# Environmental Review Team Report

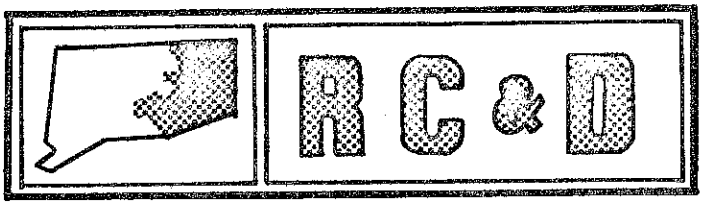
# The Town Farm

## East Haddam, Connecticut

R C & D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

# Environmental Review Team Report
on
# The Town Farm
## East Haddam, Connecticut
January 1979

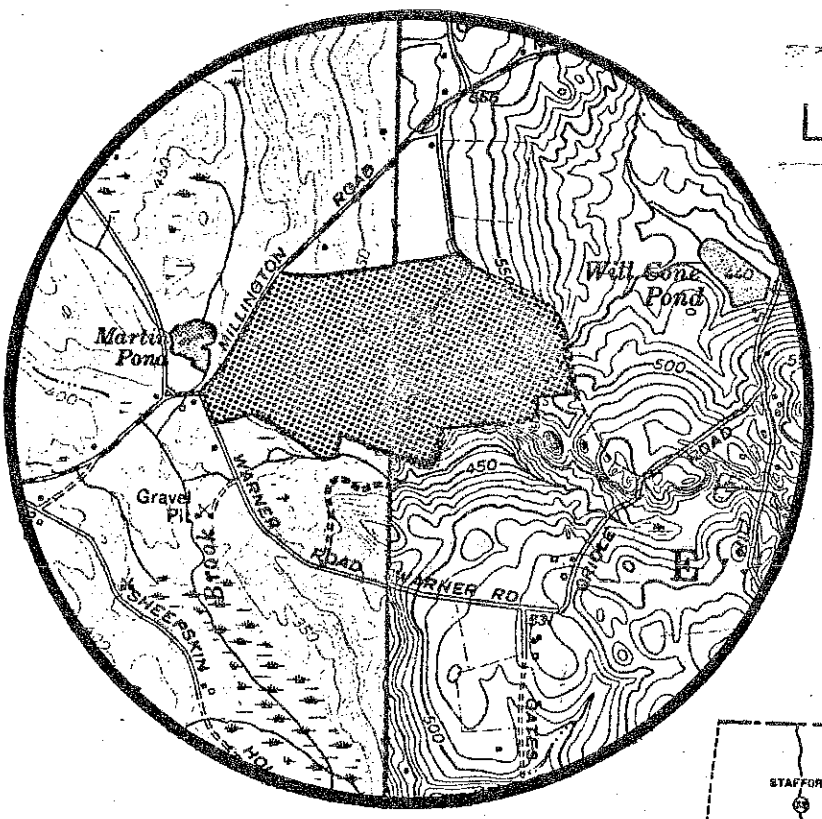


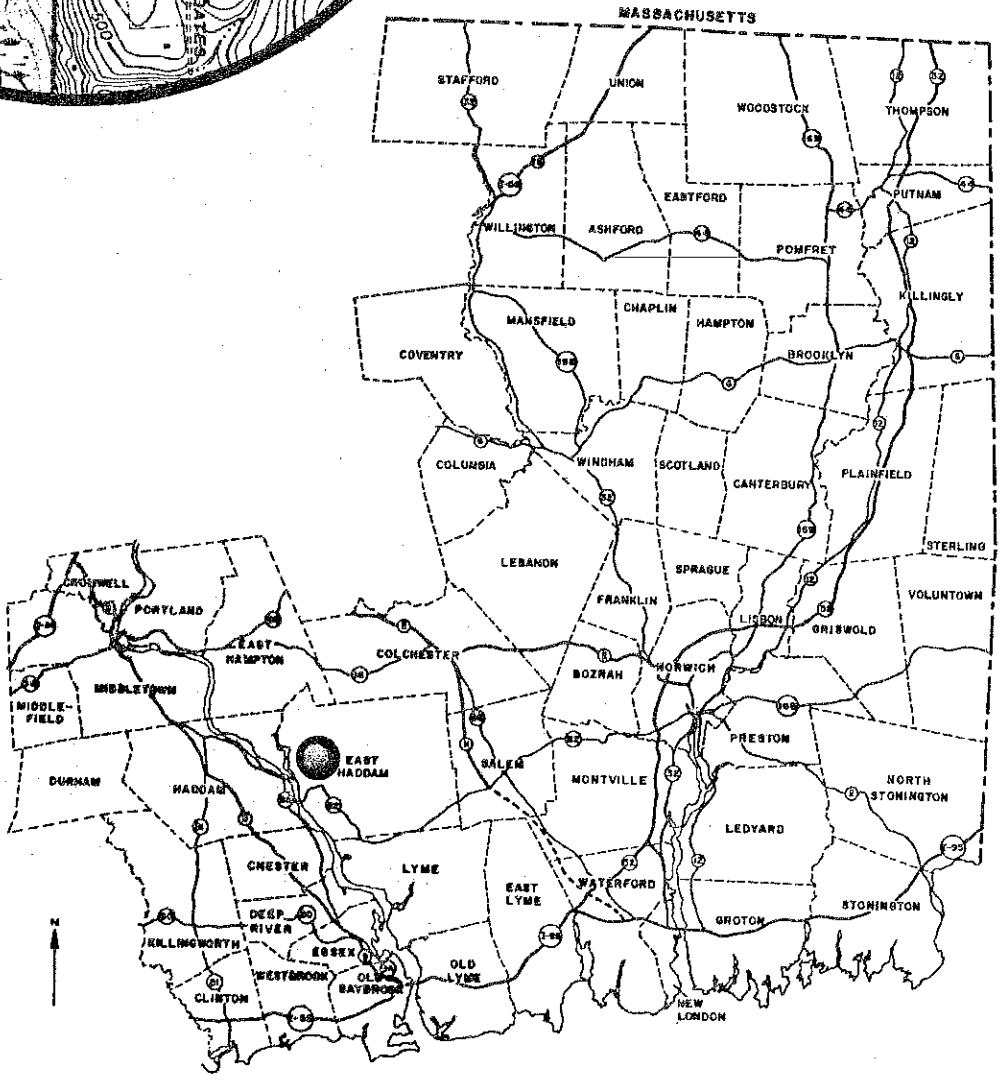

eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

# Location of Study Site

"THE TOWN FARM"
EAST HADDAM, CONNECTICUT




EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

# ENVIRONMENTAL REVIEW TEAM REPORT
# ON
# TOWN FARM SUBDIVISION
# EAST HADDAM, CONNECTICUT

This report is an outgrowth of a request from the East Haddam Planning and Zoning Commission to the Middlesex 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 for the RC&D Executive Committee by David Syme, Committee President, and the measure was reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The soils of the site were mapped by a soil scientist from the United States Department of Agriculture, Soil Conservation Service (SCS). Reproductions of the soil survey map, a table of soils limitations for certain land uses and a topographic map showing property boundaries were distributed to all Team members prior to their review of the site.

