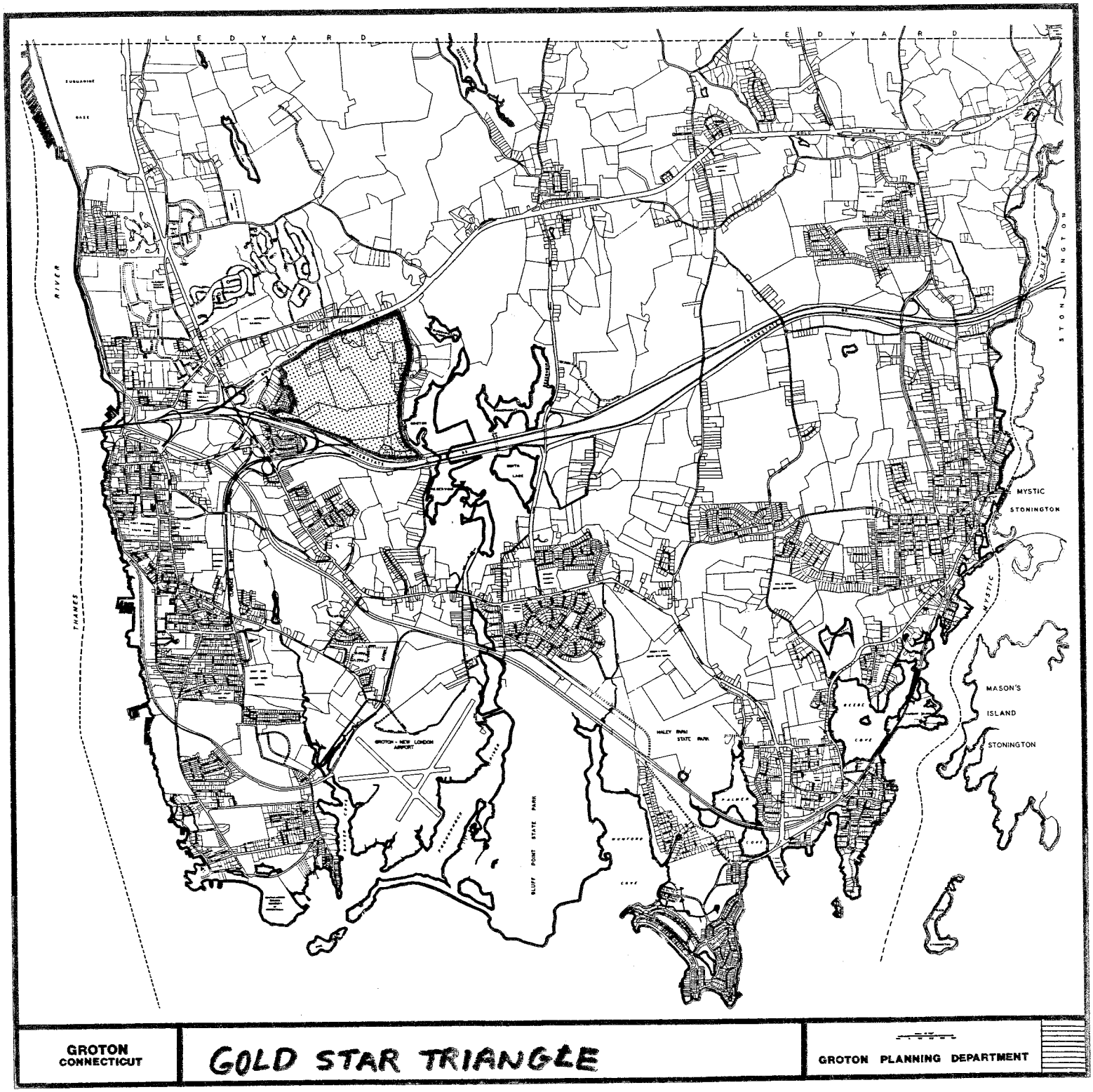
If you require any additional information, please contact:

Elaine A. Sych
ERT Coordinator
Eastern Connecticut RC&D Area
P. O. Box 198
Brooklyn, CT 06234
(203) 774-1253

TABLE OF CONTENTS

TABLE OF MAPS

LOCATION


L E D Y A R D
L E D Y A R D
SUBMARINE BASE
THAMES RIVER
INTERSTATE 95
ROUTE 1
MYSTIC
STONINGTON
MYSTIC
STONINGTON
MASON'S
ISLAND
STONINGTON
GROTON - NEW LONDON AIRPORT
HALEY FARM STATE PARK
BLUFF POINT STATE PARK
GROTON
CONNECTICUT
GOLD STAR TRIANGLE
GROTON PLANNING DEPARTMENT

1. INTRODUCTION

The study area is located in a part of the Town and the region that has attracted considerable growth and development for both residential and commercial purposes during the past several years. It is especially attractive because of its proximity to I-95 and several major state highways, the convenience of nearby shopping and employment centers, and because of the availability of public water and sewerage.

