

HELIOS CORPORATION SUBDIVISION

SALEM, CONNECTICUT

MARCH 1989

**EASTERN CONNECTICUT
ENVIRONMENTAL
REVIEW TEAM
REPORT**



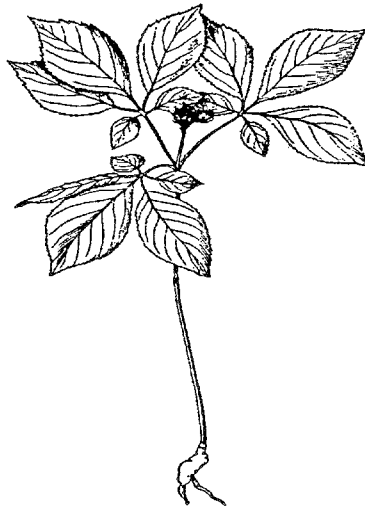
EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

HELIOS CORPORATION SUBDIVISION

SALEM, CONNECTICUT

REVIEW DATE: DECEMBER 15, 1988

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**EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.
EASTERN CONNECTICUT ENVIRONMENTAL REVIEW TEAM
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ENVIRONMENTAL REVIEW TEAM REPORT ON

HELIOS CORPORATION SUBDIVISION SALEM, CONNECTICUT

This report is an outgrowth of a request from the Salem Planning and Zoning 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 Thursday, December 15, 1988. Team members participating on this review included:

Dawn McKay	Zoologist	DEP-Natural Diversity Data Base
Liz Rogers	District Conservationist	USDA-Soil Conservation Service
Richard Serra	Planner	SoutheasternCT Regional Planning Agency
Elaine Sych	ERT Coordinator	Eastern Connecticut RC&D Area
Bill 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, a location map, a topographic map, and a soils map. During the field review the Team members were given subdivision plans and wetland boundaries information. The Team met with, and were accompanied by the Salem Town Planner and the engineer and the surveyor for the applicant. 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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Haddam, Connecticut 06438
(203)345-3977**

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1. SETTING, LAND-USE AND TOPOGRAPHY

The site, about ±174 acres in size, is located in the southeast corner of Salem near Montville. The site abuts Woodchuck Road on the south, a section of Reservoir Road on the east, City of New London property on the northeast, and private, undeveloped lands on the west. Access to it is from Woodchuck Road via Route 85. A loop-road is proposed to serve the 54 residential lots.

The site has historically been used for farming purposes. The interior sections of the site are former farm fields, whose perimeters are surrounded by second-growth hardwood forest. Dilapidated barns, out buildings, stone foundations, and stonewalls verify the site's agricultural past. Where possible, every effort should be made to retain and save the stone walls.

According to town officials, the site is located in a residential zone referred to as RU-A. Residential building lots, which are a minimum of 2 acres in size, are permitted in the zone.

The site is located in the physiographic region of Connecticut known as the Eastern Highlands. The site encompasses the southern end of Maynard Hill. Other major topographical features in the area include Beckwith Hill to the west, Toad Hollow to the northeast and Barnes Reservoir to the east. The entire site is located within the watershed area that serves the City of New London's public water supply reservoirs.

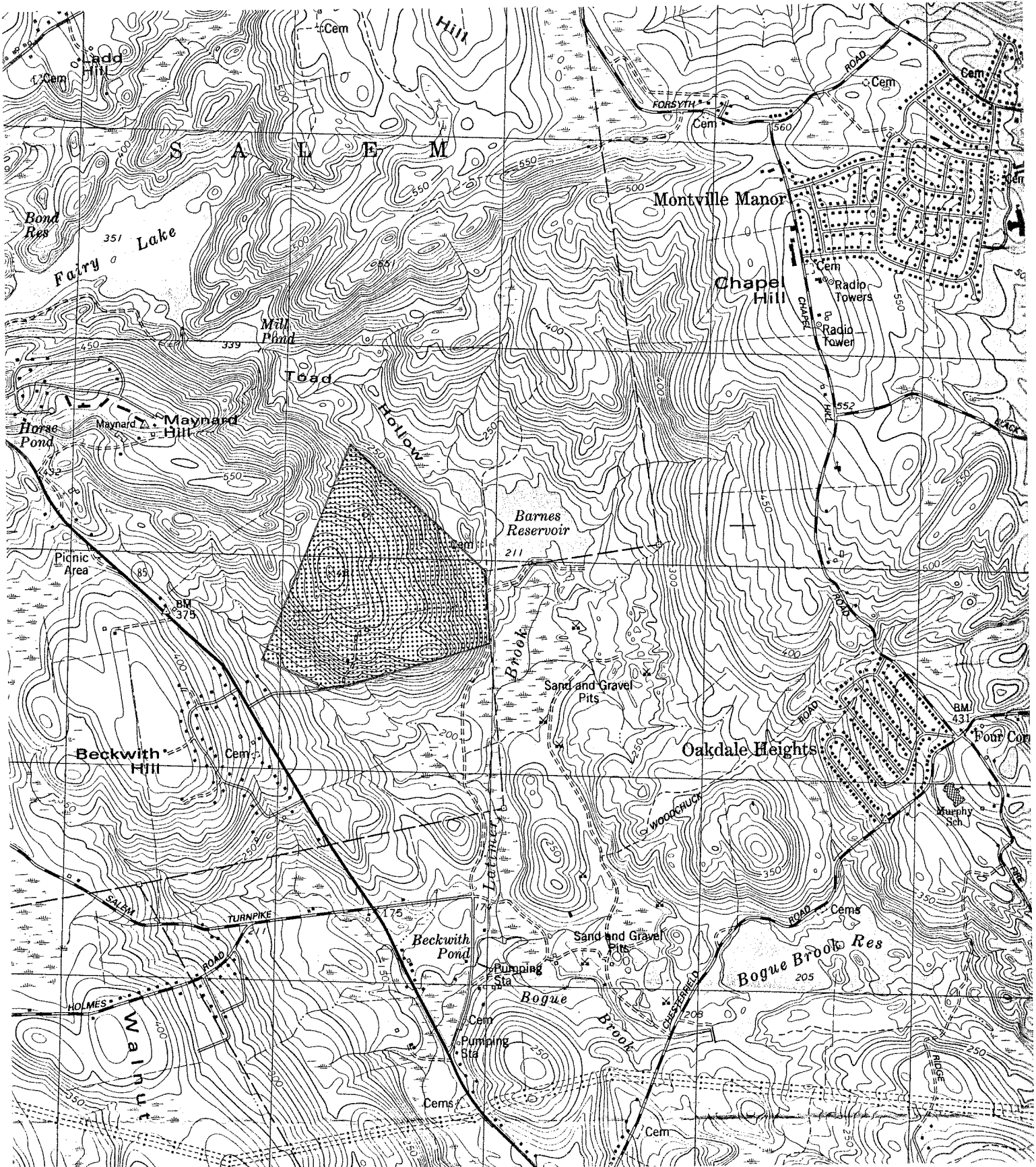
Land surface on the site rises to 461 feet above mean sea level in the northwest corner. The lowest elevation on the site is represented by the 210 foot contour which is coincident with the eastern property boundary (Montville town line). The tableland for the site is characterized by flat to gentle slopes which become increasingly steeper to the east, west and south.