The ERT that field-checked the site consisted of the following personnel: Barry Cavanna, District Conservationist, Soil Conservation Service (SCS); Joe Neafsey, Soil Conservationist (SCS); Mike Zizka, Geologist, Connecticut Department of Environmental Protection (DEP); Rob Rocks, Forester, DEP; Len Tunderman, Regional Planner, Midstate Regional Planning Agency; Don Capellaro, Sanitarian, State Department of Health; Jim Gibbons, Community Planner, Agricultural Extension Service, (EXT); and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

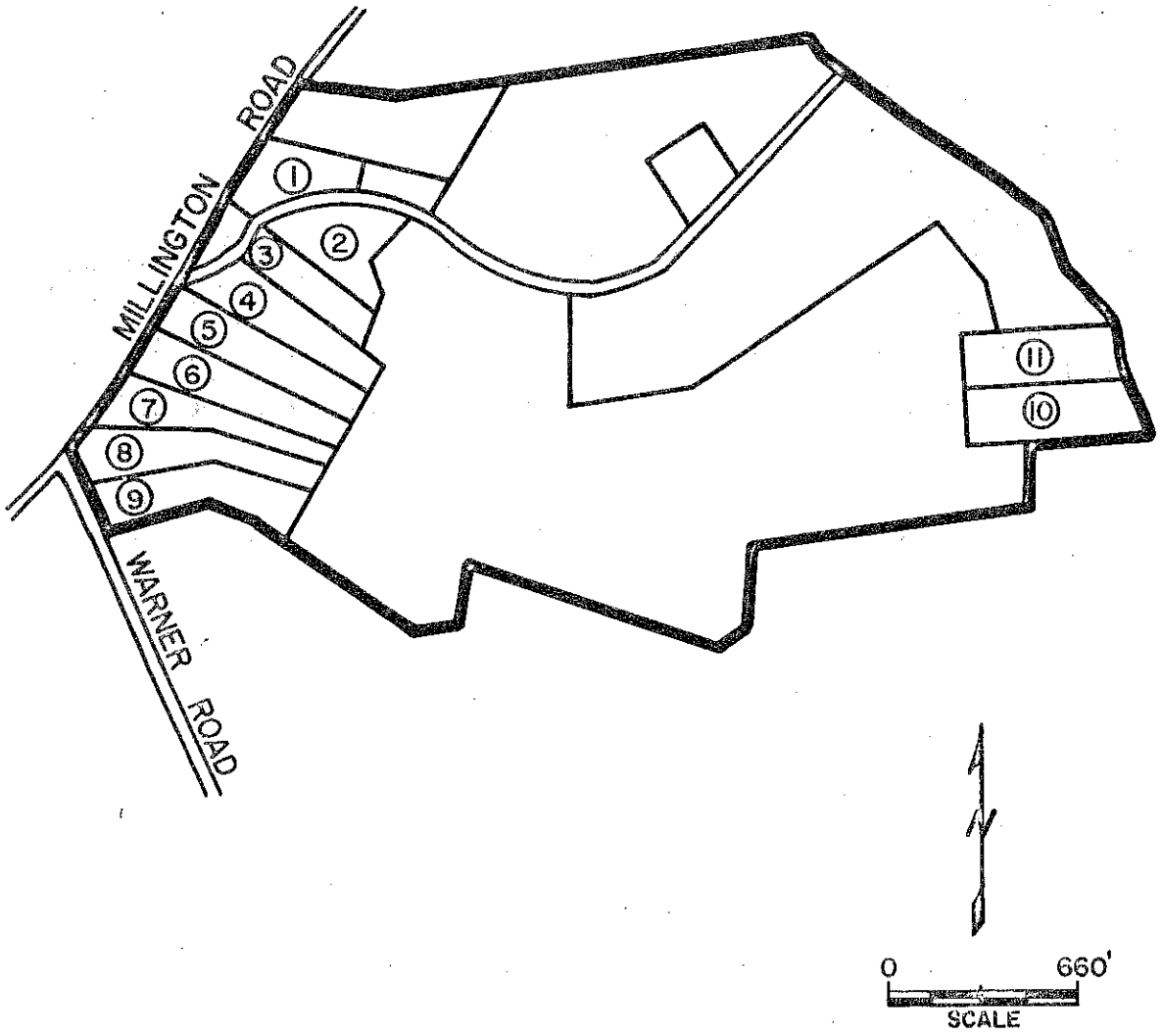
The Team met and field checked the site on Thursday, November 30, 1978. Reports from each contributing Team member were sent to the ERT Coordinator for review and summarization for the final report.

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 East Haddam. 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 Area Committee hopes that this report will be of value and assistance in making any decisions regarding 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.

# Preliminary Subdivision Plan



# INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to review a preliminary development proposal for "The Town Farm" subdivision. The 117 acre parcel owned by Ferdinand and Stella Czwaczka will be subdivided into a 22 acre parcel for development and a 95 acre parcel to be retained in private ownership. The area for proposed development is bounded by Millington Road to the northwest, Warner Road to the southwest and the open space portion of the Czwaczka property to the east; two additional lots are located to the west of Oriole Road. Eleven lots in total are proposed, each averaging 2 acres in size. Each single family residence will be served by on-site wells and on-site septic disposal systems. Perc tests were run on June 16, 1978 to determine the suitability of the site for septic systems. A test report and preliminary plans for this subdivision were prepared by James E. Mislick, P.E., of Belmont, Massachusetts.

The Team is generally concerned with the effect of this land use on the natural resource base of the site. Preliminary research indicated that the soils on this site have severe limitations for residential development with respect to road construction, septic tank leaching fields and homesite location. A detailed sediment and erosion control plan and a stormwater management plan should be developed and implemented for the site. The subdivision plan should indicate these erosion and sedimentation control measures and should detail drainage and road improvements as recommended by the Town Engineer.