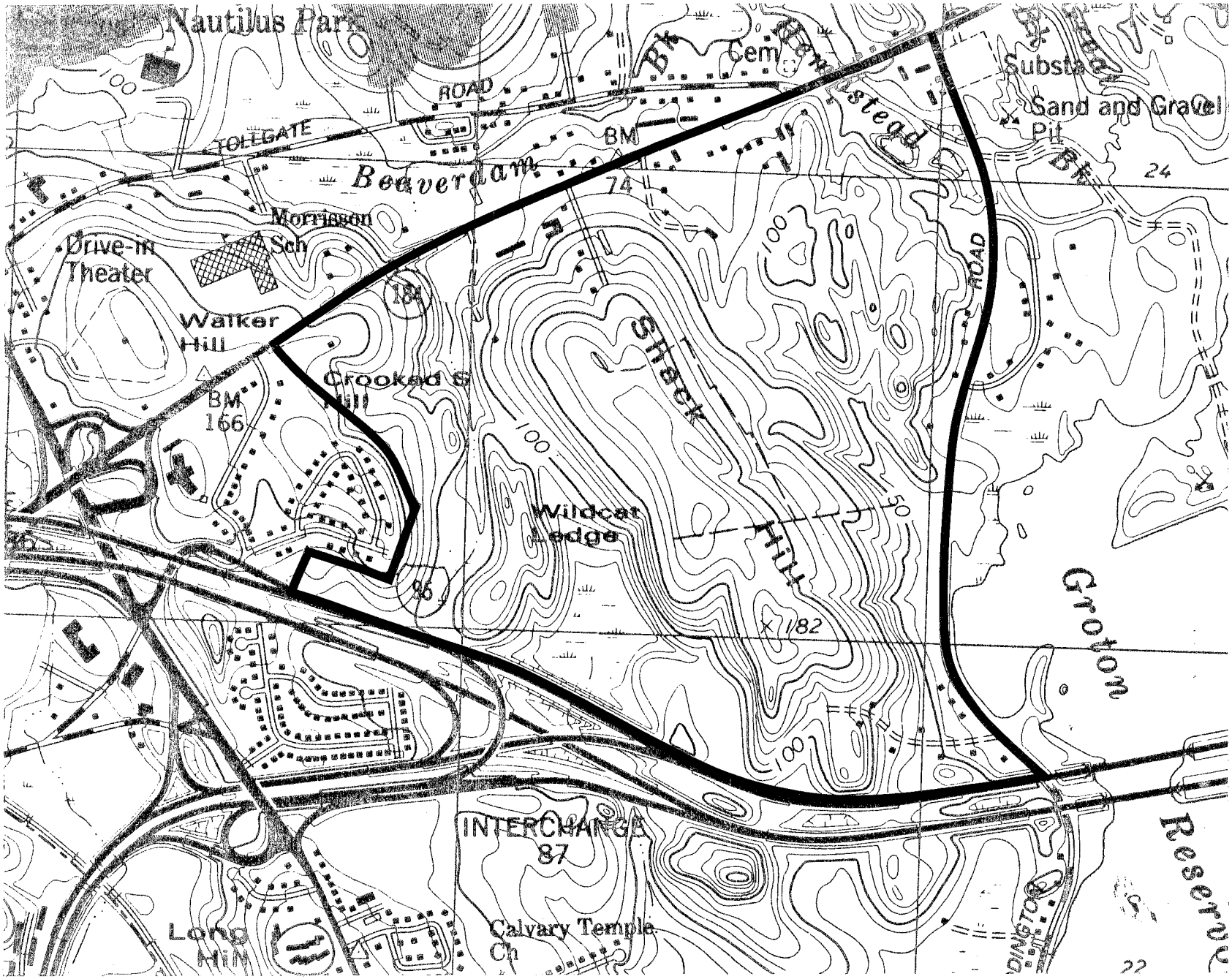
The southern boundary of the triangular study area is I-95, the primary coastal highway along the Atlantic coast. Through this area, the interstate highway has three travel lanes in each direction and the average daily traffic totals more than 50,000 vehicles. Bordering the area to the north is Route 184, a two-lane arterial highway which is the only east-west road extending through Groton to the north of I-95. Traffic on this highway increased 25% during the decade of the 1970's, but in just the first five (5) years of the 1980's, it increased by 27% to 11,700 vehicles per day. The study area's eastern edge is Buddington Road, a well-aligned town road which connects Route 184 and Route 1. Traffic volumes for this road are not available.

The study area has a complex topography which probably accounts in part for the lack of complete development to date. However, the accessible road frontage bordering the area has been heavily developed, with single-family residential uses along Buddington Road, and with commercial, offices, and multi-family residential uses along Route 184. The interior of the triangle is largely undeveloped but a major townhouse development is presently under construction in the center of the area. The basic purpose of this report is to suggest what the most appropriate use or uses might be for the remaining undeveloped land in the triangle, and to comment upon some of the proposed or suggested developments for this area. The 1986 ERT Report for "Ledgewood Commons" should also be referenced for additional information and comments concerning this area.

2. TOPOGRAPHY AND SETTING

The study area, known as the "Gold Star Triangle" consists of about 300 acres in westcentral Groton. It is bounded on the north by Route 184, Buddington Road on the east, I-95 on the south and privately owned land that fronts on Pamela Avenue on the west.

Major topographic features in the study area include Shack Hill in the central part, Wildcat Ledge in the westcentral part, and Crooked S Hill in the western part. Hempstead Brook, a feeder stream to Groton Reservoir, flows in a southeast direction through the northeast corner of the study area. It should be pointed out that an ERT report for the Shack



TOPOGRAPHY

Scale 1" = 1000'

Study Site

Hill section of this study area was published in June 1986 (Ledgewood Commons). Interested persons should reference this report, since the geology of the Shack Hill site generally reflects the overall study area.

With the exception of current development activity along Route 184 to the north, the study area consists largely of undeveloped wooded land.

The topography is strongly influenced by the underlying bedrock. This type of geologic setting produces slopes that range between moderate to steep with intermingled as well as continuous rock ledges. The most rugged terrain is present at Wildcat Ledge and along the eastern and western slopes of Shack Hill. Some flat to gentle slopes are also found throughout the study area.