LOCATION

Scale 1" = 2000'




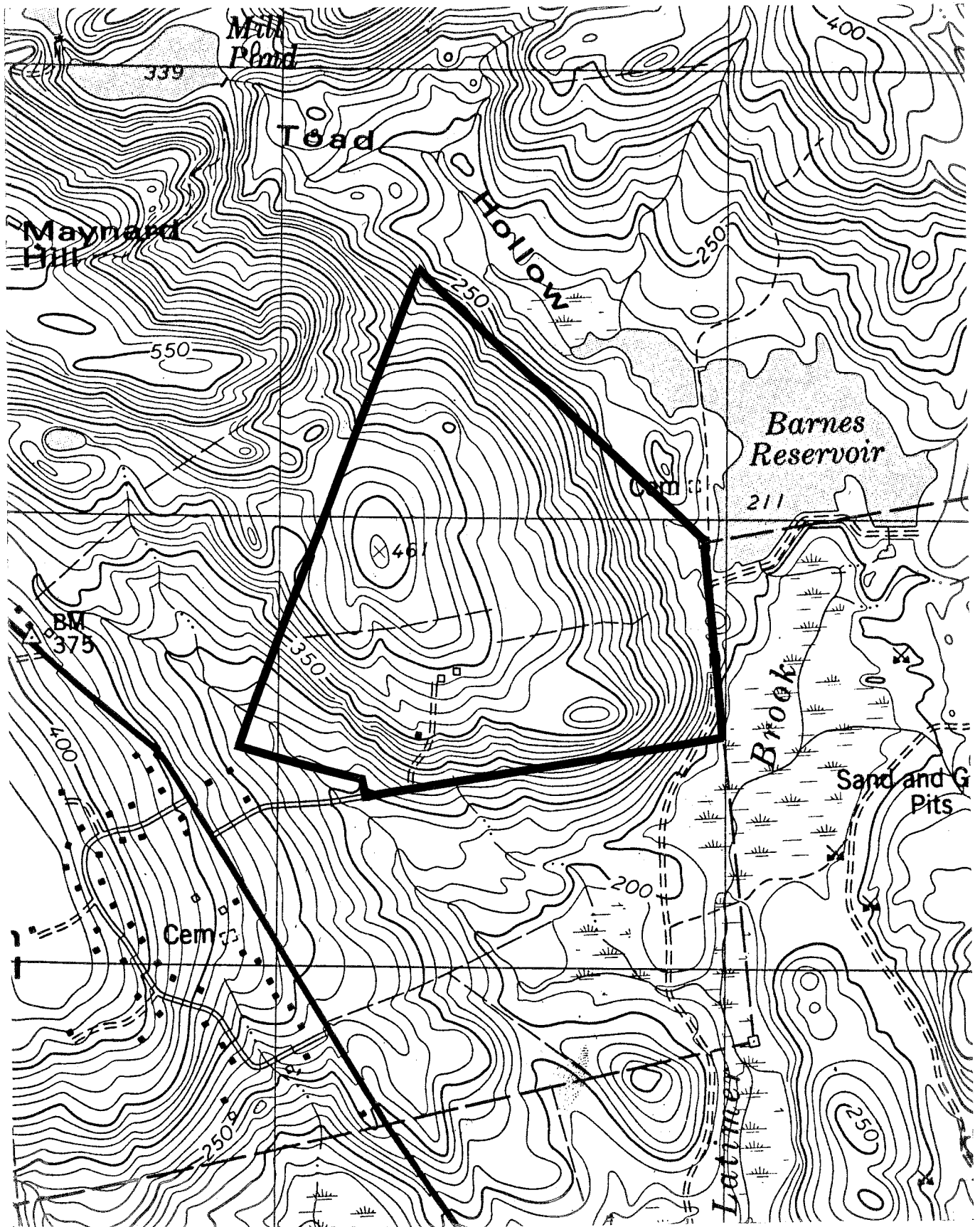
Approximate Location



TOPOGRAPHY

Scale 1" = 1000'

