# Zone Change

## Montville, Connecticut

August 1986

# ENVIRONMENTAL REVIEW TEAM REPORT

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

# Zone Change

## Montville, Connecticut

**Review Date:** JULY 17, 1986

**Report Date:** AUGUST 1986

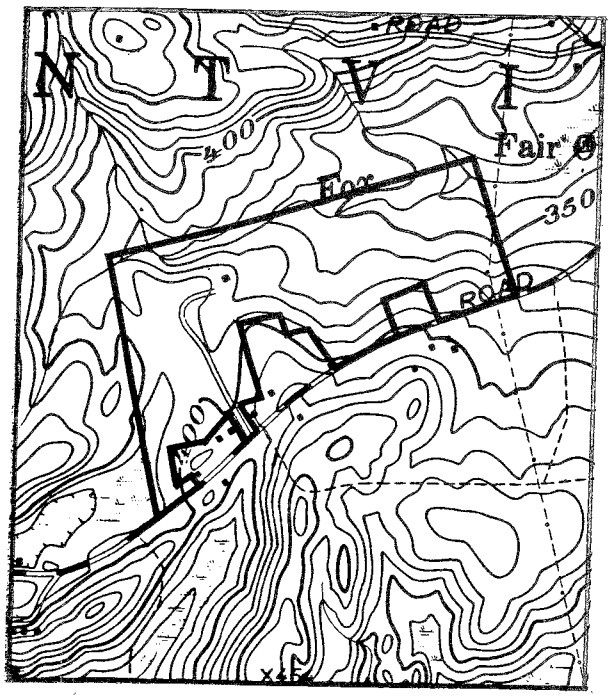
RC&D

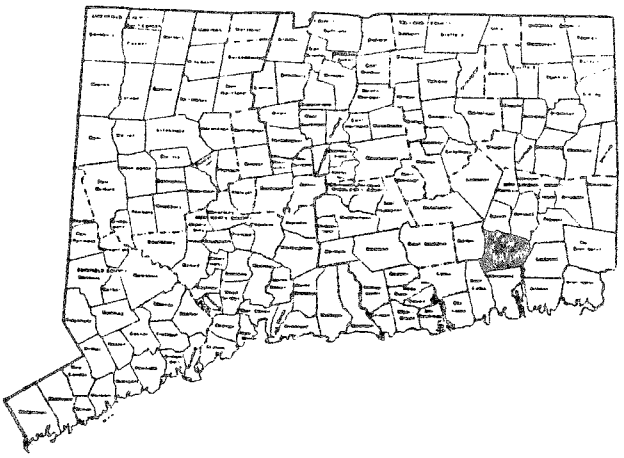
ENVIRONMENTAL REVIEW TEAM
PO BOX 198
BROOKLYN, CONNECTICUT 06234

# Site Location

ZONE CHANGE

MONTVILLE, CONNECTICUT




EASTERN CONNECTICUT

RESOURCE CONSERVATION

& DEVELOPMENT AREA

ENVIRONMENTAL REVIEW TEAM REPORT

ON

A ZONE CHANGE

MONTVILLE, CONNECTICUT

This report is an outgrowth of a request from the Montville Planning and Zoning 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. 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, July 17, 1986. Team members participating on this review included:

| | |
|---|---|
| Pete Merril | --Forester - Connecticut Department of Environmental Protection |
| Liz Rogers | --Soil Conservationist - U.S.D.A., Soil Conservation Service |
| Al Roberts | --Soil Scientist - U.S.D.A., Soil Conservation Service |
| Eric Schluntz | --Fisheries Biologist - Connecticut Department of Environmental Protection |
| Tom Seidel | --Planner - Southeastern Connecticut 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 soils map and a map showing the area proposed for the zone change. During the field review the team members were given a large scale topographic map and preliminary site plans. The Team met with, and were accompanied by the Town Planner, the agents and engineer for the developer. 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 the proposed project--all final decisions and conclusions rest with the Town and landowner. This report identifies the existing resource base and evaluates its significance to the proposed development, and also suggests considerations that should be of concern to the developer and the Town. The results of this Team action are oriented toward the development of better environmental quality and the long-term economics of land use.

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

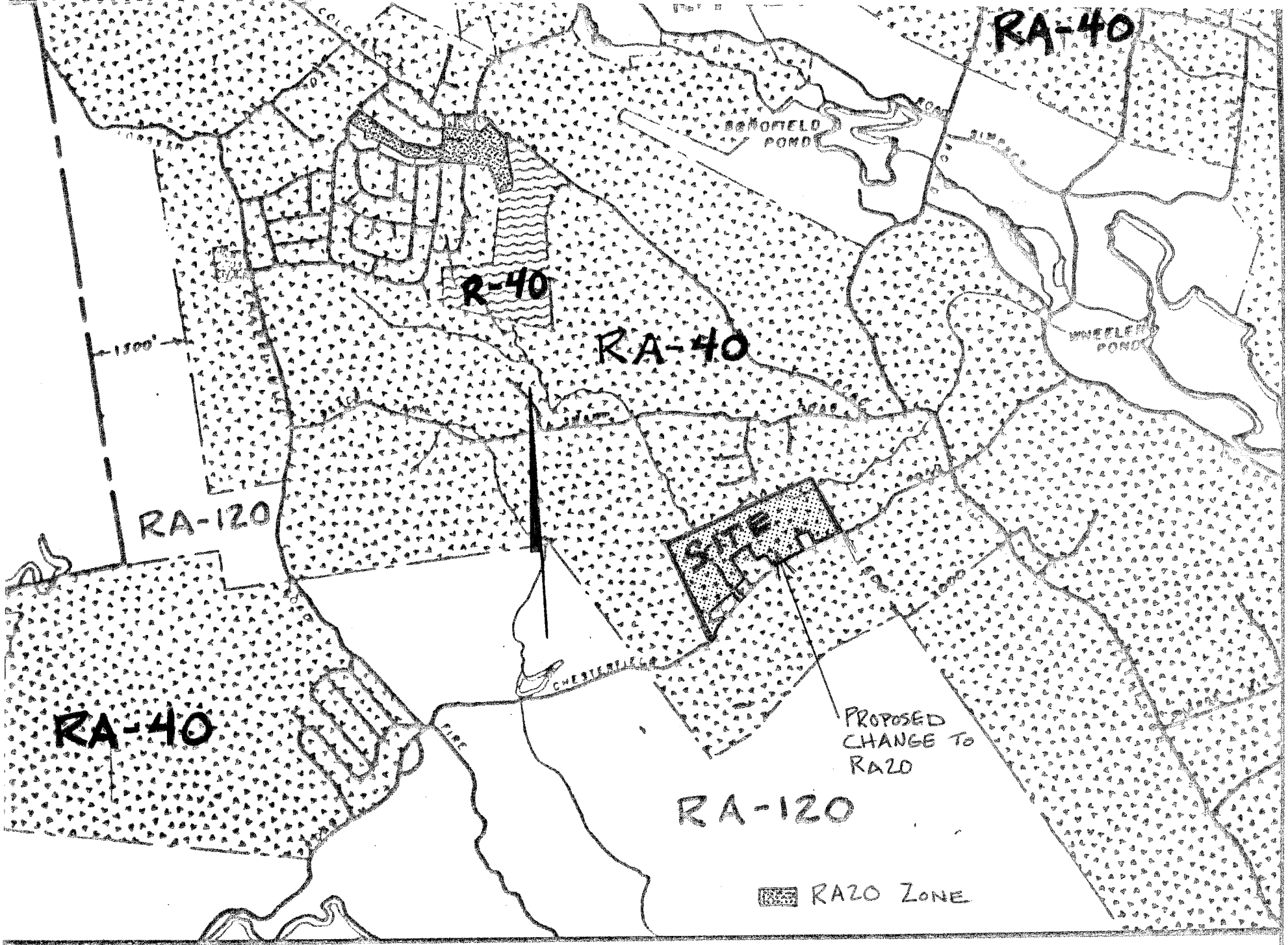
If you require any additional information, please contact:

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

## TABLE OF CONTENTS



## TABLE OF MAPS AND CHARTS




LOCATION MAP

SCALE: 1" = 2,000'

## 1. INTRODUCTION, TOPOGRAPHY AND SETTING

The Montville Planning and Zoning Commission has asked for Environmental Review Team assistance in reviewing a proposed zone change.