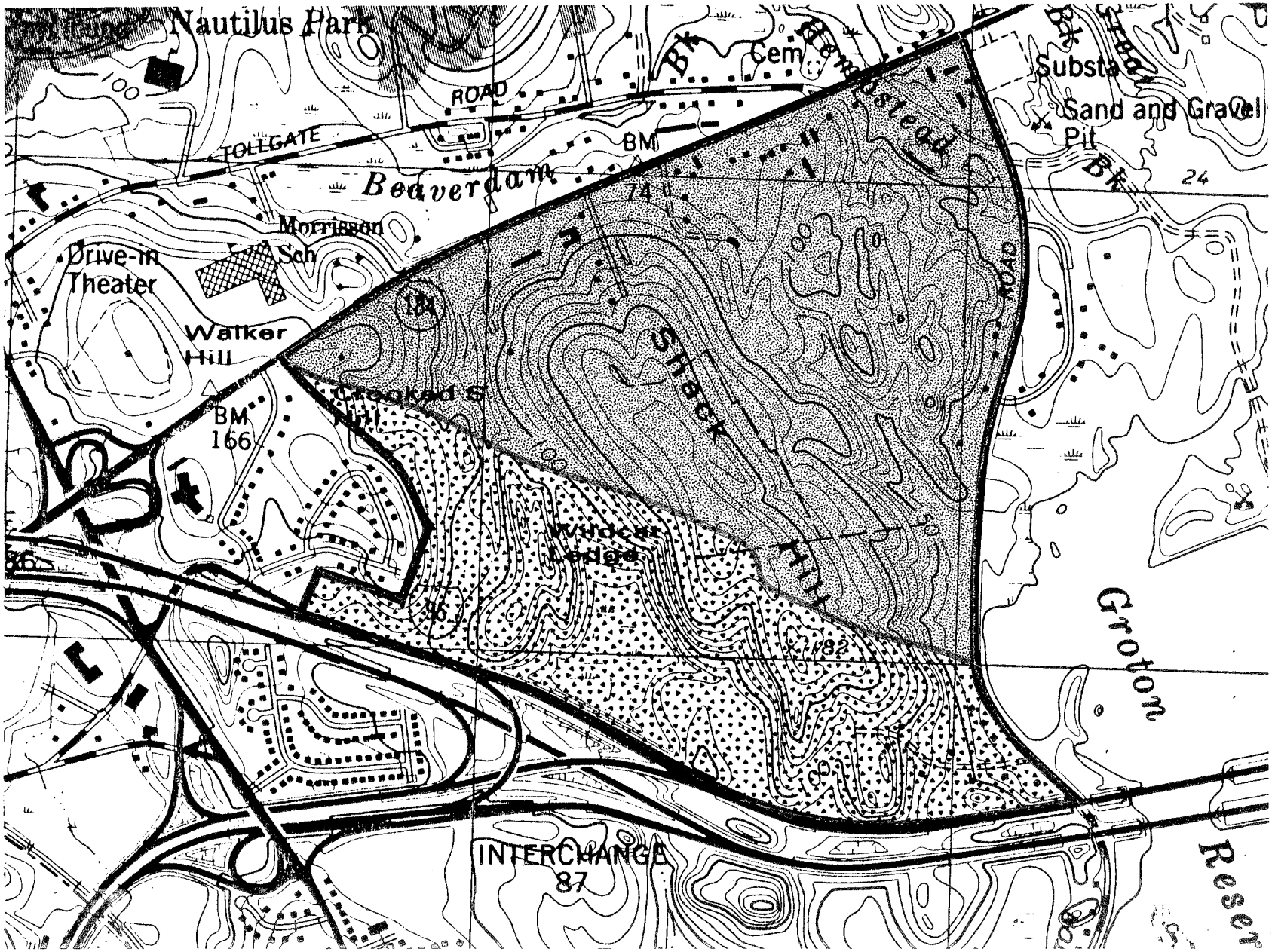
The maximum elevation, about 190 feet above mean sea level is found at the top of Shack Hill in the central parts. The minimum elevation, about 20 feet above mean sea level is found in the northeast corner of the study area.

3. GEOLOGY

The site is located entirely within the New London topographic quadrangle. A bedrock geologic map (GQ-575) and a surficial geologic map (GQ-176) by Richard Goldsmith have been produced for the quadrangle by the U. S. Geological Survey.

The underlying bedrock, which is at or near ground surface throughout most of the study area has strongly influenced the shape of the topography. Goldsmith identifies two northwest-southeast trending belts of crystalline, metamorphic rock beneath the site; Plainfield Formation and a biotite granite gneiss. The northern half of the study is comprised mainly of the Plainfield Formation. These rocks are described as interlayered, thinly bedded quartzite, mica schist and dark gray gneiss. Major minerals in these rocks include biotite, feldspar, quartz, garnet, calc-silicate minerals and sillimanite. The biotite grantic gneiss which underlies the southern half is described as light pink to gray, fine to medium grained and is well foliated. Major minerals in this rock include quartz, microcline, biotite and iron-oxides. Locally it contains muscovite and garnet. The granite gneisses outcrop extensively throughout the southern parts of the site. Continuous outcrops are visible in this area as well as along Buddington Road.

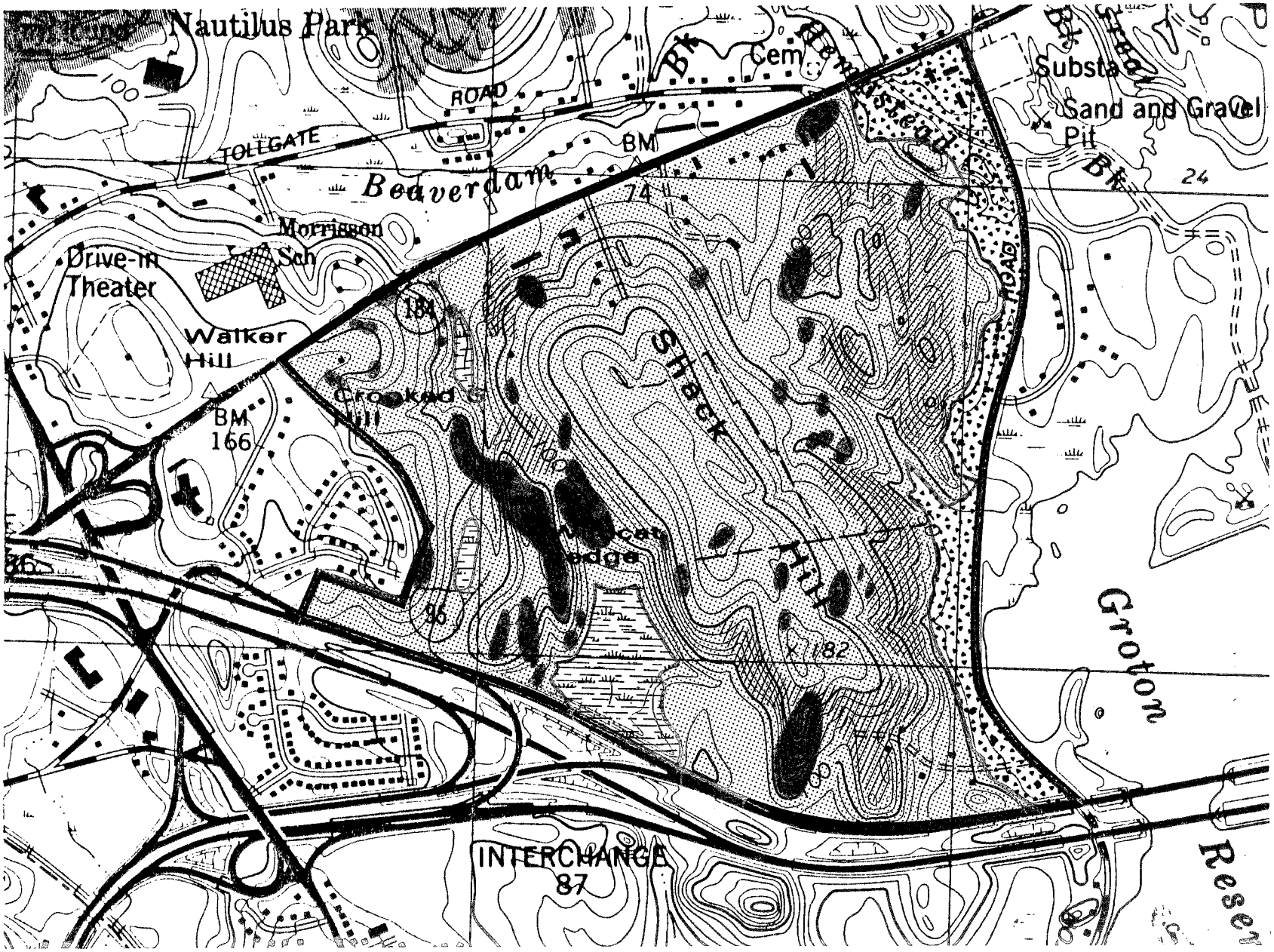
All of the rock types mentioned above, gneisses, quartzite and schists are metamorphic rocks; that is, rocks which have been geologically altered due to great heat and pressure deep within the earth's crust.