The variable nature of the soils and the presence of steep slopes, bedrock, ledge outcroppings, and bounders may prevent development of some of the lots as proposed. It is recommended that an intensive investigation of soils on each lot be performed to insure that there is an adequate amount of land suitable for traditional residential development or that proposed improvements will be adequate. As an alternative, and if suitable sites can be found, consideration should be given to cluster, larger lots, or other land uses.

Lots 10 and 11 should have detailed soil surveys to clearly delineate the boundaries of the inland-wetland soils.

As percolation tests were conducted in mid-June, the Town sanitarian might wish to retest the lots in traditionally wetter months. Potential problems such as plugged tile lines and effluent backup are elaborated on in the Waste Disposal section of this report. Diversions should be installed above leaching fields and basements proposed on slopes. Each lot viewed on the field inspection appears to need this improvement to some degree. Because of the problems of rock, ledge, slope and wet soils, the Commission and sanitarian might require that the proposed engineered solutions actually be installed to determine whether these reccommendations will work. One or two lots might be selected as a model for others.

If the Commission views this section of Oriole Road as a dead end road then the town Subdivision Regulations (Section 4.3) state that it should end in a turning circle of at least a fifty foot radius. The town and Commission policy regarding roads should be reviewed as it effects Oriole Road. The engineer proposes an improved gravel road to serve lots 10 and 11. As Oriole Road slopes in both directions to a low point approximately in the middle of lot 11's front property line, drainage along Oriole Road is and will continue to be of major concern.

The areas not designated for development should be designated as open space, reserved for future development or other land use. This information should be shown on the site plan.

The proposed subdivision conforms to minimum lot sizes required by the town zoning regulations and also conforms to applicable sections of the town's existing Plan of Development.

The Planning and Zoning Commission may wish to consider these suggestions before approval is given on final plans for this proposal.

# ENVIRONMENTAL ASSESSMENT

## GEOLOGY

Bedrock on the property is part of a geologic unit known as the Brimfield Formation. Three subdivisions of this unit cross the property in essentially east-west bands (see accompanying figure). The northernmost band comprises interbedded layers of several different rock types. Most of these layers are gray or rust-stained biotite-muscovite schists or schist-like gneisses. (Schists are rocks in which platy or flaky minerals have aligned to form wavy or crinkled surfaces that tend to be easily separated. Gneisses are similar to schists, but they are more granular, contain fewer flaky or platy minerals, and are not easily separated along planes of mineral alignment.) Other rock layers in the northern band are composed of calcium-silicate rocks, quartz-biotite schists, and amphibolite (rock that is rich in the mineral amphibole). The central band is composed largely of amphibolite. The southern band comprises garnet-rich quartz-biotite schist and interbedded amphibolite. Pegmatite, a coarse-grained granitic rock composed largely of quartz, feldspar, and mica, intrudes all the bands, but it has been mapped only where relatively extensive.

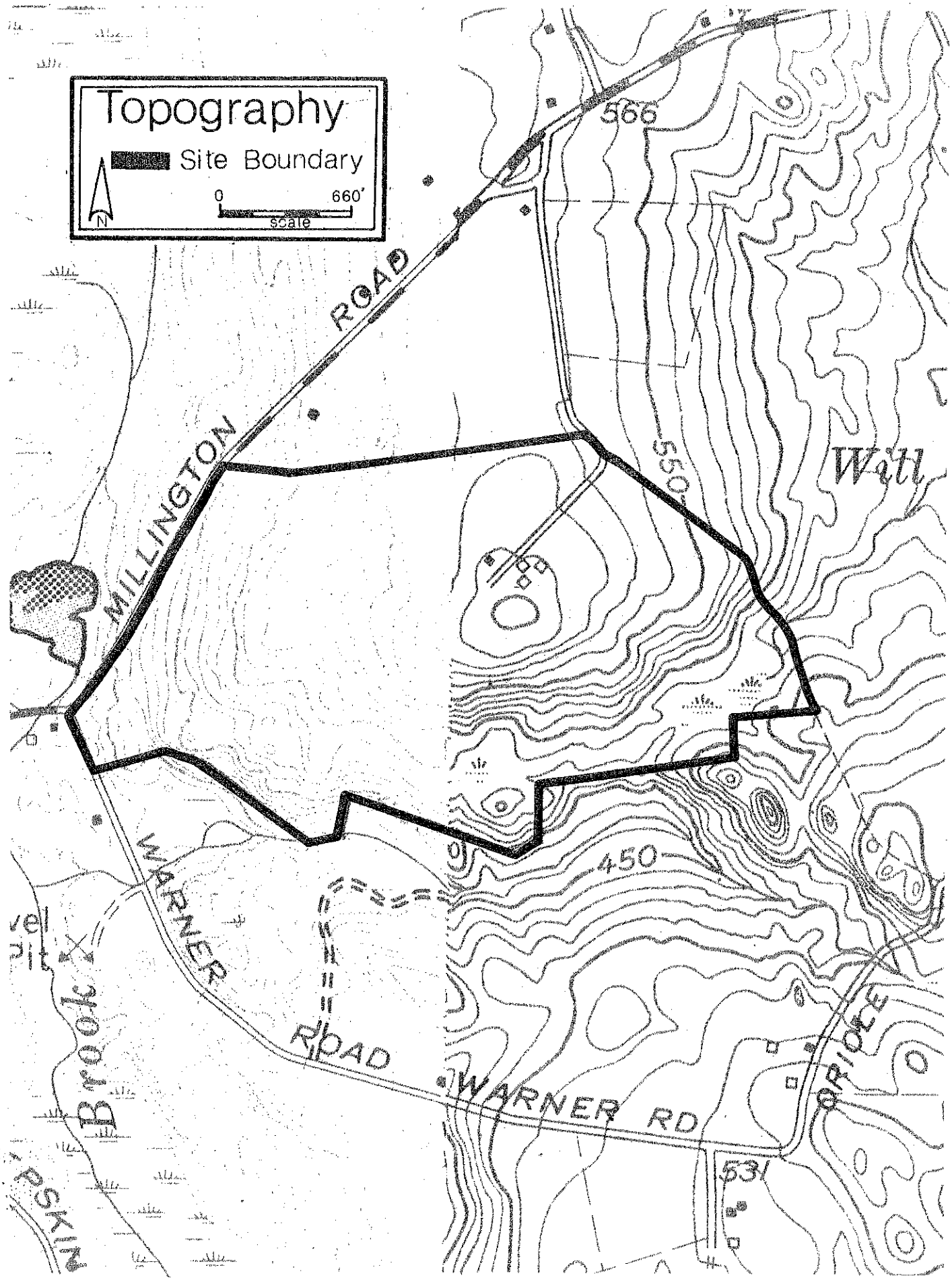
The layering of the schists dips north-northeast, and the largest fractures in the rock appear to follow this layering. The significance of this structural feature is discussed in the section on Water Supply. Further information about the bedrock on the property may be found in Quadrangle Reports Nos. 13 and 19 of the Connecticut Geological and Natural History Survey.