 Approximate Site Boundary



2. BEDROCK AND SURFICIAL GEOLOGY

The entire site lies within the Montville topographical quadrangle. A bedrock geologic map (GQ-609, by R. Goldsmith) and a surficial geologic map (GQ-148, by R. Goldsmith) have been published for the quadrangle by the Connecticut Geological and Natural History Survey.

Except for a small piece of the site in the southwest, Goldsmith has identified the bedrock underlying the site as subunits of the Plainfield Formation. In general, these rocks consist of an interlayered, thinly bedded quartzite, mica schist and dark-gray gneiss. The Plainfield Formation is in contact with a biotite granite gneiss in the southwest corner. The bedrock surface was encountered in numerous deep test holes excavated on the site for subsurface sewage disposal exploration.

Regionally, the site is located rear the Montville Dome, an area of uplifted and folded rocks. Due to the site's close proximity to this area, it is to be expected that the upper few hundred feet of the bedrock is fractured.

The underlying bedrock is the major aquifer (a geologic formation capable of supplying usable amounts of water for drinking purposes) on the site. Most homes in Salem rely on the underlying bedrock as a source of domestic water. Present plans indicates that the proposed subdivision would be served by individual on-site wells drilled into the underlying crystalline, metamorphic rock. The principal areas of bedrock outcrops are scattered around the perimeter of the property.

Except for very small areas in the eastern limits, the site is covered by a glacial sediment called till. The till, which consists of ground-up rock material, was plastered by moving glacial ice on a core of crystalline bedrock.

Two varieties of till exist on the site. Most of the till that covers the site is sandy, stony and loose. On the other hand, the interior sections (east side) are characterized by till that has a relatively shallow "hardpan" layer located below the weathered and rooted surficial soil zone. This variety of

till is finer-grained (silty) and less stony. Soil testing for on-site sewage disposal confirms the presence of a compact soil zone ranging between 2 and 2.5 feet below ground surface. Geologists call this variety "lodgement" till. Because of the compact nature of the "hardpan" layer, the soil has a very low vertical permeability. During periods of heavy rainfall, the "hardpan" impedes the downward movement of groundwater resulting in a seasonally high water table. Without proper planning and engineering, a seasonally high water table condition can be a major hindrance in terms of on-site sewage disposal and could result in wet basements.

It is understood that regulated inland-wetland soils on the site have been field identified by a certified soil scientist. Their boundaries had not been superimposed on the subdivision plan distributed to Team members on the review day. The wetland boundaries should be superimposed onto the final subdivision plans. Additionally, a signed statement by the soil scientist performing the field work should be included on the final plans.

Based on a review of the soil scientist's work sheet made available to the Team's geologist, the principal wetland areas are located in the eastern parts of the site. There are several smaller wetlands scattered throughout the site. Based on the subdivision plan submitted to Team members, the present interior road system will need to cross or impact wetland areas in several places. The road layout could be re-designed to minimize and/or eliminate anticipated wetland crossing in some areas. For example, straightening out the access road north of Lots 30-34 would minimize wetland disturbances.

Wetland crossings are generally feasible provided they are properly designed (e.g., culverts are properly sized and installed and permeable road base fill material is used). The roads should be constructed at least 1.5 feet and preferably 2 feet above the surface elevation of the wetlands. This will allow for better drainage and decrease the frost heaving potential of the roads. It is recommended that any road construction through wetland areas be done during the dry time of the year with adequate provisions for effective erosion and sediment control. This will greatly help to minimize the chance for siltation problems to occur, especially since the wetlands

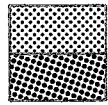
ultimately drain to Barnes Reservoir, Latimer Brook and/or Latimer Brook tributaries.

All organic material should be removed and replaced with a permeable road base material. The subdivision plan should indicate specific site development details, erosion and sediment control measures, fill lines, amount to fill to be placed, the impacts of filling, watercourse channel location and flow directions, disturbed areas, etc. This information will greatly benefit land-use decision makers.

Several lots (Lots 24, 26, 35, 49, 50 and 53) contain a high percentage of regulated wetland soils. When most of a lot is wetland, gradual filling by a homeowner often occurs in order to expand usable outdoor living space, lawn and garden areas. Such action can be subtle and difficult to regulate. It can result in significant destruction of wetlands over a period of time. Such activity on the part of a landowner often creates drainage problems on neighboring properties. In this regard, the Town may want to consider having a percent buildable area requirement for lots to assure suitable room for usable outdoor living space.

The wetland soils discussed above are regulated under Public Act 155. Any activity which involves modification, filling or removal of soil, etc., will require a permit and ultimate approval by Salem's Inland-Wetlands Commission. In reviewing a proposal, the Commission needs to determine the impact that the proposed activity will have on the wetlands. If the Commission determines that the wetland(s) is serving an important hydrological or ecological function and that the impact of the proposed activity will be significant, they may deny the activity altogether or, at least, require measures that would minimize the impact.