BEDROCK GEOLOGY

Plainfield Formation Biotite Granite Gneiss

Scale 1" = 1000' Study Site



SURFICIAL GEOLOGY

Till | Stratified Drift | Swamp Deposits | Outcrop Exposures | Areas where bedrock is at or near ground surface

Scale 1" = 1000'

Study Site

The layering of platy or flaky minerals in the rock units described above dip moderately to the north/northeast.

The Connecticut Geological and Natural History Survey Map GQ-176 by Richard Goldsmith indicates that nearly all of the study area is covered by a relatively thin layer of till. Till is a glacial sediment that was deposited directly from an ice mass. It consists of a nonsorted, generally structureless mixture of sand, silt, clay gravel and angular to rounded boulders. Based on soil mapping data, the till covering the site is generally sandy, very stony and moderately loose. At depths greater than 5 feet, a finer-grained, less stony and more compact zone may be encountered.

The eastern part of the study area along Buddington Road is covered by well sorted to poorly sorted sand, gravel and silt. These materials were deposited by meltwater streams flowing from wasting masses of glacial ice. The deposits are generally layered, but in many places the layering is contorted or disrupted. These features indicate that the sediments were built up against the ice and that they collapsed when the ice melted away.

Overlying till deposits in the eastern portion of the study area are post-glacial sediments called swamp deposits. These deposits consist of partly decomposed organic material mixed or interbedded with silt and sand.

Even with the availability of public water and sewer, approximately three fourths (3/4) of the study area is poorly suited for development. The presence of rocky or shallow to bedrock conditions, particularly near Wildcat Ledge, in the southern parts and along Buddington Road will be the major geologic hindrance. Also, steeply sloping areas are found within the areas mentioned above. A sound development in these areas would undoubtedly require a tremendous capital outlay for land preparation. The relatively shallow depth to bedrock throughout most of the study area will require significant blasting. As mentioned in the Ledgewood Commons ERT (June 1986) blasting can have negative impacts on water quality especially if not conducted under the strict supervision of persons experienced with blasting techniques. Also, there may be damage to surrounding structures, foundations, and blasting may change the yields of local bedrock wells. It is suggested that interested persons read the Ledgewood Commons June 1986 ERT report regarding the impacts of blasting bedrock in the area.

The remainder of the land appears not to be so shallow to bedrock, nor as steep. These areas obviously have the greatest potential for single family residential housing and would require the least amount of land preparation. The area presently desired for office building development in the western part also appears to be favorable for development purposes. Wetland areas in the study area hold low potential for development purposes and should be avoided completely, if possible.

4. HYDROLOGY

It should be pointed out that the hydrologic conditions present in the study area have been well described in the Ledgewood Commons ERT (1986). The report discusses the general suitability of the site for development and the impacts of development on water quality particularly on the Groton Reservoirs. Also, it discusses the impacts of development on local hydrology, i.e., peak flows, streambank erosion, etc. In order not to repeat this information, it is suggested that interested persons read the Ledgewood Common ERT report, particularly the Hydrology and Geologic Development Concerns sections.

Town officials made available to Team members newly adopted regulations concerning a water resource protection district. Since ± 75% of the study area lies within this district, strict adherence of the new regulations is imperative for all new development to ensure protection of the Groton Reservoir.

Rock excavation in the "Water Resource Protection District" must be accomplished with care to avoid changes in overall water quality in the District. The rock should be examined to insure that no minerals are present that would alter the surface and groundwater quality upon continued exposure to the atmosphere.