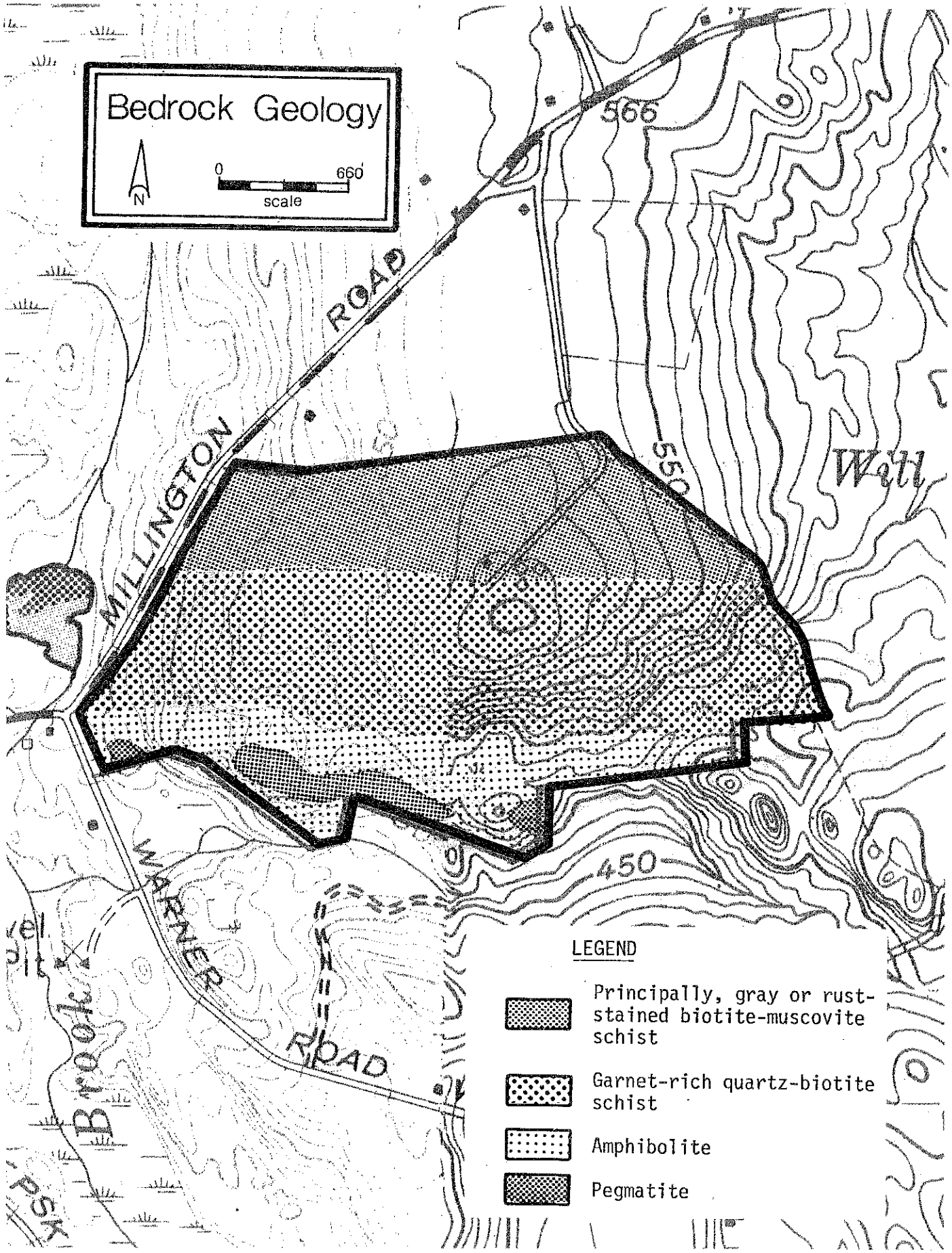
Till, a glacial deposit consisting of rock particles of all shapes and sizes, thinly covers the bedrock in most areas. Because till was deposited by glacier ice without being significantly washed by meltwater, the particles are not sorted by grain size, and the texture of the till may vary greatly from place to place. In general, the upper part of the till appears to be sandy and stony. Numerous small bedrock outcrops poke through the till, and it is likely that the thickness of the deposit is less than 10 feet in most places. In the area of lots 1-9, it seems probable that the till blankets an irregular bedrock surface. Hence, relatively deep pockets of till alternate with non-covered or very thinly covered rock ridges or knobs.

