

Environmental Review Team Report

Navy Housing Groton, Connecticut

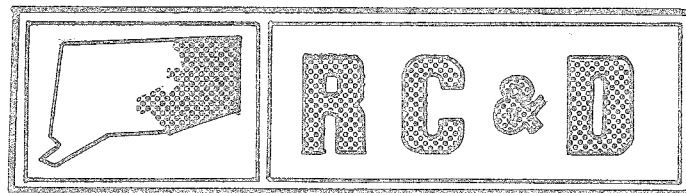


EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team
Report
on

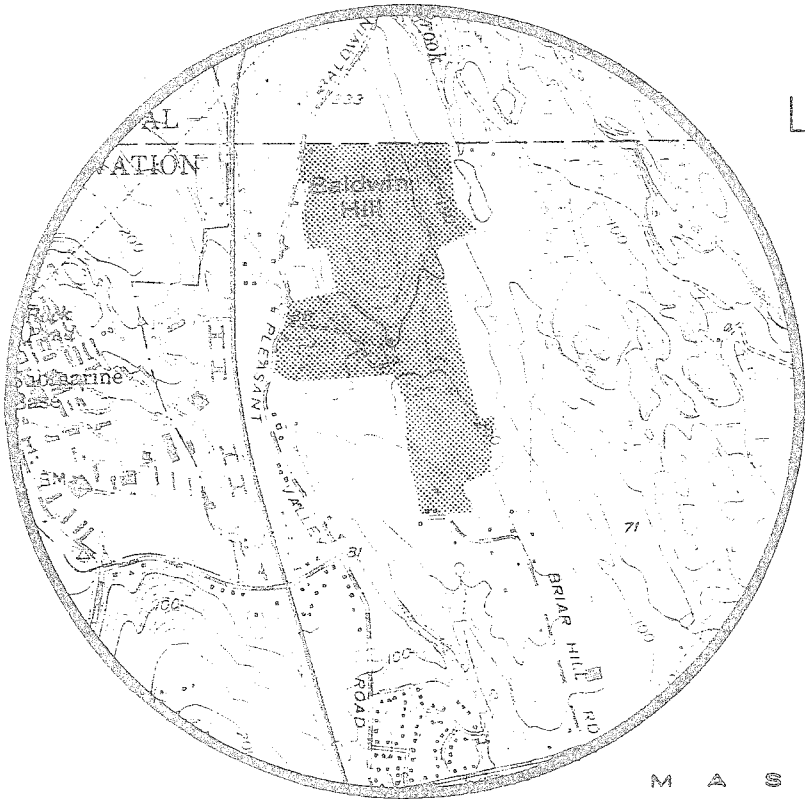
Navy Housing
Groton, Connecticut

April 1981



eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360



Location of Study Site

NAVY HOUSING
GROTON, CONNECTICUT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
NAVY HOUSING
GROTON, CONNECTICUT

This report is an outgrowth of a request from the Groton Planning Commission 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 as a project measure. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The soils of the site were mapped by a soil scientist of the United States Department of Agriculture (USDA), Soil Conservation Service (SCS). Reproductions of the soil survey map as well as a topographic map of the site were distributed to all ERT participants prior to their field review of the site.

The ERT that field checked the site consisted of the following personnel: Gary Domian, District Conservationist, Soil Conservation Service (SCS); Mike Zizka, Geologist, Department of Environmental Protection (DEP); Rob Rocks, Forester, DEP; Tom Seidel, Regional Planner, Southeastern Connecticut Regional Planning Agency; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Thursday, January 22, 1981. Reports from each Team member were sent to the ERT Coordinator for review and summarization for the final report.

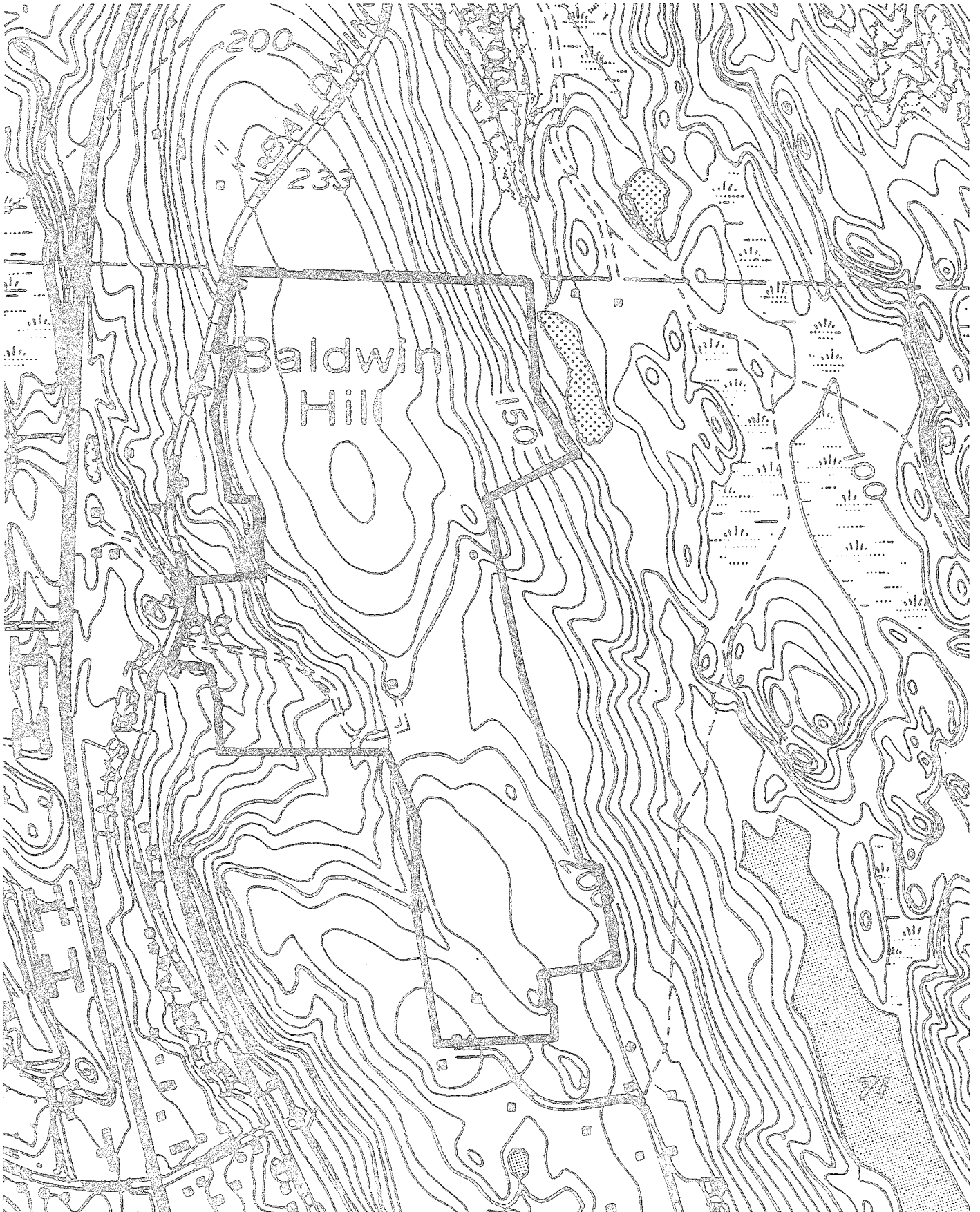
This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the developer and the Town of Groton. The results of this Team action are oriented toward the development of a better environmental quality and the long-term economics of the land use.