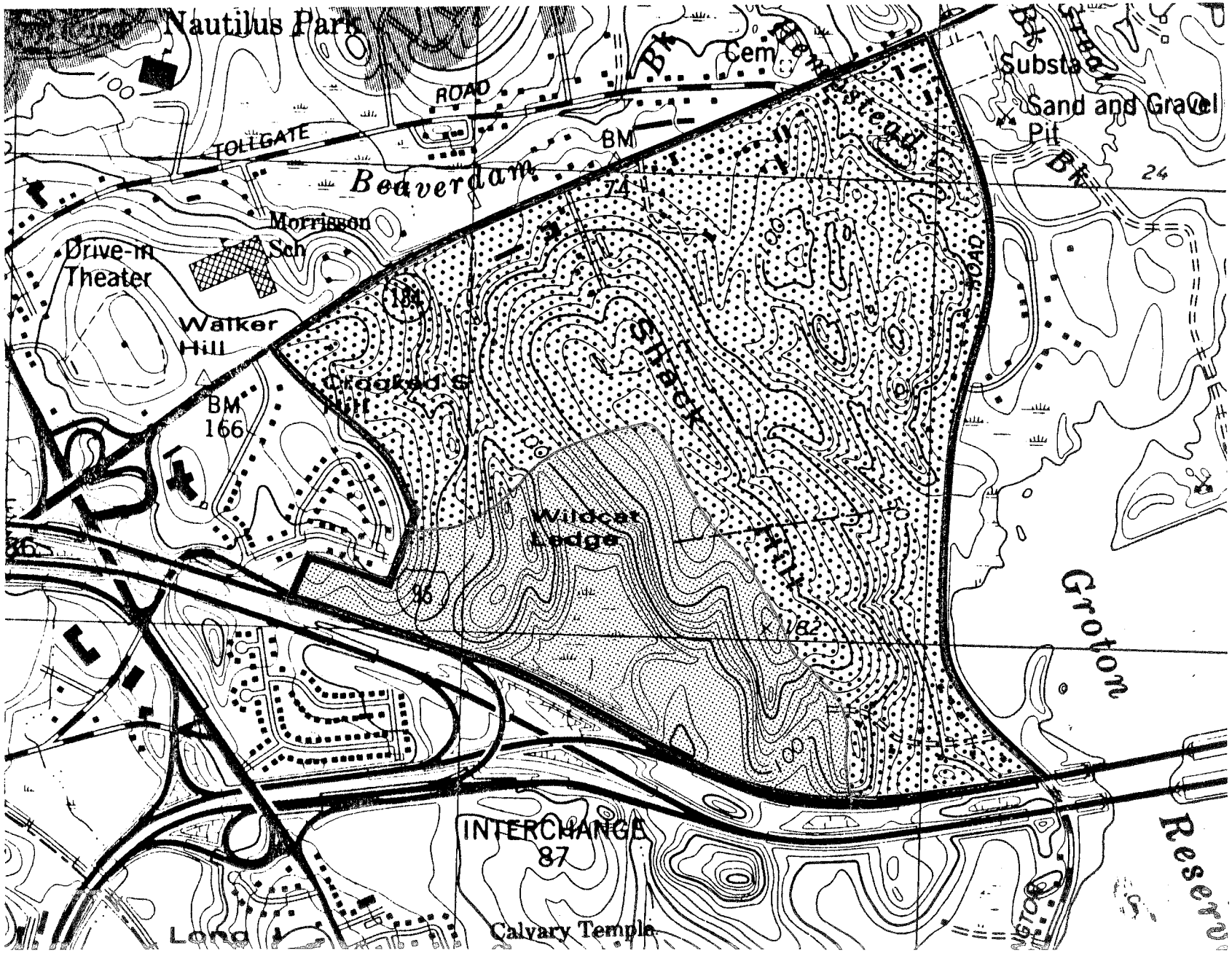
Surface water drainage on the site should be contained and transferred away from the "Proposed Water Resource Protection District" to avoid contamination of surface and groundwater.

5. SOILS

Erosion and Sediment Control Plans should be submitted with any site plans. It is recommended that they be prepared and include the following information:

A. A narrative describing:

1. the development
2. the schedule for grading and construction activities including:
    a. start and completion dates
    b. sequence of grading and construction activities
    c. sequence for installation and/or application of soil erosion and sediment control measures
    d. sequence for final stabilization of the project site



WATERSHED BOUNDARY

Portion of study area that drains to Groton Reservoir

Portion of study area that drains to Bakers Cove

Scale 1" = 1000'

Study Site

3. the design criteria for proposed soil erosion and sediment control measures and storm water management facilities
4. the construction details for proposed soil erosion and sediment control measures and storm water management facilities
5. the installation and/or application procedures for proposed soil erosion and sediment control measures and storm water management facilities
6. the operations and maintenance program for proposed soil and erosion and sediment control measures and storm water management facilities

B. A site plan map at a sufficient scale to show:

1. the location of the proposed development and adjacent properties
2. the existing and proposed topography including soil types, wetlands, water courses and water bodies
3. the existing structures on the project, if any
4. the proposed area alterations including cleared, excavated, filled or graded areas and proposed structures, utilities, roads and, if applicable, new property lines

The Soil Conservation Service working through the New London County Soil and Water Conservation District is available to review the Erosion and Sediment Control Plan at the Town's request. (887-4163)

PRINCIPAL LIMITATIONS AND RATINGS
FOR BUILDING SITE DEVELOPMENT

Soil name and map symbol	Dwellings with basement	Dwellings without basement	Local roads and streets	Lawns and landscaping
#AfA - Agawam	Slight	Slight	Slight	Slight
#AfB - Agawam	Slight	Slight	Slight	Slight
CcB - Canton	Slight	Slight	Slight	Moderate: large stones
Charlton	Slight	Slight	Slight	Moderate: large stones
CdC - Canton	Moderate: slope	Moderate:slope	Moderate:slope	Moderate: slope,large stones
Charlton	Moderate: slope	Moderate:slope	Moderate:slope	Moderate: slope,large stones
CdD - Canton	Severe:slope	Severe:slope	Severe:slope	Severe:slope
Charlton	Severe:slope	Severe:slope	Severe:slope	Severe:slope
*Ce - Carlisle	Severe:ponding low strength	Severe:ponding low strength	Severe:ponding low strength, frost action	Severe:ponding,excess humus

PRINCIPAL LIMITATIONS AND RATINGS
FOR BUILDING SITE DEVELOPMENT
(continued)