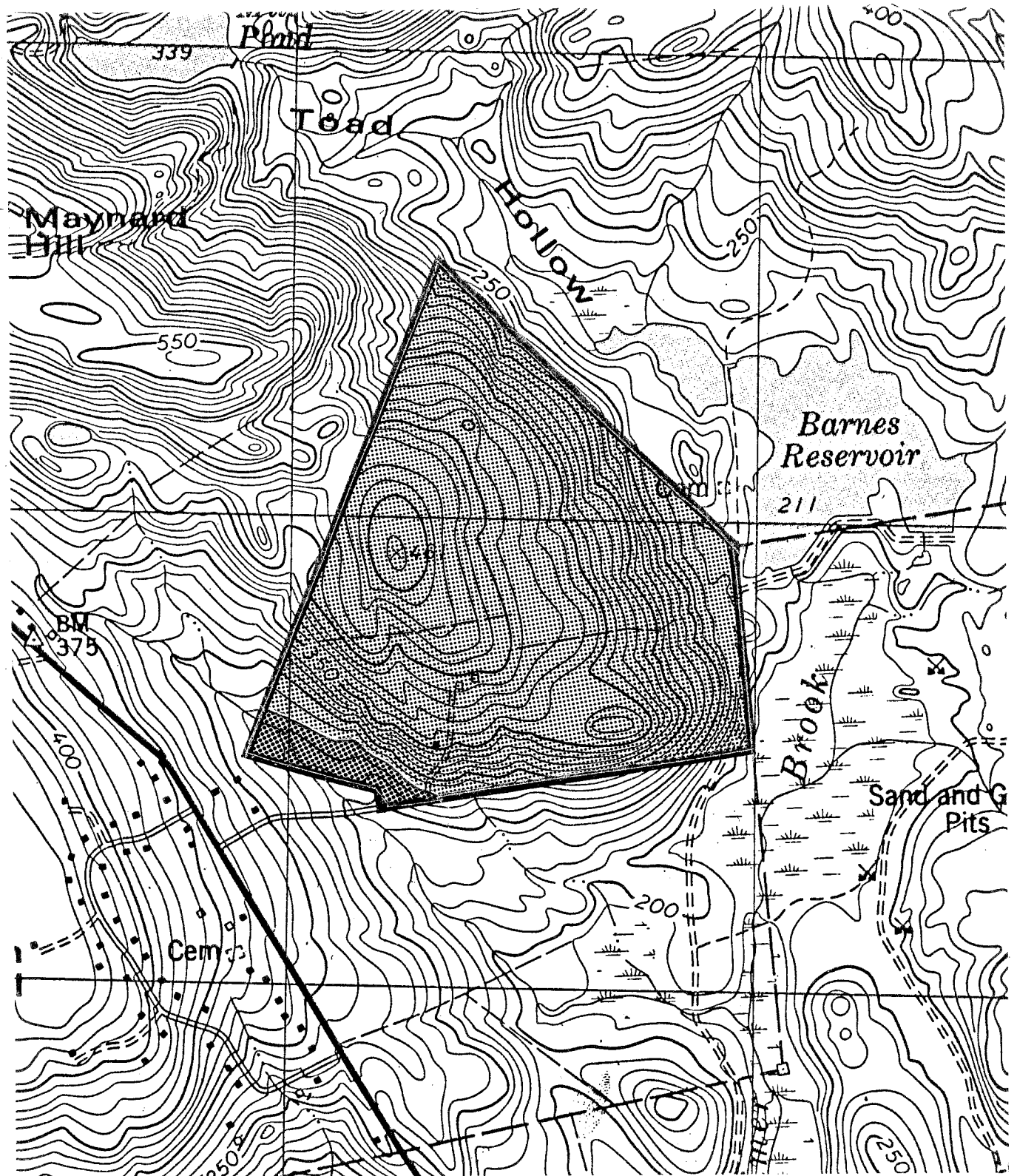
BEDROCK GEOLOGY



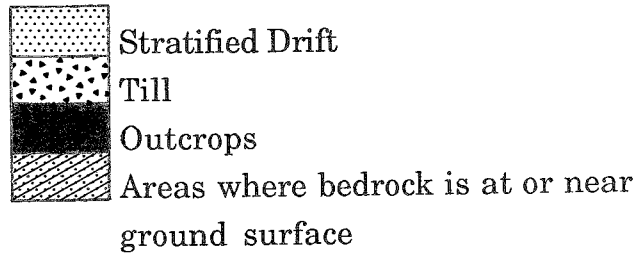
Subunits of the Plainfield Formation

Biotite Granite Gneiss

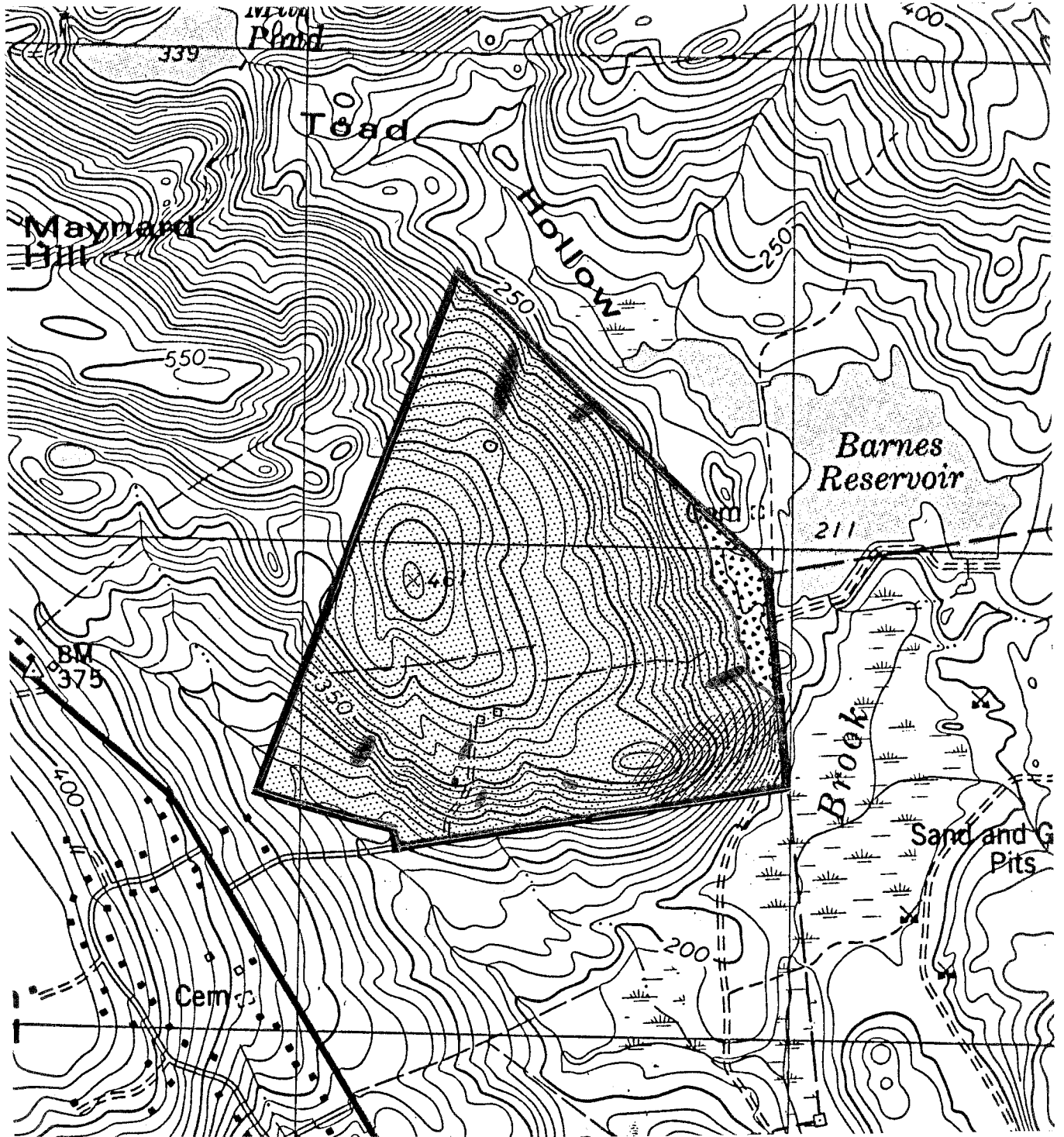
Scale 1" = 1000'



SURFICIAL GEOLOGY



Scale 1" = 1000'



3. SOILS

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

CbB - Canton and Charlton fine sandy loams, 3 to 8 percent slopes.

CbC - Canton and Charlton fine sandy loams, 8 to 15 percent slopes.

CbD - Canton and Charlton fine sandy loams, 15 to 25 percent slopes.

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

CcC - Canton and Charlton very stony fine sandy loams, 8 to 15 percent slopes.

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

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

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

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

Sf - Scarborough mucky fine sandy loam.

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

SxB - Sutton extremely stony fine sandy loam, 0 to 8 percent slopes.

