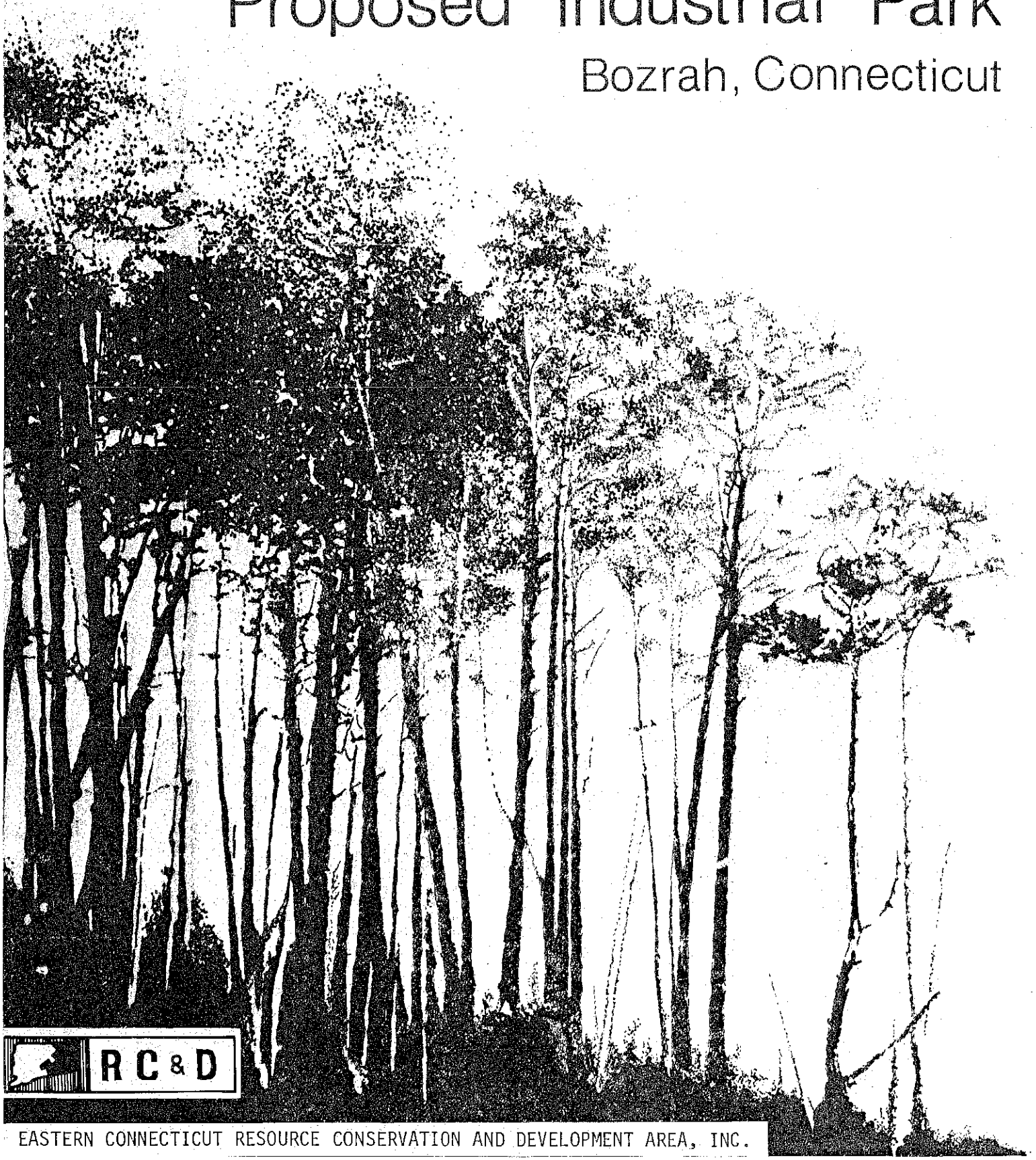
Environmental Review Team Report

Proposed Industrial Park

Bozrah, Connecticut



R C & D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team Report

on

Proposed Industrial Park

Bozrah, Connecticut

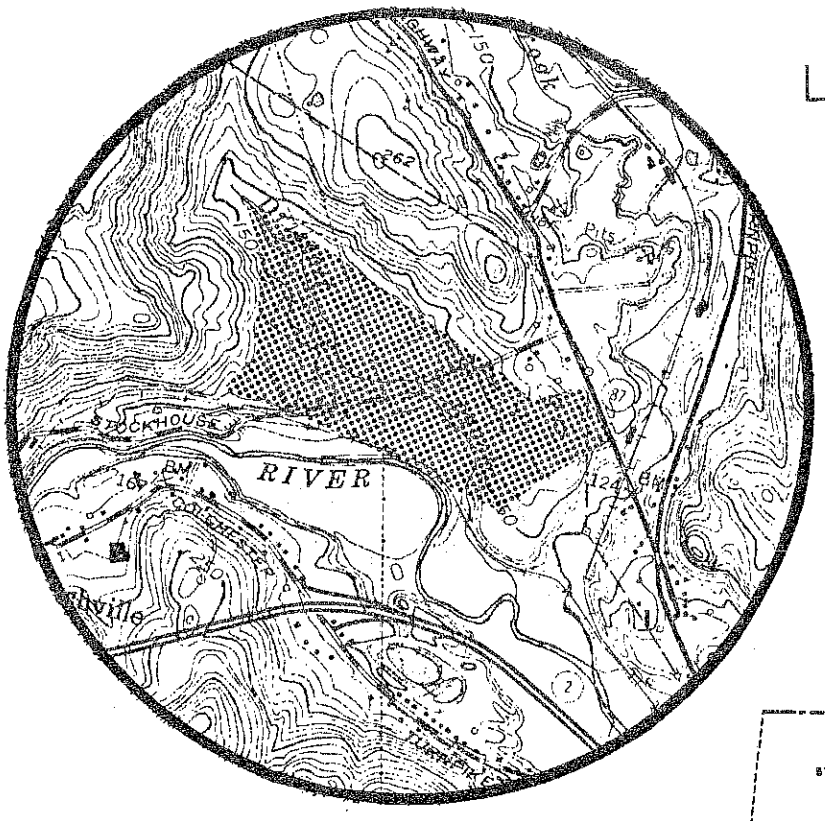
May 1979

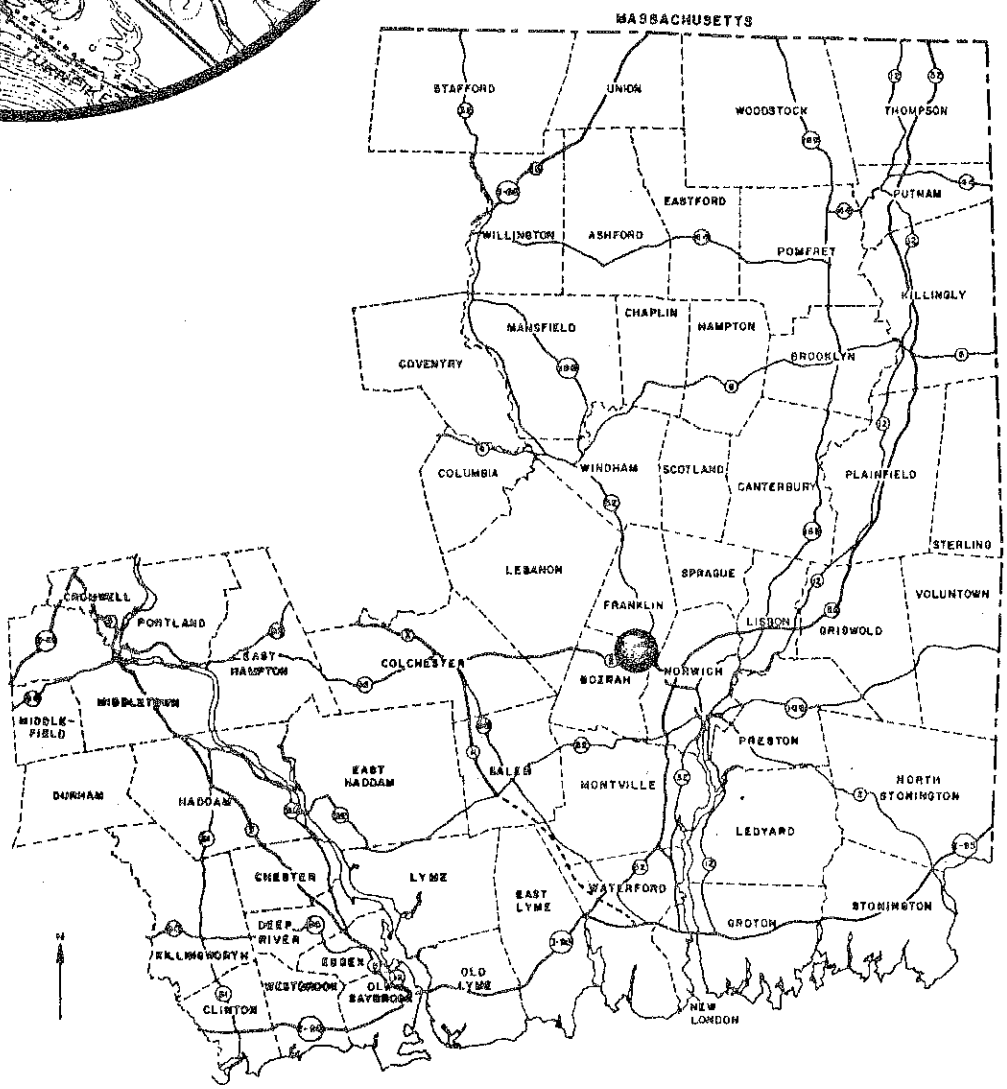
eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site

PROPOSED INDUSTRIAL PARK
BOZRAH, CONNECTICUT





EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
PROPOSED INDUSTRIAL PARK
BOZRAH, CONNECTICUT

This report is an outgrowth of a request from the First Selectman of Bozrah to the New London County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource Conservation and Development (RC&D) Area Executive Committee for their consideration and approval as a project measure. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