Soil name and map symbol	Dwellings with basement	Dwellings without basement	Local roads and streets	Lawns and landscaping
CrC - Charlton	Moderate: slope	Moderate:slope	Moderate:slope	Moderate: slope,large stones
Hollis	Severe:depth to rock	Severe:depth to rock	Severe:depth to rock	Severe:thin layer
CrD - Charlton	Severe:slope	Severe:slope	Severe:slope	Severe:slope
Hollis	Severe:slope, depth to rock	Severe:slope,depth to rock	Severe:slope, depth to rock	Severe:slope thin layer
#HcA - Haven	Slight	Slight	Moderate:frost action	Slight
#HcB - Haven	Slight	Slight	Moderate:frost action	Slight
HrC - Hollis	Severe:depth to rock	Severe:depth to rock	Severe:depth to rock	Severe:thin layer
Charlton	Moderate: slope	Moderate:slope	Moderate:slope	Moderate: slope,large stones
Rock Outcrop				
HrD - Hollis	Severe:slope, depth to rock	Severe:slope, depth to rock	Severe:slope, depth to rock	Severe:slope thin layer
Charlton	Severe:slope	Severe:slope	Severe:slope	Severe:slope
Rock Outcrop				
*Rn -				
Ridgebury	Severe: wetness	Severe:wetness	Severe:wetness, frost action	Severe: wetness
Leicester	Severe: wetness	Severe:wetness	Severe:wetness, frost action	Severe: wetness
Whitman	Severe: ponding	Severe:ponding	Severe:frost action,ponding	Severe: ponding
Ud -				
Udorthents				
Urban land	REQUIRES ON-SITE EVALUATION			

* Designated Inland Wetland Soil by Public Act 155

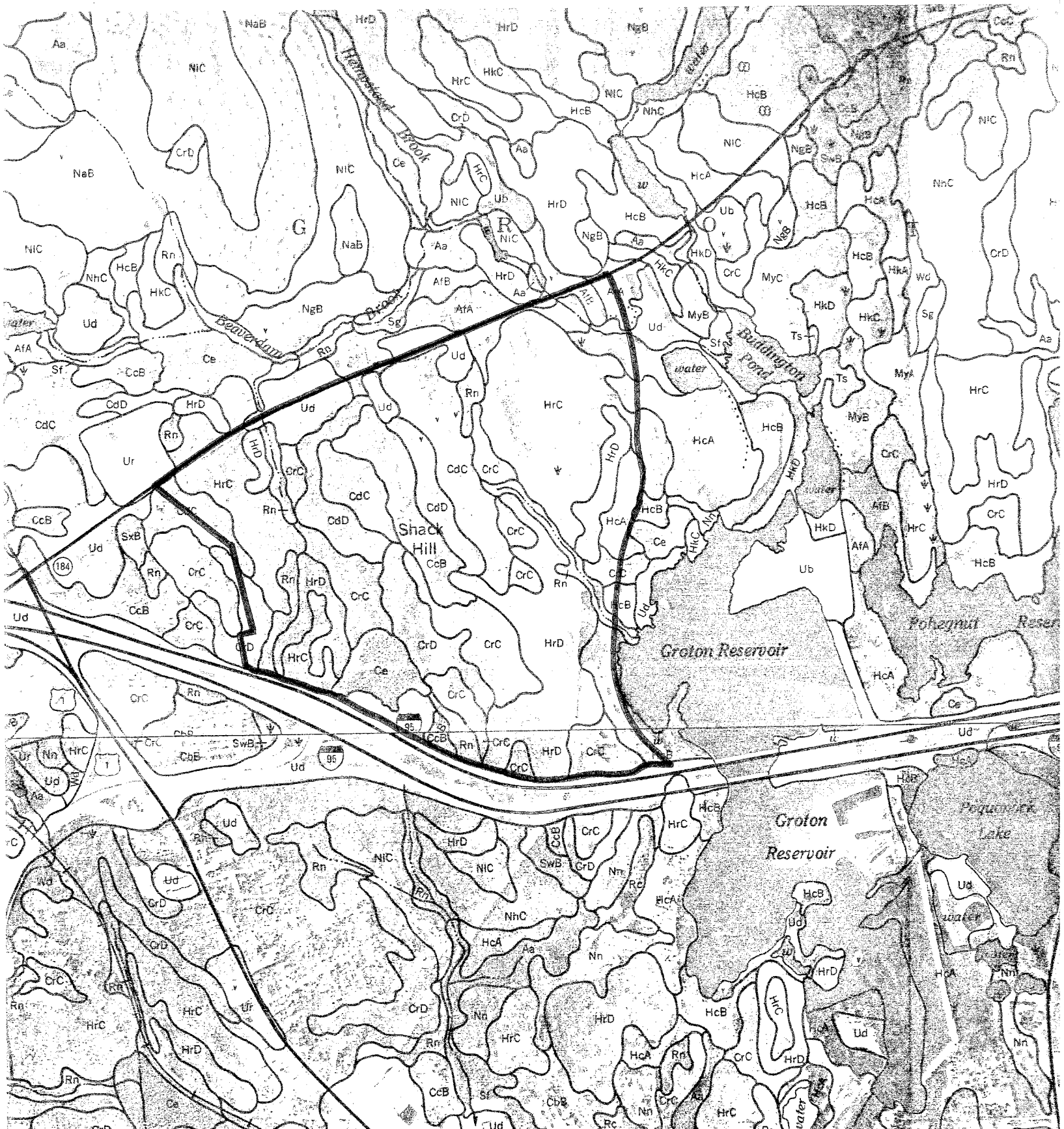
Prime Farmland Soil

United States Department of Agriculture

Soil Conservation Service

New London County USDA-SCS
562 New London Turnpike
Norwich, CT 06360
887-4163

Scale 1" = 1320' Soil Survey Sheets #73 and #81



AfA - Agawam fine sandy loam, 0-3 percent slopes

This nearly level, well-drained soil is on stream terraces and outwash plains.

Typically, this Agawam soil has a dark brown, fine sandy loam surface layer 9 inches thick. The subsoil is dark yellowish-brown fine sandy loam 15 inches thick. The substratum is light olive brown sand and very gravelly coarse sand to a depth of 60 inches or more.

Permeability of the Agawam soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is slow. This Agawam soil warms up and dries out rapidly in the spring. This soil is in capability class 1.

AfB - Agawam fine sandy loam, 3 to 8 percent slopes

This gently sloping, well drained soil is on stream terraces and outwash plains. Permiability of the Agawam soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is medium. This soil warms up and dries out rapidly in the spring. Unless limed, the soil is strongly acid or medium acid. This soil is well suited to cultivated crops. This soil is in capability subclass IIe.

CcB - Canton & Charlton very stony fine sandy loams, 3-8 percent slope

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.

Typically, the Canton soil has a black, fine sandy loam surface layer 1 inch thick. The subsoil is dark yellowish-brown, fine sandy loam and sandy loam 23 inches thick. The substratum is grayish-brown gravelly sand to a depth of 60 inches or more.

