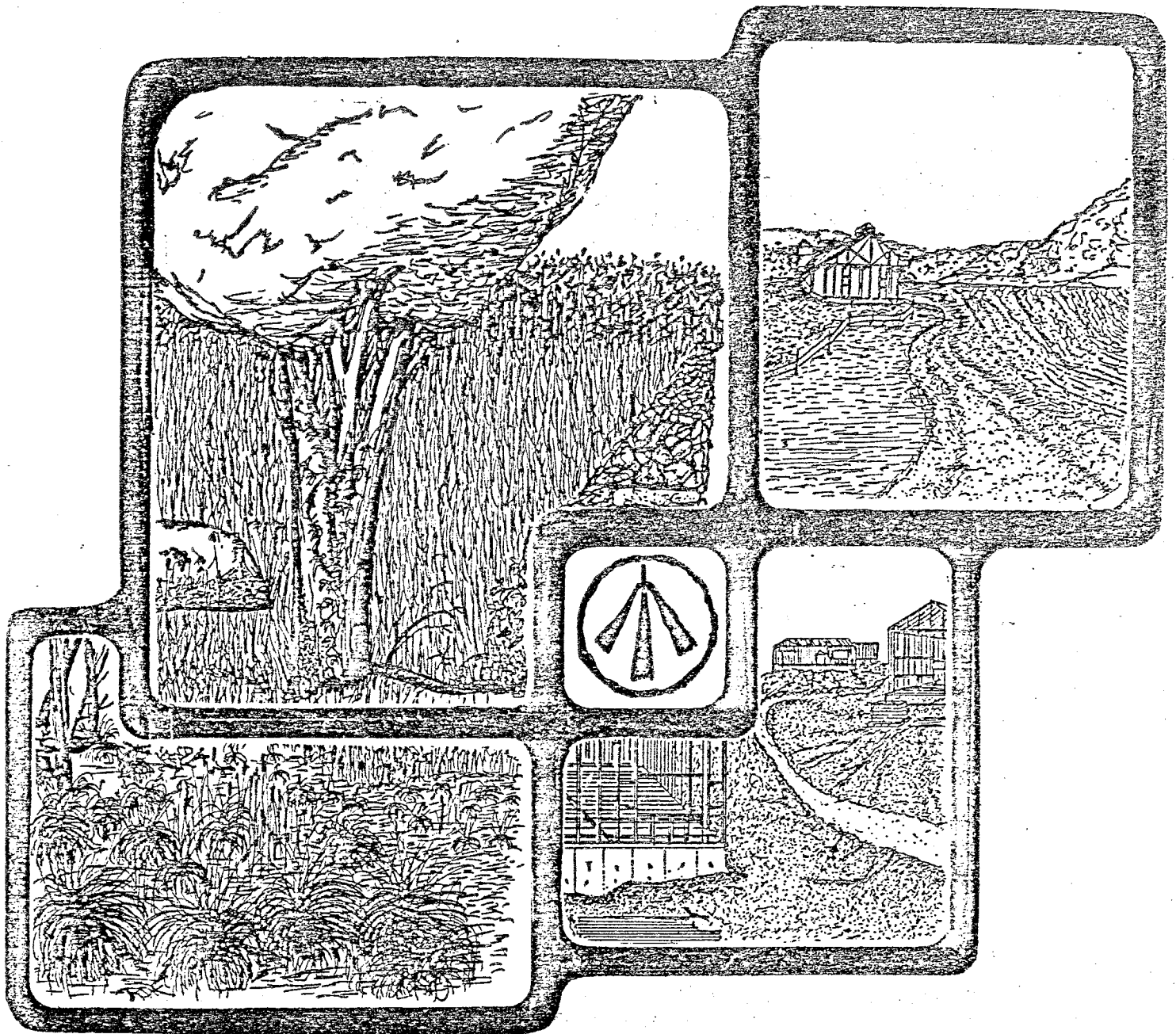


ENVIRONMENTAL REVIEW TEAM REPORT



PROPOSED COMMERCIAL & INDUSTRIAL ZONES NORFOLK, CONNECTICUT

KING'S MARK
RESOURCE CONSERVATION & DEVELOPMENT AREA

KING'S MARK
ENVIRONMENTAL REVIEW TEAM REPORT

PROPOSED COMMERCIAL & INDUSTRIAL ZONES
NORFOLK, CONNECTICUT

MAY 1982



King's Mark Resource Conservation and Development Area
Environmental Review Team
Sackett Hill Road
Warren, Connecticut 06754

ACKNOWLEDGMENTS

The King's Mark Environmental Review Team operates through the cooperative effort of a number of agencies and organizations including:

Federal Agencies

U.S.D.A. Soil Conservation Service

State Agencies

Department of Environmental Protection
Department of Health
University of Connecticut Cooperative Extension Service

Local Groups and Agencies

Litchfield County Soil and Water Conservation District
New Haven County Soil and Water Conservation District
Hartford County Soil and Water Conservation District
Fairfield County Soil and Water Conservation District
Northwestern Connecticut Regional Planning Agency
Valley Regional Planning Agency
Central Naugatuck Valley Regional Planning Agency
Housatonic Valley Council of Elected Officials
Southwestern Regional Planning Agency
Greater Bridgeport Regional Planning Agency
Regional Planning Agency of South Central Connecticut
Central Connecticut Regional Planning Agency
Capitol Regional Council of Governments
American Indian Archaeological Institute
Housatonic Valley Association

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FUNDING PROVIDED BY
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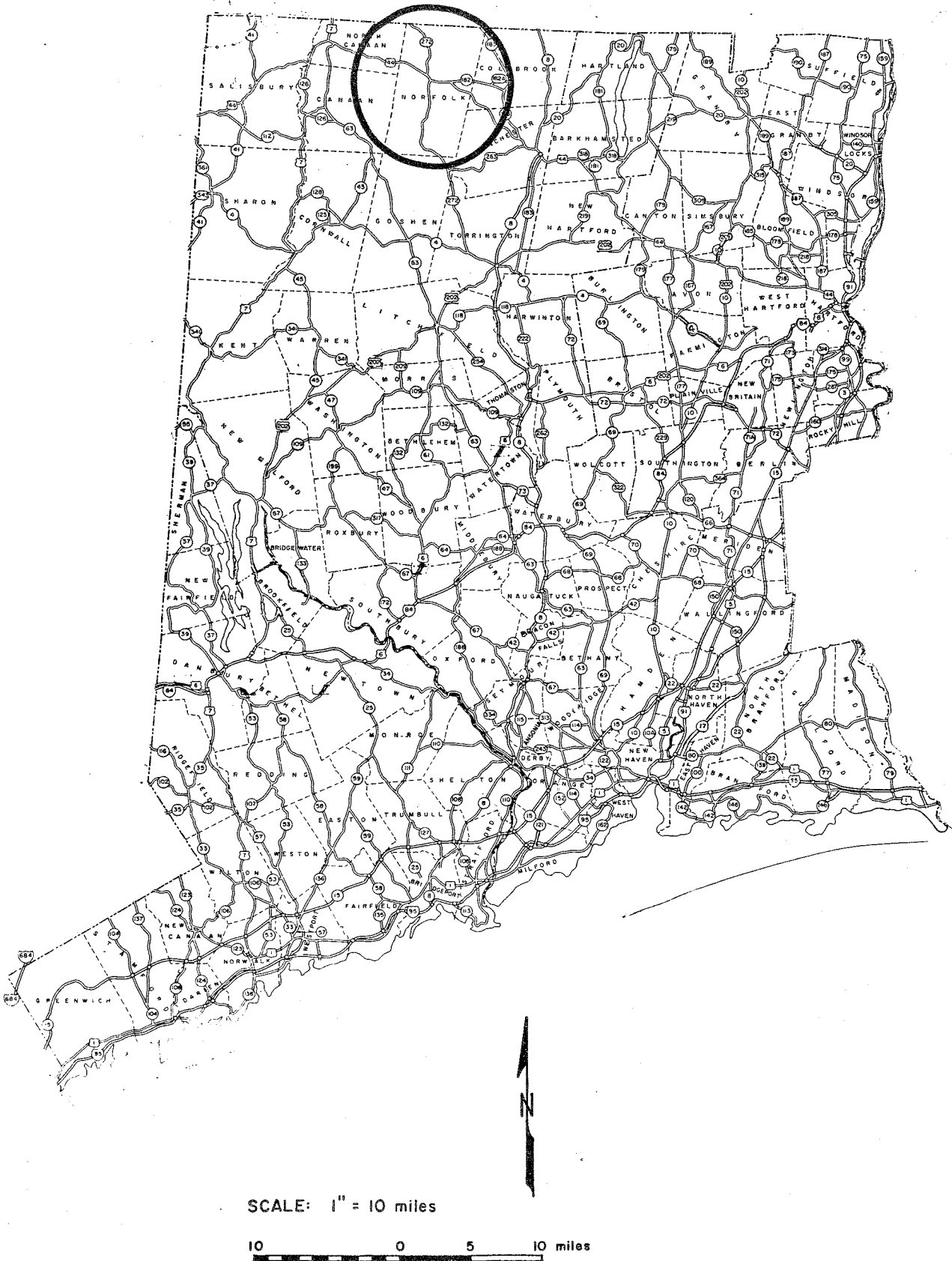
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LOCATION OF STUDY SITE

PROPOSED COMMERCIAL & INDUSTRIAL ZONES NORFOLK, CONNECTICUT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
PROPOSED COMMERCIAL AND INDUSTRIAL ZONES
NORFOLK, CT

a. INTRODUCTION

The Norfolk Planning and Zoning Commission is presently considering rezoning four areas in town for commercial and industrial use. The general locations of the four areas are shown on the following map. For the purposes of this report, the four areas may be referred to as:

Parcel 1. Gundlach Property, + 9 acres, located in the southern portion of town off Route 272.

Parcel 2. Tarrant Property, + 32 acres, located just west of the town center on Route 44.

Parcel 3. Haines Property, + 75 acres, located east of the center of town on Route 44.

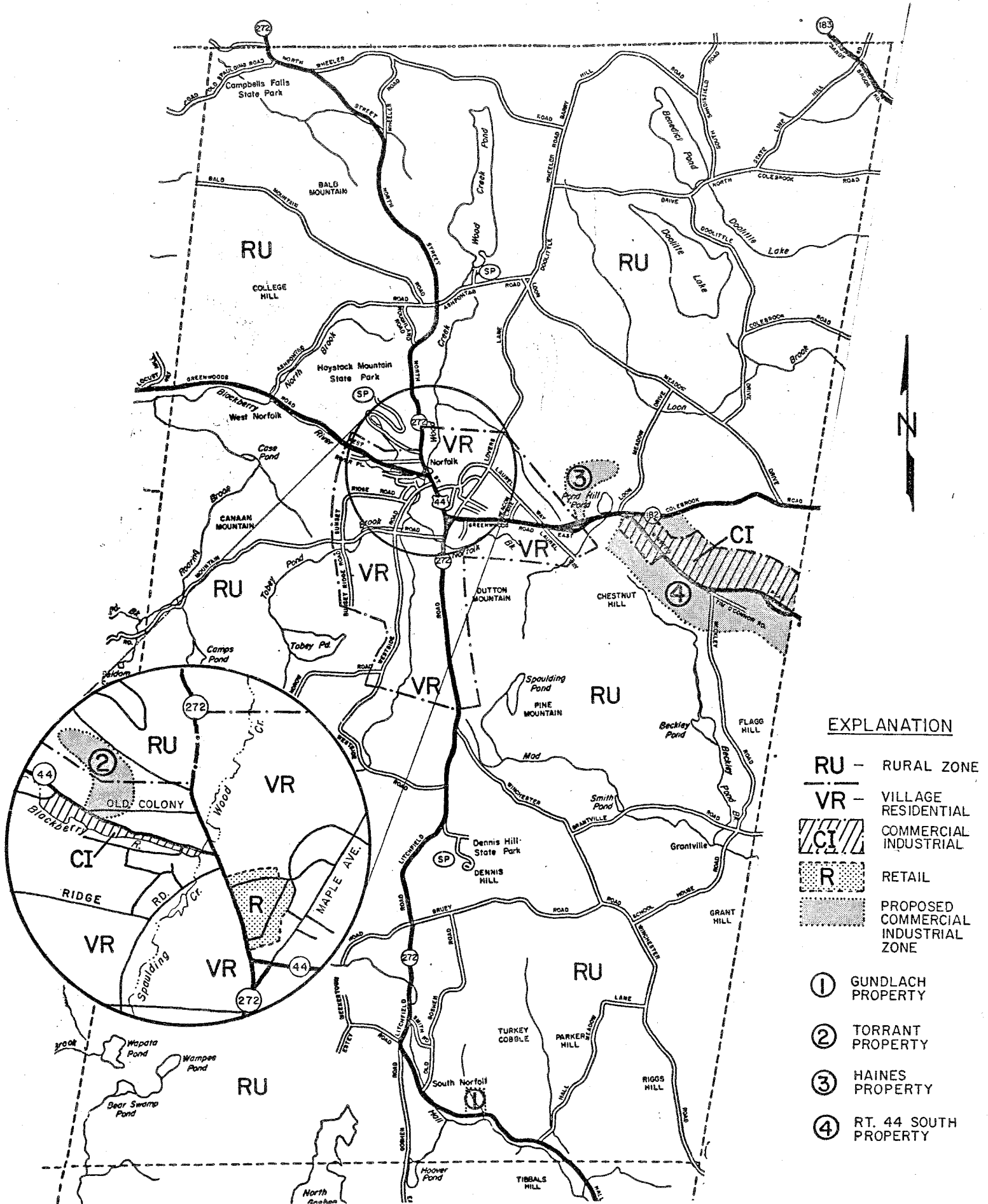
Parcel 4. Route 44 South Property, + 480 acres, located east of the town center on Route 44.