The Eastern Connecticut RC&D Project Committee hopes you will find this report of value and assistance in making your decisions on this particular site.

If you require any additional information, please contact: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360, 889-2324.

Topography

0 680'
scale



INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare an environmental assessment for a proposed residential development in the town of Groton. The 85 \pm parcel is located on Pleasant Valley Road. An additional 25 \pm acres, which has access on Briar Hill Road, may be added to the project site in the future. No preliminary engineering plans had been prepared at the time of the Team field review.

The United States Navy intends to purchase these parcels from their present owners to establish approximately 400 units of housing for their junior enlisted personnel. These units will be served by public water supply and public sewer line. As plans were not available to the Team it was difficult to determine where access to the development would be provided. The A-95 form filed for this project with the Regional Planning Agency indicates most traffic generated by development of the site will be using Pleasant Valley Road.

The site at one time was used for farming. Most areas are presently forested although a small timber harvest has taken place recently. The site has a steeply sloping topography on the eastern and western sides. The central section of the properties is gently sloping to flat. Soils typical of the site range from the Canton-Charlton series to the Ridgebury, Leicester and Whitman series, a regulated wetland, under Public Act 155.

The Team is concerned with the effect of this proposed development on the natural resource base of this site. Although severe limitations to development can be overcome with proper engineering techniques, these measures can become costly, making a project financially unfeasible for a developer. In the case of the proposed Navy housing, increase in stormwater runoff, subsequent downstream flooding and sedimentation and erosion will be the major problems encountered in developing this site. Of additional concern to the Town would be the increase in traffic generated from this project which would be travelling on roads which are in need of improvement. These Limitations are discussed in detail in the Hydrology, Soils and Planning Concerns sections of this report.

ENVIRONMENTAL ASSESSMENT

GEOLOGY

The proposed housing site is located in an area of Groton that is encompassed by the Uncasville topographic quadrangle. A bedrock geologic map (Map GQ-576) and a surficial geologic map (Map GQ-138) of the quadrangle have been prepared by Richard Goldsmith and published by the U.S. Geological Survey.

The property consists essentially of a till-covered bedrock hill. The bedrock may be subdivided into three principal units: Mamacoke Formation, Plainfield Formation, and Granite Gneiss. The distribution of the units on the site, as adapted from Map GQ-576, is shown in an accompanying illustration. The Mamacoke Formation contains light to dark gray biotite-quartz-feldspar gneiss, minor hornblende-biotite-quartz-feldspar gneiss, and thin layers of amphibolite and quartzite. The

Bedrock Geology (adapted
from U.S.G.S. Map GQ-576)