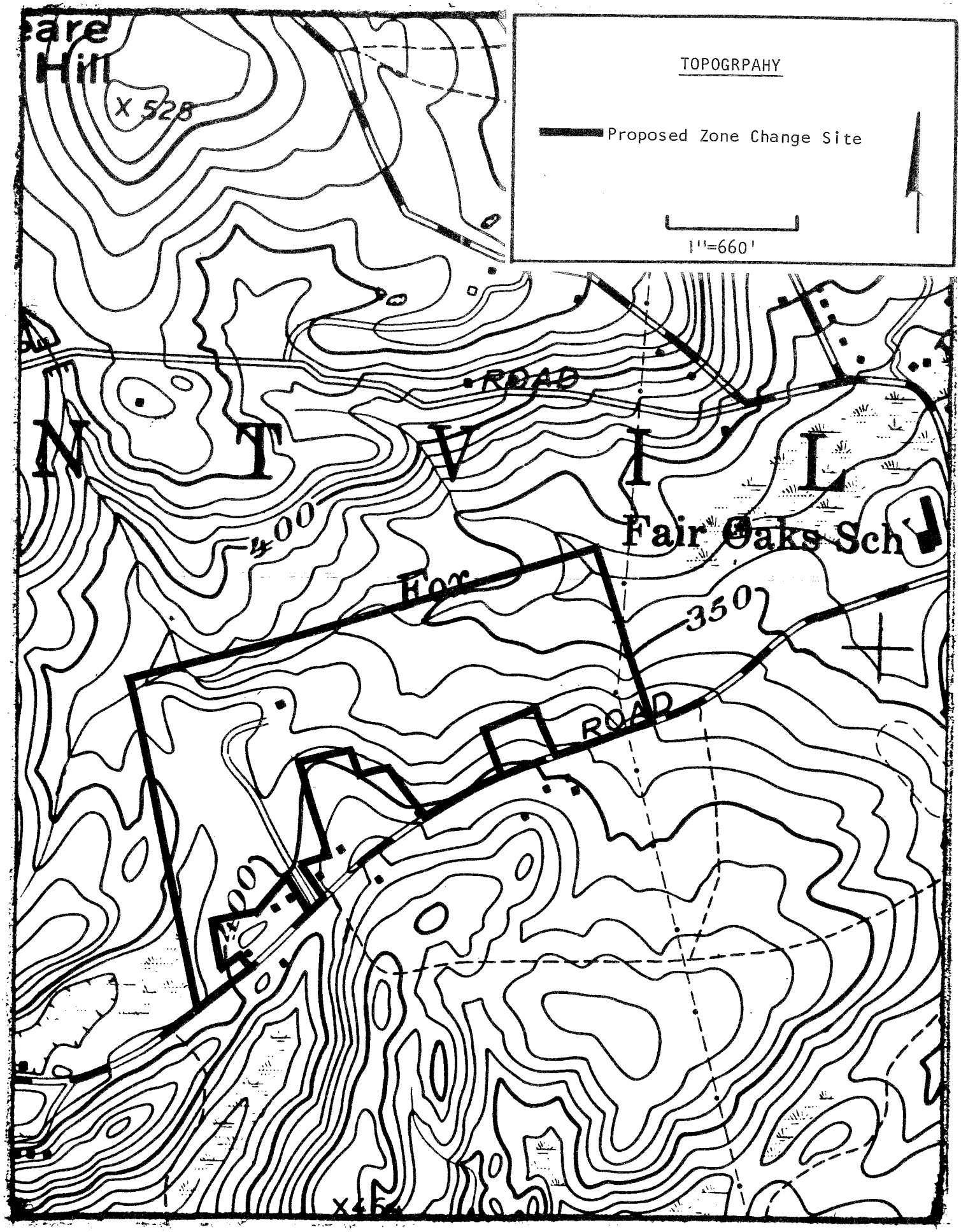
The land, which is being considered for a zone change is about 56-77 acres in size and is located in the central parts of Montville. The property will be accessed via Chesterfield Road. The party seeking the zone change wishes to reduce the present zoning requirements, which is RA-40 or 40,000 square foot building lots to an RA-20 or 20,000 square foot lots. The latter zoning has provisions for multi-family development although the applicant stated on the field review day that this type of development was not being considered for the subject parcel. The developer proposes to build 67 single family homes.

In order to consider this type of zone change, the availability of public sewers and/or water is usually a major factor. According to the applicants project coordinator, a municipal sewer line is available to the site as well as an existing community water supply well in the west central parts of the site. The availability of a public sewer line should effectively eliminate the risk of substantial groundwater contamination on and off the site. The water supply currently serves three single family homes along Chesterfield Road. (See Water Supply section). Also, the applicants project coordinator indicated on the review day that a pump station for the sewer line may be necessary for development of the site.

As indicated by the accompanying topographic map, the land surface on the site slopes gently towards Fox Brook. Fox Brook and a small tributary flow along the northern boundary of the site. Land surface in the southwest corner of the site slopes gently towards a topographic depression which appears to carry seasonal water. Water flowing in this drainageway is routed southwestward under Oakdale Road and ultimately feeds a tributary to Deep Hollow Brook.

Maximum and minimum elevations on the site are $\pm$ 420 feet and 340 feet above mean sea level.

The Team has addressed a number of concerns which are contained in the following sections. Information, comments and recommendations are discussed in the body of this report. The summary contains brief highlights from each section.


TOPOGRPAHY
Proposed Zone Change Site
1"=660'
Hill
X 528
ROAD
MT VIL
Fair Oaks Sch
400
Fox
350
ROAD
X456

## 2. GEOLOGY

The site is encompassed by the Montville topographic quadrangle. A surficial geologic map (GQ-148) and a bedrock geologic map (GQ-609) for the quadrangle prepared by Richard Goldsmith have been published by the United States Geological Survey.

Bedrock does not appear to break the ground surface on the site. Goldsmith identifies three (3) types of bedrock underlying the site which form east/west trending belts. The northeastern corner of the site is underlain by a white to cream-colored, medium grained gneissic granite. This rock is composed of the minerals microcline, quartz and oligoclase with minor amounts of biotite and magnetite. The second rock type which mainly underlies the western parts of the site and along Chesterfield Road is also a granitic rock. Goldsmith describes this rock unit as a white, fine grained granite gneiss. Major minerals in the rock includes quartz, microcline perthite and albite. The final rock types underlying the site, mainly in the western parts, and as a thin band protruding east/west in the south central parts are mainly gneisses. This rock unit also includes thin zones of quartzites (quartz-rich rock) and calc-silicate rock. The common mineral components of the rock unit includes garnet, biotite, sillimanite quartz and feldspar. Their relative proportions vary markedly among layers. "Gneisses" are lineated, crystalline metamorphic rocks.

According to Connecticut Water Resources Bulletin #16 (Hydrogeologic Data Southeastern Coastal River Basins), the existing drilled well on the site penetrated about 22 feet of unconsolidated materials before reaching the bedrock surface. Bedrock is probably shallowest (generally less than 10 feet) in the western limits of the property and perhaps along Chesterfield Road. Subsurface investigations (deep test pits) would be required in order to determine exact depth to the bedrock surface on the site. There may be a need to blast the bedrock in these areas, if it is encountered, for the installation of the sewer and/or water lines and constructing interior roads and foundations. According to the applicant, if the property is developed for residential use, homes constructed on the site would be serviced by the existing bedrock well. Since the water in the well is derived from the underlying bedrock, it will have an affect on water quality and quantity. (Also, see Water Supply section of the report). In fact, a copy of a letter on the well submitted to Team members (dated March 29, 1963) from the State Health Department indicated an elevated iron level (1.0 part per million) in the water. The required maximum iron level in a public water supply is .3 parts per million. The letter recommends that the well water supply be approved for use pending satisfactory reduction of the iron content.