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

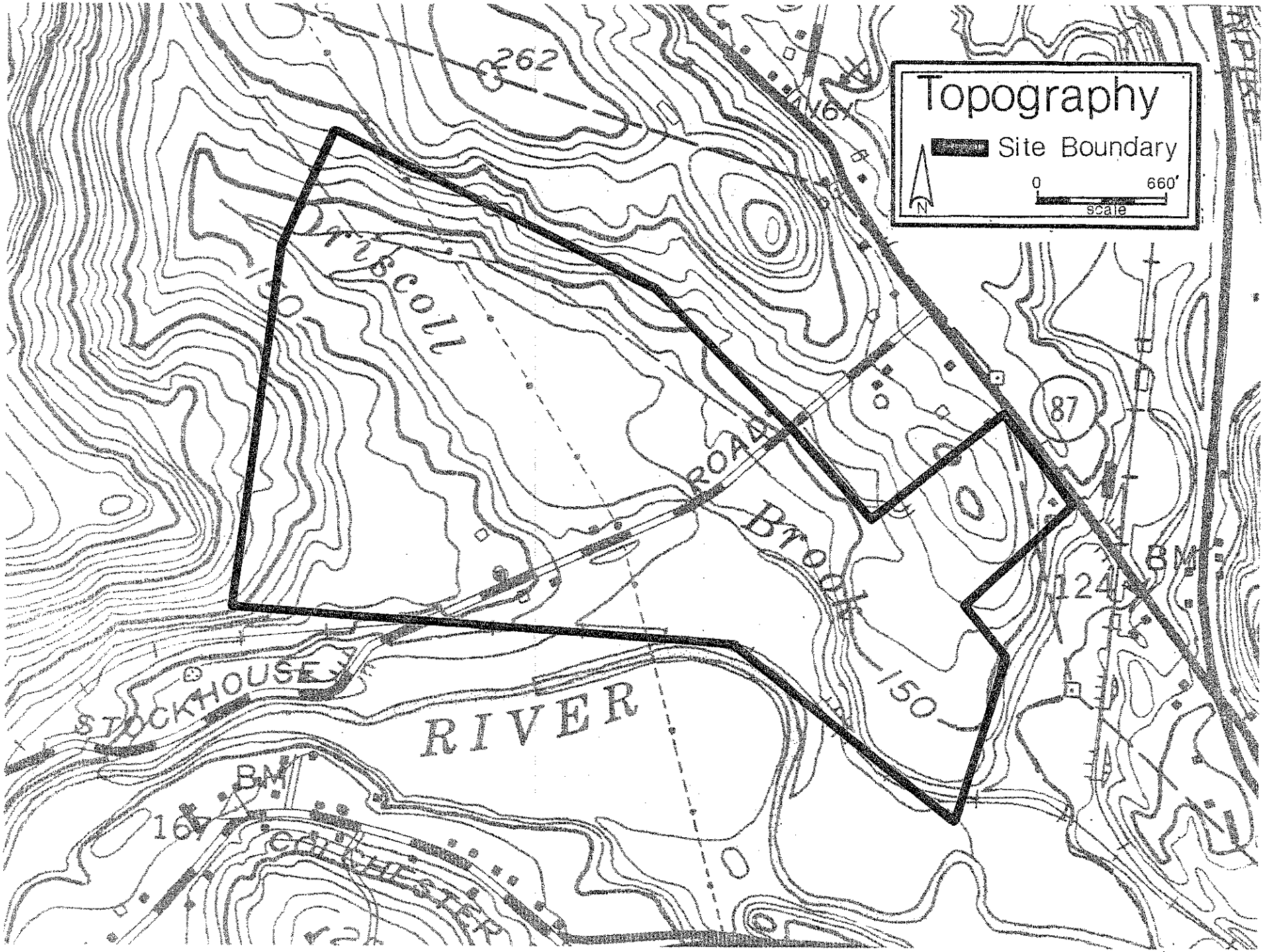
The ERT that field checked the site consisted of the following personnel: Gary Parker, District Conservationist, Soil Conservation Service (SCS); Mike Zizka, Geologist, Department of Environmental Protection (DEP); Rob Cochran, Soil Scientist, (SCS); Rob Rocks, Forester, (DEP); Don Capellaro, Sanitarian, State Department of Health; Gerhard Amt, Regional Planner, Southeastern Connecticut Regional Planning Agency; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Thursday, March 22, 1979. Reports from each Team member were sent to the ERT Coordinator for review and summarization for the final report.

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

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

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


Topography
Site Boundary
0
660'
scale
N
262
160
150
Driscoll
Road
Brook
87
124
BM
150
STOCKHOUSE
RIVER
BM
16
CHICHESTER