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

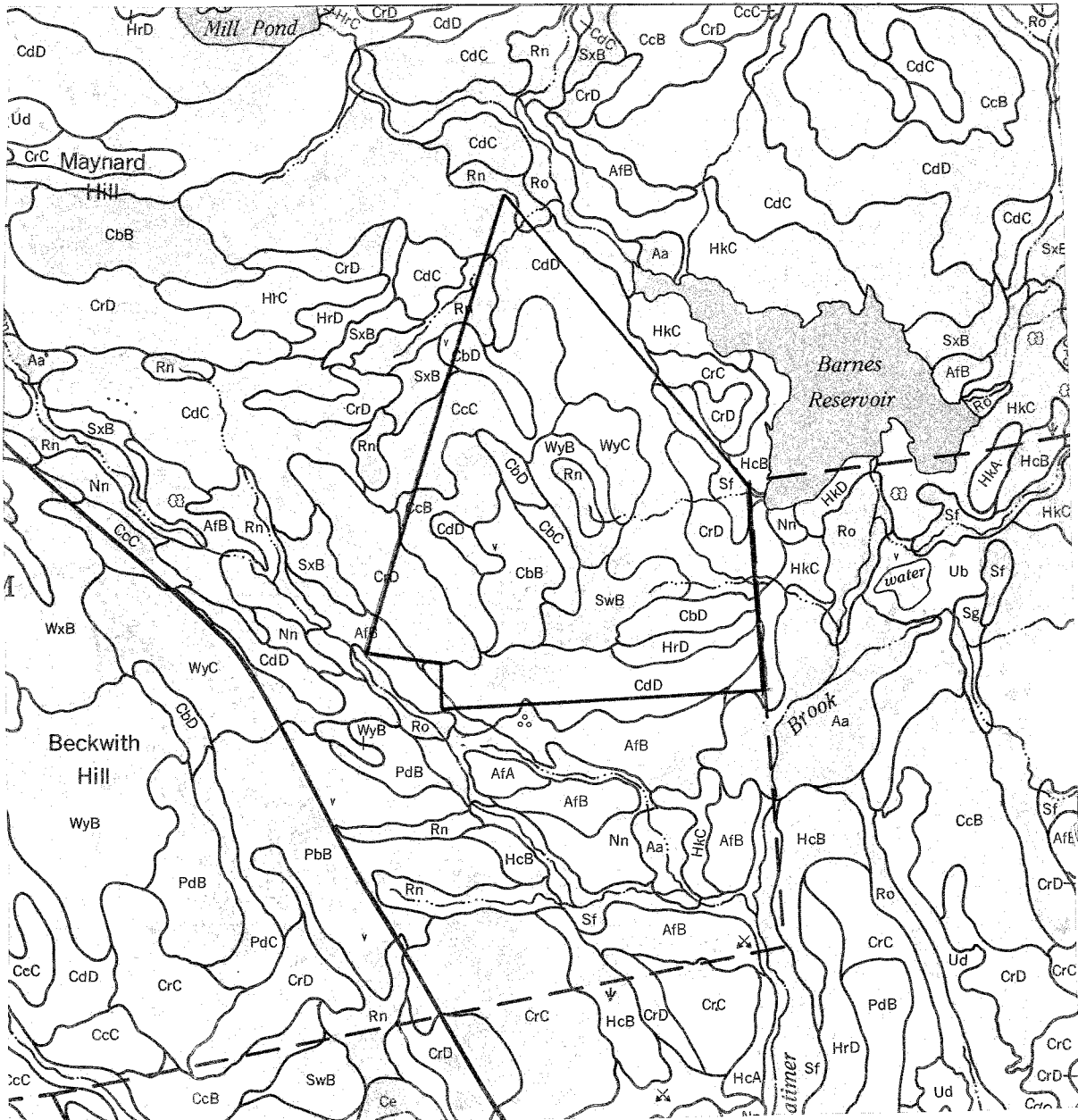
WyC - Woodbridge very stony fine sandy loam, 8 to 15 percent slopes.

SOILS

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



Scale 1" = 1320'



4. EROSION AND SEDIMENT CONTROL PLAN

An erosion and sediment control plan was not submitted with the proposed plan. It is recommended that one be prepared and contain the following information:

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.
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 erosion and sediment control measures and storm water management facilities.
7. A site plan map showing:
 - a. The location of the proposed development and adjacent properties.
 - b. The existing and proposed topography including soil types, wetlands, watercourses and waterbodies.
 - c. The proposed area alterations including cleared, excavated, filled or graded areas and proposed structures, utilities, and roads.
 - d. The location of all proposed erosion and sediment control measures.
8. When the plan is submitted the Soil Conservation Service working through the New London County Soil and Water Conservation District will be available to review it at the town's request.

5. HYDROLOGY

The entire site lies within the Latimer Brook drainage area. Surface runoff arising in the eastern half of the site flows to discharge points such as wetlands, watercourses, etc., which then transport the water to Latimer Brook, Barnes Reservoir or the watercourse connecting Mill Pond and Barnes Reservoir. The western half of the site drains southwestward to an unnamed tributary to Latimer Brook.

The surface water on the site is designated as Class AA by the DEP. This means these waters are tributary to a public water supply watershed, presently uncontaminated, presumed suitable for direct human consumption and treated wastewater discharges are not allowed.

The subdivision of the property as planned, followed by the construction of new homes and driveways will undoubtedly lead to increases in runoff from the site. In order to properly assess post-development runoff in the study area, the developer should be required to prepare a stormwater management plan. The plan would include all pre- and post-development runoff calculations. It is recommended that Connecticut's Guidelines for Erosion and Sediment Control be closely followed with regard to stormwater management on the site. The management plan and calculations should be carefully reviewed by the Town's engineer and other appropriate town officials. The impacts of post-development runoff in the study area should be clearly understood in terms of flooding and streambank erosion. It is recommended that a written report accompany the plan which states the initial conditions and storm frequencies to be analyzed. A summary table showing the pre-development, post-development and designed system peak discharges for all design frequencies should also be included. Of particular concern will be the examination of all downstream culverts, especially the one passing under Woodchuck Road at the site's southwest corner. It is understood that the road in this area is overtopped during certain storm events.

Additionally, every effort should be made to protect the streamcourses on and off the site. This will help to minimize the chance of

siltation problems to the reservoirs. It seems likely that in order to protect the reservoirs, temporary and/or permanent sediment basin(s) will be required during the construction phases, especially in view of the moderate to steep slopes and silty soils. These basins will need to be maintained on a regular basis. Catch basins and roads will also need to be maintained on a regular basis in order to protect watercourses and the reservoirs from sediment accumulation.

6. GEOLOGIC DEVELOPMENT CONCERNS

Subsurface exploration for on-site sewage disposal systems has been conducted for the proposed subdivision by the applicant's project engineer. The major geologic limitations encountered during soil testing included: (1) areas where bedrock is 5 feet or less; (2) the presence of till soils, which are characterized by seasonally high water tables and slow percolation rates (**NOTE:** The results of percolation tests for each lot were not available on the review day. The results and location of percolation tests should be included with the final subdivision plan); (3) areas of moderately steep to very steep slopes; and (4) areas of seasonal and permanent wetness. While these geologic limitations will weigh heaviest on the ability to provide subsurface sewage disposal systems, they may also pose a potential concern in terms of house foundations, the installation of buried utility lines, road and driveway construction.