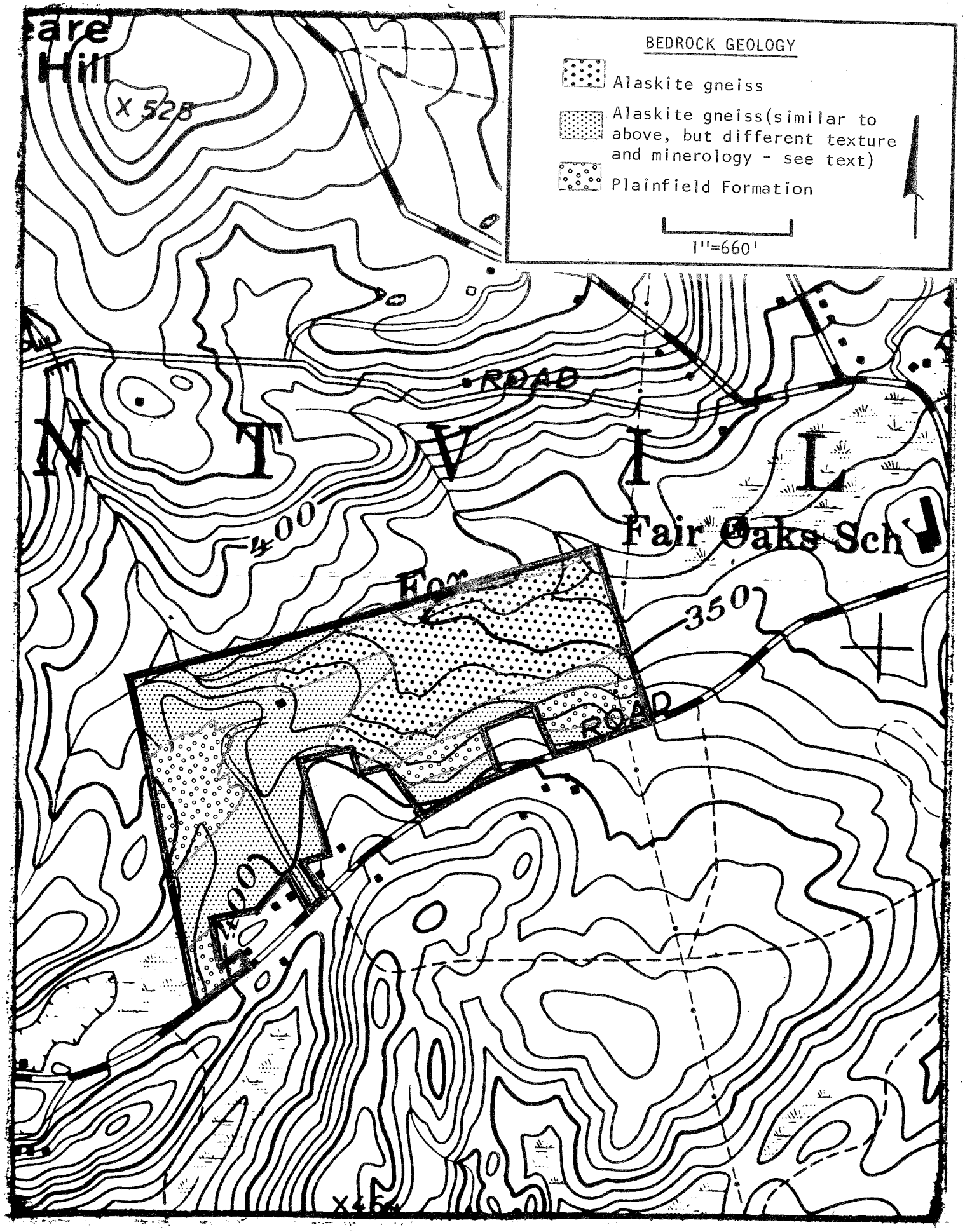
The surficial geologic materials overlying bedrock on the site are till and alluvium. Till, which covers most of the site is a glacial sediment that was deposited directly from a glacial ice sheet. Till consists of a generally nonsorted, structureless mixture of clay, silt, sand, gravel and boulders. The texture of till may vary greatly from place to place. It is generally sandy,

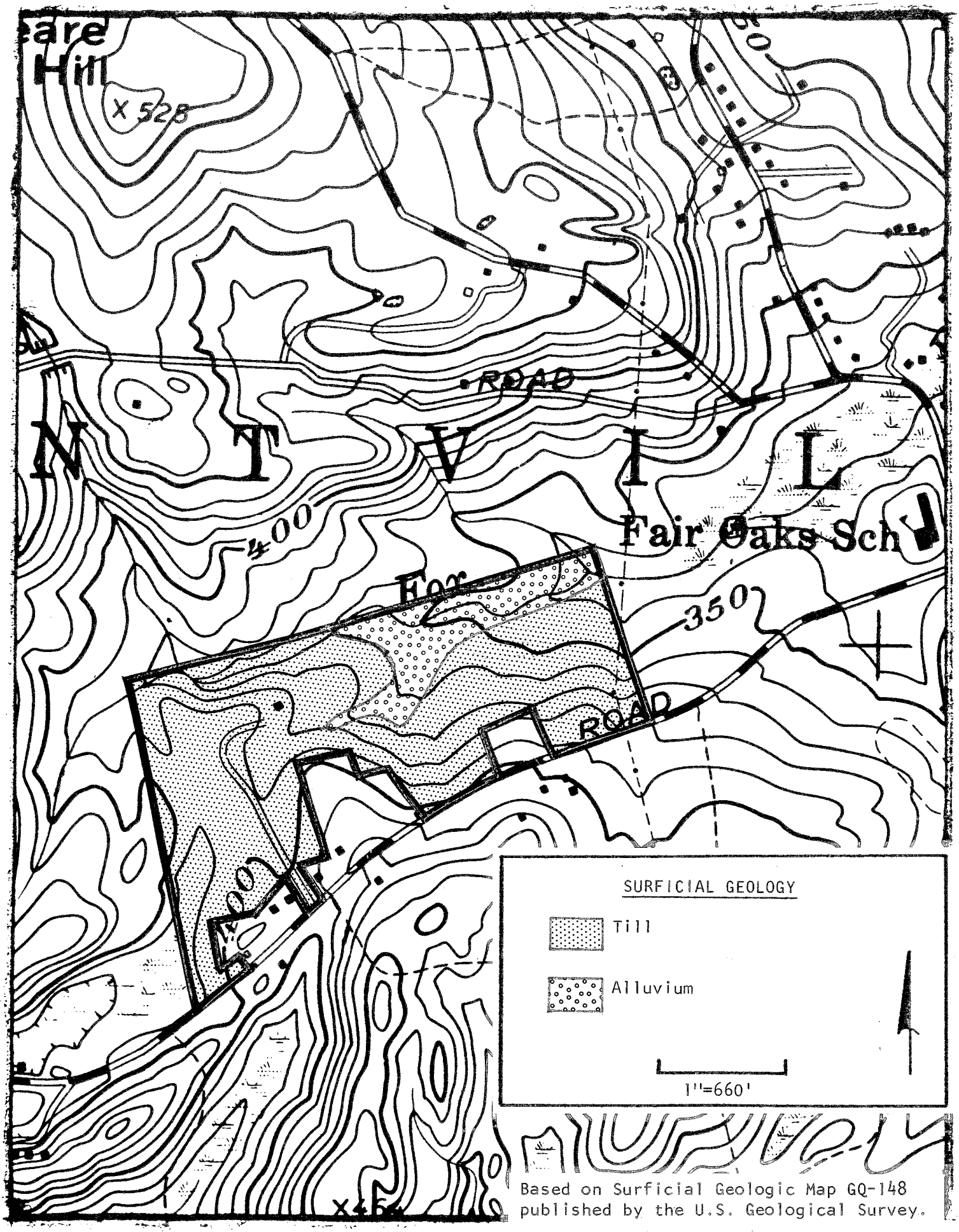
stony and loose in the upper portions, but at depths of 2 to 5 feet and occasionally at shallower depths, it becomes hard, compact and finer-grained (silty).

A surficial deposit found on the site which formed after the disappearance of glacier ice in this area is alluvium. "Alluvium", which generally parallels Fox Brook and an unnamed tributary in the central parts, consists of silt, sand and gravel of flood plains of their respective watercourses.