Presently there are two commercial and industrial zones in town totaling + 250 acres. Figure a shows the general location of these two zones. Creating the four new zones would provide the town with + 600 acres of commercial and industrial zoned land.

The Planning and Zoning proposal is in the preliminary planning stages. The ERT was requested to assist the Commission in evaluating the environmental suitability of the four areas. The Team was asked to provide the Town with a natural resources inventory of the four properties and a discussion of the potential of the four sites for commercial and industrial use. Of major concern to the Commission is the soil suitability of the sites for buildings, roads, and septic systems; adequacy of water supply; impact on surrounding land uses, and traffic impact.

The King's Mark Executive Committee considered the town's request, and approved the project for review by the Team.

a. GENERAL SITE LOCATION MAP



EXPLANATION

- RU** - RURAL ZONE
- VR** - VILLAGE RESIDENTIAL
- CI** - COMMERCIAL INDUSTRIAL
- R** - RETAIL
- PROPOSED COMMERCIAL INDUSTRIAL ZONE**

- ① GUNDLACH PROPERTY
- ② TORRANT PROPERTY
- ③ HAINES PROPERTY
- ④ RT. 44 SOUTH PROPERTY

The ERT met and field reviewed the four sites on February 23, 1982. Team members for this review consisted of the following:

- John Alexopoulos.....Landscape Architect.....Ct. Cooperative Extension Service
- Chuck Boster.....Regional Planner.....Northwestern Connecticut Regional Planning Agency
- Art Cross.....District Conservationist.....U.S.D.A. Soil Conservation Service
- Brian Curtis.....Sanitary Engineer.....Ct. Department of Environmental Protection
- Steve Dunn.....Transportation Planner.....Northwestern Connecticut Regional Planning Agency
- Ralph Scarpino.....Forester.....Ct. Department of Environmental Protection
- Frank Schaub.....Sanitary Engineer.....Connecticut Department of Health
- Bruce Soroka.....Civil Engineer.....Northwestern Connecticut Regional Planning Agency
- Mike Zizka.....Geohydrologist.....Ct. Department of Environmental Protection

Prior to the review day, each team member was provided with a summary of the proposed project, a checklist of concerns to address, a detailed soil survey map, a soils limitation chart, and a topographic map of the area. During the field review, Team members met with representatives of the Planning and Zoning Commission and toured the four areas. Following the field review, individual reports were prepared by each team member and forwarded to the ERT Coordinator for compilation and editing into this final report.

This report presents the Team's findings. It is important to understand that the ERT is not in competition with private consultants and hence does not perform design work or provide detailed solutions to development problems. Nor does the team recommend what ultimate action should be taken on a proposed project. The ERT concept provides for the presentation of natural resources information and preliminary development considerations--all conclusions and final decisions rest with the Town of Norfolk. It is hoped the information contained in this report will assist the Town of Norfolk in making environmentally sound decisions.

The report begins with a general discussion of factors relevant to all of the four areas proposed for rezoning. Following that is a separate discussion of each of the four areas. A Soils Limitations Chart is presented in the Appendix of the report which identifies soil suitability for various land uses on each of the four sites.

If any additional information is required, please contract Richard Lynn, (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, Sackett Hill Road, Warren, Connecticut 06754.

* * * * *

I. GENERAL CONSIDERATIONS

A. Water Quality

The following water quality concerns should be considered in planning future commercial and industrial use in the Town of Norfolk.

1. Subsurface Sewage Disposal - The design flow of any proposed subsurface disposal system will govern what review and approvals are needed for the system design. The Norfolk Health Department has jurisdiction over the review and approval of household and small commercial sewage disposal systems defined as those with a design capacity of less than 5,000 gallons per day. Within the range of 2,000-5,000 gallons per day the State Health Department will review the system design in conjunction with the Town Health Department. Any large (greater than 5,000 gpd to any one property) subsurface sewage disposal system must obtain a State Discharge Permit from the Department of Environmental Protection. A State Permit must also be obtained from the Department of Environmental Protection for any "community" sewage disposal system as defined under Section 7-245 of the Connecticut General Statutes.

The ground disposal of any wastewater other than domestic sewage, regardless of quantity, requires a State Discharge Permit from the Department of Environmental Protection and is subject to Connecticut's Water Quality Standards and Classifications.

Based upon a field review of the four proposed commercial-industrial sites and considering soils mapping, groundwater and ledge conditions, preliminary indications are that three of the sites (Gundlach, Haines, and Rt. 44 South) would have very limited potential for large scale subsurface sewage disposal systems concentrated in any one area. Smaller scale systems should be workable on suitable portions of these areas if proper designs are used. The Torrant piece may have the potential for large scale subsurface sewage disposal systems due to the sandy nature of soils on that site. The Torrant property is also accessible to the municipal sewer located on Route 44 at the southern end of the property. It should be noted that the Haines Property also has potential for tying into the municipal sewer system.

The only acceptable new discharges to the municipal sewerage system would be those wastewaters amenable to the type of treatment provided at the sewage treatment plant. Uncompatible wastes or those that would not receive further treatment at the plant are unacceptable. Those wastes that would not be treated further at the plant would needlessly take up plant capacity; these waste might include large cooling water or clean water discharges, metal plating wastewaters, non-biodegradable wastes, etc. It is possible to apply for a surface water discharge permit for these types of treated industrial wastewaters to the class B Blackberry River, assuming that State and Federal requirements can be met.

2. Connecticut Water Quality Standards and Classifications - These standards and classifications provide for a coordinated, rational approach to allocating the use of Connecticut's surface and groundwater resources to accommodate all competing needs ranging from drinking water supply to industrial wastewater disposal. *

*Further discussion of the standards and criteria is presented in "A Handbook of Connecticut's Water Quality Standards and Criteria", State of Connecticut Dept. of Environmental Protection Water Compliance Unit, August 1981 (available from DEP at 566-3654).

a. Surface Waters: As mentioned previously, it is possible to discharge treated industrial or municipal wastewaters to Class B watercourses. These discharges are regulated by the Department of Environmental Protection through Section 25-54i of the Connecticut General Statutes and Section 402 of the Federal Clean Water Act (National Pollution Discharge Elimination System, NPDES). The only Class B water course in the Town of Norfolk is the Blackberry River from the Sewage Treatment Plant downstream.

b. Groundwaters: Groundwater throughout virtually all of the Town of Norfolk is classified as being Class GA meaning that it should be of acceptable quality for use as a drinking water supply without requiring treatment. The only type of wastewaters permitted for discharge to GA areas are domestic sewage, septage, wastes of predominately human or animal origin, or substances which easily biodegrade in the soil system and pose no threat to untreated drinking water supplies drawn from outside of the zone of influence of a permitted discharge. The discharge of all other materials to the ground is prohibited. As one can easily see these requirements have a great impact on the nature of industrial/commercial establishments which then become feasible in view of the wastewaters produced by each. During initial contact the town should inform potential industrial/commercial establishments of these restrictions and requirements so that an understanding is clear from the outset. The Department of Environmental Protection would be available to meet with the town over questions regarding any specific proposal.

3. Water Quality Impacts - Norfolk zoning regulations allow for a wide range of potential uses in industrial/commercial zoned areas. Due to this wide range of possible uses, a corresponding wide range of potential impacts on water quality exists. This becomes very important when considering that most areas of town must rely upon groundwater drinking water supplies. Despite the regulatory programs which are in affect today there are often associated unregulated operations carried out by certain industrial processes that often cause groundwater contamination problems by accident or due to poor management. The town may wish to consider what types of uses will be allowed in industrial/commercial areas to preclude those that pose a substantial threat to groundwater quality.

The Connecticut Areawide Waste Treatment Management Planning Program, "208", has developed guidance materials on this matter. This material is available through the regional 208 Central Office in Hartford. In any case, a careful review considering general groundwater flow patterns should be given to locating future water supply wells relative to commercial/industrial development.

B. Landscape Considerations

In general, whatever is proposed and developed on the four sites should respect the essential landscape characteristics of the Town of Norfolk and the regional area. In particular, the town is perceived as small and rural, primarily forested and very hilly. Any large scale project would have a marked impact on this character; therefore, large visible industrial sites would detract from the residential rural character. Any additions of commercial or industrial areas should be placed where minimal deforestation, land grading and visual quality would be affected. Suitable buffers of forest should be left where they would be most effective. Disturbed land should be replanted.

In addition, signs and other graphic displays should be coordinated as well as being made compatible with the rural scenery.

C. Vegetation Management

There are many large healthy trees scattered throughout the four parcels that have high aesthetic and shade value. In any plan for development these high value trees should be selected for retention and worked into final site plans where possible.

Trees are quite sensitive to changes in soil conditions. Development practices near trees may disturb the root zone and ultimately their health and vigor. Trees in the process of dying, and indeed dead trees, reduce the aesthetic appeal of an area, become hazardous, and may be expensive to remove.

In any plans for construction, thought should be given to the impact of the project on the vegetation. Where possible, trees should be left in clumps or clusters. This lowers the possibility of soil disturbance and mechanical injury to individual trees.

Several factors should be considered in the maintenance of a natural forest stand. Wetland types of soils will have a water table close to the surface of the ground. This allows for shallow root penetration of the trees. As a result, windthrow is a potential hazard in these areas. Light thinnings in these areas may help to improve the tree stability. Openings and clearings in and along side wetland areas should be avoided if possible however.

Alterations in the wetlands which permanently raise the water table and/or restrict natural drainage may also have a negative impact on vegetation in the immediate area. Raising the water table may drown root systems causing widespread mortality in the plant community.

Trees which are growing on ridge tops may be subject to wind damage. These stems quite often grow in very thin soil (perhaps only a few inches thick) and may quite easily be toppled if exposed to heavy winds. As in wetland areas, trees rely on each other for stability and heavy cutting may lead to wind related problems.

Trees which are unhealthy and not growing vigorously due to crowded conditions are most susceptible to further degradation from environmental stress brought on by development; disease; insect infestation; and adverse weather conditions. Improvement thinnings to remove undesirable trees reduce the competition for sunlight, nutrients and water between the higher quality residual trees. Over time, these thinnings will allow the residual trees to improve in health, vigor, quality and stability. These thinnings when implemented properly can improve the aesthetic value of an area, improve tree health and vigor, improve wildlife habitat and provide a variety of wood products.

An improvement cut might remove trees for a variety of reasons. Individual trees could be harvested due to rot, excessive sweep or crook, unhealthy crown conditions or the fact that the species is less desirable. This type of cut

allows for a hardier, more vigorous stand of trees, more capable of thriving under adverse conditions. Cutting of undesirable trees prior to any development would set the stage for a more useable and enjoyable forest.

Any cutting whether it is for thinnings or for clearing of roadways or building sites, should be done to take advantage of the high demand for all wood products. Firewood, pulpwood, hardwood and softwood sawlogs are highly sought after. The proper marketing of these products should be a concern and should be planned for.

A public service forester (available at 379-0771) or a private forester may be of assistance in either on-the-ground planning or the marketing of the wood products.

D. Planning Considerations

Town, regional and state plans for the Town of Norfolk are either not available, or else not available in sufficient detail to indicate planning alternatives for the four sites. A few generalizations may be made however. Early residents of the Town settled around the village center which prompted the provision of streets, sidewalks, water lines and sewers. Brochures about the Town frequently describe the Town's character as that of a "summer resort" and the visual character of the town center supports that contention.

For a Town of 2156 persons, or some 617 households,* there seems to be a significant level of participation in Town government. All elected and appointed offices are filled. Using the current Town Annual Report as a source, approximately 137 persons are involved in Town government. Making several gross assumptions, one out of every five households in the Town may be involved with running the Town. This is not uncommon for rural, Connecticut towns and is an indicator of healthy, although often heated, decision making.

Discussions with several local officials indicate the following:

- 1) Townspeople recognize the unique character of Norfolk as a distinctive place to live.
- 2) Municipal facilities, particularly water and sewer, have little or no excess capacity for growth and development.
- 3) There is a sincere desire to assist the local small businesses. These businesses are usually locally owned and operated, frequently with family-related employees.
- 4) Norfolk zoning is fair and reasonable; very small lots permitted on parcels served by sewer and water; 1 acre in the rest of the village; and 2 or 3 acres in the rest of the Town.

A brief review of the existing zoning regulations as they would apply to the four parcels indicates that the process for approving or rejecting zoning changes is clear and manageable. Reasonable discussion and debate of land use issues will frequently lead to zoning changes.

*Source: 1980 census figures.

It is beyond the scope of this report to recommend a comprehensive town program for commercial and industrial growth and development. Ideally, such a program should be developed as one component of a comprehensive Town Plan. The Norfolk Planning and Zoning Commission is encouraged to undertake the preparation of such a Plan to open even greater opportunities for the town.

The concept of establishing a planned commercial/industrial zone in Norfolk has considerable merit. As discussed in the text of this report, the four sites studied by the ERT have varying potential for commercial/industrial development: the Tarrant property apparently having the greatest potential, the Rt. 44 South Property, the least.

It should be noted that there are no planning standards or criteria for determining the "right" amount of commercial or industrial zoned land in a rural town such as Norfolk. The distribution and acreage of commercial and industrial zoned land in Town can only properly be determined by the townspeople of Norfolk after thoughtful debate and discussion. Professional planning consultants are available to help in this regard.

In considering any commercial development proposal, the traffic impact on the adjacent road system should be considered. In a rural town such as Norfolk it is unlikely that any single development would be proposed large enough to severely impact the present system. However, it would be good for the Planning and Zoning Commission to keep in mind the traffic typically generated by certain types of commercial and industrial use. These are given in the following table.