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EXPLANATION



Mamacoke Formation

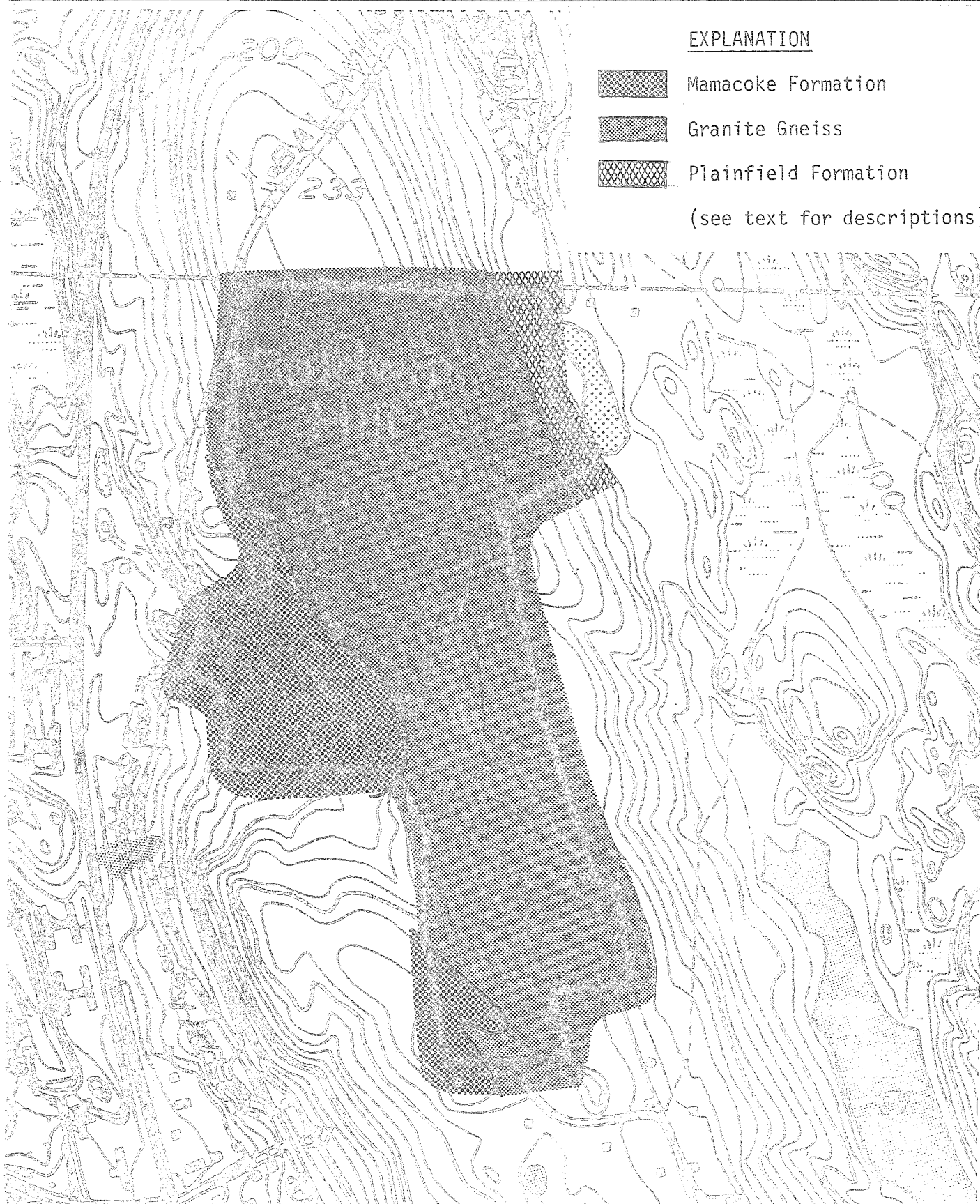


Granite Gneiss



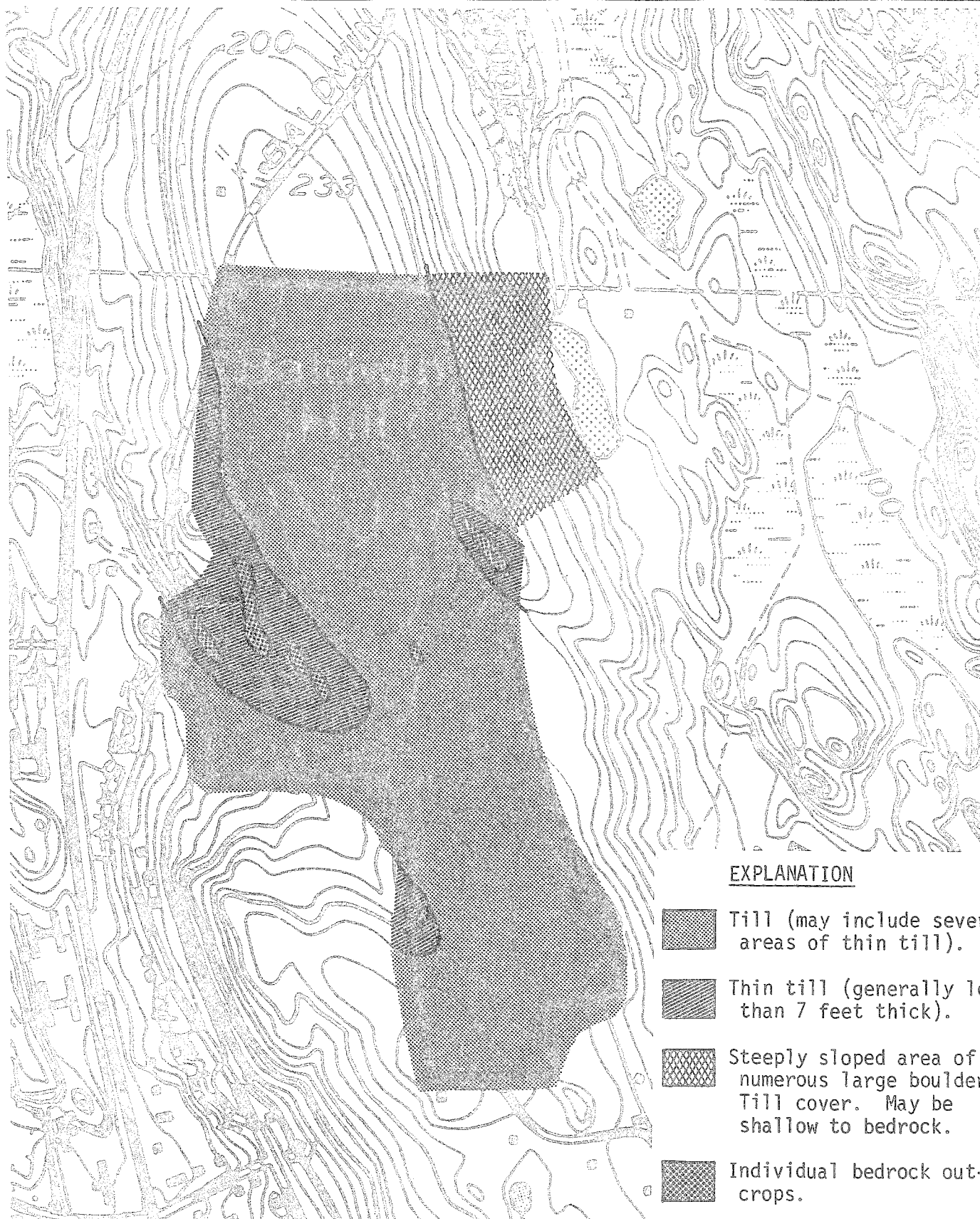
Plainfield Formation

(see text for descriptions)



Surficial Geology

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scale



term "gneiss" in the description preceeding this page means that the rock contains alternating bands of elongate minerals (platy, flaky, or pencil-shaped) and more rounded minerals. The mineral constituents of the gneisses are listed in order of increasing abundance. Some accessory minerals are not included in the name. Plainfield Formation rocks include light gray to dark green gneisses and schists composed of varying concentrations of garnet, hornblends, biotite, quartz, and plagioclase. The term "schist" is used for rocks in which elongate minerals predominate and are aligned into parallel layers. Schists generally have a slabby or platy appearance. The Granite Gneiss is simply a gneiss with a granitic mineral composition; quartz, microcline, oligoclase, biotite, muscovite, iron oxides, and garnet are the primary constituents.

Till covers bedrock on most of the property. Bedrock outcrops are most numerous on the western slope north of the present access road from Pleasant Valley Road. Till consists of a nonsorted mix of clay, silt, sand, gravel, and boulders. These materials were collected by a glacial ice sheet as it passed over preexisting soils and rock surfaces, and they were redeposited directly from the ice. The till ranges in texture from sandy, stony, and relatively loose to silty, less stony, and very compact. The coarser-grained till (sandier texture) was exposed in excavation just south of the access road, and it is likely that the upper 3 to 10 feet of till in most places is also sandy. Compact till is more likely to be encountered in deep excavation, but it may be near the surface in some places.