Some seasonally wet areas are visible throughout the site mainly in topographic depressions, along Fox Brook and other intermittent drainage channels. Because of the relatively high density of development that could occur on the site if the zone change is granted, it is recommended that a certified soil scientist flag the wetlands on the site. Once the wetlands on the site have been identified their boundaries should be superimposed on the site plan for any development which may take place on the site.

Because wetness may be encountered with some of the till-based soils on the site, foundations constructed with basement facilities should be protected against wetness. A likely resolution for this potential problem would be the proper installation of building footing drains.


BEDROCK GEOLOGY
Alaskite gneiss
Alaskite gneiss(similar to above, but different texture and minerology - see text)
Plainfield Formation
1"=660'
Hill
X 528
ROAD
Fair Oaks Sch
400
350
ROAD
X 456




Based on Surficial Geologic Map GQ-148
published by the U.S. Geological Survey.

## 3. SOILS

This 56-77 acre site, on Chesterfield Road, is dissected by number of intermittent streams and associated wetlands. Fox Brook, a major tributary for the area, runs along and through the northern border of this tract of land. Some changes have been made to the soils map of the area to show the following soils:

CcB -- Canton and Charlton soils, 3 to 8 percent slopes, very stony
#Ce -- Carlisle muck
SvA -- Sutton fine sandy loam, 0 to 3 percent slopes
SvB -- Sutton fine sandy loam, 3 to 8 percent slopes
SwB -- Sutton fine sandy loam, 0 to 8 percent slopes, very stony
#Rn -- Ridgebury, Leicester, and Whitman soils, extremely stony
#Ro -- Rippowam fine sandy loam

# -- designated as inland wetland soils, Public Act 155.

A brief description of these soils follows:

CcB -- Canton and Charlton soils, 3 to 8 percent slopes, very stony. This mapping unit consists of gently sloping, well drained deep soils on ridges, hills, and side slopes of glacial till uplands. The areas are mostly irregular in shape. Slopes are generally smooth and convex and less than 200 feet long. About 45 percent of this unit is Canton soils, 40 percent is Charlton soils, and 15 percent is other soils. In some areas, this unit will consist almost entirely of Canton soils or almost entirely of Charlton soils. The soils were mapped together because they have no significant differences in use and management. Stones cover 1 to 8 percent of the soil surface.

Typically, the Canton soils have a surface layer of very dark grayish brown fine sandy loam 2 inches thick. The subsoil is yellowish brown fine sandy loam, gravelly fine sandy loam, and gravelly sand loam 21 inches thick. The substratum is pale brown gravelly loamy sand to a depth of 60 inches or more.

Typically, the Charlton soils have a surface layer of dark yellowish brown fine sandy loam 5 inches thick. The subsoil is yellowish brown fine sandy loam and sandy loam 20 inches thick. The substratum is light yellowish brown and light brownish gray sandy loam to a depth of 60 inches or more.

Included with these soils in mapping are small areas of somewhat excessively drained Gloucester and Hollis soils; well drained Paxton soils; and moderately well drained Sutton soils. Also included are a few areas that have a compact substratum at a depth of 40 to 50 inches.

The water table in these soils is commonly at a depth of more than six (6) feet. The permeability of the Canton soils is moderately rapid in the surface layer and subsoil and rapid in the substratum. The permeability of the Charlton soils is moderate or moderately rapid. Both soils have medium to rapid runoff, and have moderate available water capacity.

Instability of some excavations in the Canton soils is the main limitation for community development. On-site septic systems need careful design and installation. Stones and boulders need to be moved in order to establish lawns. Quickly establishing a plant cover and using mulch, temporary diversions, and sediment basins help to control erosion during construction.

Ce -- Carlisle muck -- This soil is nearly level to level and very poorly drained. It is in low depressions on outwash terraces and glacial till plains. Areas of this soil are mostly oval in shape. Slopes range from 0 to 2 percent but are mostly less than 1 percent.

Typically, this soil is black, very dark brown, and dark reddish brown muck to a depth of 60 inches or more.

Included with this soil in mapping are small areas of very poorly drained Adrian, Palms, Saco, Scarboro, and Whitman soils. A few small areas have a thin mineral layer on the surface. Included areas make up about 25 percent of the unit.

The water table of this Carlisle soil is at or near the surface during most of the year. The available water capacity is high. Permeability is moderately rapid. Runoff is very slow, and water is on the surface of some areas from autumn to spring and after heavy rains.

Areas of this soil are wooded or are covered by marshgrasses and sedges. Most areas do not have adequate drainage outlets. Although this soil supports red maple, ash, and alder, it is poorly suited to woodland production. The organic material will not support heavy equipment, and uprooting is common during windy periods.

The high water table and the low strength of the organic material make this soil generally unsuitable for community development.

SvA -- Sutton fine sandy loam, 0 to 3 percent slopes -- This nearly level, moderately well drained soil is on upland glacial till plains, hills, and ridges. Areas are dominantly irregular in shape.

Typically, this Sutton soil has a very dark grayish brown, fine sandy loam surface layer 9 inches thick. The subsoil is yellowish brown, dark yellowish brown, and dark brown, mottled fine sandy loam and sandy loam 24 inches thick. The substratum is olive brown, mottled sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of well drained Canton and Charlton soils; moderately well drained Woodbridge soils; and poorly drained Leicester soils. Included areas make up about 10 percent of this map unit.

The Sutton soil has a seasonal high water table at a depth of about 18 inches. Permeability is moderate or moderately rapid. The available water capacity is moderate. Runoff is medium. Sutton soil warms up and dries out slowly in the spring.

The major limiting factor for community development is the seasonal high water table. On-site septic systems need special design and installation to prevent effluent from seeping to the surface. Foundation drains help to prevent wet basements. Lawns are wet and soggy in the fall and spring. Quickly establishing a plant cover and using mulch, temporary diversions and sediment basins help to control erosion during construction.

SwB -- Sutton fine sandy loam, 0 to 8 percent slopes, very stony -- This nearly level to gently sloping moderately well drained soil is on upland glacial till plains, hills, and ridges. Stones and boulders cover 1 to 8 percent of the surface. Areas are dominantly irregular in shape.

Typically, this Sutton soil has a very dark grayish brown, fine sandy loam surface layer 4 inches thick. The subsoil is yellowish brown, dark yellowish brown, and dark brown, mottled fine sandy loam and sandy loam 29 inches thick. The substratum is olive brown, mottled sandy loam to a depth of 60 inches or more.

Included with this soil in mapping are small areas of well drained Canton and Charlton soils; moderately well drained Woodbridge soils; and poorly drained Leicester soils. Included areas make up about 10 percent of this map unit.

The Sutton soil has a seasonal high water table at a depth of about 18 inches. Permeability is moderate or moderately rapid. The available water capacity is moderate. Runoff is slow or medium. Sutton soil warms up and dries out slowly in the spring.

The major limiting factor for community development is the seasonal high water table. On-site septic systems need special design and installation to prevent effluent from seeping to the surface. Foundation drains help to prevent wet basements.

Lawns are wet and soggy in the fall and spring. Quickly establishing a plant cover and using mulch, temporary diversions, and sediment basins help to control erosion during construction.

Rn -- Ridgebury, Leicester, and Whitman soils, extremely stony -- This mapping unit consists of nearly level, poorly drained, and very poorly drained soils in depressions and drainageways of glacial till uplands. The areas are mostly long and narrow or irregular in shape. Slopes range from 0 to 3 percent and are mainly 100 to 300 feet long. Stones cover 8 to 25 percent of the surface. About 40 percent of this unit is Ridgebury soils, 25 percent is Leicester soils, 15 percent is Whitman soils, and 10 percent is other soils. Some areas of this unit will consist of one of these soils, and other areas will consist of two (2) or three (3). The soils of this unit are mapped together because they have no significant differences in use and management.

The Ridgebury soils have a seasonal high water table at a depth of about 10 inches from fall through spring. The permeability of the soils is moderate to moderately rapid in the surface layer and the subsoil and slow to very slow in the substratum. Runoff is slow. The Ridgebury soils have a moderate available water capacity.

The Leicester soils have a seasonal high water table at a depth of about 10 inches from fall through spring. The permeability of the soils is moderate or moderately rapid throughtout. Runoff is slow. The Leicester soils have a moderate available water capacity.