INTRODUCTION

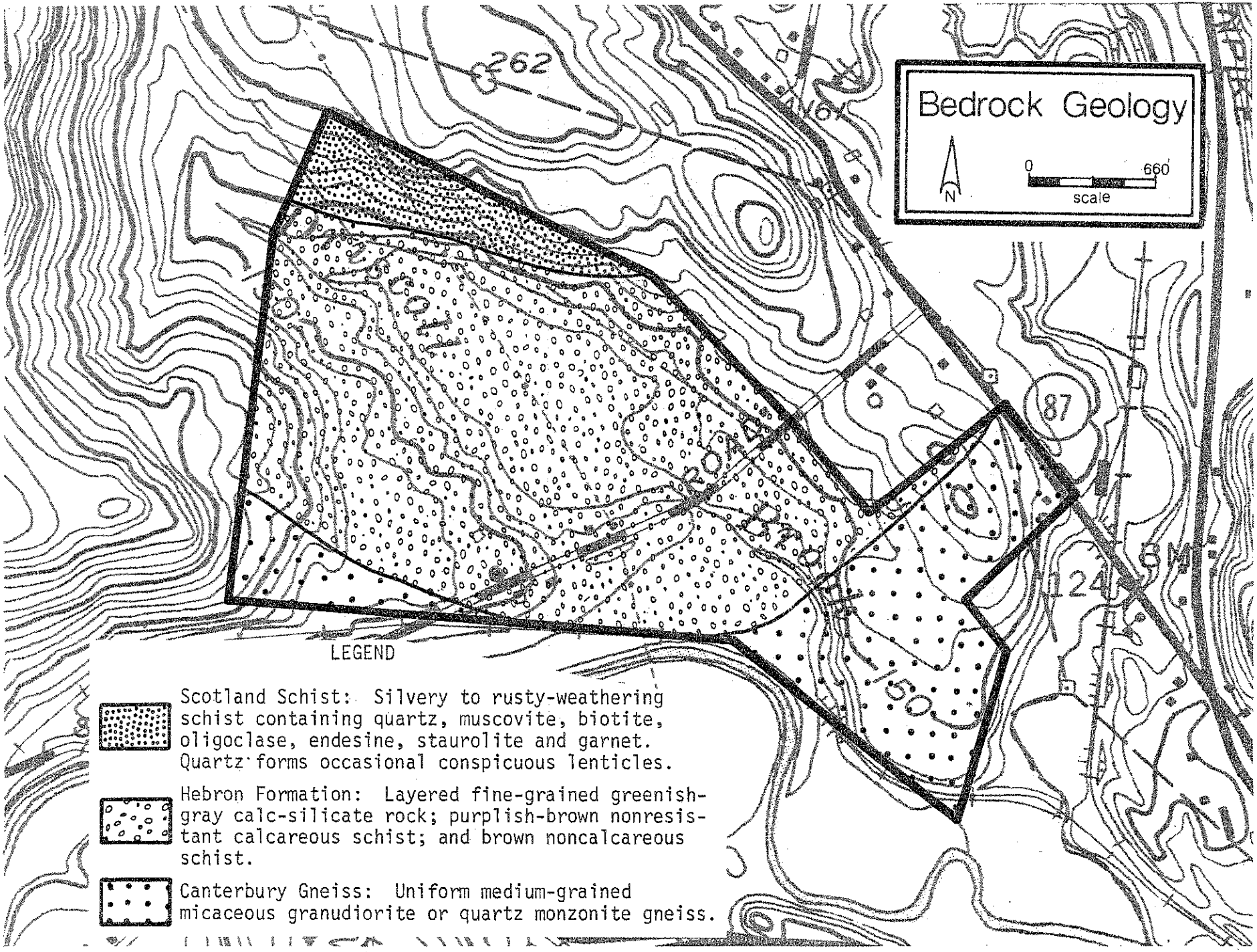
The Eastern Connecticut Environmental Review Team was asked to provide an environmental assessment of a proposed rail industrial park in the Town of Bozrah. The 150± acre site is located in the northeast corner of Bozrah, with frontage on both sides of Stockhouse Road, near the Franklin Town line. A small but important part of the site, the frontage on Route 87, is in Franklin.

The site has varied topography but is generally flat. A large wetland associated with Driscoll Brook occupies approximately half of the site on the northwest side of Stockhouse Road. A smaller wetland bisects that part of the site lying southeast of Stockhouse Road. Most of the site is currently in use as cropland or pasture. Woodland is present in the northwestern section of the parcel, and wetland vegetation occurs in the vicinity of Driscoll Brook. The proposed park is also within the watershed of the Yantic River, and it includes part of the river's flood hazard area as defined in a 1976 HUD survey.

The industrial park proposal has been formulated by the Eastern Connecticut Development Council for the greater Norwich Labor Market Area which includes the Towns of Bozrah, Franklin, Griswold, Lisbon, Preston, Sprague, and Voluntown. The proposed park will be attempting to attract light industrial uses such as assembly plants and light manufacturing similar to those industries which have located in the existing Norwich Industrial Park. This site does have the potential, however, of heavy industrial uses locating within the park due to the availability of rail service on certain sections of the site. Approximately 30% of the proposed park is to be set aside as natural buffer zones in which no construction of any kind will take place. The park will be served by the Norwich Municipal sewerage system and the Norwich municipal water supply. Bozrah Light and Power will supply gas and electricity to the site.

The Team is concerned with the effect of this proposed industrial park on the natural resource base of the site. No economic feasibility study has been prepared or evaluated by the Team. In general, we find that the proposed park will have no noticeable effect on the Yantic River. The Town of Bozrah, however, may wish to regulate outflows from the site since the combined runoff increases from a series of future developments in the watershed could alter the flow characteristics of the Yantic River. Some soils areas (notably the Adrian-Palms mucks) would need to be excavated and replaced with suitable mineral soils before construction of foundations in these areas. If areas with shallow depth of soils to bedrock must be used for construction, blasting may be required. The best use of this site will depend on a careful layout of any interior road system. The initial development proposal offers little interior layout flexibility as only three easily usable parcels exist and these would best be served by three separate access roads onto Stockhouse Road.

The upland portions of the site are currently used to grow food crops for dairy cattle and are well-suited to this activity. Almost all of the land presently being managed for agricultural purposes is classified as prime agricultural land. The Town should consider this alternative use before making a final decision on development of the site.


Bedrock Geology
N
0
660
scale
262
87
124
150
LEGEND
Scotland Schist: Silvery to rusty-weathering schist containing quartz, muscovite, biotite, oligoclase, endesine, staurolite and garnet. Quartz forms occasional conspicuous lenticles.
Hebron Formation: Layered fine-grained greenish-gray calc-silicate rock; purplish-brown nonresistant calcareous schist; and brown noncalcareous schist.
Canterbury Gneiss: Uniform medium-grained micaceous granudiorite or quartz monzonite gneiss.