TRAFFIC GENERATION FROM INDUSTRIAL/COMMERCIAL USES

USE		PER EMPLOYEE	PER 1000 sq.ft. FLOOR SPACE	PER ACRE
Industrial	ADT*	3.2	6.2	29.5
Park	¹ PHT**	.45	.87	4.13
Factory	¹ ADT	2.3	8.2	26.9
	PHT	.48	1.70	5.57
General	¹ ADT	4.6	20.6	145.6
Office	PHT	.65	2.90	20.5
Research	² ADT	3.11	9.33	37.68
Center	PHT	.68	1.59	8.35
Warehouses	² ADT	4.26	5.01	62.0
	PHT	1.37	1.63	20.2

1 ConnDOT studies

2 National Studies

* Average Daily Traffic

** Peak Hour Traffic

GUNDLACH PROPERTY

II. GUNDLACH PROPERTY

The Gundlach Property is + 9 acres in size and located in the southern portion of town off Route 272. The site is moderately sloping (see Figure 1.1), mostly open, and presently supports a sawmill, office, and several equipment storage facilities. The present landowner is interested in expanding the sawmill and has requested a zone change to commercial/industrial use to accomplish this. The property is now zoned for residential use.

A. Geology

Most of the Gundlach property is covered by till (see Figure 1.2). Till is a glacial sediment that was deposited directly from glacier ice. The sediment consists of varying proportions of sand, silt, gravel, clay, and boulders. Particles of different sizes are generally mixed together in a complex fashion. The texture of the till on the site is sandy, stony, and loose or moderately loose. Its thickness is not known, but it probably exceeds 10 feet in most places.

A small area in the southeastern corner of the site contains stratified gravelly sands, which were deposited by streams of glacial meltwater. Several feet of sand-and-gravel fill overlie these deposits.

The geology of the site would pose no difficult obstacles to development. Seasonally high groundwater tables may affect the northwestern corner of the site, and wetness limits the usefulness of a small area in the southwestern corner. Slope and stoniness appear to be the major limitations in other portions of the site.

B. Hydrology

An intermittent stream passes through the north central and eastern portions of the property. The stream is tributary to Hall Meadow Brook and the Hall Meadow Brook Reservoir. A wetland in the southwestern corner of the property drains eastward into the intermittent stream through a channel just north of Route 272. All of the surface drainage from the site is collected by these small water-courses.

It is important that Hall Meadow Brook and its reservoir be protected from contamination. It seems unlikely, however, that a rezoning of the Gundlach property to commercial-industrial would foster any type of development that could be a source of serious contamination. The small size of the parcel and the lack of proximity to major highways limit the attractiveness of the site for a major industrial development. Parking lot runoff would probably be the principal source of surface-water contamination. Judicious planning, perhaps including the usage of the natural cleansing abilities of the small wetland area in the southwestern corner of the site, can mitigate the deleterious effects of such runoff. The wetland area might also be useful for controlling post-development increases in runoff, which would not be expected to be substantial given the small size of the parcel.

FIGURE 1.1
TOPOGRAPHIC MAP

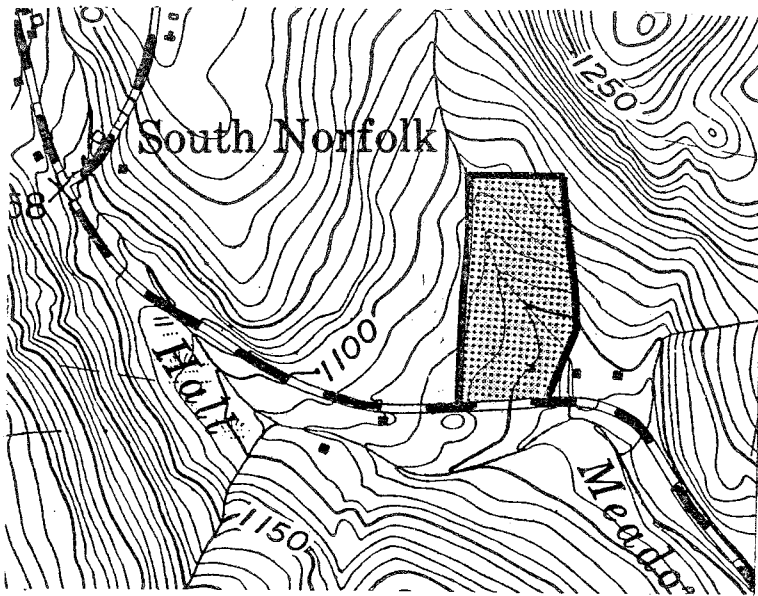
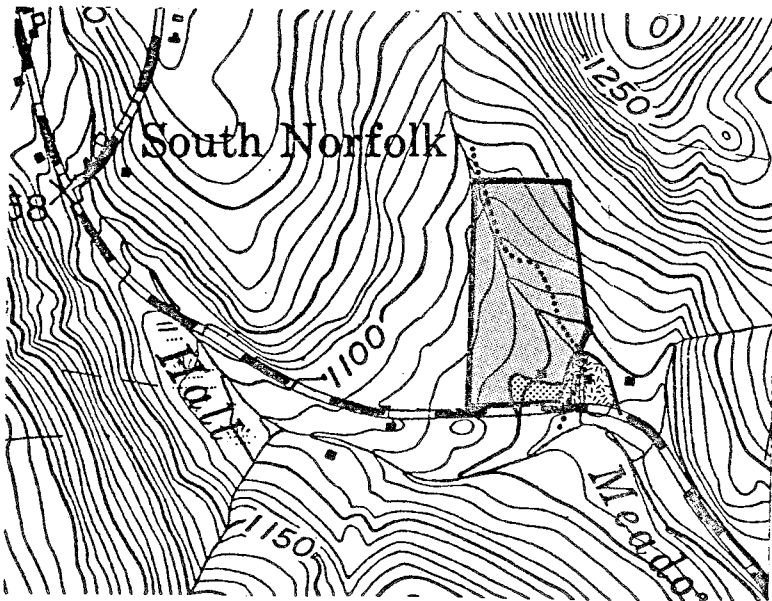
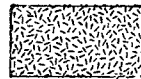


FIGURE 1.2
SURFICIAL GEOLOGY



SCALE: 1" = 1000'

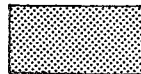
EXPLANATION



Area of stratified drift, overlain in part by sand and gravel fill.



Till.



Low wet area. Thin deposits of silt, sand, clay, and decayed organic materials overlying till.



Actual stream location.

C. Water Supply

Bedrock is likely to be the best source of water on the site. Wells drilled 100-200 feet into bedrock are generally capable of supplying small but reliable yields of groundwater. Approximately 80 to 90 percent of the bedrock wells surveyed for Connecticut Water Resources Bulletin No. 19 yielded 2 gallons per minute or more. If pumped continuously, a well producing 2 gpm would yield 2880 gallons of water per day. This should adequately serve most commercial or residential needs, as long as sufficient storage is available to provide for peak demand periods.

The quality of the groundwater should be good. Although there is always at least a slight potential for naturally high concentrations of iron, manganese, carbonates, or other mineral residues, the bedrock type underlying the site has not been identified as a frequent problem source.

D. Soils

The Gundlach Property has been altered considerably over the years by the sawmill operation. The original soils (see Figure 1.3) mapped in the area now being used for the mill and lumber stacks would probably now be mapped as "fill".

The soils on the west boundary (Lg) are mapped as Leicester, Whitman and Ridgebury very stony fine sandy loams, 0-3% slope. This soil is poorly drained with a water table at or near the ground surface most of the year. This soil is also regulated under Ct. PA 155, Inland Wetlands.

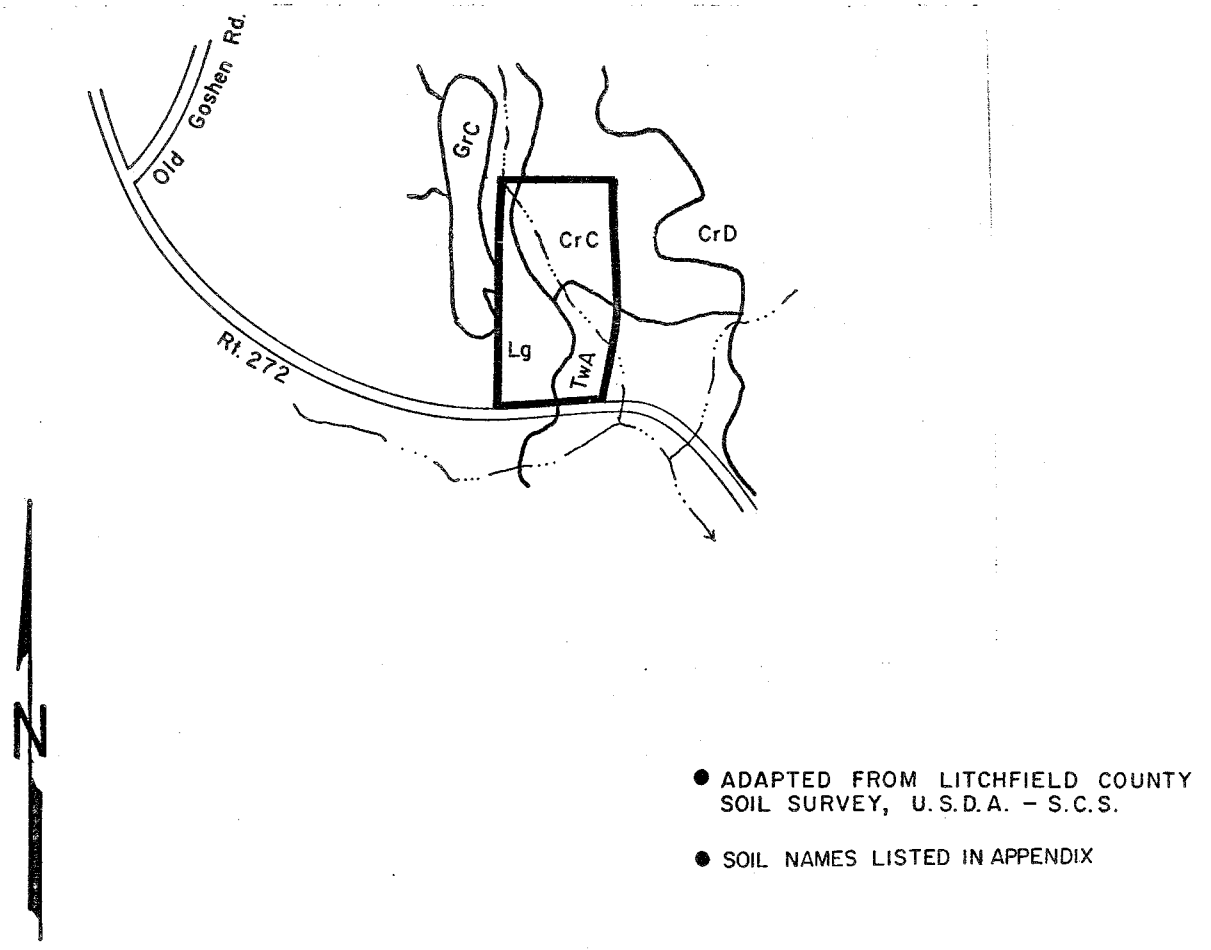
Construction of a homesite near the western property boundary is very unlikely as this is wetland soil. Therefore, any expansion of the mill operation (e.g. buildings) to the west would most likely not be near a future homesite. Expansion towards the east boundary is very limited because of the stream.

A sawmill on this site is considered a good use of the land versus a commercial activity such as a small industry because of the sites soil limitations and remoteness. The road conditions are also not well suited for a small industry which would likely employ more people than the sawmill.

E. Sewage Disposal

Due to the soil types, limited slope and location of water course, this property has limited capacity to be developed for industrial purposes. Much of the land area located west of the brook has been excavated or regraded for use in the present saw mill operations. There does appear to be sufficient area for construction of a small leaching system either in regraded areas located north of the existing structure or in the undisturbed wooded area located in the northeast portion of this property. Industrial development on this parcel would be limited by the suitable leaching area available; additional site investigations would be required to determine whether ten or more employees could utilize this property.

FIGURE I.3
SOILS MAP



SCALE: 1" = 1000'

F. Traffic and Engineering Considerations

As shown in Figure 1.1, the Gundlach property is located on a state highway. Route 272 has an average daily traffic rate (ADT) of 700 and a capacity of 2000 vehicles per hour. The road condition is rated "poor" by a recent Connecticut Department of Transportation (ConnDOT) statewide road conditions study. The bridge over Hall Meadow Brook, to the west of the site is weight restricted to less than the legal 40 ton limit and is also rated "poor" by ConnDOT. The road itself is relatively winding and would not be conducive to heavy industrially generated truck traffic.

The sight lines along Route 272 from the existing driveway are adequate. If the driveway is relocated, the horizontal curve to the east should be considered to assure adequate sight distance.

As shown in Figure 1.1, the topography of the site is a slight slope which is compatible to a sawmill type of operation.

There are no sanitary sewers or public water supply existing in the area and none are planned.

With further development of this property, care should be taken to maintain a buffer strip of vegetation adjacent to the stream to minimize the possibility of erosion impacting the stream.

G. Additional Planning Considerations

Use of this property as a sawmill represents a normal use of rural land as part farming and part forestry. Nevertheless, from a planning viewpoint, there are several negative aspects of a commercial sawmill. It should be noted that even in cases where an existing land use precedes zoning, the land use may be an issue if it detracts from the enjoyment of adjacent property. Many of these issues were debated in Connecticut's "right to farm" legislation last year.

A careful review of the methods of mitigating the negative characteristics of a sawmill operation should be considered before further expansion is allowed at this site. These methods include: noise reduction, dust control, operating hours agreements, and truck traffic control.

TORRANT PROPERTY

III. TORRANT PROPERTY

The Torrant Property is + 32 acres in size and located just west of the center of town off Old Colony Road. As shown in Figure 2.1, slopes on the property are moderate to steep. A town garage is located adjacent to this site along the eastern border. The site is traversed by a stream and has been used as a source of sand and gravel in recent years.