## HYDROLOGY

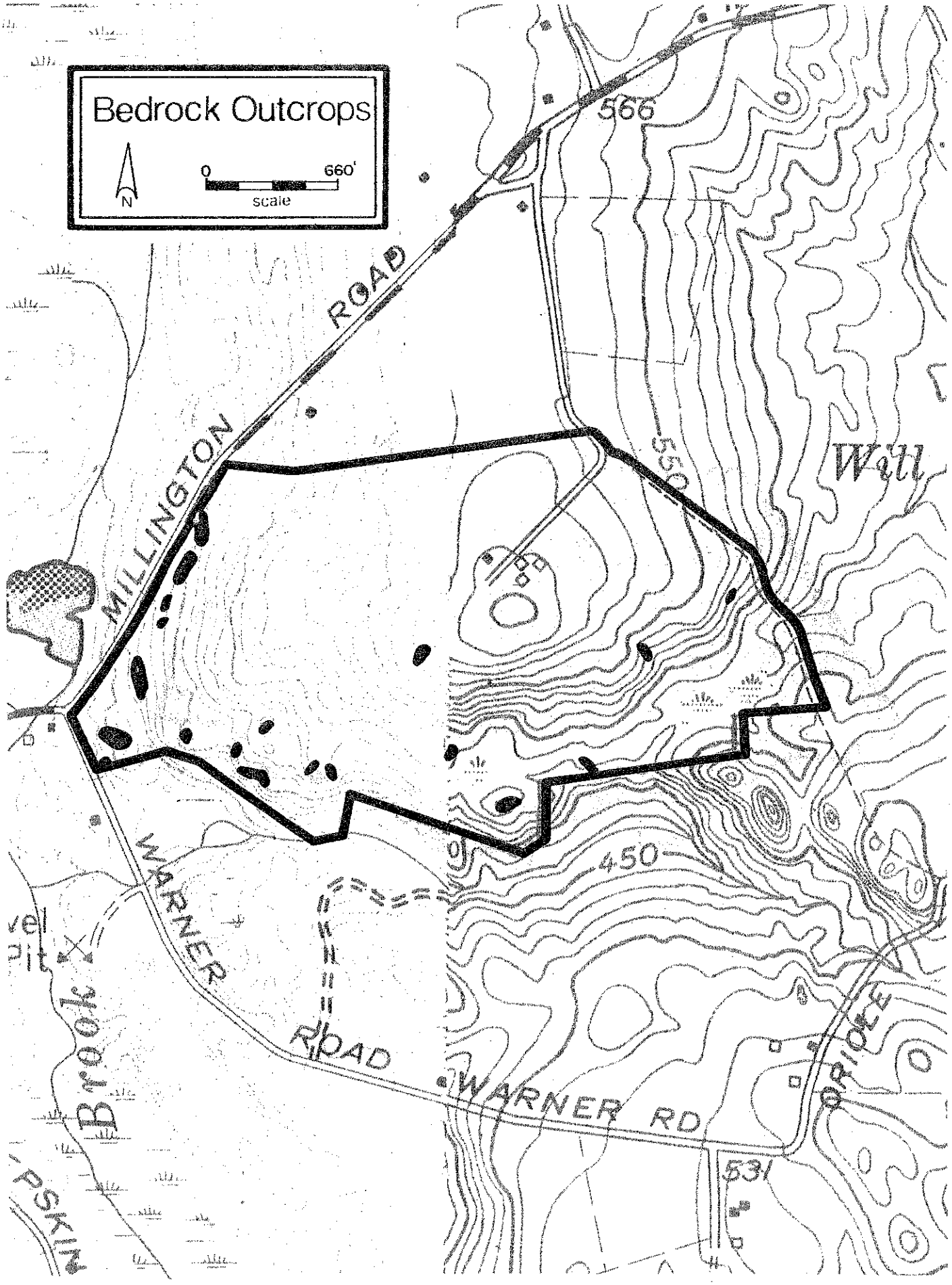
No permanent streams flow through the site. Surface runoff moves principally by sheet flow or by very short-lived rivulets. Lots 10 and 11 straddle a minor surface drainage divide; part of the runoff from these lots drains northeastward into Will Cone Pond, and part drains westward into a small, unnamed tributary to Roaring Brook.

Development of the subdivision as presently planned should cause no major change in the overall hydrologic flow patterns. Runoff rates and volumes from individual lots will be greater during the following development than they are now, but this problem is most significant in terms of sediment and erosion control on the site. A careful plan for controlling erosion is needed on most lots because of the moderate to steep slopes.


Topography
Site Boundary
0
660'
scale
N
566
550
MILLINGTON
ROAD
Well
450
WARNER
ROAD
WARNER RD
Brook
531




Adapted from Conn. Geol. Nat. Hist. Survey, Quadrangle Reports Nos. 13 and 19.


Bedrock Outcrops
N
0
660'
scale
MILLINGTON ROAD
566
550
450
WARNER ROAD
WARNER RD
BRIDGE
531

It appears that high groundwater levels may be a problem in several of the lots. In the area of lots 1-9, shallow-to-bedrock sections apparently alternate with deeper till sections. This suggests that the bedrock surface forms "steps" on the hillside, with till providing a general smoothing. This concept is reinforced by the finding of both shallow till and deeper till in separate test pits on the same lots (such as lots 4 and 7). In times of seasonal wetness, water may "pond" temporarily in the subsurface, causing groundwater to be quite near the surface. Groundwater levels are also likely to be near the surface in lot 10 during these times, as the high ground of lot 10 basically is a knoll in an otherwise low-lying topographic area.

## WILDLIFE

The parcel contains a good mix of hardwood forest, hay fields, edge areas, brushy areas and a small parcel of wetlands. Evidence of high utilization by deer was noted and the vegetation present suggests that the area has the elements of high-quality habitat for most of the indigenous woodland and openland wildlife species of this area.

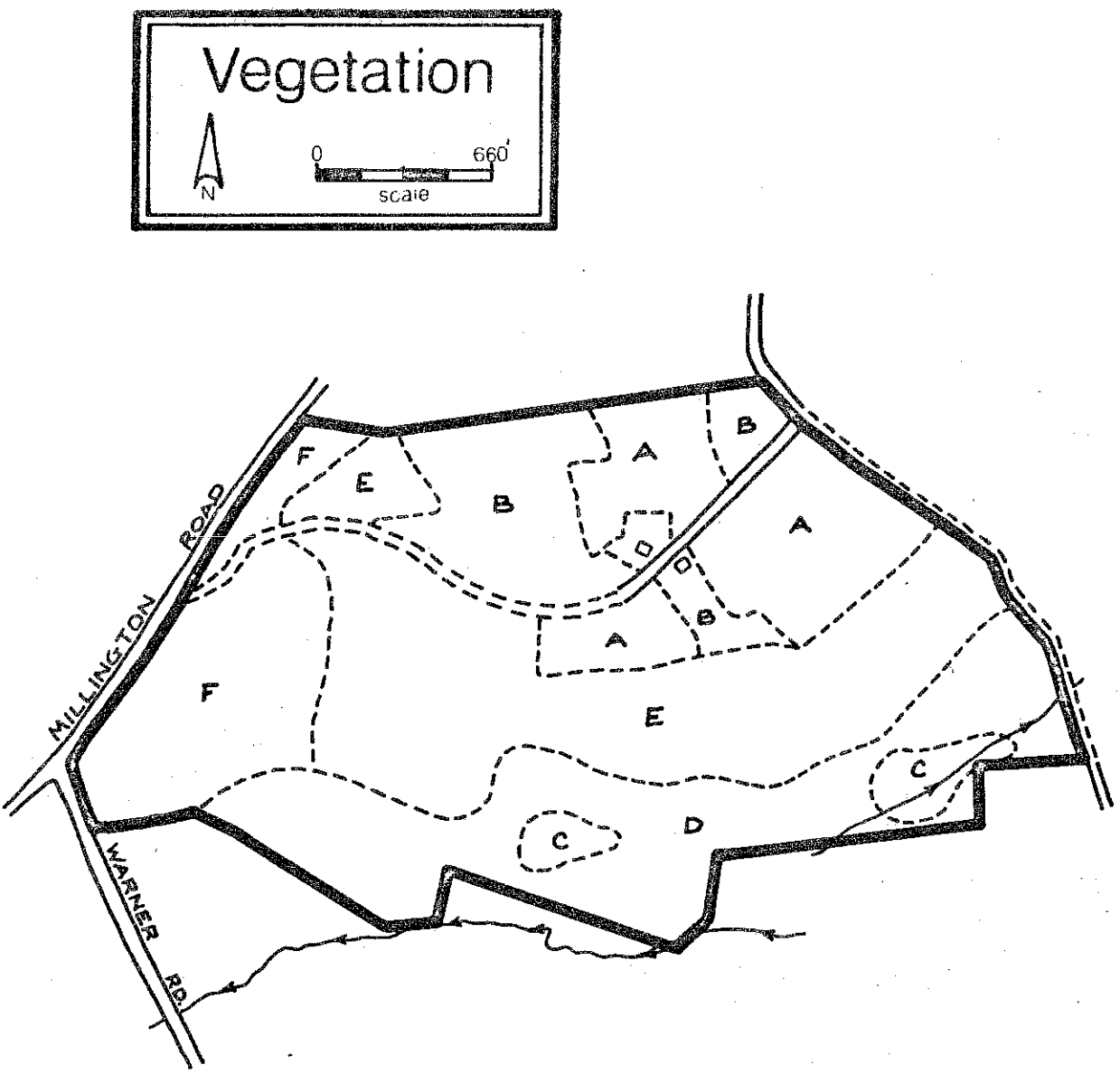
Proposed homesites have been located on heavily wooded slopes with a poorly developed understory layer. These areas do not represent significant food or water sources for wildlife and because of the lack of understory are probably not heavily utilized for cover. A possible adverse affect of development along Millington Road is that it may limit access and mobility of wildlife to the large tract of open land east of the site.