The Whitman soils have a seasonal high water table at or near the surface from fall through spring. The permeability of the soils is moderate or moderately rapid in the surface layer and subsoil and slow to very slow in the substratum. Runoff is slow. The Whitman soils have a moderate available water capacity.

The high water table and slow to very slow permeability are major limitations of the soils of these areas for community development. Steep slopes of excavations in these soils slump when saturated. The stones on the surface restrict landscaping, and lawns are soggy most of the year.

Ro -- Rippowam fine sandy loam -- This nearly level, poorly drained soil is on flood plains of major streams, rivers, and their tributaries. Areas are dominantly long and narrow or irregular in shape.

Typically, this Rippowam soil has a black, fine sandy loam surface layer 8 inches thick. The subsoil is dark grayish brown and dark gray, mottled fine sandy loam 27 inches thick. The substratum is dark grayish brown gravelly coarse sand to a depth of 60 inches or more.

Included with this soil in mapping are small areas of moderately well drained Pootatuck soils and poorly drained Limerick soils. Included areas make up about 20 percent of this map unit.

The Rippowam soil has a seasonal high water table at a depth of about 6 inches. It is subject to frequent flooding. Permeability is moderate or moderately rapid in the surface layer and subsoil and rapid or very rapid in the substratum. The available water capacity is moderate. Runoff is slow. Rippowam soil warms up and dries out slowly in the spring.

This soil is poorly suited to community development because of flooding and the seasonal high water table. Areas used for on-site septic systems require extensive filling, and systems require special design and installation. Areas also need to be protected from flooding. Sediment deposited by flooding will damage lawns. Lawns are wet and soggy in the fall and spring.

The attached soils map shows the general distribution of the soils on this tract of land. Specific areas of wetlands will need to be flagged in the field prior to any construction. The wetland extent can only be accurately determined after they are field marked.

Please note soil symbols and name changes made on this map. Boundary line of property is only an approximate.

United States Department of Agriculture

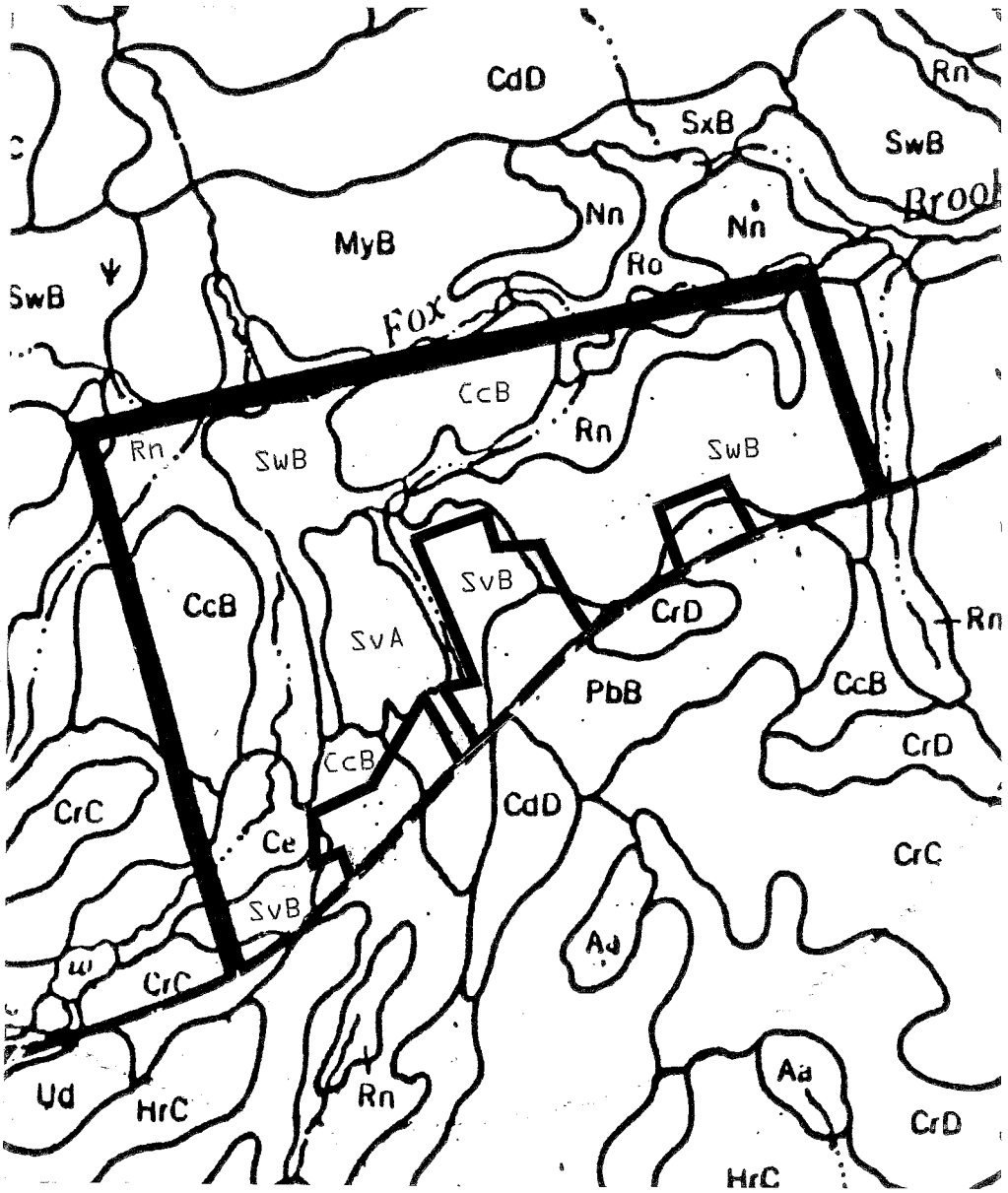
Soil Conservation Service

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

Revised from New London County Soil Survey Sheet #53

Scale 1"=660' **

** Soil boundary lines were derived from a smaller scale map and should not be viewed as precise boundaries, but rather as guide to the distribution of soils on the site.



## 4. HYDROLOGY

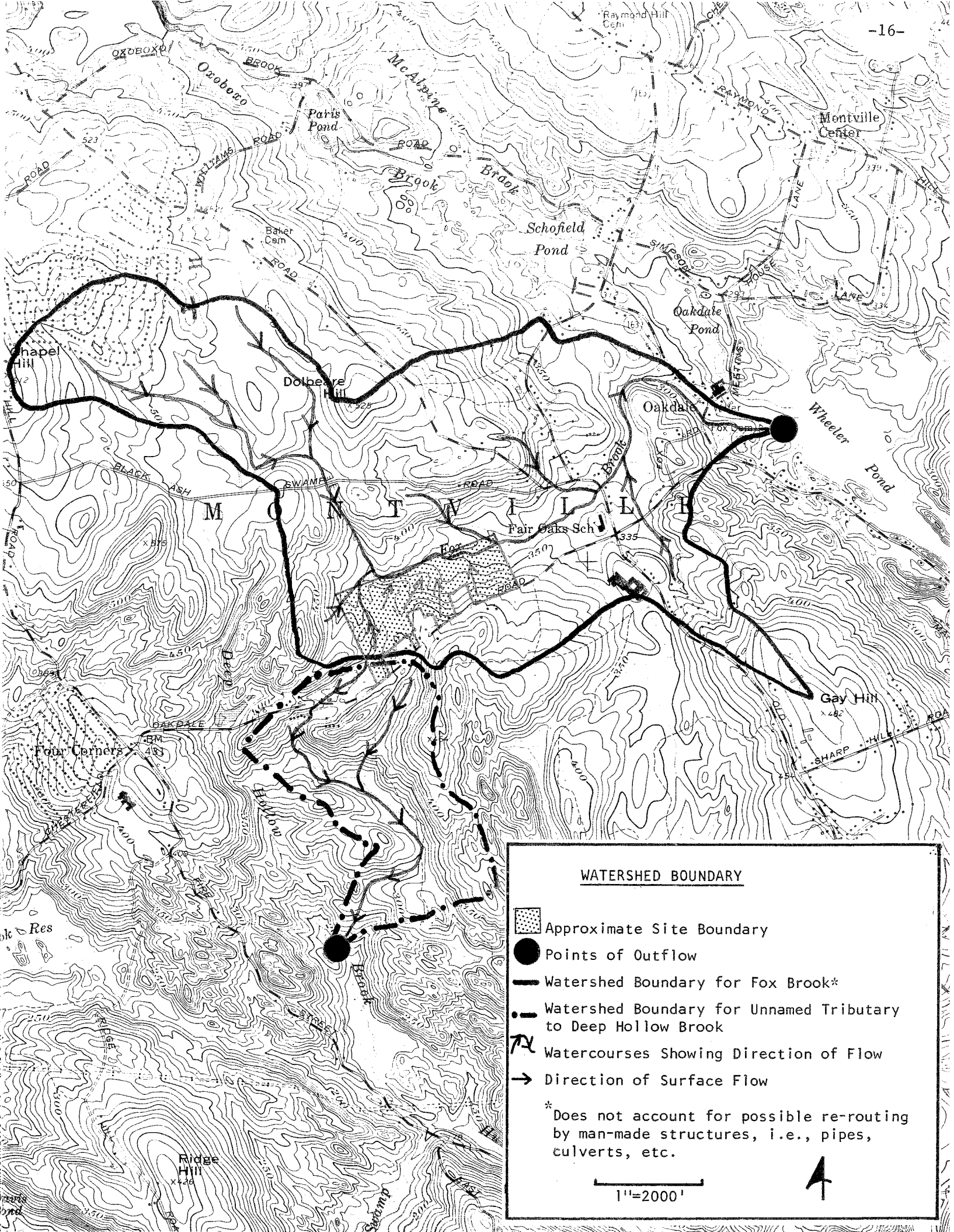
Except for 45 acres in the southwest corner of the site, surface runoff and probably to a large extent groundwater flow is to Fox Brook. Fox Brook and an intermittent drainage channel on the site act as discharge points for runoff. Fox Brook, which flows along the property line in the northern limits in an easterly direction, ultimately discharges into Wheeler Pond to the east.