A. Geology

Most of the Torrant property contains well-sorted to poorly sorted sand, gravel, and silt (see Figure 2.2). These materials were deposited by melt-water streams flowing from wasting masses of glacier ice. The deposits are generally layered, but in many places the layering is contorted or disrupted. These features indicate that the sediments were built up against the ice, and that they collapsed when the ice melted away. There has probably also been some downslope movement of the sediments because of the steepness of the slopes on which they were deposited.

Large pits have not only revealed the nature of the surficial geologic materials on the site, but they have allowed relatively flat "floors" to be notched into the steep hillside. If providing access to these pit areas would be technically feasible and practical, the areas should be capable of sustaining one or several small commercial or industrial buildings and parking areas. Sub-surface drainage should be good to excellent on these pit floors, but precautions will be needed to prevent parking lot drainage and other surface runoff from eroding gullies in the steep hillside. Because of the highly porous nature of the deposits, any pollutants that are disposed of directly, or otherwise make their way, into the ground will have little opportunity to be renovated by the soil components. On the other hand, natural dilution by infiltrating precipitation will be increased. Moreover, the availability of public sewer facilities to the site and the existing public water line along Route 44 south of the property would decrease both the likelihood of groundwater pollution and the detrimental effects of any such pollution that does occur.

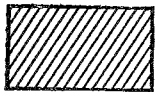
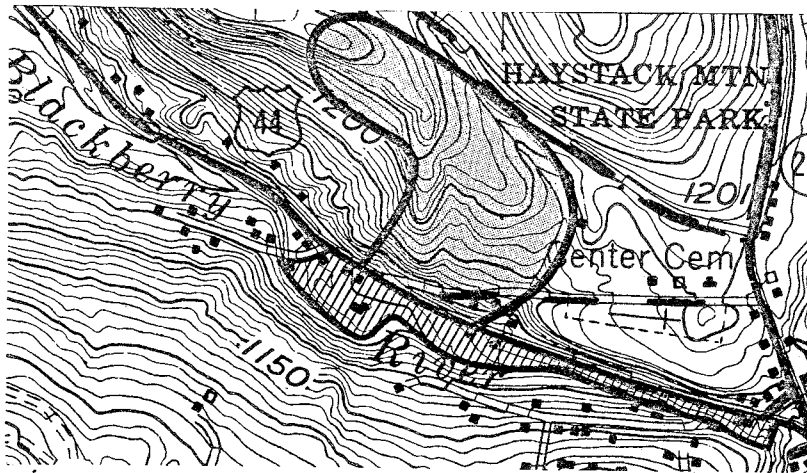
The northwestern tip of the property is the eastern edge of a bedrock ridge with a thin till cover. Although it could be developed, the topography and geology of this area would make it a very poor and undoubtedly expensive choice.

B. Hydrology

The property lies within the drainage area of Blackberry River. A small tributary stream curves along the northeastern portion of the site boundary, but it collects only a small percentage of the total surface drainage from the property. Most of the surface runoff flows directly down the steep slopes, emphasizing the need for runoff controls if the site is further developed. Concentrated runoff from parking lots, etc., could cause severe gullyng.

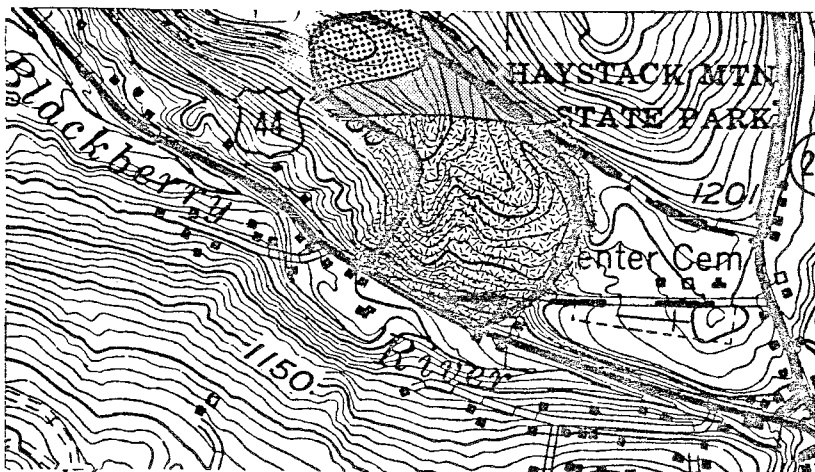
As discussed in the Geology section, the sandy and gravelly deposits found on most of the site are relatively poor filters for contaminated groundwater. However, the risk of significant groundwater contamination is reduced by several factors: 1) the ability of the deposits to absorb more rainfall than other types of soils; 2) the availability of public sewer facilities; 3) the small size of the site; 4) the availability of public water in the area toward which groundwater from the site would travel.

FIGURE 2.1
TOPOGRAPHIC MAP

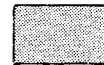


EXISTING COMMERCIAL/INDUSTRIAL ZONE

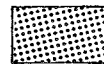
FIGURE 2.2
SURFICIAL GEOLOGY



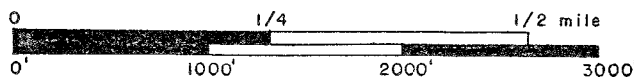
STRATIFIED DRIFT (MOSTLY SAND AND GRAVEL).



TILL.



SHALLOW TILL WITH SCATTERED EXPOSURES OF BEDROCK.



SCALE: 1" = 1000'



C. Water Supply

Public water facilities are accessible to this site. If, for some reason, an on-site well is desired, bedrock would probably have to be tapped. Depending on the location of the well, several tens of feet of sand and gravel may need to be penetrated before bedrock is reached. A well drilled no more than 200 feet into the bedrock should be capable of yielding 2-5 gallons per minute, but there is at least a slight probability that drilling in any particular location will result in a dry hole. The natural water quality should be generally adequate, but because of the particular mineralogy of the bedrock underlying the site, there is a chance that the water will have undesirable concentrations of iron or manganese, which will discolor the water.

D. Soils

As shown in Figure 2.3, the soils of this site are mapped as Terrace Excarpment and Merrimac sandy loams. As previously noted, these soils are underlain by layers of sand and gravel.

The area now consists of essentially two levels of very irregular terrain resulting from the sand and gravel removal. It is possible to create small commercial sites by regrading these two levels.

Major limitations to be considered are that unless town sewer and water were brought to the site, ground water could be polluted and/or diminished and downhill water users could be affected. In addition, vegetative stabilization of graded sloped and bare soil areas will be difficult in the droughty, low fertility sand and gravels. The existing, small berm along the stream should be maintained so as to prevent sediment from reaching the stream. Any access road across the stream would need a properly designed and sized culvert.

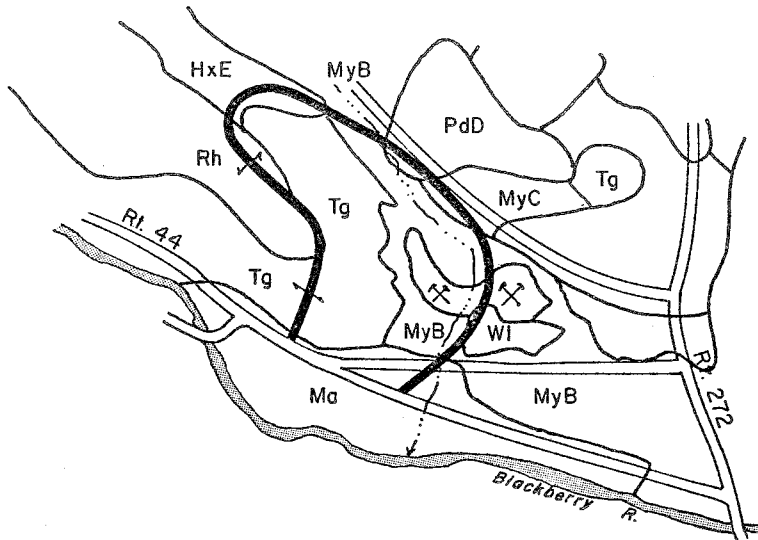
E. Subsurface Sewage Disposal

This 32- acre parcel appears acceptable for industrial or commercial use. Soil conditions are favorable for construction of on-site sewage disposal systems and connection to existing municipal sewers also appears feasible. Water supply needs would dictate the feasibility of on-site water supply development or connection to the public water supply system which is available. Well-drained sand and gravel soils are suitable for installation of subsurface sewage disposal systems and connection to existing water service lines would eliminate the need for on-site water supply development. On-site wells may limit the area available for disposal of sewage via conventional subsurface disposal systems.

F. Traffic and Engineering Considerations

The Tarrant property is located on Old Colony Road, a residential street that connects at an acute intersection to Route 44 at the western end and nearly perpendicularly to Route 272 at the eastern end. The western end of Old Colony Road is quite steep. Development of this parcel for commercial-industrial use might require that traffic to and from the west use the western end and traffic to and from the east use the eastern end. Vehicular access to the site is clearly easier from the east however. It should be noted that there is a potential access to this site from the north, via the Haystack Mountain State Park service road.

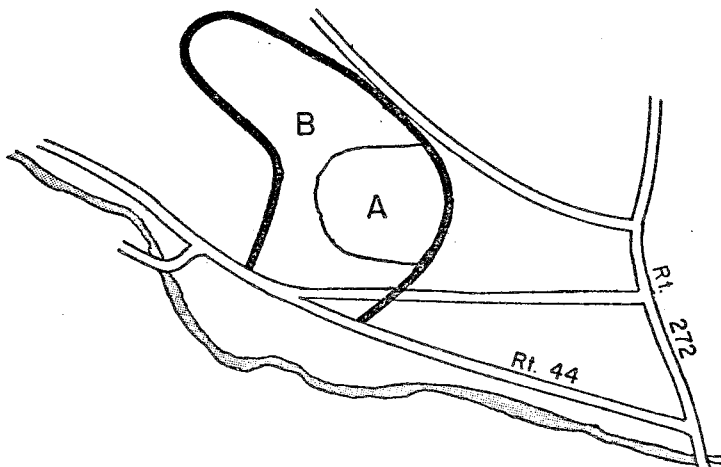
FIGURE 2.3
SOILS MAP



- ADAPTED FROM LITCHFIELD COUNTY SOIL SURVEY, U.S.D.A. - S.C.S.
- SOIL NAMES LISTED IN APPENDIX



FIGURE 2.4
VEGETATION TYPE MAP



SCALE: 1" = 1000'

VEGETATION TYPE DESCRIPTIONS*

- TYPE A Open gravel pit with miscellaneous weed species. 11 acres.
- TYPE B Mixed hardwoods, fully stocked, pole size. 21 acres.

*Pole size - Trees 5" to 11" in diameter at 4½' above the ground.

ADT on Route 44 in this vicinity is from 4000 to 5000. Capacity is 1345 vehicles per hour. Road surface condition is rated "good" and the nearest bridges are rated "fair" by ConnDOT. Lane width is narrow (10') in the vicinity. This factor is accounted for in the relatively low capacity rating.

Due to the grade of that portion of the property fronting on Route 44 and Old Colony Street, access to the site would have to be gained through the town-owned property off of Old Colony Street, just east of the site. Sight distances along Old Colony Street are adequate, however, as previously noted, the street does enter Connecticut Route 44 at an acute angle which will make access difficult.

Sanitary sewers and a public water main are located approximately 1,000 feet to the east of the site.

As discussed above, because of the steep and irregular topography of the site, development will require considerable regrading.

G. Vegetation

As shown in Figure 2.4, two major vegetation types are present on this site. These include:

TYPE A. Open Gravel Pits - This area is predominantly an open gravel mine. Tree species are generally non-existent. Mineral soil is exposed and miscellaneous weed species do exist.

TYPE B. Mixed Hardwoods - Fully stocked, pole sized hardwood trees dominate the majority of this area. Species include red maple, birch, and red oak on the lower slopes, and a combination of red oak and chestnut oak on the tops of the knolls. The understory is a mixture of similar tree species and patches of very dense mountain laurel.

Suggestions for management are presented in Section Ic of this report. It should be noted, however, that on this parcel, as with others considered by the Team, large healthy trees and flowering shrubs can play a key role in preserving the aesthetics of an area whether the land stays as forest land or is developed in the future.

H. Landscape Considerations

From a landscape perspective, this site seems well suited to a small commercial development because there is sufficient flat ground, and the land has already been disturbed. Care must be taken in its treatment, however, so that a gap in the forest is not created. Such a gap in the tree cover will be especially prominent on this hillside. Attention to landscape plantings should be made with consideration of views to this hillside from surrounding areas. A buffer planting should also be maintained between the property and both Old Colony and Haystack Mountain Roads.

HAINES PROPERTY

IV. HAINES PROPERTY

The Haines Property is about 75 acres in size and is located just east of the center of town along Route 44. As shown in Figure 3.1, the land is generally moderately sloping. The parcel is mostly wooded. Pond Hill Pond is located to the southeast of the site.

A. Geology

The Haines property is covered almost entirely by till (see Figure 3.2). Till is a glacial sediment that was deposited directly from a mass of ice. Clay, silt, sand, gravel, and rounded or angular boulders are mixed together in varying proportions in the till. Sand is generally the dominant component, although compact silty layers or clusters of stones are the features that may capture one's attention. The upper 3-5 feet of the till are normally loose or only moderately compact, but at greater depths the till may become siltier and tightly compact.

The till on the hillside at the northwestern corner of the tract is relatively thin. Small, scattered rock outcrops in that area suggest that the till is generally less than 10 feet thick. The till along the southern leg and in the northeastern section of the parcel may be much deeper.

The compact till and the moderate to steep slopes will limit development potential in the northeastern and southern portions of the site. These limitations will weigh most heavily on the ability to provide adequate subsurface sewage disposal. However, properly engineered systems may be able to overcome these limitations. Because of the geologic features and the unusual configuration of the parcel, industrial or commercial development might be appropriate at a moderate or low density, but a high-density development would probably be impractical.