HYDROLOGY

Surface drainage flows in several directions from the site. Approximately 10 acres in the northwestern corner drains westward across Pleasant Valley Road and Route 12 into a large wetland in the Naval Reservation. The outlet stream from the wetland flows 3000 feet westward to join Thames River. The remainder of the western half of the site, comprising about 38 acres (including part of the Letz parcel), drains to a narrow wetland-stream system between Pleasant Valley Road and Route 12. The stream flows south, crosses Route 12, and enters the Naval Reservation; its route from there to Thames River could not be determined, but apparently the stream is partially piped underground. The northeastern section of the parcel drains to a privately owned shallow pond and its outlet stream. The stream (Flat Brook) flows north-northwest through the town of Ledyard, passing under a building occupied by the Door-Win Company, and ultimately entering Long Cove and Mill Cove, which border Thames River. The stream has reportedly caused flooding problems at the Door-Win building, which is located between Route 12 and Baldwin Hill Road just south of Long Cove Road. The remainder of the eastern half of the site drains to a long, narrow impoundment at the upstream end of Hempstead Brook, a tributary of Groton Reservoir and Poquonock River.



Creation of the proposed Navy housing complex on the parcel will lead to increases in surface runoff during and following periods of rainfall. The increases will result from the removal of vegetation, the compaction of soil by earth-moving equipment or other heavy machinery, and the placement of impermeable surfaces, such as roofs and pavement, on the property. It is not feasible to estimate the magnitude of the runoff increases that would be generated by the housing development because the actual area of land that would be directly affected is not known. If development is done on a vertical basis (i.e. highrise apartment buildings) rather than a horizontal basis, the effect on runoff will be lessened. From a hydrologic standpoint, then, vertical development is preferable.

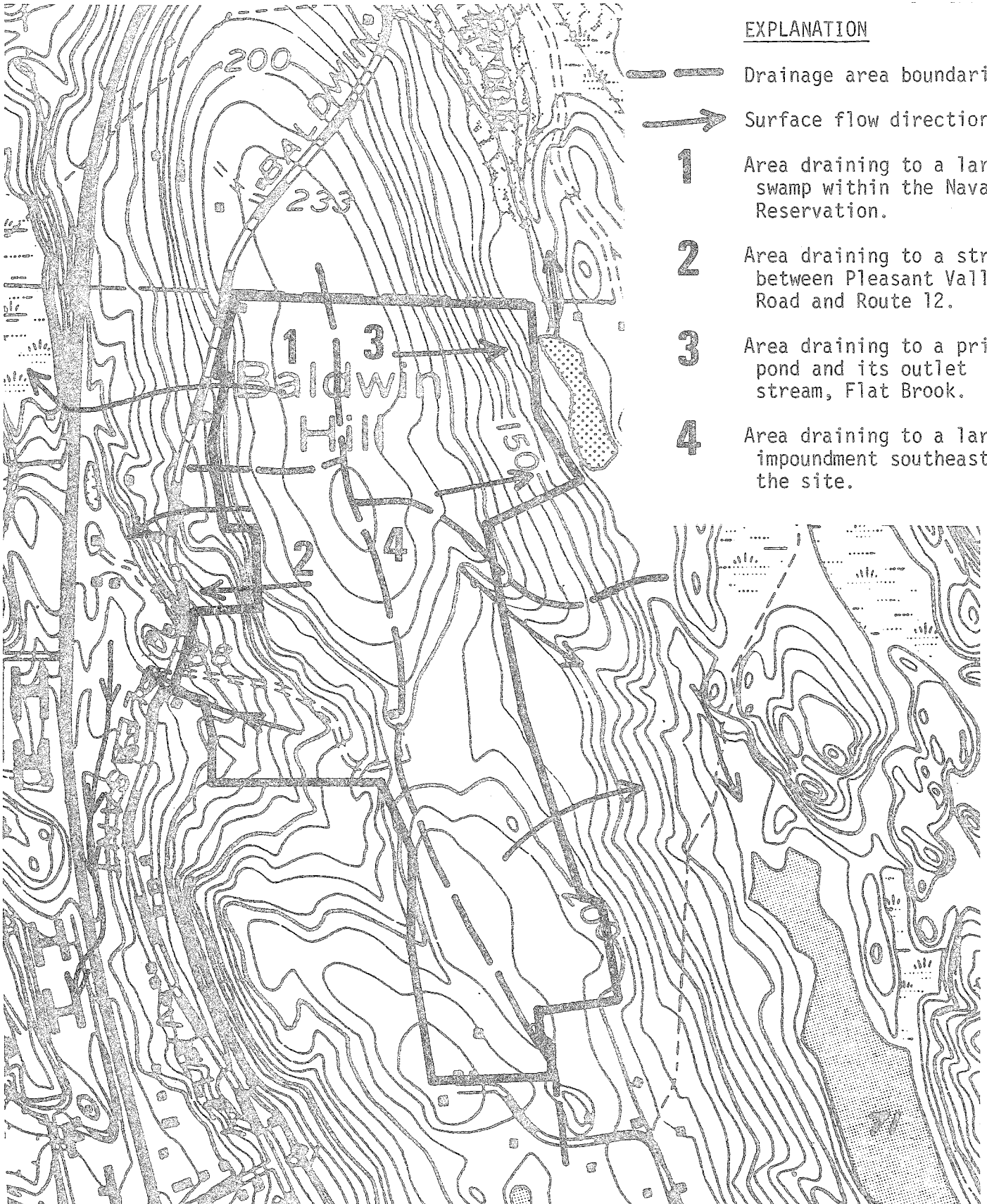
DRAINAGE AREA

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EXPLANATION

-  Drainage area boundaries.
-  Surface flow directions.
- 1** Area draining to a large swamp within the Naval Reservation.
- 2** Area draining to a stream between Pleasant Valley Road and Route 12.
- 3** Area draining to a private pond and its outlet stream, Flat Brook.
- 4** Area draining to a large impoundment southeast of the site.



The potential for erosion, particularly in the form of gullying, may be the most serious concern from the runoff on the western side of the property. The slopes adjacent to Pleasant Valley Road are steep and probably susceptible to erosion. Peak flows in the brook between Pleasant Valley Road and Route 12 will be higher during and following rainstorms after development than they would be under present land conditions. This may cause a greater duration or extent of flooding in that narrow valley. The Navy should be concerned with the potential effects of the augmented streamflows on the drainage system for the stream on the western side of Route 12. Increased flows from the northwestern corner of the site will not have as great an influence since that area is only about 10 acres in size and since it drains into a large swamp west of Route 12.

Steep slopes on the eastern side of the parcel present the same concerns for erosion as do those on the western side. Siltation may be a more serious problem since two water bodies could be affected. The most dramatic effects may occur in the small, shallow pond at the northeastern corner of the site. Without effective erosion controls, that pond would be subject to a high risk of becoming clogged with sediment and a concomitant growth of vegetation. This result would not only be a nuisance for the pond's owner, but it would reduce the storage capacity of the pond. The latter condition, together with the increased peak flow rates from the development, could aggravate the flooding problems along Flat Brook. Sedimentation may also occur in the northern portion of the larger water body that is located southeast of the parcel. The nuisance value probably wouldn't be as great, nor would the effect on peak flows be as significant. Nevertheless, it is usually more desirable to consider a particular development proposal not as an isolated event, but as part of a potential series of developments in an area. Since the cumulative impact on streamflow of numerous small developments in a watershed may be significant, individual developers should be urged to address the drainage effects of their particular projects without regard to the relative sizes of the project.