Surface runoff and groundwater from the remaining ± 45 acres in the southwest corner flows into a swampy area southwest of the site. It is then routed southward under Oakdale Road into an unnamed tributary to Deep Hollow Brook.

Construction of the site under the R-20 zone versus the R-40 zone can be expected to lead to increases in runoff from the site and to increase peak flows in the local watercourses. This is mainly due to the greater density which would be allowed under the R-20 zones.

These increases would be caused by removal of vegetation, compaction of soil during the construction phase, and creation of impervious surfaces such as roof tops, driveways and access roads. In general, the most important factor would be the amount of new impervious surfaces, i.e., roof tops and paved roads that will be placed on each lot. The amount of the increases will depend upon the ultimate density of development.

In this regard, it is recommended that the applicant be required to submit detailed hydrological information on pre- and post-development runoff volumes and peak flows from the site, prior to subdivision approval. Estimates should be provided for a 10, 25 and 100 year design storm. Detailed design specifications for all stormwater control facilities (if considered) should also be submitted. All storm drain outlets should include an energy dissipator to help protect areas below the outlet from gullying. A conscientious erosion and sediment control plan should accompany the stormwater management plan for each section of the development.


WATERSHED BOUNDARY
Approximate Site Boundary
Points of Outflow
Watershed Boundary for Fox Brook*
Watershed Boundary for Unnamed Tributary to Deep Hollow Brook
Watercourses Showing Direction of Flow
Direction of Surface Flow
*Does not account for possible re-routing by man-made structures, i.e., pipes, culverts, etc.
1"=2000'
Montville Center
Oakdale
Gay Hill
Four Corners
Ridge Hill
Chapel Hill
Dolbeare Hill
Fair Oaks Sch
Schofield Pond
Oakdale Pond
Wheeler Pond
Paris Pond
Deep Hollow Brook
Fox Brook
Oxoboxo Brook
McAlpine Brook
Baker Cem
Raymond Hill Cem
Fox Cem
OAKDALE
SHARP HILL ROAD
BLACK ASH SWAMP ROAD
WILLIAMS ROAD
SIMPSON HOUSE LANE
RAYMOND LANE
WHEELER HILL
RIDGE ROAD
OLD

## 5. WATER SUPPLY

The applicant noted on the review day that if the site is developed, homes in the subdivision would need to rely on an existing bedrock well located in the north central parts of the site. According to a copy of the report submitted to Team members on the field review day, the well consists of an 8 inch diameter pipe which is about 310 feet deep. It is reported to yield 70 gallons per minute. This yield is equivalent to 100,800 gallons per day. Presently the well serves three (3) single family residential homes on Chesterfield Road.

According to Connecticut Water Resources Bulletin No. 15, which encompasses the subject site, bedrock is commonly capable of supplying small but reliable yields of groundwater to individual wells. Groundwater moves through bedrock by way of an interconnected fracture system. Most wells that penetrate 150 to 200 feet of bedrock should intersect enough fractures to supply 2 or 3 gallons per minute. Some wells, however, fail to intersect any water-bearing fractures which result in a "dry hole". "Dry holes" are relatively scarce. On the other hand, very few wells in bedrock can be expected to yield 20 gallons or more per minute. The Team's geologist reviewed several well completion reports for domestic bedrock wells drilled along Chesterfield Road. The yields ranged between 3 gallons per minute and 20 gallons per minute.

If the existing water supply is utilized for future development of the site it will be subject to Connecticut General Statute Section 16-262m. This statute requires that the expansion of a community water supply system may not begin until the owner has obtained a certificate of public convenience and necessity for the construction or expansion from the Department of Public Utility Control and the Department of Health Services. The telephone numbers for these agencies are 827-1553 and 566-1253, respectively.

As a result, it is advised that before development takes place on the site that the developer first contact the above agencies to discuss such items as: (1) well location(s), (2) water quality and; (3) yield data, along with plans for pumpage, storage and distribution. It is recommended that the applicant contact the agencies noted above as soon as possible to discuss the water supply matter. It should be noted that a back up well will be required on the site, if it is developed.

The actual quality of the water should be good. However, the bedrock underlying the site may yield elevated concentrations of iron and/or manganese. As noted earlier, in the report, the existing well on the site has an elevated iron contact (1.0 part per million). Therefore, before the water supply is approved, the Department of Health Service, Public Water Supply section may require that the iron content in the supply be reduced to the recommended levels of .3 parts per million before it is approved. There are several types of filters available to remove most undesirable mineral-induced concentrations of elements in well water.

## 6. EROSION AND SEDIMENT CONTROL

An Erosion and Sediment Control Plan was not included with the preliminary site plan. It will be necessary to include an Erosion and Sediment Control Plan containing the following information:

1. A Narrative - including project description, schedule for grading and construction activities, design criteria and construction details for proposed soil erosion and sediment control measures and storm water management facilities; and also the installation and maintenance procedures and schedules for the proposed measures and facilities.

2. A Site Plan - including the location of the proposed development and adjacent properties. The existing and proposed topography including soil types, wetlands and watercourses. Also, location of the proposed areas to be cleared, excavated, filled or graded and proposed structures, utilities and roads as well as the location of all proposed erosion and sediment control measures.

In addition, the plan should include the name of the person responsible for the installation and maintenance of the erosion control measures during construction as well as the person responsible for the maintenance of permanent measures after the project is completed.

When the Erosion and Sediment Control Plan is submitted, the Soil Conservation Service working through the New London County Soil and Water Conservation District will be available to review the plan at the town's request.

## 7. VEGETATION

--Vegetative Types: (See map page 21)

Area Number 1: The overstory canopy consists of red, black and white oaks, red maple, with a few pignut hickories and black birch. The understory is fairly sparse, but there are some seedlings and saplings of the above species, plus some flowing dogwood, highbush blueberry, greenbriar, and a few Mountain laurel bushes.

Area Number 2: This is a rather flat area with a pole sized stand of black and scarlet oaks, with some black birch and pignut hickory. There are some small saplings of black birch and hickory, and in some areas, quite a lot of witch hazel, but little else.

Area Number 3: This is not as dry a site as Area Number 2, and has a considerable north and northeast slope. The overstory is heavy to red maple with considerable red and black oak and black birch. There is also some yellow birch on the lower slopes. The understory is fairly light, with some black birch and red maple saplings, arrowwood, witch hazel and some azelea bushes.