Commercial or industrial development of the northwestern corner of the site might be possible with large financial expenditures for land preparation, but a zone change for that portion of the property would not seem to be appropriate.

An area in the northeastern portion of the parcel is swampy. Sediments here consist of silt, sand, clay, and a high percentage of decayed organic materials. Standing water is present for much of the year. This area is inappropriate for any type of development.

B. Hydrology

Most of the parcel drains into Pond Hill Pond, located just to the southeast of the site. The pond is a headwater source of Norfolk Brook, a tributary of Blackberry River. Part of the property drains northward into a tributary of Wood Creek, which is also a tributary of Blackberry River. Because of its headwater position and presently undeveloped state, the property presumably has relatively pristine groundwater. Pond Hill Pond is affected primarily by debris (sand, salt, oils, etc.) from nearby Route 44, but the present quality of the water in the pond is not known. In order to protect the local water resources, it would be desirable to prevent the use of the property by commercial or industrial establishments that would need to dispose of large quantities of wastewater. Septic systems to accommodate the employees of a moderate-density industrial or commercial development should not be a serious concern, assuming that the technical requirements for such systems can be met on the site.

FIGURE 3.1

TOPOGRAPHIC MAP

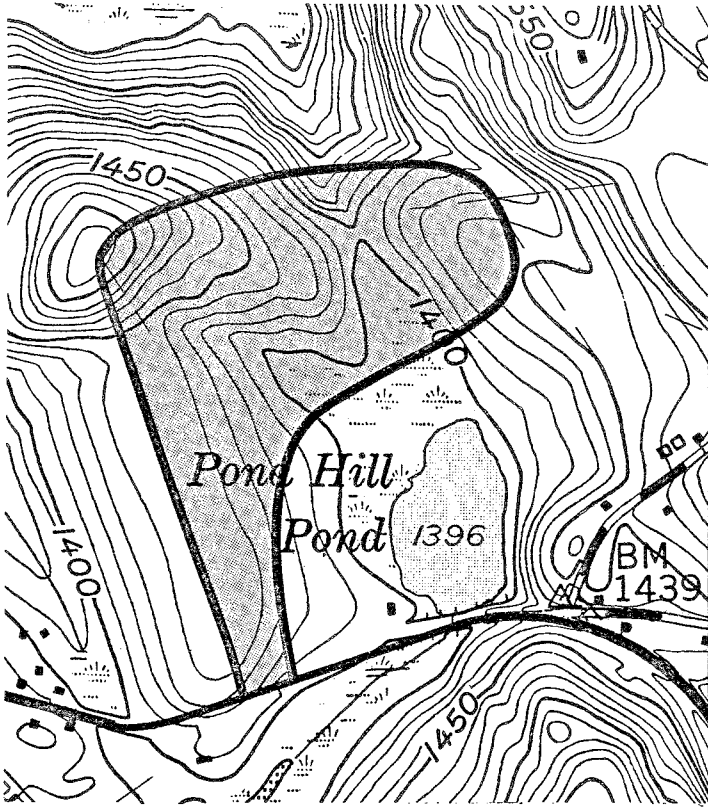
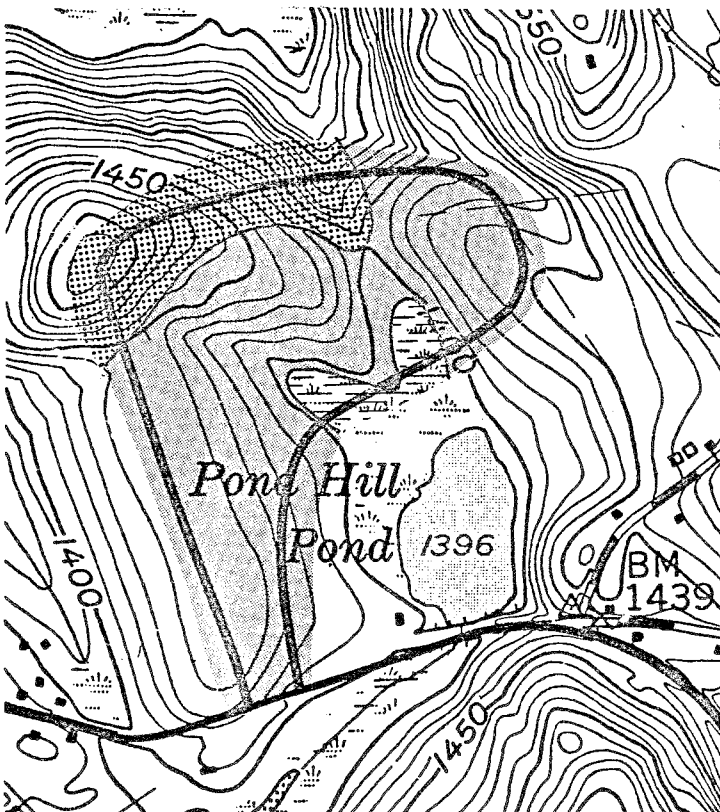


FIGURE 3.2

SURFICIAL GEOLOGY

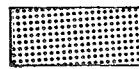
SCALE: 1" = 1000'



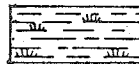
EXPLANATION



Till.



Shallow till with scattered bedrock exposures.



Swamp sediments. Clay, silt, and sand mixed with a high percentage of decayed organic matter.

Both residential and commercial-industrial development of the site would increase the amount of runoff during periods of rainfall. These increases would result from soil compaction, removal of vegetation, and placement of impervious surfaces (roofs, driveways, etc.) over the soil. Since the commercial and industrial uses would tend to require more impervious surface area (as for parking lots and bigger buildings), the runoff increases for that type of development would tend to be higher than for residential development. Efforts should be made in either case to protect Pond Hill Pond from sand and other road or parking lot debris.

C. Water Supply

Unless public water facilities become available, bedrock would be the only practical source of water for the site. Bedrock is commonly capable of providing small but reliable yields of groundwater to individual wells. A survey of bedrock wells in northwestern Connecticut (see Connecticut Water Resources Bulletin No. 21) indicates that more than 80 percent of those wells that were drilled into a rock type similar to that found on the site yielded 3 gallons per minute or more, and 90 percent yielded 2 gallons per minute or more. These yields are equivalent to 4320 gallons per day and 2880 gallons per day, respectively. Less than 20 percent of the wells yielded 20 gallons per minute or more. Land uses requiring a substantial amount of water would probably necessitate the drilling of more than one well. On the other hand, short-term daily needs for high flow rates might be met by a low-yielding well in conjunction with a water storage tank.

The natural quality of the groundwater should be good. Since the property is in a headwater area, little water to dilute subsurface wastewater discharges would be expected to come from outside the site. For this reason, a low density of development is recommended to preserve the quality of the groundwater as a drinking water supply.

D. Soils

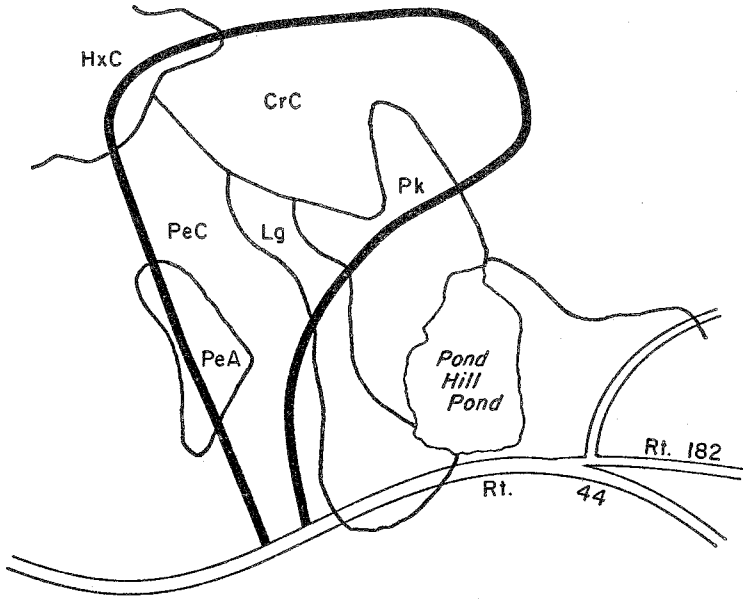
As shown in Figure 3.3, four soil types dominate the Haines Property. The Pk and Lg soils are wetland soils and should not be developed. A pond could be constructed in the Lg area for fire protection, scenic beauty, stormwater control and possibly fishing.

Access to this site off Route 44 is good and the interior land slopes are generally favorable for commercial and industrial development.

The Paxton soils (map symbols PeA, PeC) however, have severe limitations for on-site sewage disposal systems in their natural condition due to the slow percolation rate in the underlying hardpan soil layer. There is moderate potential for overcoming this limitation if the following are implemented:

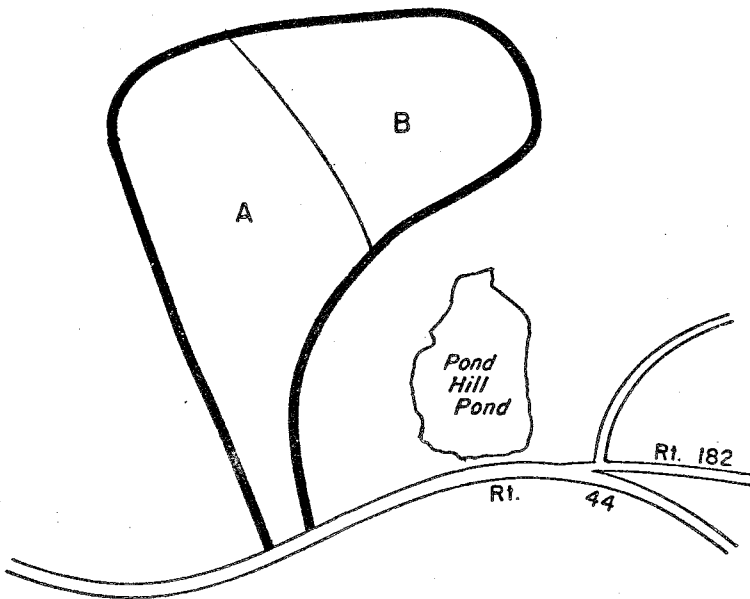
- 1) restrict percolation testing to those times when water tables are highest,
- 2) use interceptor drains over the hardpan,

FIGURE 3.3
SOILS MAP



- ADAPTED FROM LITCHFIELD COUNTY SOIL SURVEY, U.S.D.A - S.C.S.
- SOIL NAMES LISTED IN APPENDIX

FIGURE 3.4
VEGETATION TYPE MAP



EXPLANATION

- TYPE A Mixed hardwoods - seedling to pole size, understocked. 48 acres.
- TYPE B Softwood with scattered hardwood clumps. Fully stocked. 27 acres.

SCALE: 1" = 1000'



- 3) install large field, sand filter, or mound system,
- 4) avoid construction when wet to prevent soil "smearing",
- 5) undertake land shaping and/or stone removal,
- 6) use serial tile distribution where slopes are in the 8-15% range.

It should be noted that the limitation of the Paxton soil could also be overcome by extension of the sewer line to this site.

Frost heaving of paved roads is also a hazard in Paxton soils. Practices to overcome this limitation include an adequate road base and subsurface drains. Due to the favorable slopes on this property, the service road could follow the land contours practically its entire distance. Some stone removal may be necessary, but very little cutting and filling would be required.

The Charlton soils (CrC) have a moderate limitation for on-site sewage disposal systems. Stoniness and slopes are the major limitations.

Management Practices which may be implemented to overcome the soil limitations are:

- 1) Land shaping and/or stone removal.
- 2) Avoid construction when wet and enlarge leaching area as soil smears,
- 3) Serial tile distribution where slopes are in the range of 8-15%. Approximately 50 acres of the Charlton and Paxton soils are present on the site.

E. Sewage Disposal

As mentioned above, the 75 acre Haines Property is somewhat limited for commercial or industrial development due to the relatively shallow permeable soil layers found above a compact glacial till commonly referred to as "hard pan". It does appear feasible to develop this parcel for commercial or industrial sites with the provision that developments be generally small in size. Manufacturing facilities for 25 to 50 employees could function adequately on 2 to 5 acre parcels providing sufficient leaching area was identified and preserved on each individual site. Sewage disposal systems typically constructed in soil found on this site require installation of ground water control drains and placement of sandy fill material to elevate leaching systems above seasonally high ground water tables. Construction of individual low yield rock wells may provide the most feasible source of potable water. Construction of large subsurface sewage disposal systems for flows in excess of 2000 gallons per day or more may require use of large land areas and extensive soil testing in order to determine feasibility.

These soil limitations again become minimized if sanitary sewers are extended to service the site. An 8' sanitary sewer is located approximately 1,000 feet to the west. Permission to utilize the sewer would have to be granted by the Norfolk Sewer District.

F. Traffic

Sight distances along Route 44 at the Haines Property are excellent and access to the site is easy off Route 44. The average daily traffic along Route 44 in this area is 5000 and capacity is 1660 vehicles per hour.

Lane width at 12' is adequate. Road surface is "good" and nearby bridges are rated "fair" by the Connecticut Department of Transportation. There also are very wide shoulders in this area.

G. Vegetation

As shown in Figure 3.4, there are two major vegetation types present at the site. These include:

TYPE A. Mixed Hardwoods - The majority of this area has recently been logged off in a fashion to remove most of the merchantable timber. Many of the trees left behind are of poor quality, exhibiting rot and excessive crook. Species include black cherry, red maple and white pine. The understory contains scattered seedlings of maple and cherry as well as heavy concentrations of raspberry. This area is presently understocked.

TYPE B. Softwood - This area is dominated by white pine and hemlock. Clumps of hardwood trees do exist. This area is fully stocked. Portions of this type closest to Pond Hill Pond are on wet soils, impeding tree growth potential. Scattered hardwood tree seedlings accompany the hemlock, pine and mountain laurel understory. The wetland area on this property offers good wildlife habitat and should not be developed.