Typically, the Charlton soil has a very dark grayish-brown, fine sandy loam surface layer 3 inches thick. The subsoil is dark yellowish-brown, yellowish-brown and light olive brown fine sandy loam 26 inches thick. The substratum is grayish-brown fine sandy loam to a depth of 60 inches or more.

Permeability in the Canton soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is medium. The soil warms up and dries out rapidly in the spring.

Permeability of Charlton soil is moderate to moderately rapid. The available water capacity is moderate. Runoff is medium. This soil warms up and dries out rapidly in the spring.

These soils are in capability subclass VIs.

CdC-Canton and Charlton extremely stony fine sandy loams 3 to 15 percent slopes

These gently sloping and sloping, well drained soils are on glacial till upland hills, plains, and ridges. Stones and boulders cover 8 to 25 percent of the surface. These soils were mapped together because there are no major differences in use and management. Permeability of the Canton soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is medium or rapid. The Canton soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

Permeability of the Charlton soil is moderate or moderately rapid. The available water capacity is moderate. Runoff is medium or rapid. The Charlton soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

These soils are not suited to cultivated crops. Stones and boulders make the use of farming equipment impractical. These soils are in capability subclass VIIs.

CdD-Canton and Charlton extremely stony fine sandy loams, 15 to 35 percent slopes

These moderately steep to steep, well drained soils are on glacial till upland hills, plains, and ridges. Stones and boulders cover 8 to 25 percent of the surface. Permeability of the Canton soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is very rapid. The Canton soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

Permeability of the Charlton soil is moderate or moderately rapid. The available water capacity is moderate. Runoff is very rapid. The Charlton soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

These soils are not suited tocultivated crops. Stones and boulders make the use of farm equipment impractical. The hazard of erosion is severe. These soils are in capability subclass VIIs.

Ce-Carlisle muck

This nearly level, very poorly drained soil is in pockets and depressions of flood plains, stream terraces, outwash plains, and glacial till uplands. Slopes range from 0 to 2 percent. The Carlisle soil has a high water table near or above the surface for most of the year. Permeability is moderately rapid. The available water capacity is high. Runoff is very slow. The soil is strongly acid through slightly acid. This soil is not suited to cultivated crops because of wetness. This soil is in capability subclass VIw.

CrC-Charlton-Hollis fine sandy loams, very rocky, 3 to 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 up to 10 percent of the surface. Stones and boulders cover 1 to 8 percent of the surface. The soils of this complex are so intermingled on the landscape that it was not practical to separate them in mapping at the scale used. Permeability of the Charlton soil is moderate or moderately rapid. The available water capacity is moderate. Runoff is medium or rapid. Charlton soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

Permeability of the Hollis soil is moderate or moderately rapid above the bedrock. The available water capacity is low. Runoff is medium or rapid. Hollis soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

These soils are not suited to cultivated crops. Stoniness and rock outcrops generally make the use of farming equipment impractical. The Hollis soil has a shallow rooting depth and is droughtly. The hazard of erosion is moderate to severe. These soils are in capability subclass VIs.

CrD-Charlton-Hollis fine sandy loams, very rocky 15 to 45 percent slopes

This moderatly steep to steep 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 to 8 percent of the surface. Permeability of the Charlton soil is moderate or moderately rapid. The available water capacity is moderate. Runoff is rapid or very rapid. Charlton soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

Permeability of the Hollis soil is moderate or moderately rapid above the bedrock. The available water capacity is low. Runoff is rapid or very rapid. Hollis soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

These soils are not suited to cultivated crops. Stoniness and rock outcrops make the use of farming equipment impractical. The Hollis soil has a shallow rooting depth and is droughty. These soils are in capability subclass VIIs.

HcA-Haven silt loam, 0 to 3 percent slopes

This nearly level, well drained soil is on stream terraces and outwash plains. Permeability of the Haven soil is moderate in the surface layer and subsoil and very rapid in the substratum. The available water capacity is high. Runoff is slow. Haven soil warms up and dries out rapidly in the spring. Unless limed, it is strongly acid or medium acid. This soil is well suited to cultivated crops. This soil is capability class I.

HcB-Haven silt loam, 3 to 8 percent slopes

This gently sloping, well drained soil is on stream terraces and outwash plains. Permeability of the Haven soil is moderate in the surface layer and subsoil and very rapid in the substratum. The available water capacity is high. Runoff is medium. Haven soil warms up and dries out rapidly in the spring. Unless limed, it is strongly acid or medium acid. This soil is well suited to cultivated crops. This soil is in capability subclass IIe.

HrC-Hollis-Charlton-Rock outcrop complex, 3 to 15 percent slopes

This gently sloping to sloping complex consists of somewhat excessively drained and well drained soils and Rock outcrop on glacial till uplands. Stones and boulders cover 1 to 8 percent of the surface. The soils and Rock outcrop in this complex are so intermingled on the landscape that it was not practical to separate them in mapping at the scale used.

Permeability of the Hollis soil is moderate or moderately rapid above the bedrock. The available water capacity is low. Runoff is medium or rapid. Hollis soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

Permeability of the Charlton soil is moderate or moderately rapid. The available water capacity is moderate. Runoff is medium or rapid. Charlton soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

These soils are not suited to cultivated crops. Stoniness and the Rock outcrop make the use of farming equipment impractical. The hazard of erosion is moderate to severe. These soils are in capability subclass VIIs

HrD-Hollis-Charlton-Rock outcrop complex, 15 to 45 percent slopes

This moderately steep to very steep complex consists of somewhat excessively drained and well drained soils and Rock outcrop on galcial till uplands. Stones and boulders cover 1 to 8 percent of the surface. These soils and Rock outcrop in this complex are so intermingled on the landscape that it was not practical to separate them in mapping at the scale used.

Permeability of the Hollis soil is moderate or moderately rapid above the bedrock. The available water capacity is low. Runoff is rapid or very rapid. Hollis soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

Permeability of the Charlton soil is moderate or moderately rapid. The available water capacity is moderate. Runoff is rapid or very rapid. Charlton soil warms up and dries out rapidly in the spring. It is strongly acid or medium acid.

These soils in this complex are not suited to cultivated crops.