Area Number 4: This area is primarily a red maple stand with a few black oaks, yellow birch, black gum and American elm. The understory is quite heavy and dense, with spicebush and sweetpepper bush, and in some places, witch hazel and azalea also. There is also a ground cover of ferns and other herbacious plants associated with wet ground. This area differs from Area Number 9 in that there is much more gradient to this land, and although there is water on or close to the surface, it is moving water, which allows much better tree growth.

Area Number 5: This is a much younger red maple stand with the average stem only 4--6 inches in diameter. Some of the blueberry bushes in the understory are still alive, and along with the sweetpepper bush and spicebush, they make a dense understory.

Area Number 6: This is a reverted old field with a variety of species, depending on how far succession has progressed. There are area of grasses and sedges to areas of pole sized red maple. Other species include bayberry, sheep laurel, sweetfern, smooth sumac, blueberry, black cherry, flowering dogwood, white ash, red cedar and wild pear.

Area Number 7: This area is more open than Area Number 6 and therefore has more grasses and sedges. There are scattered red cedars that are large, but most of the area is small seedlings and saplings of just about the same species. Area 7a has more black-scarlet oak and less red maple.

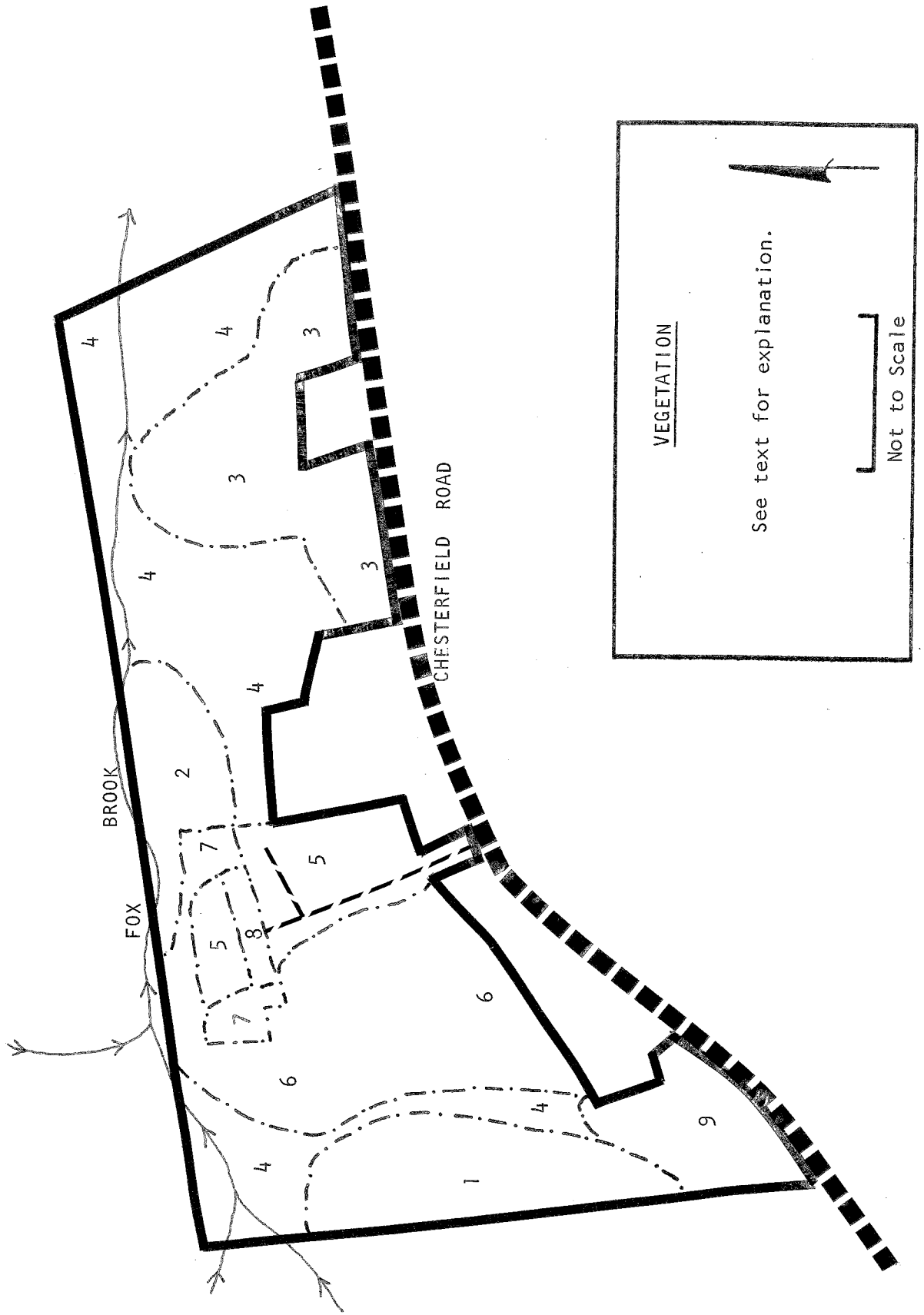
Area Number 8: This area has had most of the top-soil removed so plant growth is somewhat limited. Around the small dug-out pond there is some speckled alder and sheep laurel. Part of the area is bare, with just moss growing on the

ground, but in general the cover is fairly complete. Other species include gray birch, black birch, red maple, bayberry, smooth sumac, azalea, blueberry (high and low bush), red cedar, and a few patches of Mountain laurel.

Area Number 9: This is a red maple swamp with sweetpepper bush and spicebush in the understory; however, this is different from the other maple areas in that the underlying soils are peat mucks, which will limit the size a tree can obtain. In the middle of this area, where the muck is deepest, maximum tree diameter will be six (6) inches or less. Nearer to the edges, larger trees may be expected, but development in this area will be seriously restricted.

There are several areas that have a high seasonal water level which will cause problems to the local vegetation if adequate drainage is not provided. Any ponding of water could cause serious tree mortality. There is also another serious problem in the general location of Area Number 4. Opening this area up with roadway and house lots will make the trees sitting on these shallow wet soils very susceptible to wind damage and uprooting; this is not only unsightly but dangerous to property and persons.

From a vegetative point of view, probably about one-half of the area would not be adversely affected by small lot size, but much of the rest of the area should be larger lots or not developed at all.


VEGETATION
See text for explanation.
Not to Scale
CHESTERFIELD ROAD
FOX BROOK

## 8. FISH RESOURCES

Fox Brook flows through the proposed zone change area located on Chesterfield Road in Montville.

The stream bottom varies from silt and sand to gravel and rock. It has a slight to moderate gradient and is three (3) to five (5) feet wide.

Streamside vegetation provides cover and cooling shade for the fish while the root systems prevent soil erosion and stabilize stream banks.

Wild brook trout and blacknose dace presently inhabit the brook.

The impact of development on the brook can be minimized by leaving a 100 foot buffer zone along the stream and by implementing proper erosion and sediment control structures.

## 9. LAND USE AND TRAFFIC CONCERNS

The area of the proposed zone change is located in the west-central portion of the Town. Single-family homes are located along Chesterfield Road and Ortega Drive in the immediate area. Montville High School and an elementary school are located about one-half mile to the east at the intersection of Chesterfield Road and Old Colchester Road.

The area is depicted as low- and medium-density residential on the Town Plan of Development with suggested densities of less than one (1) to four (4) units per acre. The Regional Development Plan recommends low-density and mixed suburban uses for this area with densities of less than one (1) to two (2) units per acre. The lower density areas reflect the wetlands along Fox Brook at the rear of the property. With the availability of public sewers, half acre zoning should be feasible. The RA-20 Zone in addition to single-family homes also allows multi-family dwellings at 10,000 square feet per dwelling unit. The applicant has indicated that this provision will not be utilized with only single-family homes intended for the area.

Chesterfield Road is classified as a collector street in the Montville Plan of Development. No improvements are suggested for Chesterfield Road in the vicinity of the zone change in either the Montville Plan of Development or in the Regional Transportation Plan. No traffic counts exist for local roads in Montville. Data published by ConnDOT* indicate that a residential subdivision can be expected to generate 10.6 weekday trips per unit. Of this number, 7.9% can be expected to occur during the morning peak hour and 10.1% during the evening peak hour. Sixty (60) new single-family homes could be expected to generate 636 daily trips. If the area of the zone change develops with new roads, consideration should be given to a connection with Ortega Drive to the north which would provide a north-south connection between Black Ash Swamp Road and Chesterfield Road.