ROUTE 44 SOUTH PROPERTY

V. ROUTE 44 SOUTH PROPERTY

The Route 44 South Property consists of many landowners. Although most of the "property" is privately owned, the town landfill and town farm are also located within the property boundaries. As shown in Figure 4.1, about half of the area is presently zoned for commercial/industrial use. The landscape of the area is diverse consisting of slight to steeply sloping wooded land and open land.

A. Geology

The geologic characteristics of this long strip of land range from moderately suitable to poorly suitable for commercial-industrial development. U.S. Geological Survey Map GQ-983 indicates that the parcel is covered mostly by till (see Figure 4.3). Till is a glacial sediment that was deposited directly from an ice mass. It consists of a nonsorted, generally structureless mixture of sand, silt, clay, gravel, and angular to rounded boulders. While it is often sandy, very stony, and moderately loose in the upper 3 to 5 feet, the till at greater depths commonly becomes slightly finer-grained, less stony, and tightly compact. The transition between the two textures is often abrupt.

Approximately three-fourths of the land west of Beckley Road is rocky or shallow to bedrock. It is also generally steeply sloped. This land is very poorly suited for development, particularly intensive development. A sound development in this area would undoubtedly require a tremendous capital outlay for land preparation. The remainder of the land west of Beckley Road (the portion adjoining the road) is not so shallow to bedrock, but it is steep and it contains a substantial swamp. It is therefore not well-suited for development.

Of the land east of Beckley Road, the easternmost portion is partly shallow to bedrock. In addition, the parcel contains a swamp of about 8.5 acres and two extensive areas of seasonal wetness (areas designated Lg on the soils map). The remaining land is moderately well-suited for development: slopes are moderate and soils are relatively deep. The compact till layer at depth may limit the feasibility of "standard" septic systems, but this limitation may be overcome by properly engineered systems. Although this portion of the parcel is not ideally suited for development, its limitations are generally less restrictive than those of the presently designated commercial and industrial zone north of Route 44. The old Town Farm property is the only portion of the present zone that appears to have a moderate (as opposed to low) development potential.

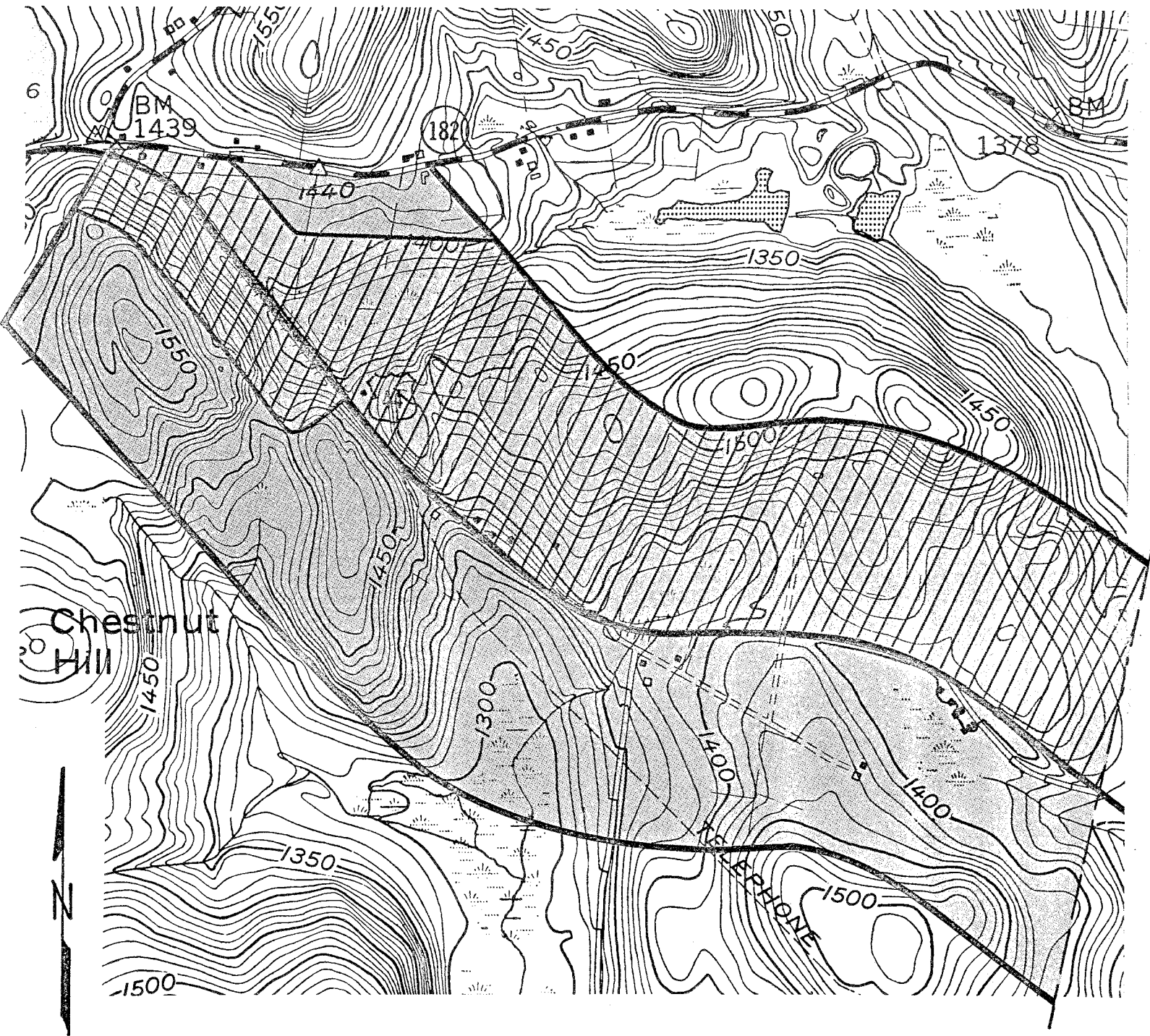
B. Hydrology

All but about 20 acres of the property lie within the watershed of Farmington River (see Figure 4.4). The 20 acres, located at the western edge of the parcel, drain into the Norfolk Brook - Blackberry River system. Of the remaining area, approximately two-thirds drains southward through Beckley Pond Brook into Mad River. The other one-third drains north or east into Mill Brook and thence into Mad River. Mad River flows into Still River in Winsted. Still River joins the West Branch of Farmington River in the village of Riverton in Barkhamsted.

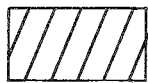
Because the property is largely in the headwater region of a major drainage system, it has no large streams. There are, however, several small streams and wetland areas. Their water quality is unknown. Presumably, some degradation of groundwater quality has occurred in the vicinity of the existing landfill.

FIGURE 4.1

TOPOGRAPHIC MAP



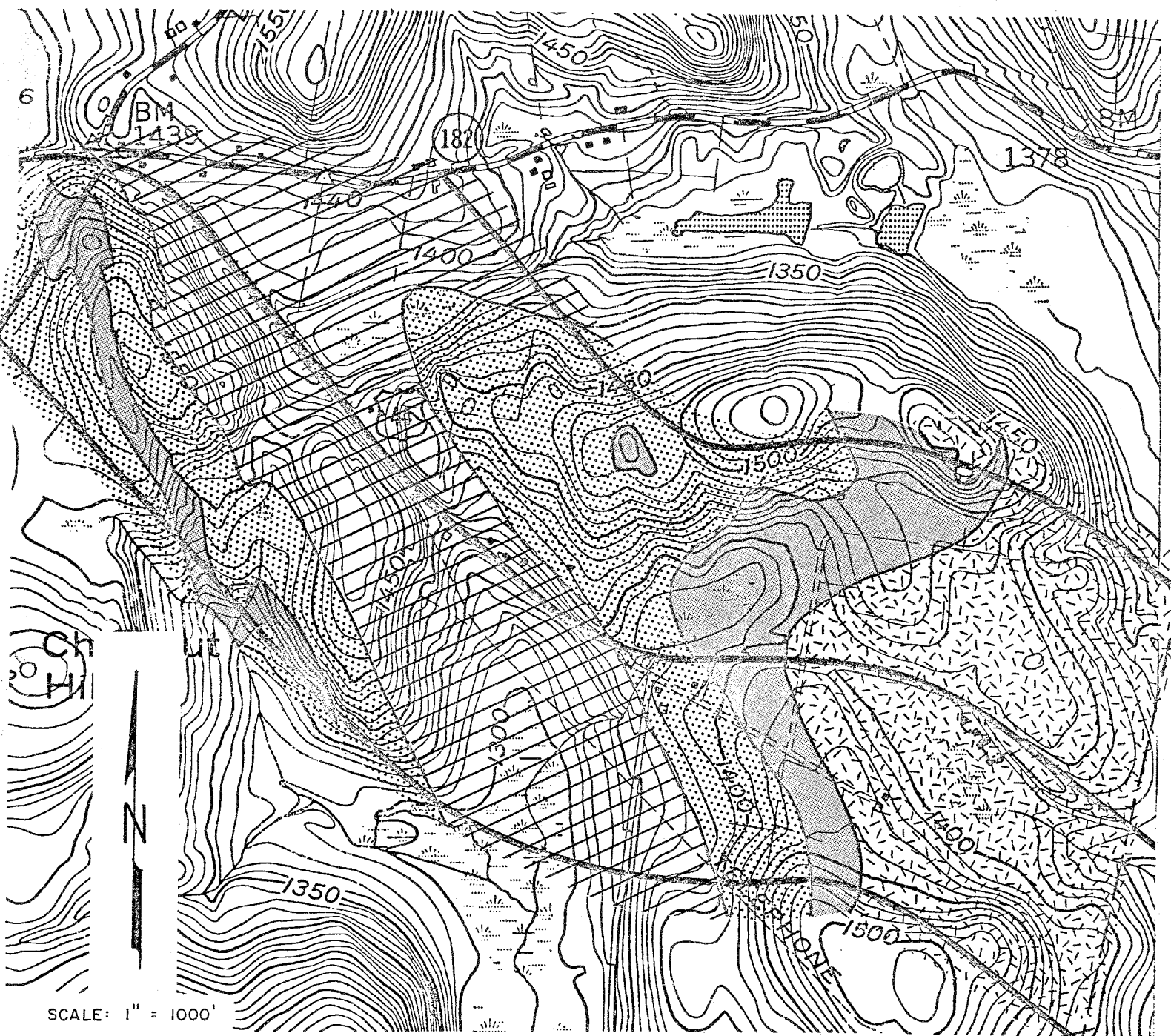
SCALE: 1" = 1000'



EXISTING COMMERCIAL/INDUSTRIAL ZONE

FIGURE 4.2

BEDROCK GEOLOGY (Adapted from U.S.G.S. Map G-Q 1518)



EXPLANATION



Granofels, composed of quartz, plagioclase, biotite, muscovite, sillimanite, apatite, zircon, and garnet.



Granitic gneiss, composed of about equal amounts of quartz, microcline, and sodic plagioclase, with lesser amounts of biotite, muscovite, apatite, zircon, and magnetite.

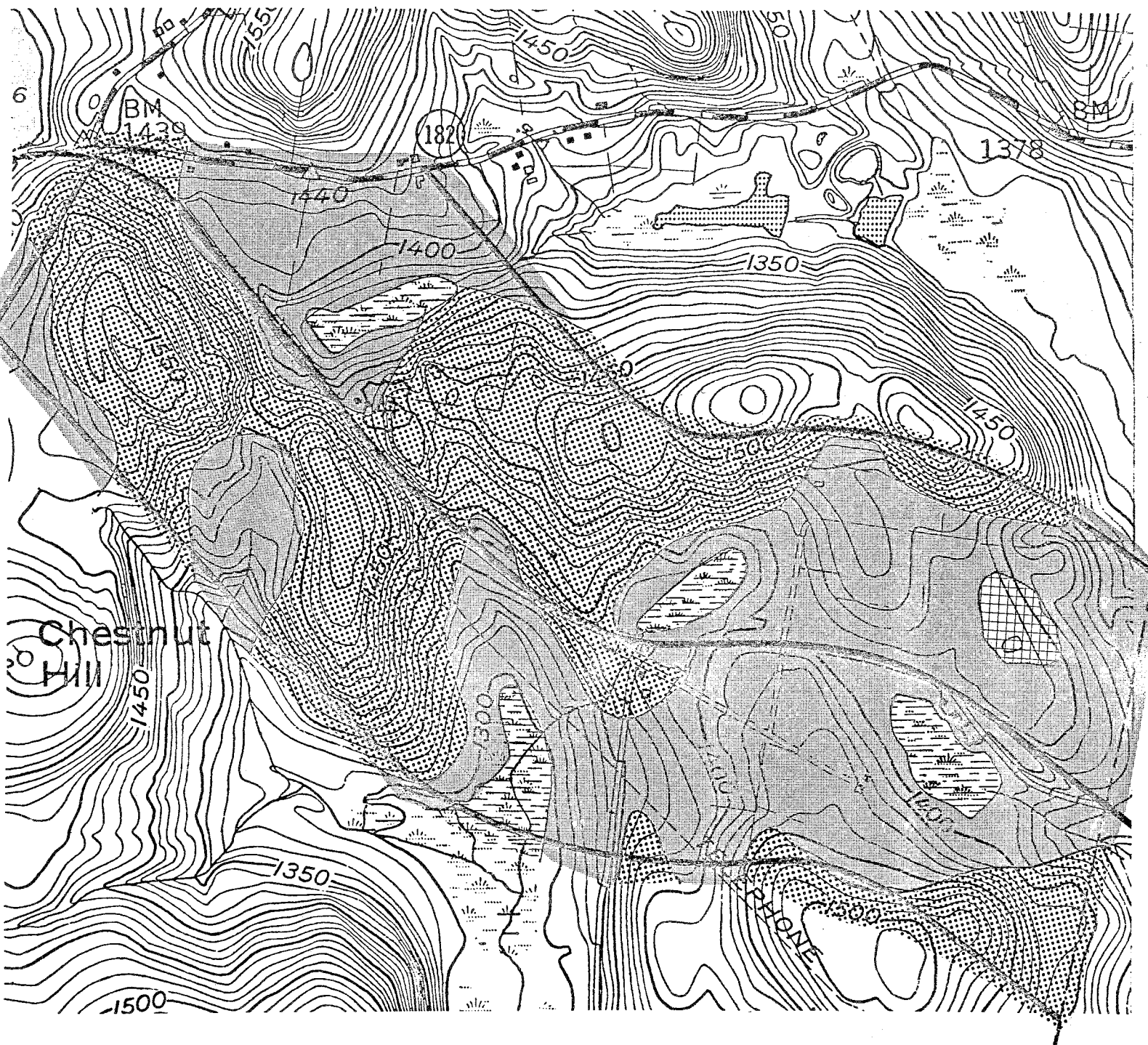


Gneiss composed of hornblende, plagioclase, quartz, biotite, epidote, sphene, magnetite, apatite, zircon, and garnet. May give undesirably high iron or manganese concentration to local groundwater.