A review of available soil testing and mapping data suggests that the majority of lots are suitable for sewage disposal, but that unfavorable subsurface conditions (i.e., shallow bedrock and seasonably high groundwater tables) prevail on many building lots. As a result, plans for the design of the subsurface sewage disposal facilities (along with the placement of each on site well water supply) must be prepared by a professional engineer and submitted to the local health department for review and approval by its certified staff. This process should be a coordinated effort between the design engineer and Salem's sanitarian.

In general, design recommendations for the hydrogeologic limitations mentioned earlier include raised septic systems with specified bank run gravel and/or the installation of curtain drains. The construction of septic systems in fill material should proceed very carefully and in strict compliance with the State Public Health Code and Technical Standards. The main concern is to ensure that the surrounding naturally occurring soils can adequately absorb or disperse the expected volume of sewage effluent without overflow, breakout or detrimental effect on ground or surface water. Only fill material as prescribed in Technical Standards should be used. Additionally, the fill material must be properly compacted.

Providing there are sufficient slopes, curtain drains can be effective for lowering the water table so it does not interfere with the proper functioning of the septic system. Ideally, curtain drains should be outletted to the storm drainage system where possible. If this is not possible, they should daylight at a point where they do not create water problems, (i.e., not near septic systems, wells or neighboring properties). The curtain drain must be properly designed and constructed in accordance with the State Public Health Code and Technical Standards.

A curtain drain may be used in conjunction with building footing drains. Footing drains should be required for all homes constructed in the subdivision where a shallow water table was encountered. This should keep basements from getting wet during the wet time of the year.

Before subdivision approval, the applicant's engineering firm must show that each of the proposed lots in the subdivision meets the minimum soil standards set forth in Section 19-13B103e(a)(3) of the Public Health Code and be able to hydraulically disperse the expected discharge from the home's sewage disposal system into the site's natural soil layers per Section 19-12-B103e(a)(4) of the Code.

As mentioned earlier, the entire subdivision lies within a public water supply watershed area (City of New London). As a result, any development that takes place in this area needs to comply with Sec. 19-13-B32 Sanitation of Watersheds (following this section). It should be pointed out that Section 19-13-B32(i) of the Connecticut Public Health Code prohibits the termination of storm water drain pipes within 100 feet of the edge of an established watercourse. This should be checked prior to approval of the stormwater management plan.

Because the watercourses and their accompanying wetlands on the site serve as conduits to Latimer Brook and the water supply reservoirs, additional erosion and sediment control measures will be needed at all stream crossings. Because of the velocity of flow in the

streams (especially in the late winter and spring), it is recommended that a stone berm be placed across the stream downstream of the crossing. The berm should have a filter fence installed in the middle of it. Hay bales or silt fences will still need to be installed. In order to minimize the chance for siltation problems, every effort should be made to conduct stream crossing activity during the summer months when the streams experience low or no flow conditions. Careful monitoring and maintenance of all control measures is paramount to protecting wetlands and watercourses on the site.

Where the bedrock cannot be excavated by heavy machinery, there may be a need for blasting in areas of shallow bedrock for roads, driveways, utility lines and house foundations. Any blasting which takes place in the subdivision should be done under the strict supervision of personnel familiar with the latest technology in blasting. This should reduce the chance for damage from undue seismic shock or air blast. A pre-blast survey of the area would also be wise to minimize the chance for damage claims. Every effort should be made to complete the necessary blasting prior to house construction.

Deep cuts, (i.e., roads, driveways, etc.) into soils with "hardpan" layers are extremely difficult to stabilize due to seepage of groundwater over the compact zone (hardpan layer). The water creates an unstable condition just below the seepage line. The weight of the unstable soil causes the soil to move downslope. After this begins, the slope is extremely difficult to stabilize. The establishment of a good vegetative cover is practically impossible on these eroding slopes. Based on the Soil Survey for New London County, these soil conditions occur mainly in the eastcentral parts of the site.

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 ground water 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 a 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 the 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.

7. WATER SUPPLY

Based on review of hydrogeologic data, the principal aquifer on the site is the underlying crystalline, metamorphic rock. Wells drilled in bedrock generally supply small but reliable yields of groundwater that fill the fractures (cracks and seams) in the rock. Since the yield of a given well depends upon the number and size of water bearing fractures that it intersects, and since the distribution of the fractures is irregular, there is no practical way of predicting the yield of a well in a specific location, outside of drilling the well. However, experience has shown that most fractures generally occur within the first few hundred feet of the bedrock surface. The probability of increasing the yield of a well usually decreases with depths below 300 feet.

Because of the 2 acre minimum building lot size and septic tank recharge the proposed subdivision will cause little change in recharge to the bedrock aquifer. The creation of impervious surfaces will also be minimal. As a result, groundwater recharge should far outweigh water demand for the proposed subdivision. This, however, assumes that the fractures in the underlying bedrock are saturated and capable of transmitting adequate amounts of water to the proposed wells.