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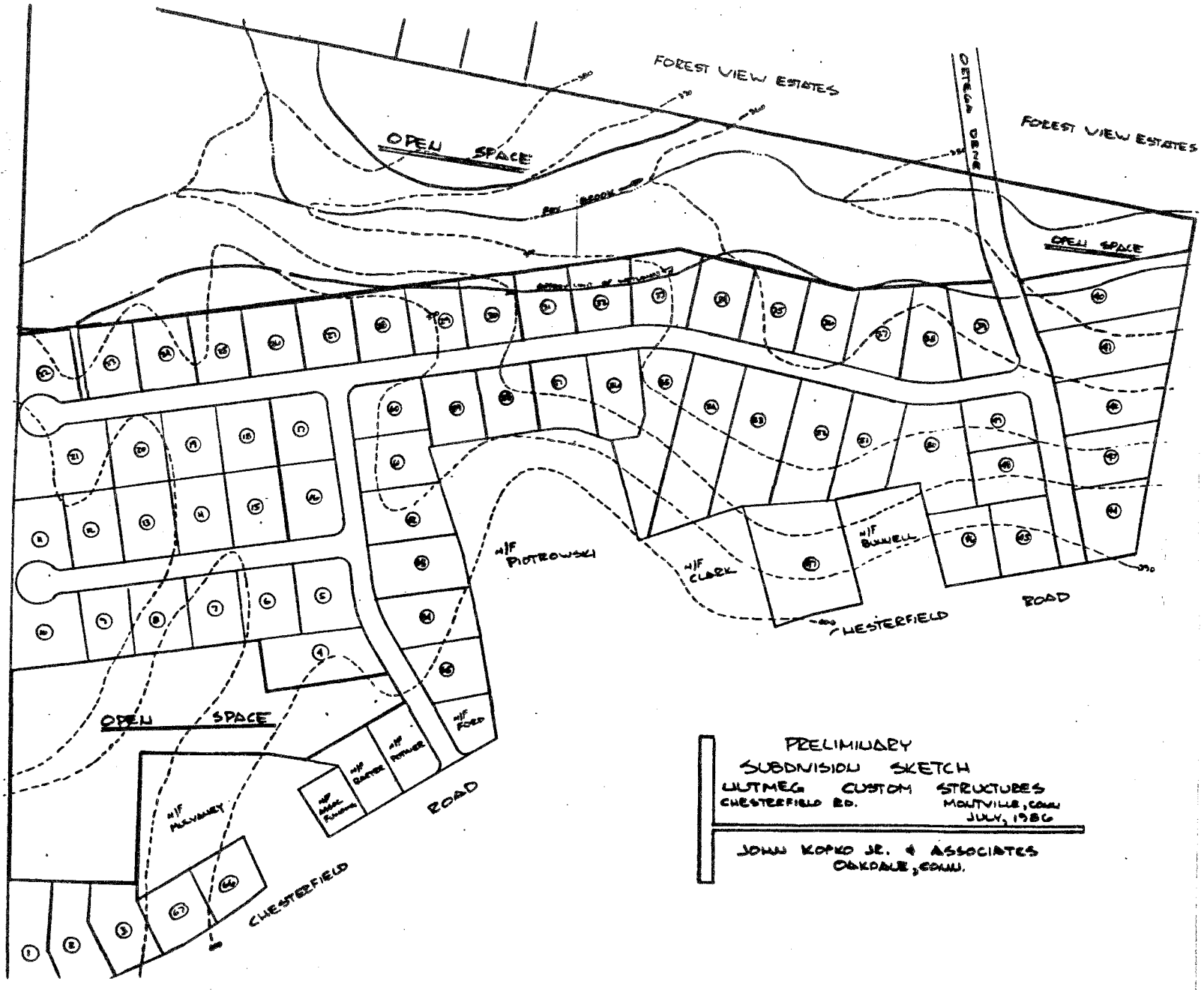
*Trip Generation Study of Various Land Uses, Supplement A, by Israel Zevin Connecticut Department of Transportation, 1975




PRELIMINARY
SUBDIVISION SKETCH
NUTMEG CUSTOM STRUCTURES
CHESTERFIELD RD. MONTVILLE, CONN
JULY, 1986

JOHN KOPKO JR. & ASSOCIATES
OAKDALE, CONN.

## 10. SUMMARY

NOTE: This is a brief summary of the major points, concerns and recommendations of the Team. You are strongly urged to read the entire report, and to refer back to specific sections in order to obtain all the information about a certain topic.

GEOLOGY

--Bedrock does not appear to break the ground surface on the site. Subsurface investigations would be required to determine the exact depth to bedrock because there may be a need to blast bedrock, if it is encountered, for the installation of sewer and/or water lines and constructing interior roads and foundations.

--Some seasonally wet areas are visible throughout the site and it is recommended that a certified soil scientist flag the wetlands. Once the wetlands are identified, their boundaries should then be superimposed on the site plan for any development which may take place on the site.

--With some of the till-based soils on the site wetness may be encountered so foundations constructed with basements should be protected against wetness.

SOILS

--The soils map has been revised to reflect on-site investigation.

--The soils descriptions describe each soil and highlight limitations for community development.

--Again it is recommended that wetlands be flagged in the field prior to any construction because wetland extent can only be accurately determined after they are field marked.

HYDROLOGY

--Construction of the site under R-20 zone versus the R-40 zone can be expected to lead to increases in runoff from the site and to increase peak flows to local water courses. The amount of increases will depend upon the ultimate density of the development.

--It is recommended that the applicant be required to submit detailed hydrological information on pre-and post-development runoff volumes and peak flows from the site, prior to subdivision approval.

--Detailed design specifications for all stormwater control facilities should also be submitted.

--All storm drain outlets should indicate an energy dissipator to help protect areas below the outlet from gullying.

WATER SUPPLY

--If the existing water supply is utilized for future development of the site it will be subject to Connecticut State Statute Section 16-262m. (See page 17, paragraph 3)

--It is advised that before development takes place on the site that the developer first contact the Department of Public Utility Control and the Department of Health Services to discuss the water supply matter.

--The actual quality of the water should be good, however, the bedrock underlying the site may yield elevated concentrations of iron and/or manganese. There are several types of filters available to remove most undesireable mineral-induced concentrations of elements in well water. (See page 5, paragraph 3 and page 17, paragraph 5)

EROSION AND SEDIMENT CONTROL

--An Erosion and Sediment Control was not included with the preliminary site plan, an E & S Plan will be necessary when a site plan is submitted for approval.

--Necessary information for an E & S Plan is provided on page 18.

VEGETATION

--Several areas that have a high seasonal water level will cause problems to the local vegetation if adequate drainage is not provided.

--A serious problem exists in the general area of #4 (See vegetation map). By opening this area up with roadway and homes, this will make the trees sitting on these shallow wet soils very susceptible to wind damage and uprooting.

--From a vegetative viewpoint probably about one-half of the area would not be adversely affected by small lot size, but much of the rest of the area should be larger lots or not developed at all.

FISH RESOURCES

--The impact of development on the brook can be minimized by leaving a 100 foot buffer zone along the stream and by implementing proper erosion and sediment control structures.

LAND USE AND TRAFFIC CONCERNS

--The Regional Development Plan recommends low-density and mixed suburban uses for this area with densities of less than one to two (2) units per acre.

--With the availability of public sewers, half-acre zoning should be feasible.

--No improvements are suggested to Chesterfield Road in the vicinity of the zone change in either the Montville Plan of Development or the Regional Transportation Plan.

--No traffic counts exist for local roads in Montville. Using ConnDOT data, 60 new homes could be expected to generate 636 daily trips.

--If the area of the zone change develops with new roads, consideration should be given to a connection with Ortega Drive to the north to provide a north-south connection between Blask Ash Swamp Road and Chesterfield Road.

# About The Team

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

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

## PURPOSE OF THE TEAM

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

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

## REQUESTING A REVIEW

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

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