ENVIRONMENTAL ASSESSMENT

GEOLOGY

Bedrock and surficial geologic maps of the site accompany this section of the report. The bedrock map is adapted from G.L. Snyder, 1964, Petrochemistry and Bedrock Geology of the Fitchville Quadrangle, Connecticut: U.S. Geological Survey Bulletin 1161-I. The surficial geologic map is adapted in part from Fred Pessl, Jr., 1966, "Surficial Geologic Map of the Fitchville Quadrangle": U.S. Geological Survey Map GQ-485, and is in part based on field observations by M. Zizka, 1979. Detailed descriptions of bedrock units within the property are included with the bedrock map. The only unit likely to be encountered during development, assuming that the hilly section at the site's western border is left intact, is the Scotland Schist, which outcrops along the gas pipeline near the northern border of the property. This rusty-weathering, well-layered unit is less resistant to excavation than some other crystalline rock formations, but it may still require blasting in a few areas to accommodate the proposed industrial activities.

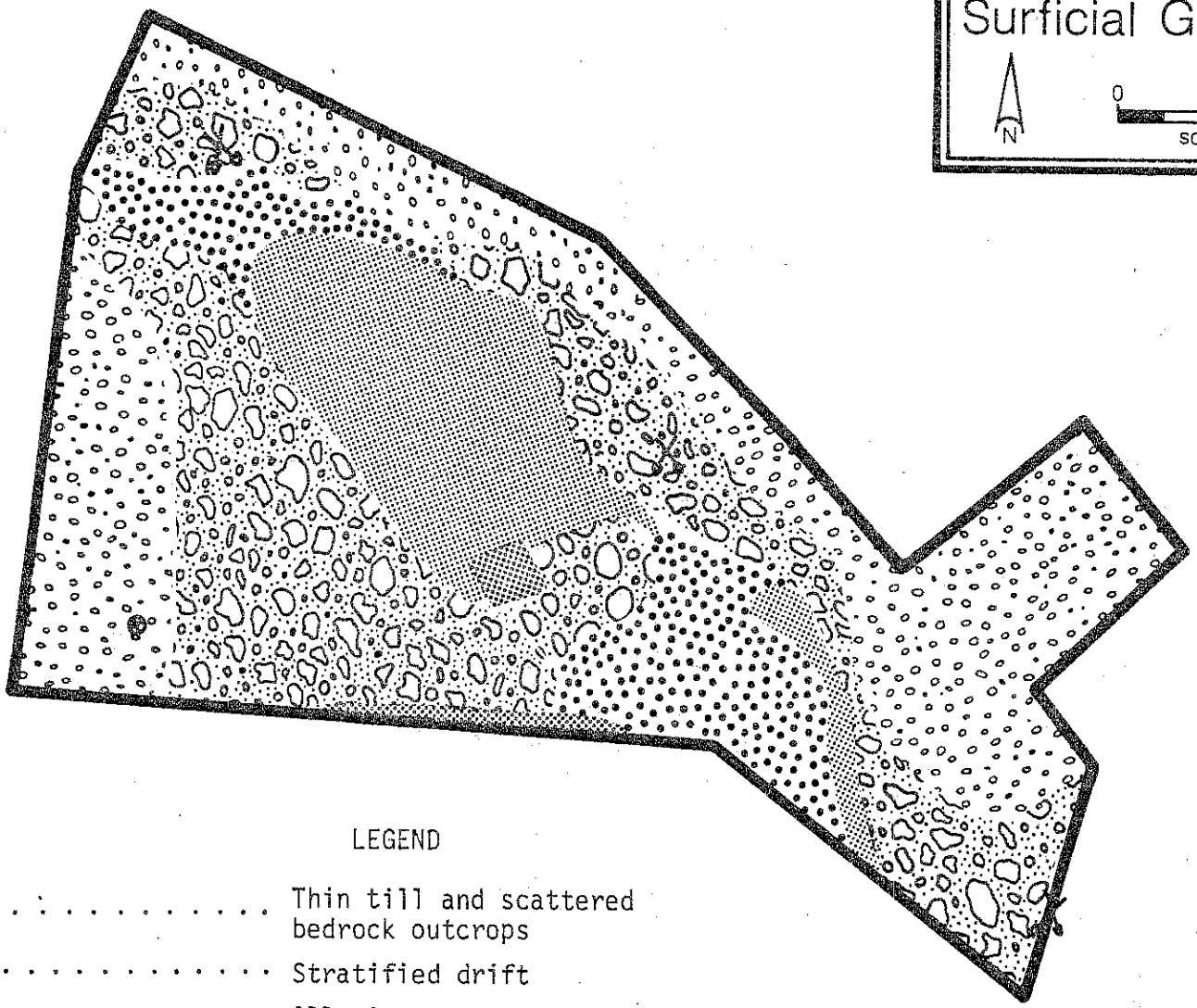
Five types of surficial geologic materials may be encountered on the site. Till, a glacial deposit, which is found principally on the hillier areas, is a compact, nonsorted mixture of rock particles of various shapes and sizes. The till probably is thinner than 10 feet to bedrock in most places, but may be slightly thicker near the eastern edge of the site. Stratified drift consists largely of sand and gravel, which was deposited by glacial meltwater streams. The gravel is mostly pebble to cobble size and is found principally within the upper five feet of the deposits. Pits near the eastern and western edges of the site exposed approximately 20 feet and 15 feet, respectively, of stratified drift. The total thickness of the material is unknown. The remaining three units are alluvium (floodplain deposits of silt, sand, and clay), swamp deposits (similar to alluvium but containing more fine particles and decayed organic matter), and artificial fill.