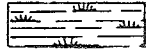
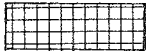


Rusty-weathering, strongly foliated schist, composed of quartz, plagioclase, muscovite, biotite, garnet, sillimanite, zircon, and apatite. May give undesirably high iron or manganese concentrations to local groundwater.

FIGURE 4.3
SURFICIAL GEOLOGY



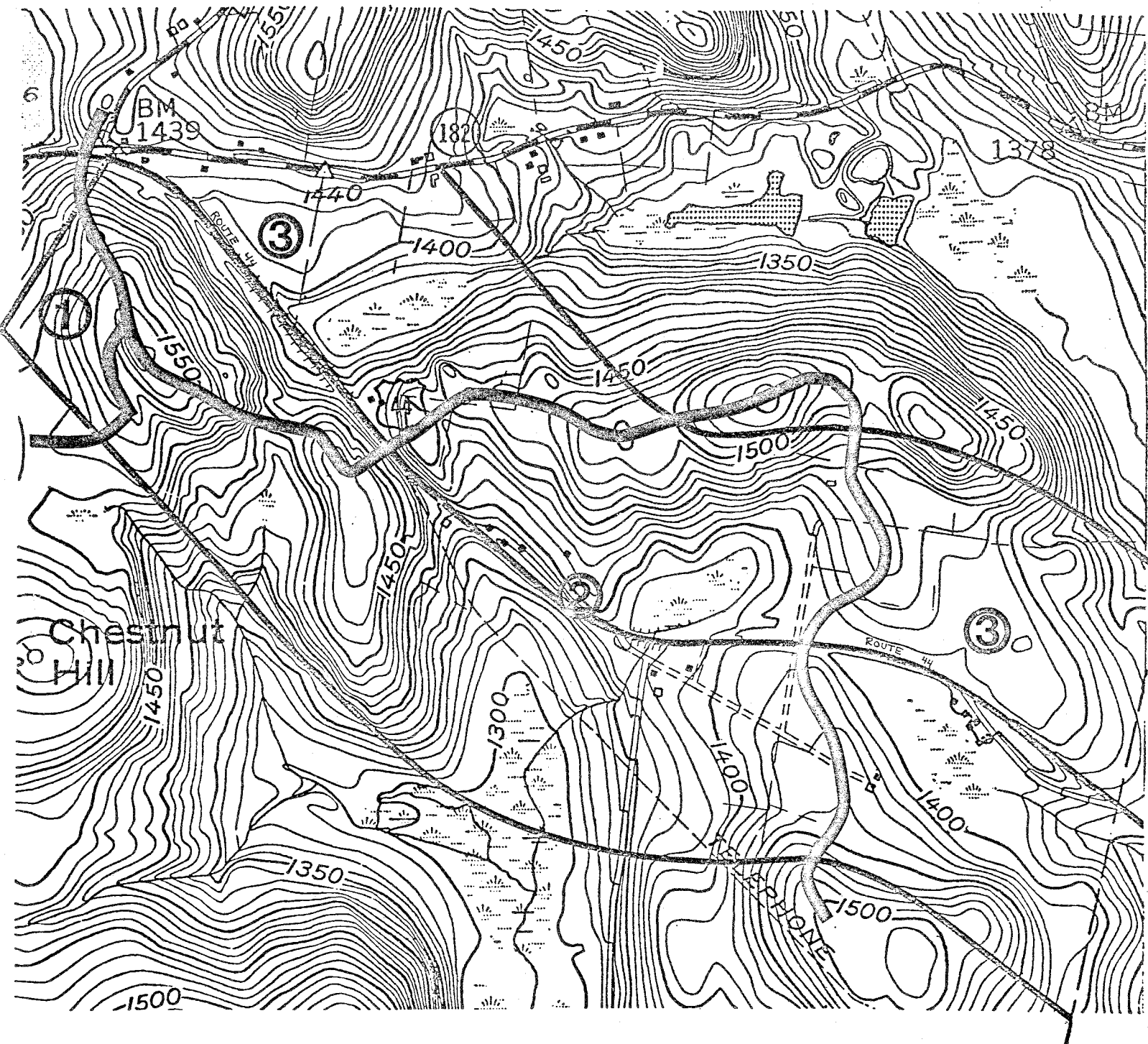
EXPLANATION

-  Till.
-  Shallow till and areas of bedrock exposure.
-  Swamp sediments. Silt, sand, and clay mixed with a high percentage of decayed organic matter.
-  Landfill area.



SCALE: 1" = 1000'

FIGURE 4.4
DRAINAGE AREAS



EXPLANATION

- ① Area draining to Blackberry River
- ② Area draining to Beckley Pond Brook and thence to Mad River
- ③ Area draining to Mill Brook and thence to Mad River

SCALE: 1" = 1000'

The landfill lies within the Mill Brook drainage area. If landfill activity were begun in the old Town Farm parcel, groundwater and surface water in the Beckley Pond Brook drainage area could be affected. Part of the land within this drainage area, including part of the proposed commercial-industrial zone, is presently protected from development by deed restrictions.

None of the proposed commercial-industrial land is ideally suited for major wastewater discharges. Discharges from small or moderately sized septic systems would probably be acceptable on the farmland east of Beckley Road, assuming the systems were properly designed and installed. Most of the available land west of Beckley Road is poorly suited even for residential septic systems. Groundwater discharges in that area may result in pollution of the bedrock aquifer, the principal water supply source. Unfortunately, a large chunk of the existing commercial-industrial zone north of Route 44 is no better suited to development. The landfill is probably present in this zone more out of necessity than choice. However, as long as land uses requiring a potable water source are not established in proximity to the landfill, particularly to the northeast, the landfill should not cause any serious problems in the future.

C. Water Supply

Public water facilities are not presently available to this property. Bedrock would undoubtedly be the principal, if not sole, source of water. 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 will intersect enough fractures to supply at least 2 or 3 gallons per minute. Some wells, however, fail to intersect any water-bearing fractures. There is no practical way of predicting whether any particular location will be good for drilling a well.

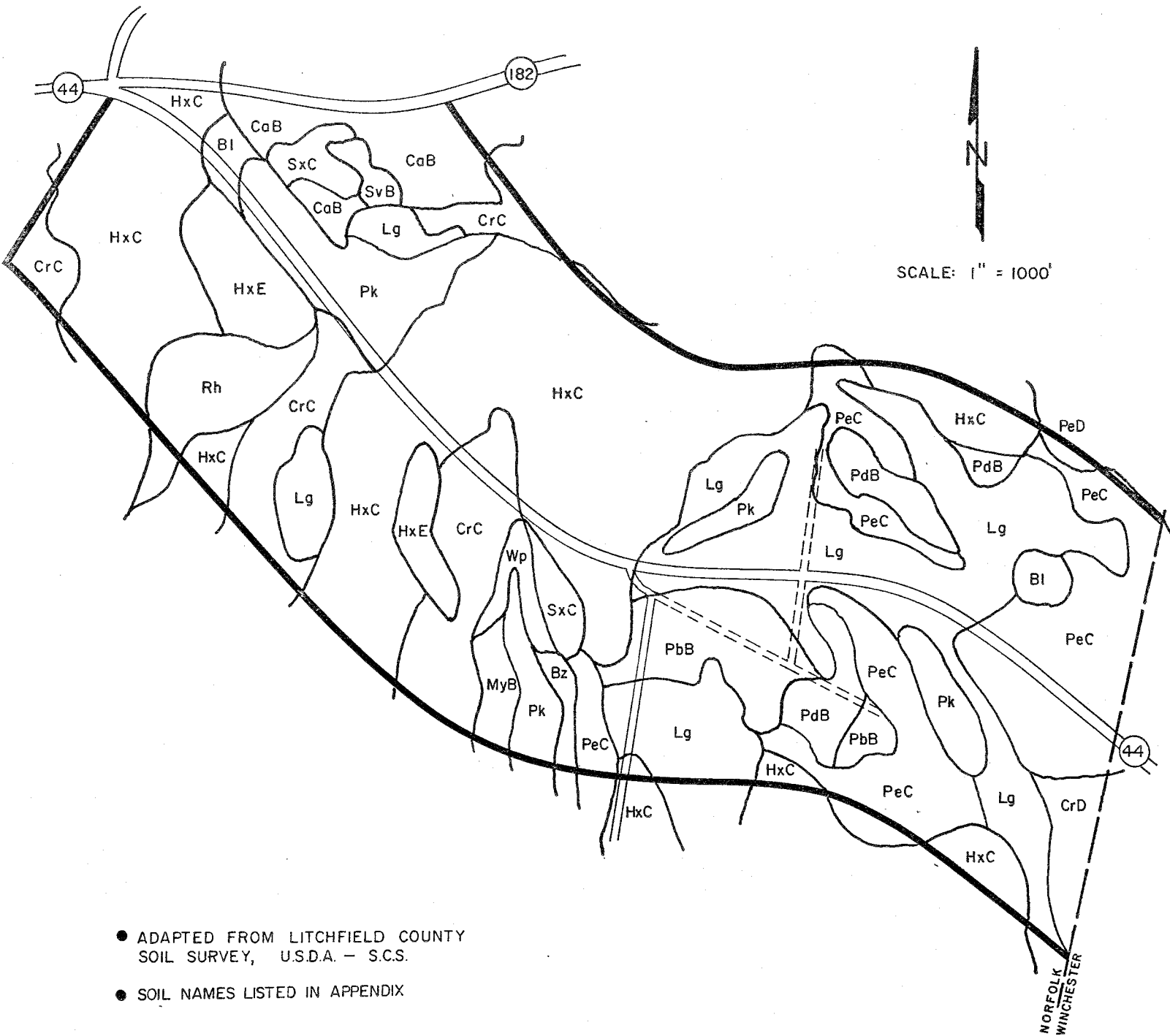
Very few wells in bedrock can be expected to yield 20 gallons or more per minute. However, if the total daily demand for water is only 1000 - 2000 gallons, a relatively low-yielding well can adequately serve this need. Storage capacity will usually be needed to allow the flow rate from the system to exceed the actual rate of return flow from the ground into the well. The well shaft will provide some of this storage, but tanks may be needed for some uses.

The quality of the groundwater would be expected to be generally good except in the vicinity of the landfill. The bedrock underlying the site contains a relatively high percentage of iron-bearing minerals. Some undesirably high concentrations of iron or manganese may occur in well water drawn from the site, but there are several types of filters available to combat this problem. The town should use considerable caution in allowing development of the shallow to bedrock areas west of Beckley Road. A serious risk of well pollution could accompany such development.

D. Soils

Due to severe soil limitations, it is suggested that none of the existing commercial/industrial zone be considered for development with the exception of the "Town Farm" property. Limitations of wetlands, bedrock, and steep slopes are too severe to be feasibly overcome. The Town Farm property has the same soil and soil limitations as described under Paxton soil for the Haines property. The area of the site not wetland however is considerably smaller than

FIGURE 4.5
SOILS MAP



- ADAPTED FROM LITCHFIELD COUNTY SOIL SURVEY, U.S.D.A. - S.C.S.
- SOIL NAMES LISTED IN APPENDIX

that of the Haines Property (+15 acres vs. +50 acres). A fire pond could be constructed on the south side of the entrance road to Town Farm property.

As discussed in the preceding sections, the south side of Route 44 is similarly restricted by steep slopes, wetland soils, and bedrock. Only one area is deemed feasible for development, the old Anstelt farm (soil map symbols PbB, PdB, PeC). Soil limitations for this area are the same as identified for the Paxton soils on the Haines Property.

It should be noted that approximately 16 acres of the Paxton soil (PbB) are prime farmland soils. An additional 6 acres (symbol PdB), with surface stone removal could be converted to prime farmland for a total of 22 acres. This land could not support a dairy farm but has good potential for fruits and vegetables. A pond for irrigation could be provided nearby in the southern wetland. Two houses on or near this property would be seriously affected should this land be developed for commercial uses.

E. Sewage Disposal

As discussed above, the soils in this area are generally unsuitable for subsurface sewage disposal. Any plans for commercial or industrial development will require extensive site investigation and detailed analysis. There is no public water supply or sanitary sewer existing or planned for this area.

F. Traffic

Most of the properties abutting Route 44 in this area have good access. Shoulders are adequate although not as wide as near the Haines Property. Average daily traffic is 4300; otherwise the same conditions exist here as at the Haines Property.