In sum, the major hydrologic concerns from the proposed housing project are erosion, sedimentation, and changes in peak flows. Flow considerations are especially crucial for the northeastern section of the site. The ultimate developer of the project should be asked to provide a detailed erosion-control plan as well as drainage calculations and a workable, satisfactory drainage scheme. The drainage system could include one or more retention basins to keep the effective flow rates from the site at the same levels for major storms as they are at present.

SOILS

A detailed soils map of this site and detailed soils descriptions are included in the Appendix to this report, accompanied by a chart which indicates soil limitations for various urban uses. As the soil map is an enlargement from the original 1,320'/inch scale to 660'/inch, the soil boundary lines should not be viewed as absolute boundaries, but as guidelines to the distribution of soil types on the site. The soil limitation chart indicates the probable limitations of each of the soils for on-site sewage disposal, buildings with basements, streets and parking, and landscaping. However, limitations, even though severe, do not preclude the use of the land for development. If economics permit large expenditures for land development and the intended objective is consistent with the objectives of local and regional development, many soils and sites with difficult problems can be used.

The soils map, with the publication, New London County Interim Soil Survey Report, can aid in the identification and interpretation of soils and their uses on this site. "Know Your Land: Natural Soil Groups for Connecticut" can also give insight to the development potentials of the soils and their relationship to the surficial geology of the site.

The gently sloping land forms higher in the landscape are occupied by Paxton and Montauk very stony fine sandy loams. The soils are designated by the soil symbol 35XB. The soils are well drained and formed in compact glacial till. Both soils have moderate permeability in the surface layer and subsoil, and slow permeability in the substratum (fragipan). The Montauk soil has a coarser textured substratum. Surface runoff is medium to rapid for Montauk soils.

The gently sloping to steep landforms adjacent to the highest elevations in the landscape, are occupied by Charlton-Hollis fine sandy loams, very rocky. These soils are designated by the soil symbol 17LC and 17LD. Both soils are well drained. The Charlton soils formed in deep friable glacial till, and the Hollis soil formed in glacial till less than 20 inches deep over bedrock. Charlton soils have moderate to moderately rapid permeability, the Hollis soils have moderate permeability. Surface runoff is medium to very rapid for Hollis soils and medium to rapid for Charlton soils.

The gently sloping to sloping landforms down from the bedrock-controlled landforms are occupied by Canton-Charlton fine sandy loams. The mapping unit symbols are 11XB, and 11XC. The letter "X" denotes very stony conditions. The Canton soils formed in a fine sandy loam mantle underlain by gravelly sandy glacial till, derived mainly from gravel and gneiss. The Charlton soils formed in deep loamy glacial till. Canton soils have moderately rapid or rapid permeability. Charlton soils have moderate to moderately rapid permeability. Surface runoff is medium in Canton soils and medium to rapid in Charlton soils.

The moderately steep to steep landforms down from the bedrock-controlled landforms are occupied by Canton-Charlton fine sandy loams. The mapping unit symbol is 11MD. The letter "M" denotes extremely stony conditions. The Canton soils formed in a fine sandy loam mantle underlain by gravelly sandy glacial till, derived mainly from gravel and gneiss. The Charlton soils formed in deep loamy glacial till. Canton soils have moderately rapid or rapid permeability. Charlton soils have moderate to moderately rapid permeability. Surface runoff is medium in Canton soils and medium to rapid in Charlton soils.

The low lying, nearly level areas along drainage ways in the landscape are occupied by Ridgebury, Leicester and Whitman extremely stony fine sandy loams. The soils are designated by the mapping unit symbol 43M. The Ridgebury and Whitman soils formed in compact glacial till; the Leicester soils formed in friable glacial till. The Ridgebury and Leicester soils have moderate to moderately rapid permeability in the surface layer and subsoil and slow or very slow permeability in the substratum (fragipan). The Leicester soils have moderately rapid permeability throughout. The seasonal highwater table for Ridgebury and Leicester soils is at or near the surface 7 to 9 months of the year. The Whitman soil has a highwater table at or near the surface 9 to 10 months of the year. Whitman soils have high runoff potential. Runoff is slow to medium in Ridgebury soils and slow in Leicester soils. This soil is designated as a wetland soil and is regulated under Public Act 155.

The availability of public water and sewer for this development lessen the chance of pollution to shallow ground water supplies near the site. The major concerns for development are sediment and erosion control, and storm water runoff control.

The soils that will have the most severe limitations for the planned development are those indicated on the soil map by 17LC and 17LD, which are Charlton-Hollis fine sandy loams. Other soils that will have severe limitations similar to those, are the soils indicated on the soil map by 11 MD, Canton-Charlton extremely stony fine sandy loams. The development limitations for 17LC and 17LD are due to slope and shallow to bedrock soil areas, and 11MD has limitations due to slope and surface stoniness. The soils occupy slopes that are greater than 15 percent in most cases. The soils shown on the map as 11 X B and 11 X C, Canton-Charlton very stony fine sandy loams, will have moderate limitations for the land use proposed because of large surface stones and slope. The Paxton soils have moderate limitations due to slope and the possibility of frost action.

Approximately seven acres of wetland soils are delineated on site by the mapping unit symbol 43M. Included in this mapping unit are watercourses that carry water seasonally from the upland watershed. Watercourses and wetlands are regulated under Public Act 155. Wetland areas are a valuable asset to a development, such as the one proposed, as they can be used as part of a storm water runoff and control plan. Existing watercourses can be improved to route storm water to suitable storage and outlet areas.

Runoff water control on the northeast section of the property will have to be addressed prior to beginning the project. The northeast section of the property is part of the Flat Brook watershed, part of which drains east off of Baldwin Hill into a private pond, which outlets northerly into Flat Brook, in the Town of Ledyard. Flooding problems have occurred where Flat Brook crosses under Baldwin Hill Road in Ledyard. Development such as intended for naval housing will increase rates of runoff and will aggravate an existing flooding problem across the town line. Alternatives to the increased runoff problems would be installing permanent runoff control features that allow for no increase in runoff offsite. Searching for a suitable outlet to the south and east toward the pond and Latham Bog may also be a way of disposing of storm water runoff; however, existing landowners must be aware of this proposal. Installation of permanent runoff control structures or diversions will be limited, particularly below the 150 foot elevation contour because of abrupt steep slopes and exposed bedrock.