HYDROLOGY

The site lies within the Yantic River Watershed. Most runoff from the property flows into the river via Driscoll Brook, which essentially bisects the site. Industrial development will increase the volume of runoff shed from the site for a given amount of rainfall, and it will therefore increase the peak flows in Driscoll Brook. The magnitude of these increases will depend upon the nature and extent of the development. Although the peak flows in the brook may increase noticeably, no practical effects on the development would be anticipated since the brook possesses a substantial flood storage area. The additional runoff volume would be spread throughout the storage area, raising temporary water levels only slightly.

At the point of confluence of Driscoll Brook with Yantic River, the overall watershed area of the river is more than 70 square miles. Because the parcel to be developed represents much less than one percent of this area, no noticeable effects of the development on Yantic River should occur. Nevertheless, as a policy matter, it may be wise to regulate the outflows from the site, e.g. by means of retention structures, so that future flows are no greater than present flows. The reason for this action would be to assure that the individual effects from a series of future developments in the watershed will not add up to produce significant changes in the flow characteristics of Yantic River.

Surficial Geology



LEGEND

- Thin till and scattered bedrock outcrops
- Stratified drift
- Alluvium
- Swamp deposits
- Artificial fill

Driscoll Brook and its associated wetlands would be susceptible to pollution from industrial activity if proper precautions were not taken regarding site development, waste disposal, and plant operation. Any pollution in the brook would probably affect water quality in Yantic River and would also reduce the quality of the wetland as a wildlife habitat.

The state plan of Conservation and Development and more recently the Aquifer Protection Study of the Southeastern Connecticut region, has designated this as a high priority aquifer for the potential development of a new or expanded public water supply. Traditionally, when public water and sewers are installed in an area the density of development significantly increases resulting in more surface runoff with some loss of overall water quality due to various factors. Certain industries or operations may have industrial wastes or toxic materials, which through improper handling or disposal methods, could cause contamination of ground water.

VEGETATION

Agricultural land and wetland areas are dominant on the 150± acre tract proposed for the Bozrah Industrial Park. In all, nine vegetation types are described. (See vegetation type descriptions and vegetation type map.)

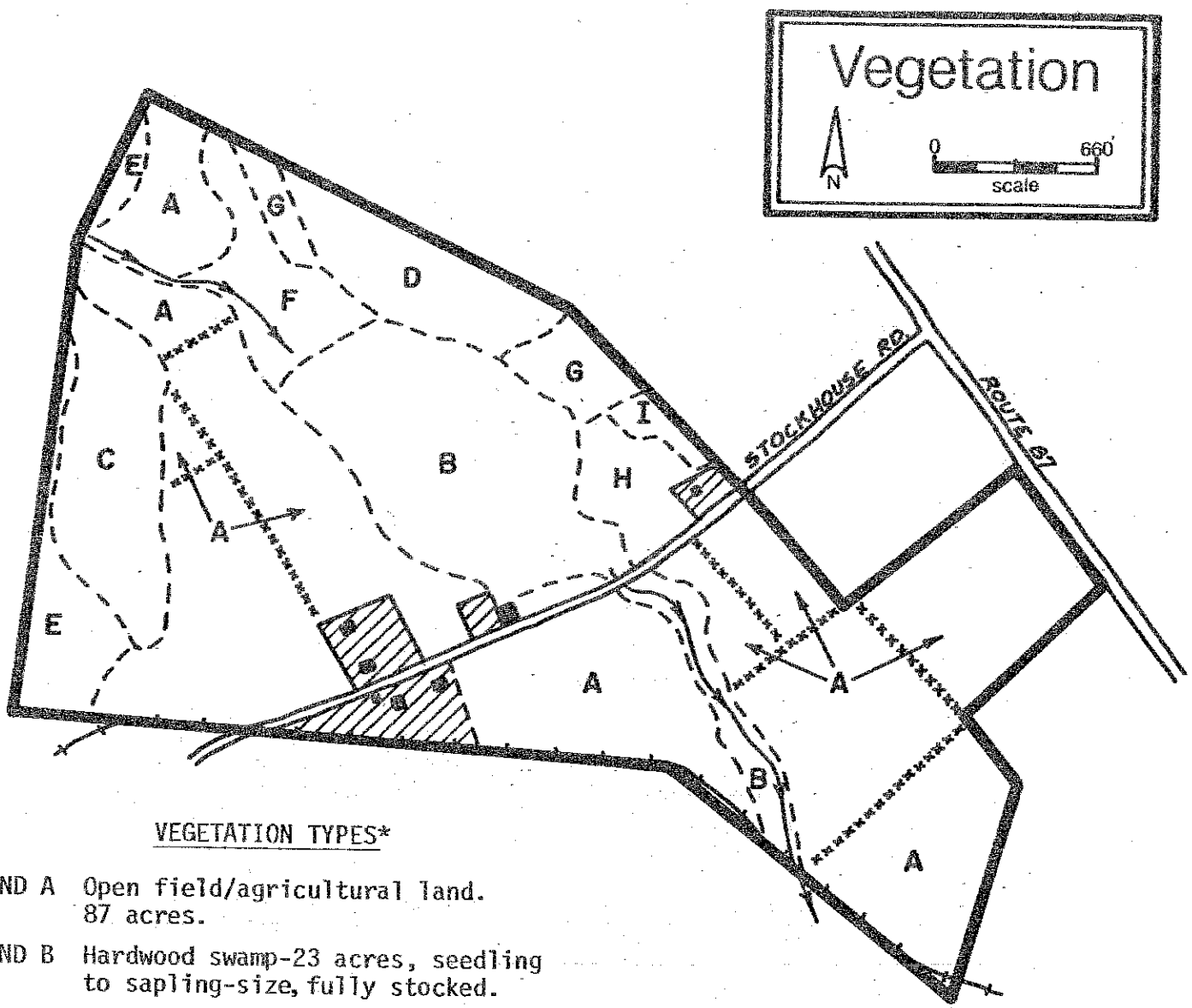
Stand A: (Open field/agricultural land.) Grasses and legumes are the dominant form of vegetation presently covering these fields, which total 87 acres. Some of these fields have been planted to corn in the recent past. Red cedar, red maple, black birch, and white ash are growing along the stone walls which separate these fields from one another.