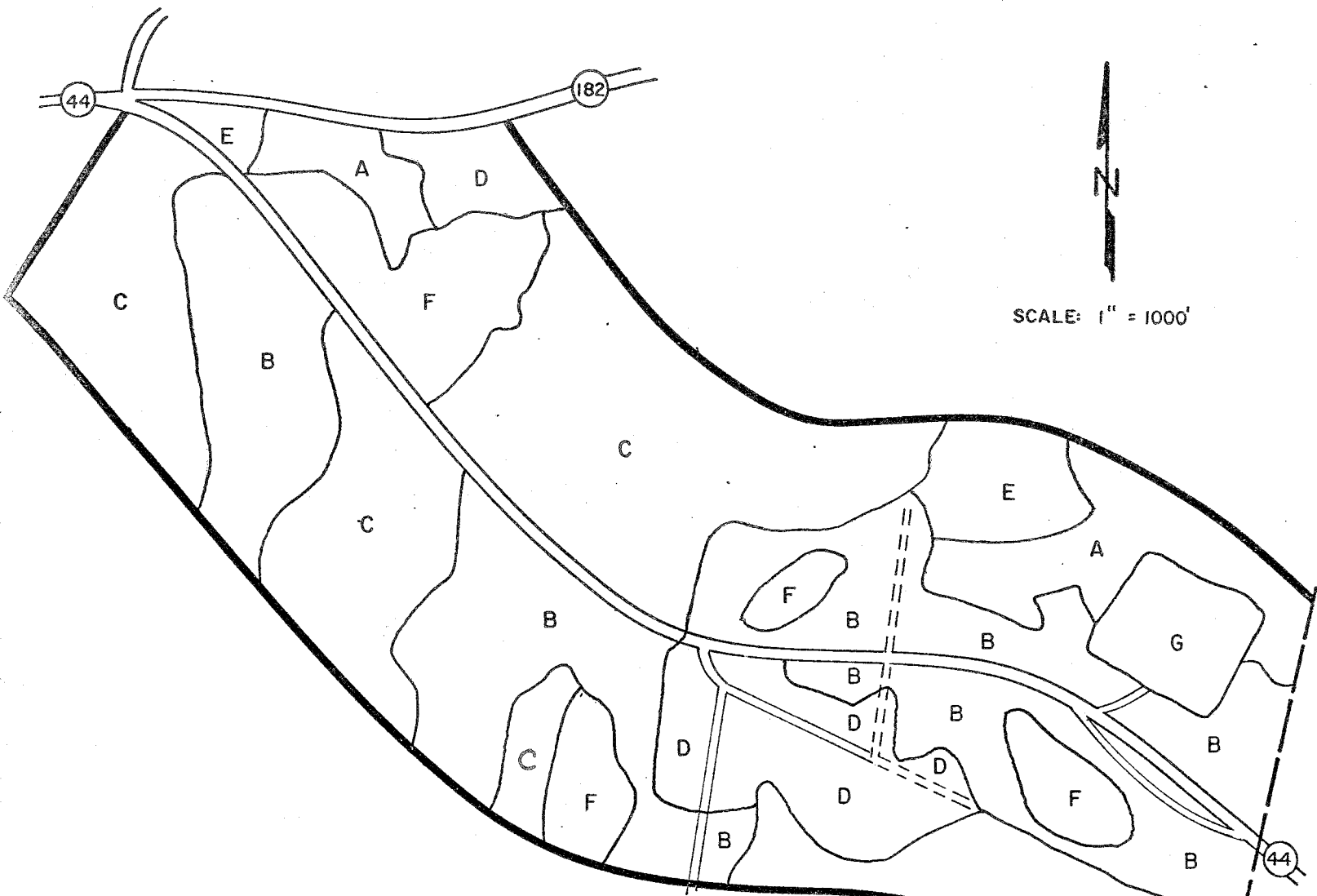
Caution should be exercised in considering development of this parcel so that an excessive number of curb cuts (driveways and side streets) do not occur along Route 44. Carrying capacity of arterials such as 44 is greatly reduced by curb cuts as well as the extra traffic created by the development. There are several techniques for reducing curb cuts such as frontage roads, collector side streets, and cluster designs.

G. Vegetation

Seven different vegetation types occupy this parcel with tree growth dominating the landscape. Within each type the forest changes several different times. This change is due primarily to the amount of water available to plant growth. Quite often species composition is closely aligned with soil types.

TYPE A. Hardwood/Softwood - Hardwood and softwood tree species dominate these areas. Red oak, black and white birch, beech and maples represent about half of the trees while white pine and hemlock make up the remainder. The undulating topography finds slightly different species on the lower land. Here, red maple is apt to dominate. Closely associated with this type, in the understory, one is apt to find the above tree seedlings as well as blue beech, hop hornbeam, scattered mountain laurel and some witch hazel in the wetter areas.

FIGURE 4.6
VEGETATION TYPE MAP



EXPLANATION

- TYPE A Hardwood/softwood mix. 72 acres.
- TYPE B Mixed hardwoods. 151 acres.
- TYPE C Softwoods. 136 acres.
- TYPE D Agricultural land. 43 acres.
- TYPE E Old field. 15 acres.
- TYPE F Swamp/bog. 41 acres.
- TYPE G Landfill. 14 acres.

NORFOLK
WINCHESTER

TYPE B. Mixed Hardwood - Hardwood trees in this type dominate the terrain. A scattering of hemlock does exist, primarily in pockets, and compliments the red oak, black and white birch, red and sugar maple. The terrain for the most part limits the amount of moisture available to plant growth. Ridge tops are well drained and have thin soil and correspondingly the tree growth will appear somewhat stunted. Red and chestnut oak can generally be found over an understory of mountain laurel, low bush blueberry and maple leaved viburnum. Side slopes generally provide moderately drained soils and good tree growth. The bottom of small ravines or valleys may collect water allowing for a higher water table and correspondingly poorer growing conditions. Red maple is the most dominant species here.

TYPE C. Softwood - This type is dominated by hemlock and white pine. Scattered hardwoods exist and are represented by red oak, black birch, red maple and beech. Again the tops of the knolls are spots of less vigor while the side slopes are generally better able to support good growth. A typical understory consists of scattered hemlock regeneration, birch and maple seedlings and patches of mountain laurel.

TYPE D. Agricultural Land - This type is primarily active agricultural land. Grasses provide both a source of pasture and hay. Hedge rows generally consist of young hardwood tree growth and are characterized by clumps of black cherry and red maple. Common associates include barberry, wild grape, poison ivy and green briar.

TYPE E. Old Field - This type was once open agricultural land and is now slowly reverting to forest. These successional stages are represented by many grasses, smooth and staghorn sumac, grey birch, aspen, pussy willow, juniper and red cedar. Scattered seedlings of major tree species get established at this stage and one would expect to find young white pine, ash, sugar maple and birch.

TYPE F. Swamp/Bog - Most of this type is open to partially open swamp land. Tree species are generally limited to red maple, elm, white cedar and hemlock. Shrub growth is commonly found and may consist of highbush blueberry, spice bush, pussy willow, poison sumac, nannyberry, and button bush.

TYPE G. Landfill - The town landfill is mostly void of vegetative cover. Edges of this area might contain sweetfern, blackeyed Susan and poverty grass.

H. Aesthetic Considerations

The strip zoning of both sides of Route 44 for commercial/industrial use is not considered appropriate. This approach largely disregards existing land form, vegetation, and visual character. The property flanks the major thoroughfare into the community and strip development would mar the approach to town center and greatly alter the perceived character of Norfolk. In addition, this kind of practice requires numerous exits and entrances to be made which have a negative effect on safety and circulation. Access to the property would require steep roads or severe cuts and fills off Route 44.

Any commercial and industrial development located here should be centralized (perhaps near Beckley Road) and not spread out or placed piecemeal along Route 44.

* * * * *

APPENDIX

Soils Limitation Chart

PARCEL 1

Nat. Soil Groups	Map Symbol	Soil Name	Septic absorption Fields	Buildings/ Basements	Roads or Drives	Landscaping
A-1b	GrC	Groton gravelly sandy loam, 3-15% slopes	Severe; Poor filter	Moderate, Slope	Moderate; Slope	Severe; Droughty
A-2	TwA	Tisbury & Sudbury soils, 0-3% slopes	Severe; wetness	Severe; wetness	Severe, Frost action	Slight
B-3b	Lg	Leicester, Ridgebury, Whitman very stony fine sandy loam, 0-3% slopes	Severe; Large stones, Wetness	Severe; Large stones, wetness	Severe; Wetness, Frost action, Large stones	Severe; Large stones, Wetness
B-1c	CrC	Charlton very stony fine sandy loam, 3-15% slopes	Moderate; slope	Moderate; slope	Moderate, slope	Moderate; Slope; Large stones

PARCEL 2

A-1c	Tg	Terrace escarpments	Severe; Poor filter	Severe; Slope	Severe; Slope	Severe; low fertility; droughtiness
A-1d	MyB	Merrimac sandy loam, 0-3% slopes	Severe, Poor filter	Slight	Slight	Moderate; Droughtiness
A-1e	MyC	Merrimac sandy loam, 8-15% slopes	Severe; Poor filter	Moderate; slope	Moderate; Slope	Moderate; Erosion hazard
A-3a	W1	Walpole and Raynham soils	Severe; Wetness	Severe; Wetness	Severe; Wetness	Severe; Wetness
C-1d	PdD	Paxton stony fine sandy loam, 15-25% slopes	Severe; Slope	Severe; Slope	Severe; Slope	Severe; Moderate
D-2	HxE	Hollis extremely rocky fine sandy loam, 15-35% slopes	Severe; Slope, Large stones, Depth to rock	Severe; Depth to rock, Large stones	Severe; Depth to rock, Large stones	Severe; Depth to rock, Large stones
	Rh	Rock land	Severe; Depth to rock, Slope	Severe; Depth to rock, Slope	Severe; Depth to rock, Slope	Severe; Slope, Thin layer

Nat. Soil Group	Map Symbol	Soil Name	Septic Absorption Fields	Buildings w/ Basements	Roads or Drives	Landscaping
Parcel 2						
U	Ma	Made Land	- On-site investigation necessary			
PARCEL 3						
B-3b	Lg	See Parcel 1				
B-1c	CrC	See Parcel 1				
C-1c	PeA	Paxton very stony fine sandy loam, 0-3% slopes	Severe; Percs slowly	Moderate; Wetness	Moderate; Frost action	Slight
	PeC	Paxton very stony fine sandy loam, 3-15% slopes	Severe; perc's slowly	Moderate; slope, wetness	Moderate; Slope, Large stones	Moderate; Slope
D-2	HxC	Hollis extremely rocky fine sandy loam, 3-15% slopes	Severe; Depth to rock, large stones	Severe; Depth to rock, Large stones	Severe; Depth to rock	Severe; Depth to rock, Large stones
F-1	Pk	Peat and Muck, 0-3% slopes	Severe; Floods, Wetness	Severe; Floods, Wetness, Low strength	Severe; Low strength	Severe; excess humus, Wetness, Floods
PARCEL 4						
A-1d	MyB	See Parcel 2				
B-1a	CaB	Charlton fine sandy loam, 3-8% slopes	Slight	Slight	Slight	Slight
B-1c	CrC	See Parcel 1				
B-2a	SvC	Sutton fine sandy loam, 8-15% slopes	Severe; Wetness	Severe; Wetness	Severe; Frost action	Moderate; Slope, Wetness

Nat. Soil Group	Map Symbol	Soil Name	Septic absorption Fields	Buildings w/ Basements	Roads or Drives	Landscaping
PARCEL 4						
B-2b	SxC	Sutton very stony fine sandy loam, 3-15% slopes	Severe; Wetness, Large stones	Severe; Wetness, Large stones	Moderate; Slope, Frost action	Severe; Large stones
B-3b	Lg	See Parcel 1				
C-1a	PbB	Paxton fine sandy loam, 3-8% slopes	Severe; Wetness	Moderate; Wetness	Moderate; Wetness, Frost action	Moderate; Erosion hazard
C-1c	PeC	Paxton very stony fine sandy loam, 3-15% slopes	Severe; Percs slowly	Moderate; Slope, Wetness	Moderate; Slope, Wetness, Frost action	Moderate; Slope
C-1d	PdD	Paxton stony fine sandy loam, 15-25% slopes	Severe; Slope, Percs slowly	Severe; Slope	Severe; Slope	Severe; Stoniness
C-3a	Rd	Ridgebury fine sandy loam	Severe; Percs slowly, Wetness	Severe; Wetness	Severe; Wetness, Frost action	Severe; Wetness
C-3b	Wp	Whitman stony fine sandy loam	Severe; Pondering Percs slowly	Severe; Pondering	Severe; Pondering Frost action	Severe; Pondering
D-2	HxC	Hollis extremely rocky fine sandy loam, 3-15% slopes	Severe; Depth to rock, Large stones	Severe; Depth to rock, Large stones	Severe; Depth to rock	Severe; Depth to rock, Large stones
	HxE	See Parcel 2				
	Rh	See Parcel 2				
F-1	Pk	See Parcel 3				
G-3b	Bz	Birdsall silt loam	Severe; Wetness, Percs slowly	Severe; Wetness	Severe; Wetness, Frost action	Severe; Wetness
U	B1	Borrow and fill land, loamy - materials	On-site investigation necessary			

ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state, and regional agencies. Specialists on the team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, recreation specialists, engineers, and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - a 47 town area in western Connecticut.

As a public service activity, the team is available to serve towns and developers within the King's Mark Area --- free of charge.

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 the review of a wide range of significant activities including subdivisions, sanitary landfills, commercial and industrial developments, and recreation/open space projects.

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

REQUESTING A REVIEW

Environmental Reviews may be requested by the chief elected official of a municipality or the chairman of an administration agency such as planning and zoning, conservation, or inland wetlands. Requests for reviews should be directed to the Chairman of your local Soil and Water Conservation District. This request letter must include a summary of the proposed project, a location map of the project site, written permission from the landowner/developer 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 King's Mark RC&D Executive Committee, the team will undertake the review. At present, the ERT can undertake two reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil Conservation District Office or Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P.O. Box 30, Warren, Connecticut 06754.