The west side of the development will also need planning to control runoff water leaving the site and crossing Pleasant Valley Road. To prevent runoff water from flowing uncontrolled down the west slope across private property, a diversion or water control structure will be necessary to carry water to a safe outlet. Presently there is an outlet on the west side of the property that flows west under Pleasant Valley Road and Route 12. Adequacy of this culvert to accommodate the volume of runoff anticipated will have to be calculated as part of the total plan. Another outlet can be located in the northwest corner of the parcel; however, this outlet will be severely limited due to slope, access over private property and crossing Pleasant Valley Road and Route 12.

VEGETATION

The property proposed for Navy housing may be divided into three major vegetation types. These include three mixed hardwood stands which total approximately 73 acres, two old field areas totaling 27⁺ acres and 6⁺ acres of open fields. (See vegetation type map and vegetation type descriptions).

Vegetation Type Descriptions

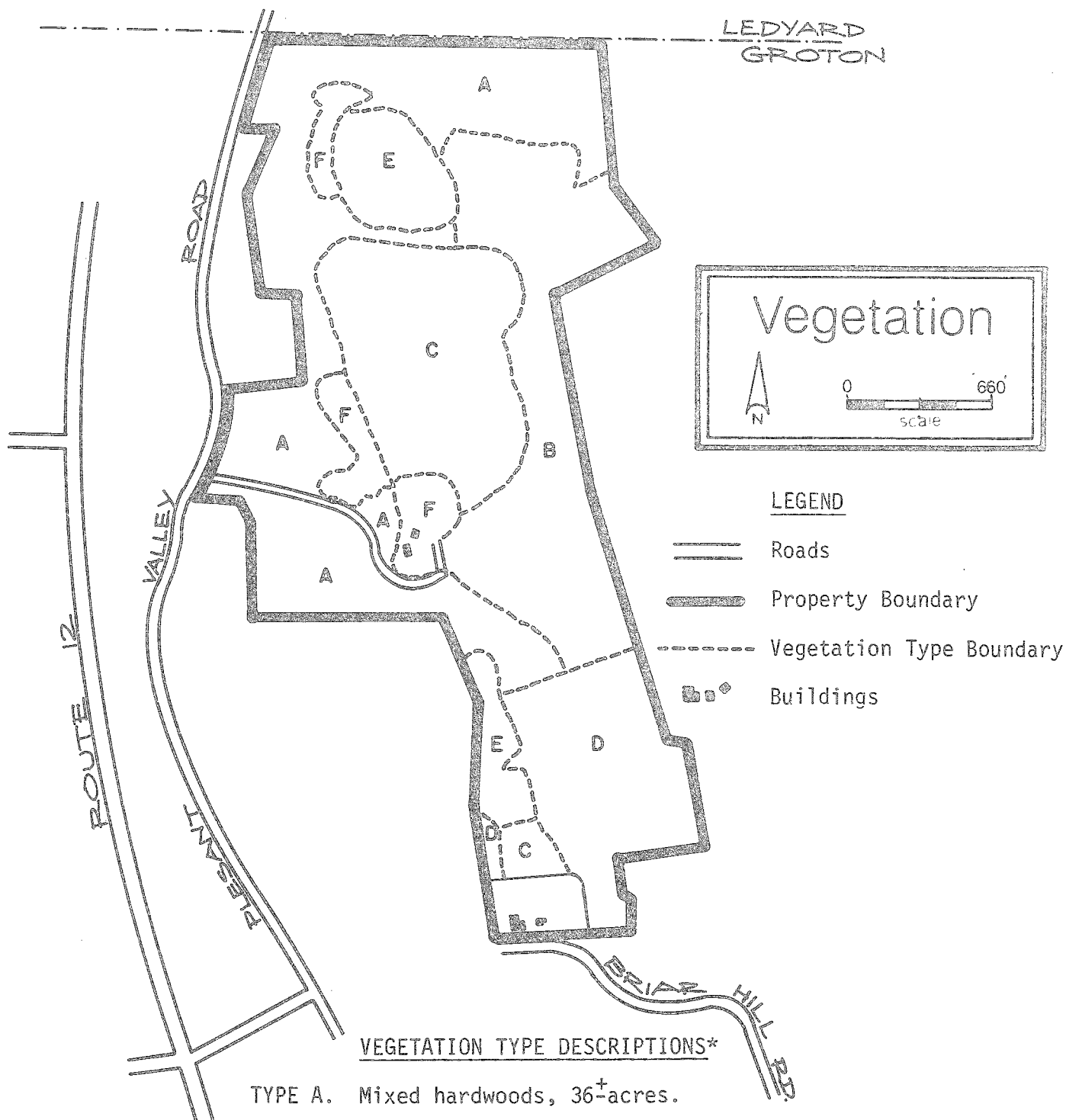
Type A. (Mixed Hardwoods) - This 36⁺ acre fully-stocked stand is made up of medium quality pole and sawtimber-size black oak, red maple, black birch, shagbark hickory and occasional tuliptree. Chestnut oak are present along with white oak on the steeply sloped ledge areas near Pleasant Valley Road. The understory in this area consists of hardwood tree seedlings, including black oak, white oak, black birch, shagbark hickory and red maple. Patches of mountain laurel, witch-hazel and maple leaf viburnum are also present. Club moss, barberry, Christmas fern, Japanese honeysuckle, poison ivy and greenbriar form the ground cover throughout much of this stand.

Type B. (Mixed Hardwoods) - This 23⁺ acre area was harvested of all its salable timber prior to the field investigation. In some areas fuelwood, from the tops which were left behind, has been removed. At present this stand is understocked with sapling to small pole-size red maple, black birch, tuliptree, black oak, shagbark hickory and sassafras. Understory species present include mountain laurel, witch-hazel and flowering dogwood. Ground cover is made up of grasses and poison ivy. The vine species which are present include oriental bittersweet, Japanese honey suckle and green briar. Growth of these vine species will be accelerated by the additional direct sunlight which now reaches them.

Type C. (Old Field) - Sapling to small pole-size eastern red cedar, red maple, black oak, scarlet oak, pignut hickory, black cherry, white ash and occasional apple trees are scattered throughout this 20⁺ acre understocked old field area. Other species which are present include flowering dogwood, multiflora rose, smooth sumac, green briar, poison ivy, oriental bittersweet, Japanese honeysuckle, and barberry. Ground cover consists of grasses, goldenrod, milkweed, black-eyed Susan and other assorted weed and wildflower species.