Each well should ideally be located on a relatively high portion of a lot, properly separated from the sewage disposal system or any other potential pollutant and in a direction opposite the expected direction of groundwater movement. Because leakage from underground fuel storage tanks is a major cause of groundwater contamination in the State and because the site is located in a public water supply watershed, it is recommended that underground fuel oil storage tanks be prohibited on the site. This recommendation, if adopted, should be noted in the plans and deeds to these lots.

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 regulation. All wells should be cased with steel pipe into the underlying

bedrock. In addition, the Town sanitarian will need to inspect and approve well locations.

The 2 acre minimum lot size for the site allows for a spacing of about 200 feet between domestic wells in the proposed subdivision. This should help to minimize the chances for mutual interference and allow a recharge area of one acre per well.

The natural quality of groundwater should be satisfactory. However, the bedrock beneath the site may have elevated amounts of iron and/or manganese minerals, which could lower the overall quality. In either case, there are suitable treatment filters available to ameliorate these potential water quality concerns.

Groundwater in the area is classified by the Department of Environmental Protection (DEP) as GAA, which means that it is presumed suitable for direct human consumption.

Because the site is located in a public water supply watershed area, every effort should be made to restrict the use of sodium chloride as a de-icing compound. Calcium chloride can be used as a substitute.

8. THE NATURAL DIVERSITY DATA BASE

The Natural Diversity Data Base maps and files have been reviewed regarding the proposed Helios Subdivision. According to the information, there are no known extant populations of Federally Endangered or Threatened species occurring at this site.

But, the information indicates that a "Species of Special Concern" does occur within the delineated boundaries of the subdivision. A population of Panax quinquefolius (American Ginseng) was known to occur in this area in 1978. Ginseng was formerly common in rich woods and on rocky wooded hillsides in Connecticut, but now is local and rare in the state. Ginseng's rarity is thought to be caused by commercial collection of the roots.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultation with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

SPECIES OF SPECIAL CONCERN

Panax quinquefolius
(American Ginseng)

found on wooded hillsides

bright red berries



X 1/4

9. PLANNING CONCERNS

SITE

The Regional Development Plan depicts the Helios Subdivision area as suitable for low density development which includes residential uses at less than one unit per 1.5 acres, agricultural, open space, recreational, and water supply uses. This classification is primarily due to the wetland soils and streams located on the property and the adjacent surface water supply reservoir.

The adjacent property in the town of Montville is zoned residential with a minimum lot size requirement of 40,000 square feet. The Regional Development Plan depicts an area in Montville, which is adjacent to this site, as a proposed conservation area due to major wetlands and stream belts. This area is bordered by the City of New London Reservoir property on the north and a gravel excavation on the east.

The site development limitations are the wetland soils and streams, the high water table due to these soils, and the steep slopes. Any drainage from this site, if it is developed, must be adequately designed to take into consideration the environmentally sensitive nature of the site and the surrounding area.

TRANSPORTATION/TRAFFIC

The existing Woodchuck Road is approximately 1500 feet in length, which is the maximum length permitted by Town subdivision regulations for a cul-de-sac street. Accordingly, further extension of this road would require an additional outlet to another town or state road. This is a necessary ingredient for this site. An additional outlet will permit safer traffic flow and emergency vehicle access. It is understood that another subdivision is being considered on an adjacent property to the north and west (**Salem Meadows ERT report, June 1988**) of this site. If the two

developments where to connect a roadway it would permit an additional outlet for both sites.

The Planning & Zoning Commission should explore whether a permit is required from the State Traffic Commission due to the floor area size of one or both of these proposals. The review of development applications of this size provides an opportunity to evaluate the geometrics of Route 85 which may require a turning lane.

If this subdivision and the proposed Salem Meadows subdivision were to be developed as presently proposed they would have the potential to generate the following traffic volumes. (National Cooperative Highway Research Program Report 187).

	<u>Peak Hour Trips</u>
Helios	
subdivision, 54 lots = 502 trips to & from	40/ a.m. 54/ p.m.
site per day.	
Salem Meadows	
subdivision, 58 lots = 539 trips to & from	43/ a.m. 58/ p.m.
site per day.	
TOTAL 112 lots =1041 trips to & from	83/ a.m. 112/ p.m.
site per day.	

The distribution of these volumes to Route 85 can be assumed to be evenly divided between Woodchuck Road and any new northerly connector road.

The addition of approximately 1041 trips to and from these sites each day will have a significant impact on the road network in this area, especially local roads. The present condition of Woodchuck Road will have to be upgraded with regard to pavement surface and possibly drainage. The

sight clearance at the intersection of Woodchuck Road and Route 85 also needs to be improved in both directions, especially southerly. At a minimum this intersection needs brush clearing. The State of Connecticut Department of Transportation and/or the State Traffic Commission in conjunction with the applicant(s) and Town need to review this situation in greater detail.

SUMMARY

1. Residential density at one unit per 2 acres of suitable land area is compatible with the environmentally sensitive area.

2. The drainage from the site must be adequately designed to insure the continued quality of surface water to the City of New London reservoir system.

3. Encroachment into wetland areas on the parcel should be minimized due to the watershed sensitivity.

4. The proposed development must have an additional outlet other than Woodchuck Road.

5. Woodchuck Road may need upgrading with regard to pavement surface and drainage. Right of way should also be reviewed to determine adequacy.

6. The potential traffic volumes generated by one or both of the proposed developments is significant to the area road network.

7. The State Traffic Commission should be consulted as to the necessity of a S.T.C. permit.

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, 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.**