Stand B: (Hardwood Swamp.) Seedling and sapling-size red maple on hummocks occupy this 23-acre fully stocked stand. Speckled alder, steeplebush, marsh grass, cattail and moss are also present.

Stand C: (Softwoods-Hardwoods.) This 9-acre fully stocked stand is made up of pole to small sawlog-size white pine, hemlock, black oak, black birch, and black cherry. Total volume ranges between 9 and 11 cords per acres on this medium-quality site. Black cherry and hemlock seedlings form a sparse understory with ground cover of occasional herbaceous vegetation.

Stand D: (Mixed Hardwoods.) Pole to sawlog-size white oak, hickory, American beech, black birch, and red maple are present in this 8-acre fully stocked stand. Total sawlog volume ranges between 4000 and 6000 board feet per acre on this medium quality site. The major understory species in this stand are dogwood, bluebeech, and black birch seedlings. Club mosses and grasses are present in some places.

Stand E: (Mixed Hardwoods.) Sapling to pole-size scarlet oak, black oak, hickory, occasional hemlock, and poor-quality trembling aspen occupy this 7-acre fully stocked stand. Total volume is between 7 and 9 cords per acre on this medium to low-quality site. The understory is dominated by bluebeech, dogwood, hardwood tree seedlings, white pine, and scattered red cedar. Ground cover is sparse.



VEGETATION TYPES*

STAND A Open field/agricultural land. 87 acres.

STAND B Hardwood swamp-23 acres, seedling to sapling-size, fully stocked.

STAND C Softwoods-hardwoods. 9 acres, pole to small sawlog-size, fully stocked.

STAND D Mixed hardwoods. 8 acres, pole to sawlog-size, fully stocked.

STAND E Mixed hardwoods. 7 acres, sapling to pole-size, fully stocked.

STAND F Hardwood swamp, 6 acres, sapling to pole-size, over stocked.

STAND G Old field. 5 acres, seedling to sampling-size, fully stocked.

STAND H Made land/disturbed land, 4 acres.

STAND I Old field, 1.5 acres. Brush species.

LEGEND

- Road
- Railroad
- xxxxxx Stone walls separating agricultural land
- Property Boundary
- Vegetation type boundary
- Buildings and house lots
- Stream

* Seedling-size trees = 1 inch and smaller in diameter at breast height (dbh).
Sapling-size trees = 1 to 5 inches dbh.
Pole-size trees = 5 to 11 inches in dbh.
Sawlog-size trees = 11" and greater trees.

Stand F: (Hardwood Swamp.) This 6-acre overstocked stand is made up of poor-quality sapling to pole-size red maple with occasional black birch. The understory is predominantly spicebush and alder with scattered patches of green-brier. Marsh grasses, mosses, and skunk cabbage form the ground cover in this area.

Stand G: (Old Field.) Seedling to sapling-size red cedar dominate this 5-acre fully stocked stand. Black oak and hickory seedlings are present in low numbers with poor-quality blue beech and gray birch. Bayberry, grasses, and club mosses form a dense ground cover in some areas.

Stand H: (Made Land.) This disturbed 4-acre site is sparsely vegetated with pussy willow, alder, red maple, gray birch, and arrowwood. Grasses, goldenrod, and herbaceous plants are beginning to cover the soil.

Stand I: (Old Field.) Pioneer species such as trembling aspen, cherry, gray birch, dogwood, red maple, and red cedar are present on this 1.5-acre site. Grasses, goldenrod, and bayberry form this area's ground cover.

The poorly drained soils and permanently high water table present in Stands B and F (Hardwood swamps) limit vegetation to species unsuitable for timber management. Red maples, which are tolerant of excessive moisture conditions, are usually the dominant tree species growing on these wetland areas. Early over-crowding often results in slow growing, poor-quality trees which have little value for timber products. As fuelwood demand increases, these areas may be managed for fuelwood production.

Windthrow may be a hazard in these swamp areas. The trees in these stands are shallow-rooted and crowded. The saturated soils do not provide a good substrate for trees to become anchored; as a result, the potential for windthrow is high.

Removal of the red cedar windbreak which is present around the edges of Stand F and any clearings made within the stand will allow wind to travel through, rather than over, this area, increasing the already high chance of windthrow.

Thinnings in the fully stocked stands (C,D,E, and F) will reduce competition between trees for space, sunlight, water, and nutrients. Removal of approximately one third of the volumes in Stands C,D, and E and perhaps 1/4 of the volume in Stand F will in time improve the health, vigor, and stability of the residential trees. Unhealthy and poor-quality trees, along with trees which are in direct competition with healthy, high-quality trees, should be removed. The dead trees in areas that may be used for recreation should also be removed so that they do not become hazardous.