Type D. (Mixed Hardwoods) - This 14⁺ acre over-stocked stand is made up of high quality pole to small sawtimber-size black oak, white oak, pignut hickory, black birch, red maple, tulip tree, black cherry and occasional bigtooth aspen. The total volume in this stand ranges between 16 and 21 cords per acre. The understory in this stand consists of mountain laurel, flowering dogwood, American chestnut sprouts, maple leaf viburnum and isolated patches of sweet pepperbush and speckled alder on the southern tip of this stand. Clubmoss, Christmas fern, hayscented fern and green briar form the ground cover in this area.

Type E. (Old Field) - Seven acres of old fields which are dominated by sapling to pole-size eastern red cedar are present within the bounds of this property. Occasional pole-size black oak, shagbark hickory and black cherry are also present. The dense overstory precludes any understory vegetation. Ground cover vegetation in this area is sparse, however some grass and club moss were present.



- * Seedling-size = Trees less than 1 inch in diameter at 4 1/2 feet above the ground (d.b.h.)
- Sapling-size = Trees 1 to 5 inches in d.b.h.
- Pole-size = Trees 5 to 11 inches in d.b.h.
- Sawtimber-size = Trees 11 inches and greater in d.b.h.

Type F. (Open Field) - Grasses and goldenrod dominate the open fields which total approximately 6 acres. Occasional tree and shrub species are present, they include gray birch, sassafras, eastern red cedar, black birch and arrowwood. Steeplebush, bay berry, barberry and multiflora rose are present around the perimeter of these areas along with smooth sumac.

The proposed plans for development of this property for Navy housing calls for almost complete removal of the vegetation from approximately 82 acres. Removal of this vegetation may result in increased runoff. The initial increase in runoff will result from reduced evapotranspiration. This will be followed by an increase in runoff caused by soil compaction and the addition of non-porous surfaces. This increase in runoff may accelerate erosion, especially during peak flow times. To reduce the chances of accelerated soil erosion, a sediment and erosion control plan should be drafted and followed during construction. This plan should include practices designed to control erosion during the time of vegetation removal, and all phases of construction until the area is stabilized.

Forest Resource Utilization and Management

At the time of the field investigation most of the salable timber had been removed from this property. The tops which were left after the harvest could be utilized for fuelwood, as could the sapling and pole-size trees which remain. Roughly this equals approximately 4-5 cords per acre. It would also be desirable to locate a market for the pole-size eastern red cedar which are dominant in vegetation types C and E.

If complete vegetation removal is not necessary, it would be desirable to select the healthiest trees which remain and incorporate them into the site design. Many of the trees which do remain, if retained will increase in shade and aesthetic value over time. Care should be taken not to disturb the trees or the soil under the crowns of the trees which are to be retained. Disturbances may cause a decline in tree health, and possible mortality in 3 to 5 years. Forest management opportunities for this property are limited as a result of the almost complete vegetation removal proposed. The southern most portion of this tract, which will be used as a utility right-of-way could, however, be managed. This area has the potential to grow valuable timber and is at present in need of a thinning. The trees in this area (vegetation type D) are crowded and declining in vigor. A fuelwood thinning in this stand, following the "Crop Tree Selection Method" would reduce competition for space, sunlight, water and nutrients between residual trees. A thinning of this nature would result in a high vigor, stable stand of high quality trees, in the future.

Under the "crop tree selection method", 100 of the highest quality trees in each acre should be identified (trees spaced about 20' x 20' will equal 100 trees per acre), and one, two, or three trees that are in direct competition with each of those identified should be removed. The 100 trees per acre that are selected as crop trees should be healthy, large crowned, and show little or no signs of damage. Trees which are not competing with the 100 selected trees should not be removed, unless they are severely damaged. This thinning, if implemented, will provide between 4 and 5 cords of fuelwood per acre.

If the above mentioned thinning is agreed upon, a public service forester or private forester could be contacted to help select the crop trees which are to

be retained. At the same time this individual could also help to pick valuable trees suitable for retention, if plans for complete vegetation removal are changed.

PLANNING CONCERNS

The area of the proposed development is located in the northwestern section of Groton adjacent to the Ledyard town line and east of Pleasant Valley Road North. Scattered single family homes are located along this road. The remainder of the land area around the proposed housing is undeveloped. The Regional Development Plan recommends this area for medium density mixed urban uses.

Traffic will enter and leave the proposed housing via Pleasant Valley Road North. This road connects to Route 12 via Crystal Lake Road and Gungywamp Road in Groton and via Long Cove Road in Ledyard. A new east-west connecting road from the proposed housing to Pleasant Valley Road North to Route 12 in the vicinity of the Route 12 Navy Base entrance will probably be proposed by the Navy as a way to reduce travel on Pleasant Valley Road North and to provide direct access to the Base. Route 12 has an average daily traffic count of 15,100 in this area and its volume capacity ratio is 0.98. A ratio of 0.75 is considered congested and a ratio of 1.25 is considered the intolerable threshold.

A CONNDOT study indicated an average of 6.8 week-day trips for multi-family housing units. For a unit housing development this would mean an average week-day trip count of 2,720. These figures may now be high since they were developed in 1973 before the recent increases in the cost of energy. For this proposal it might be feasible in some cases for persons to walk to work if the base is their final destination. Navy shuttle-bus or van service could also be used as a way to decrease daily commuting trips. Commuter, corridor and local bus service of SEAT is also available on Route 12 in this area.