Stoniness and the Rock outcrop make the use of farming equipment impractical. The hazard of erosion is severe. These soils in this complex are in capability subclass VIIs.

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 to 25 percent of the surface. These soils were mapped together because there are no major differences in use and management. The Ridgebury soil has a seasonal high water table at a depth of about 6 inches. Permeability is moderate or moderately rapid in the surface layer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is very slow or slow. Ridgebury soil warms up and dries out slowly in the spring. It is strongly acid through slightly acid.

The Leicester soil has a seasonal high water table at a depth of about 6 inches. Permeability is moderate or moderately rapid. The available water capacity is moderate. Runoff is very slow or slow. Leicester soil warms up and dries out slowly in the spring. It is very strongly acid through medium acid.

The Whitman soil has a high water table at or near the surface for most of the year. Permeability is moderate or moderately rapid in the surfacelayer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is very slow, or the soil is ponded. Whitman soil warms up and dries out very slowly. It is very strongly acid through slightly acid.

These soils are not suited to cultivated crops. Stoniness makes the use of farming equipment impractical. These soils are in capability subclass VIIs.

Ud - Udorthents & Urban Land Complex

This complex consists of excessively drained to moderately well drained to moderately well drained soils that have been disturbed by cutting or filling and areas that are covered by buildings or pavement.

Most areas were cut or filled in order to smooth sites for community developments, recreational facilities, and roads. This complex requires onsite investigation and evaluation for most uses.

6. PLANNING PERSPECTIVES

The present zoning of the study area is RU-20 in the undeveloped interior, which allows single-family residences on half-acre lots. Commercial (CB-15) zoning extends along Route 184 for a variable depth of 500 to 800 feet. The western end of the triangle contains a developed subdivision with single-family dwellings on small lots, the present zoning of which is R-12, requiring 12,000 square feet per lot. The parcel on the center of the triangle where the townhouses are being built is zoned THR, which allows townhouses at a density of 6,500 square feet per dwelling unit.

Developing this area consistent with the present zoning would require extensive altering of the natural landscape for road construction and the preparation of house sites. The environmental impacts would be substantial. The resulting single-family homes on half-acre lots would be somewhat incongruous with the adjacent six-lane expressway, the townhouses in the middle of the triangle and the businesses along Route 184. Detached single-family residences would be more suited to an area further away from the noise of traffic on I-95 and the intensity of activities in this part of the community.

A more appropriate zoning designation might be one which permits development that does not require major alteration of the natural terrain and which maximized the use of the more readily buildable parts of the triangle. This may be achieved with a multi-family or townhouse zone. The overall density could remain low to reduce the amount of area needed for structures, but the allowed units would be confined to the least possible number of locations would be selected according to how little their construction would disrupt the terrain.

The proposed road system that has been approved to serve the Winding Hollow Apartments is well located to serve as a basis for providing access throughout the triangle. A southerly extension of Antonio Road, possibly connecting with an improved Roberts Road, would provide access to the southern part of the triangle. A new road connection between Antonio Road and Buddington Road would provide access to the eastern part of the triangle and offer an alternative road outlet for vehicles traveling from the triangle toward the southern part of the town. The western part of the triangle could be accessed by dead-end roads connecting with Winding Hollow Road. This seems to be more desirable than an additional loop road through the entire southern part of the triangle. Steep slopes and wetlands in the south-central part of the triangle would be severely impacted by such a road. However, as the area develops, any opportunity to link Winding Hollow Road with the Pamela Road development should not be overlooked.

7. TRAFFIC CONSIDERATIONS

Previously the owner/owners of a parcel within the 300+ acres submitted an application to the State Traffic Commission (STC) for the proposed residential development "Ledgewood Commons". The traffic study was based on the development of 368 apartments on 44 acres and a certificate was granted by the STC.

The development of the 300+ acres including the 44 acres will have an impact on traffic operations on Route 184 relative to turning movements, peak hour and normal traffic operations. The existing traffic counts 1984 are moderate, 10,700 ADT, and should be factored to include additional development since 1984.

Depending on property ownership of the 300+ acres, an application to the State Traffic Commission would be required. Traffic generated could exceed 5,000 trips per day with peak hour traffic in the order of 750 trips. Sightline and traffic control devices must also be reviewed in light of the increased development.

8. NOISE CONTROL

The area that may be proposed for single-family residential can be expected to receive high traffic noise levels due to its proximity to I-95. It is understood that the Connecticut Department of Transportation measured noise levels in excess of 70 dBA in a residential area immediately to the southwest of the proposed site. Similar levels could be expected at the proposed site.

Mitigating measures could include the construction of a noise barrier to protect the first few rows of homes. To be effective the barrier would need to at least clear the line of sight from the first floor of the residences to a typical trailer truck exhaust stack. On level terrain this is usually 15 feet. Please note that this would not benefit second story locations. In addition this barrier should contain no gaps or openings and should be long enough to prevent noise from "leaking" in around the ends. For the proposed site this could involve a barrier approximately 5,000 feet in length. The effectiveness of the barrier could be adversely affected by topographic conditions such as land that rises in elevation away from the highway and by elevated highway sections. Both of these conditions appear to exist at the proposed site.

Because of the complexities existing at this site, if a noise barrier were to be considered, a detailed study should be undertaken to determine the actual noise abatement that can be expected.

In addition to the construction of a noise barrier another abatement measure that could be considered would be the "soundproofing" of the homes. This involves heavier than normal wall and roof construction, accoustically treated and possible sealing the windows and air conditioning the homes. While reducing the noise in the home this option alone would obviously not improve the noise situation in the yards.

Planting a tree and shrub belt would not have any significant effect on the noise reaching the homes from the highway.

It is understood, that since the homes are being built after the highway, ConnDOT will not fund any noise abatement measures.

In summary, from noise impact perspective, this appears to be a very poor site for residential development. A more acceptable site would be the northwest section of the parcel. In this section, "Shack Hill" would serve as a natural barrier between the homes and I-95.

About The Team

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

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

PURPOSE OF THE TEAM

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

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

REQUESTING A REVIEW

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

For additional information regarding the Environmental Review Team, please contact Elaine A. Sych (774-1253), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, P.O. Box 198, Brooklyn, Connecticut 06234.