## FOREST VEGETATION

At present the preliminary plans for the "Town Farm" calls for the development of approximately 22 acres of the total 117 acre tract. The entire area is forested except 17 acres of hayfields. The tract is divided into six vegetation types. These types reflect the differences in successional development from time of abandonment as cultivated fields. (See Vegetation Map).

Stand A: (Open Field) This 17 acre stand is presently made up of several mowing lots which have not been in use for one to two years. Grasses, goldenrod, and bayberry are the primary species represented. Seedling size (smaller than 1 inch diameter at breast height - DBH) white ash, sugar maple and red maple are starting to appear around the field edges, especially where stone walls divide the lots. Pole size ( 5 to 11 inches DBH) white ash, sugar maple and red maple are prevalent in the wall areas.

Stand B: (Northern Hardwoods) Sixteen acres of fully stocked sapling size (1 to 5 inch DBH) sugar maple are starting to shade out the scattered red cedar, dogwood, and viburnum. Grasses and goldenrod comprise the ground cover layer. Approximately half of this area is in a more advanced state of growth; this is primarily due to site quality differences and the length of time since the abandonment of cultivation.




LEGEND

- Improved Road
- Unimproved Road
- Type Boundary
- Property Boundary
- Stream

VEGETATION TYPES*

STAND A. Open Field
STAND B. Northern Hardwoods, Sapling Size
STAND C. Hardwood Swamp, Pole Size
STAND D. Mixed Hardwoods, Sapling-Pole Size
STAND E. Mixed Hardwoods, Pole Size
STAND F. Mixed Hardwoods, Pole-Sawlog Size

* Sapling Size = 1.0 to 4.9 inches diameter at breast height (d.b.h.)
Pole Size = 5 to 10.9 inches d.b.h.
Sawlog Size = Eleven inches and greater d.b.h.

Stand C: (Hardwood Swamp) Pole size red maple on hummocks fully occupy these two wetland sites, which together total four acres. Highbush blueberry is the principle understory species. Marsh grasses and ferns are present as ground cover on the hummocks. This area is considered non-commercial forest land because the excessively high water table found in hardwood swamps usually limits growth rates and quality of wood produced under these conditions, and because the operation of logging machinery through these wetland areas is difficult and may result in environmental damage.

Stand D: (Mixed Hardwoods) Twenty-nine acres of fully stocked sapling and pole sized red oak, white oak, hickory, black birch, yellow birch, tulip tree and red maple occupy this site. The understory is made up of green briar, sweet pepperbush, high bush blueberry and tree seedlings of yellow birch, black birch, hickory, white oak and tulip tree. Several species of ferns are the predominant ground cover. Big tooth aspen, speckled alder and wild grape were found bordering the two swamp areas. It is evident that part of this stand received a timber harvest within the last ten years. Unfortunately, only poor quality trees were left standing. As a result many of the larger trees in the overstory have amall damaged crowns, are generally unhealthy, and are not aesthetically pleasing.

Stand E: (Mixed Hardwoods) Old field hardwoods make up this fully stocked 33 acre stand. Pole size white oak, red maple and red cedar, with occasional gray birch, tulip tree and white ash comprise the overstory. The understory has great diversity and is made up primarily of blue beech, hawthorne, high bush blueberry, green briar, barberry and several species of hardwood tree seedlings. Ground cover consists of club mosses, ferns, and low density poison ivy.

Stand F: (Mixed Hardwoods) Pole size and sawlog size (greater than 11 inches DBH) red oak, white oak, hickory, tulip tree, red maple, and black birch fully occupy this 18 acre stand. Poor quality white oak with large spreading crowns and large dead branches are also present here. The understory is predominantly high bush blueberry, maple leaf viburnum, mountain laurel, and seedling size hardwood trees. Christmas ferns and club mosses, are the principle gound cover species. At the field interface with Stand E, crowded sapling and pole size black birch are present.

Construction of driveways, buildings, and septic fields will demand cuts and fills due to the steeply sloped and rocky nature of this site. Trees which are damaged by such construction or have the soil disturbed under their crowns should be removed. A high risk of mortality may last as long as three years for these trees.

The mature white oak trees over 24 inches DBH with the large dead limbs are unhealthy and should be removed. Only the healthiest trees should be left for wildlife dens or aesthetic appeal, as all others will prove to be liabilities to the individual lot owners.

To increase landscape variety for aesthetics or wildlife habitat, any combination of hemlock, white pine, or larch would be suitable if planted in the open fields at least eight to ten feet apart. If these mowing lots are not maintained, sugar maple, white ash, tulip tree, and red maple will probably become established, as these species are present along the edges of the fields.