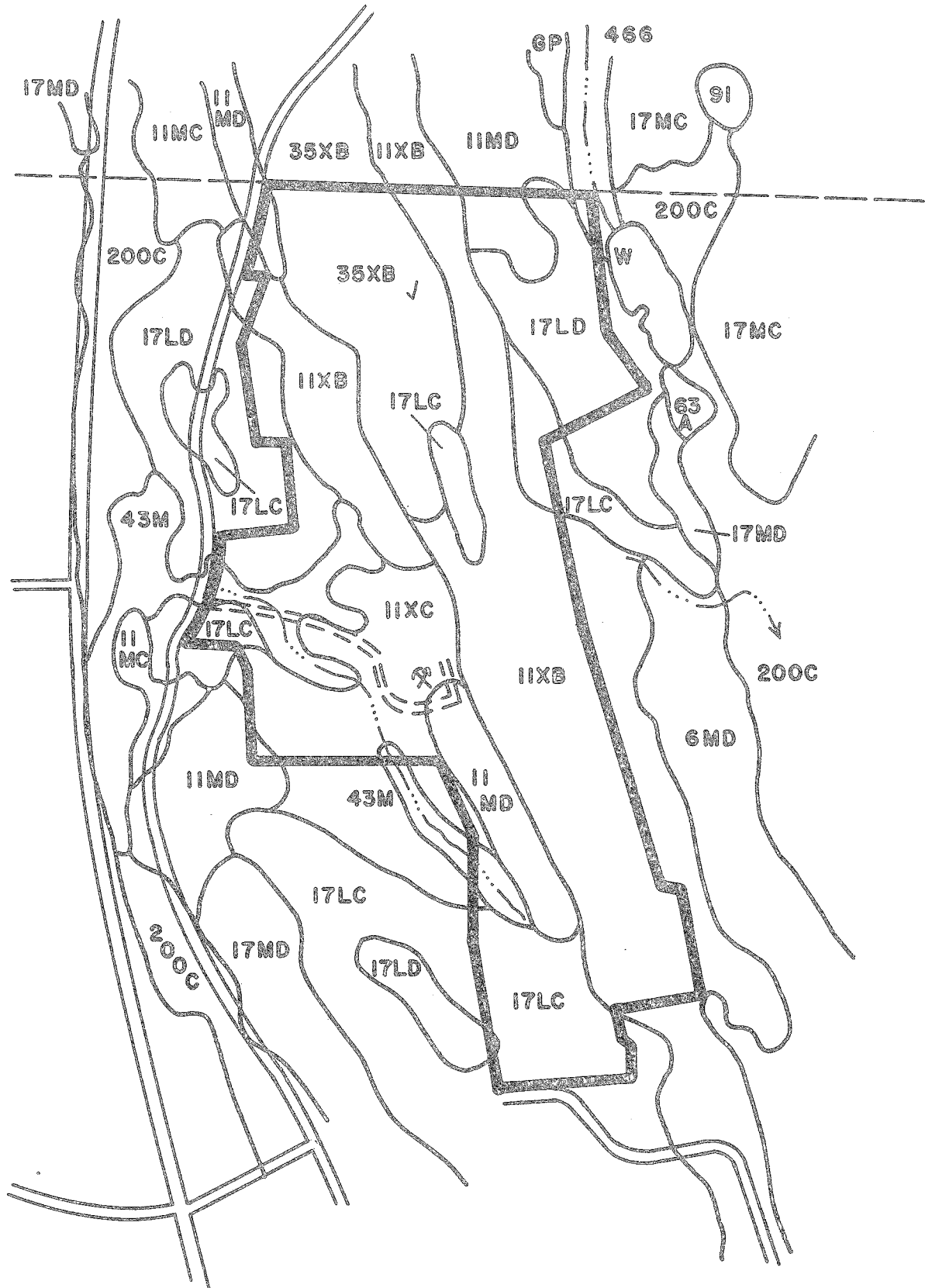
Pleasant Valley Road North is currently a narrow local road in this area and should be improved. It is recommended for reconstruction in the FY 1981 Regional Transportation Plan from Crystal Lake Road to the Ledyard town line as a high local priority. If, in the future, the Navy extends housing development south into the Letz property, consideration should be given to connecting any new roads to Briar Hill Road. This would provide an alternative to all traffic using Pleasant Valley Road North. Briar Hill Road connects to Gungywamp Road which provides access west to Route 12 or southeast to Route 184.

It would also be desirable to provide some open space and recreation areas for a large development such as this one. It might be possible to combine an open space function with an erosion and sedimentation function. For instance, the steep hilly area in the northeast section could function as both a forested open space area and an area to control runoff. A subdivision subject to local review would be required to have 10% of the gross area reserved for open space and recreation.

Since the Charles Barnum elementary school is located on Briar Hill Road the possibility exists of providing a wide, paved walking path from the proposed development south to Briar Hill Road. This would provide an alternative to school busing for elementary school children. Such a path could possibly follow the sewer and water lines which will run in the same general direction.

Appendix

Soils



NAVY FAMILY HOUSING
GROTON, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Natural Soil Group	Soil Symbol	Approx. Acres	Percent of Acres	Principal Limiting Factor	Urban Use Limitations*			
						On-Site Sewage	Buildings with Basements	Streets & Parking	Land-Scaping
Canton-Charlton		11XB	40	36	Large stones	2	2	2	2
Canton-Charlton		11XC	11	10	Slope, large stones	2	2	2	2
Canton-Charlton		11MD	10	9	Slope, large stones	3	3	3	3
Charlton-Hollis Charlton Part Hollis Part		11LC	15	13	Slope, large stones, depth to rock	2	2	2	2
						3	3	3	3
Charlton-Hollis		17LD	15	13	Slope	3	3	3	3
Paxton-Montauk		35XB	14	13	Percs slowly	3	2	2	2
**Ridgebury, Leicester & Whitman		43M	7	6	Large stones, percs slowly, wetness	3	3	3	3
			<u>112</u>	<u>100</u>					

LIMITATIONS: 1 = slight, 2 = moderate, 3 = severe.
** Regulated Wetland Soil Under Public Act 155.

SOIL INTERPRETATIONS FOR URBAN USES

The ratings of the soils for elements of community and recreational development uses consist of three degrees of "limitations:" slight or no limitations; moderate limitations; and severe limitations. In the interpretive scheme various physical properties are weighed before judging their relative severity of limitations.

The user is cautioned that the suitability ratings, degree of limitations and other interpretations are based on the typical soil in each mapping unit. At any given point the actual conditions may differ from the information presented here because of the inclusion of other soils which were impractical to map separately at the scale of mapping used. On-site investigations are suggested where the proposed soil use involves heavy loads, deep excavations, or high cost. Limitations, even though severe, do not always preclude the use of land for development. If economics permit greater expenditures for land development and the intended land use is consistent with the objectives of local or regional development, many soils and sites with difficult problems can be used.

Slight Limitations

Areas rated as slight have relatively few limitations in terms of soil suitability for a particular use. The degree of suitability is such that a minimum of time or cost would be needed to overcome relatively minor soil limitations.

Moderate Limitations

In areas rated moderate, it is relatively more difficult and more costly to correct the natural limitations of the soil for certain uses than for soils rated as having slight limitations.

Severe Limitations

Areas designated as having severe limitations would require more extensive and more costly measures than soils rated with moderate limitations in order to overcome natural soil limitations. The soil may have more than one limiting characteristic causing it to be rated severe.

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.

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, and a statement identifying the specific areas of concern the Team should address. When this request is approved by the local Soil and Water Conservation District and the 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 Jeanne Shelburn (889-2324), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360.