Cordwood may be harvested from any of the fully stocked stands. About one third of the volume could be removed, concentrating on unhealthy and poorly formed trees,

along with undesirable species such as blue beech and red maple. A qualified private forester should be contacted to determine which trees should be removed. This harvest would reduce stocking levels, giving the healthy trees which were left, more room to grow.

SOILS

A detailed soils map of this site is 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 feet/inch scale to 600 feet/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 sewerage, buildings with basements, buildings without 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 Special Soils Report, Connecticut River Estuary Planning Region, 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.

Soils on this site range from the poorly drained Ridgebury-Whitman complex (which occurs on the western edge of the property and includes portions of lots 10 and 11) to the moderately well drained Woodbridge, the well drained Canton and Charlton association, and the Charlton-Hollis complex. Within the area proposed for development are small pockets of deep soil interspersed with areas of steep slopes, shallow-to-bedrock soils, large boulders, exposed bedrock ledges, and seasonally high water table. Highly erosive subsoil layers and the presence of a dense hardpan will also create development problems. These soil characteristics will present severe limitations to development of lots as proposed.

The following comments refer to lots 1-9: The road and driveway drainage systems will need to be designed to carry both the existing runoff from Town Farm Road as well as the increased runoff due to development. Hydrologic data should be generated to insure that the proposed cross culvert and the existing culverts will handle the increased flows expected. Roadway and driveway swales, either grassed or rock-lined, should be utilized to carry surface runoff. Diversions may be needed to protect homesites and leaching fields from surface runoff. These diversions should have outlets to either driveway or road swales, and sediment basins should be installed below potential sediment generation sites as proposed. The disposal of roof runoff by the method proposed should be supported by calculations of runoff expected and capabilities of saturated soil for absorption and infiltration. In some cases drywells may be required. These above-mentioned measures should be incorporated into a sediment and erosion control plan and stormwater management plan for this site. Because the potential for runoff and erosion problems is high, these plans should be written into the construction sequence.

The percolation test report (by Mislick, July 24, 1978) was reviewed. The field inspection revealed the frequent ledge outcroppings, large boulders, and steep slopes present along with pockets of deeper soil. It was questioned whether

sufficient deep-test-pit information was gathered to insure that adequate areas for septic-tank leaching fields, reserve areas, and homesite locations exist on each lot. Because of the variable soil conditions, an intensive soil investigation should be performed on each proposed lot. In addition, the variable nature of surface and subsurface water movement in this area may cause problems with saturated conditions or seasonally high water tables, and the use of curtain, basement, and footing drains are recommended. On certain lots where deep test pits revealed shallow-to-bedrock soils, gravel mats are proposed, to bring the soil to the required depth for leaching fields. This material should have the proper textural characteristics so that the chance for ground water contamination is minimized. In addition, the mats are to be placed on relatively steep slopes, so the method of stabilization should be specified.

The relatively steep slopes proposed for driveways and the upper portion of Town Farms road have the potential for runoff, erosion, and winter icing problems if measures are not provided to control runoff generated on these sites. The variable depth to bedrock may cause additional problems with road and driveway construction as well as with installation of storm drainage systems.

The following comments refer to lots 10 and 11 (off Oriole Road). The extent of the wetlands on these lots should be investigated by a qualified soil scientist, and the boundaries noted on the plan map, as well as any improvements to the road that are proposed. Measures should be taken to control surface water on both of these lots to insure that homesites and leaching fields are protected. It was noted that the proposed driveway to lot 11 runs along the toe of a steep slope and will act to divert some of the surface water toward Oriole Road. Provisions should be made to convey this surface water to a stable outlet. Because of soil conditions, the use of leaching field curtain drains and basement and footing drains is recommended. In addition, the proposed leaching field for lot 10 is located in an area which may have problems with surface runoff and subsurface water. This situation may cause a seasonally high water table or saturated condition that will adversely affect the operation of the system. It is recommended that this area be tested during the wet season to determine the extent of the problem.

The proposed improvements to Oriole Road include widening and construction of a new cross culvert. These activities involve a portion of the wetlands on the site and will need to be addressed by the local inland wetlands commission. Since a considerable amount of runoff and silt runs down the road (which is presently unpaved) the sediment and erosion control and stormwater management plan should address this situation to prevent any siltation or degradation of the wetlands or stream.

## WATER SUPPLY

Because a public water supply is unavailable, individual on-site wells drilled into bedrock would supply water to houses within the subdivision. In most cases, bedrock can provide a yield that is small but capable of meeting most domestic needs. Because of the mineralogy of the local Brimfield Formation rocks, it is not unlikely that relatively high iron, manganese, or sulfur concentrations will be found in the water. This problem generally can be solved by suitable filtration methods.

In shallow-to-bedrock areas, contamination of wells by septic-system effluent is usually a concern. Because of the particular fracture pattern that appears in the local bedrock, however, it seems likely that these concerns will be minimal as

long as the wells are drilled about 75 to 100 feet upslope from the septic systems.

The U.S. Geological Survey and the Connecticut Department of Environmental Protection has recently delineated "favorable aquifers" or areas known or inferred to be capable of yielding moderate to very large amounts of water (50 to 2,000 gallons per minute). Such an aquifer is found along Roaring Brook approximately 1/4 mile south of the intersection of Mount Parnassus Road and Warner Road. Care should be taken to assure that septic waste and eroded materials are contained on-site and not allowed to flow across Millington Road into the wetlands, where they might eventually have an adverse effect on the aquifer.

## WASTE DISPOSAL

Shallow depths of soil to bedrock and seasonally high water tables are likely to pose the most serious constraints to septic systems. Lot 10 does not appear to have enough high ground to support both a house and a septic system without at least one of the two experiencing groundwater flooding. A significant amount of filling may be necessary to offset this problem. On lots 1-9, subsurface ponding in bedrock hollows may hamper septic systems, causing flooding of tile lines, backups, or surfacing of effluent. Slopes and shallow soils suggest that effluent from the systems will often surface before the flow reaches Millington (Mount Parnassus) Road. This need not be a severe constraint if the soil can adequately purify the wastewater before such surfacing. It seems clear, however, that either very judicious site selection for the systems or careful engineering would be required to assure such purification.

## ROADS/TRAFFIC CONSIDERATIONS

Lots numbered five through nine would be afforded adequate access by Millington Road, a State highway, and by Warner Road, an improved Town road. Lots numbered one through four would depend on access from Town Farm Road, listed by the Connecticut Department of Transportation as an unimproved local road. To provide safe and convenient access to the four lots, this western end of Town Farm Road would require upgrading for a distance of some 800 feet easterly from its intersection with Millington Road.

A similar situation exists with respect to lots numbered ten and eleven. The developer proposed to provide access to these lots by marginally upgrading an unimproved section of Oriole Road, also listed as a local road, to a level which currently serves neighboring residences.

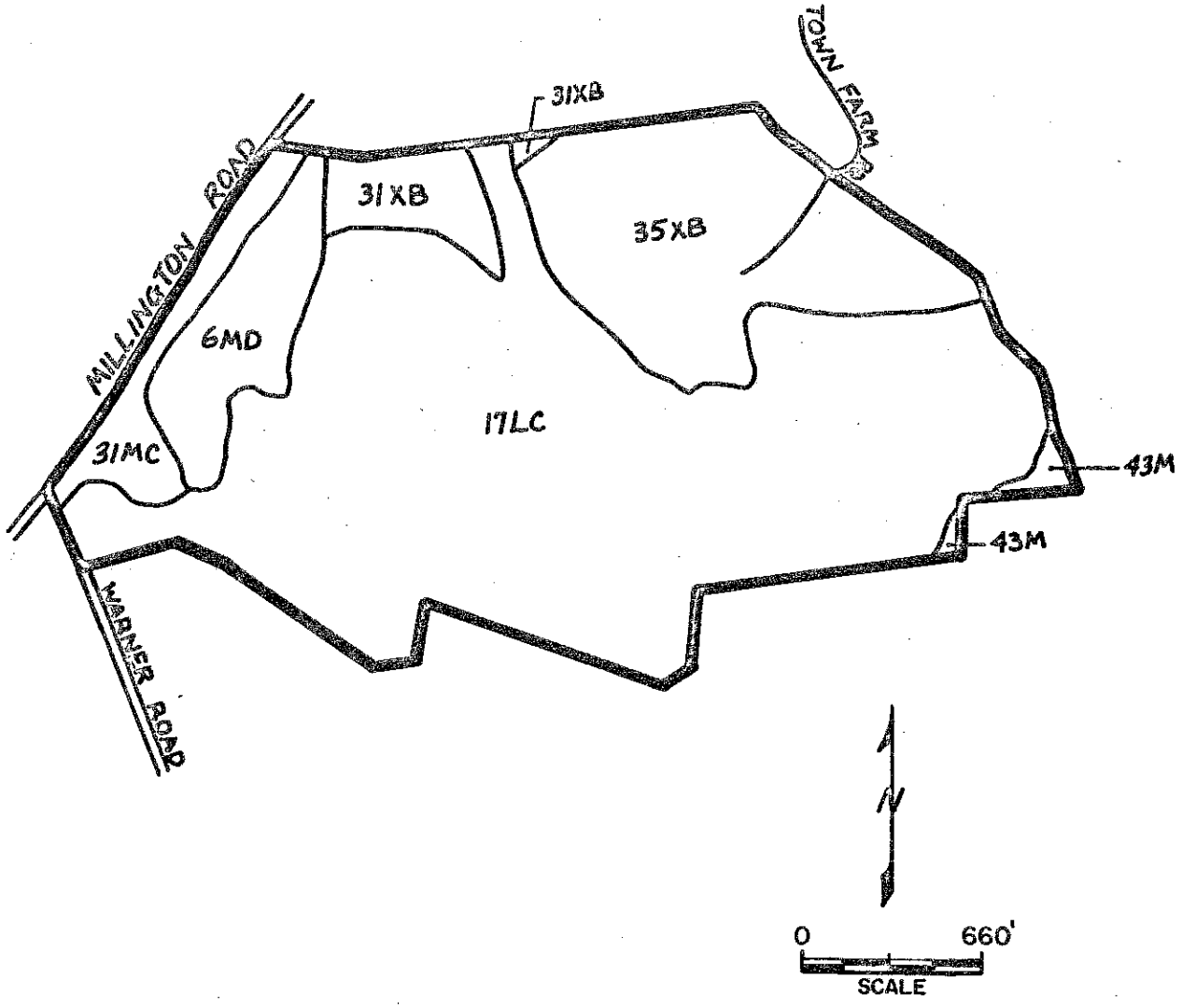
The issue confronting the Town in this case is the standard to which the unimproved local roads should be upgraded and who should bear the cost of the improvement. Guidelines prepared by the Midstate Regional Planning Agency were recently distributed to East Haddam officials; if applied to the Town Farm subdivision, the road segments in question should be improved to a surface width of 24 feet within a right-of-way of between 32 and 50 feet, depending on the likelihood of future development along the road. The subbase, wearing surface, and drainage channels should be constructed in conformance with accepted engineering practices as recommended by the Town Engineer.

Until the Town adopts a Road Policy, the burden of improvement costs must be determined by agreement between the developer and the Board of Selectmen.

# Appendix

# Soils

CZWACZKA PROPERTY
EAST HADDAM, CONNECTICUT




This map is an enlargement from the original 1,320'/inch scale to 660'/inch.

Information taken from: Special Soils Report, Middlesex County Connecticut, 1974; soil survey sheet Nos. 1629, 1563 and 1565, prepared by the United States Department of Agriculture, Soil Conservation Service; Advance copy, subject to change.

CZWACZKA PROPERTY
EAST HADDAM, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

| Soil Series | Soil Symbol | Approx. Acres | Percent of Acres | Principal Limiting Factor | Urban Use Limitations* | | | |
|---|---|---|---|---|---|---|---|---|
| | | | | | On-Site Sewage | Buildings with Basements | Streets & Parking | Land-Scaping |
| Hollis-Charlton | 17LC | 76 | 63% | Slope, Large stones, Depth to rock | | | | |
| Charlton part | | | | | 2 | 2 | 2 | 2 |
| Hollis part | | | | | 3 | 3 | 3 | 3 |
| Canton-Charlton | 6MD | 9 | 7% | Slope, Large stones | 3 | 3 | 3 | 3 |
| Woodbridge | 31MC | 4.5 | 4% | Large stones, Wetness, Percs slowly | 3 | 3 | 3 | 3 |
| Woodbridge | 31XB | 5 | 4% | Percs slowly, Wetness, Large stones | 3 | 3 | 3 | 2 |
| Paxton | 35XB | 24 | 20% | Percs slowly, Large stones, Frost action | 3 | 2 | 2 | 2 |
| Ridgebury-Whitman | 43M | 3 | 2% | Wetness, Large stones, Percs slowly | 3 | 3 | 3 | 3 |

LIMITATIONS: 1 = Slight, 2 = Moderate, 3 = Severe.

## 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.