A consultant forester should be contacted to mark the trees to be removed for the thinnings and to locate markets for the timber products which will be removed as development takes place.

Preservation of a buffer zone of forested land several hundred feet wide, where possible, around the proposed industrial park will provide multiple benefits.

This forested zone, protected from future development, will:

1. absorb some of the noise pollution which may emanate from the industrial park to surrounding areas,

2. have the ability to trap certain particulate and gaseous air pollutants which may be produced,

3. act as a visual screen,

4. reduce the amount of woodland wildlife habitat that would be destroyed by development.

If properly planned, parts of this forested buffer zone (especially Stand C) could be utilized for low-density employee recreation. Trails and picnic areas could be established providing a pleasant alternative to the industrial environment.

SOILS

A detailed soils map of this site and detailed soils descriptions are included in the Appendix to this report, accompanied by a chart which indicates soil limitations for various urban uses. As the soil map is an enlargement from the original 1,320'/inch scale to 660'/inch, the soil boundary lines should not be viewed as absolute boundaries, but as guidelines to the distribution of soil types on the site. The soil limitation chart indicates the probable limitations of each of the soils for on-site sewage disposal, buildings with basements, streets and parking, and landscaping. However, limitations, even though severe, do not preclude the use of the land for development. If economics permit large expenditures for land development and the intended objective is consistent with the objectives of local and regional development, many soils and sites with difficult problems can be used. The soils map, with the publication, New London County Interim Soil Survey Report, can aid in the identification and interpretation of soils and their uses on this site. "Know Your Land: Natural Soil Groups for Connecticut" can also give insight to the development potentials of the soils and their relationship to the surficial geology of the site.

Soil series typical of the proposed Bozrah Industrial Park include the Adrian-Palms series, the Agawam series, the Canton-Charlton series, the Charlton-Hollis series, the Ridgebury-Leicester-Whitman series, the Narragansett-Hollis series, and the Rumney series. Soils designated as inland wetlands and regulated under Public Act 155, as well as soils considered prime agricultural lands, are listed in the Appendix to this report. General limiting factors to development on this site are related to slope, wetness, shallow depth to bedrock, and suceptibility to frost action.

The Adrian-Palms (91) and Ridgebury-Leicester-Whitman (43M) soils would require extensive modification to accommodate the proposed development. In their present condition, however, these soils could function as storm water detention areas, minimizing the impact of this development on downstream flooding. Flooding along the Yantic River in Norwichtown and Yantic is a frequent occurrence. Therefore, although the impact of the proposed development on stormwater run-off would be relatively slight, provision should be made to store any increased run-off generated by development of the site.

A sediment and erosion control plan should also be prepared to forestall potential sedimentation in Driscoll Brook, in its wetlands, and also in the Yantic River. The Connecticut Sedimentation and Erosion Control Handbook can aid both the Town and developers in preparing such a plan. Technical expertise for designing vegetative and mechanical controls is available from the New London County Soil Conservation Service field office in Norwich.

FOUNDATION DEVELOPMENT/GRADED CONDITIONS

The Rumney (855) and Podunk (816) soils, both of which are regulated under PA-155, and which are found south of Stockhouse Road on the site, have a seasonally high water table and would require filling prior to development. These soils are also part of the Yantic River-Driscoll Brook floodplain. Backflow of Yantic River floodwaters onto these soil areas is presently restricted by the stone culvert through which Driscoll Brook flows under the abandoned railroad grade. The severity of flooding from the waters of Driscoll Brook itself is not known, but should be considered if buildings are to be constructed in these areas.

Extremely steep bluffs found in the southeast portion of the site would erode very easily if improperly developed. Erosion of these slopes could cause significant sedimentation in Yantic River.

Development occurring north of Stockhouse Road may impinge on the large wetland area containing the Adrian-Palms organic soils (91), which are also regulated under PA-155. Use of these soils should be minimized. Extensive modification would be required before buildings or roads could be successfully constructed. This modification would entail removing all organic deposits, draining the area, and filling with suitable mineral earth. Such an extensive alteration could have a significant impact on water quality and flow in Driscoll Brook. The Ridgebury-Leicester-Whitman soils (43M) are also very wet and extremely rocky. Extensive draining and filling would also be required before building on these soils.

The wetland areas north of Stockhouse Road are bordered by relatively steep slopes. Erosion on these slopes could cause significant sedimentation in these areas.

Bedrock appears to be close to the surface at several points in the north and east sections of the site. Development of these areas could require blasting to remove the bedrock.

WATER SUPPLY

Water for the industrial development will be obtained from the Norwich public water supply. A connection could be made to an existing transmission main and a feeder line extended to service the park property. As Norwich has an adequate supply of water along with a modern water treatment plant, there should be no particular problems providing sufficient water of suitable quality.

SEWAGE DISPOSAL

Although the area does not presently have a public sewerage system, it is understood that arrangements would be made for extending the Norwich public sewer

system, by having a connection with the Yantic line, to the industrial park. The availability of this type of facility should adequately solve the problem for means of sanitary waste disposal.

PLANNING CONSIDERATIONS

Although Bozrah has no Plan of Development, the area of the site is zoned for commercial and industrial use. The adjoining land in Franklin is similarly zoned and significant industrial and commercial development has occurred in this part of Franklin in recent years. The site is also less than a mile from the Norwich Industrial Park, which has attracted considerable economic activity to the region during this decade.

Highway access to the site is reasonably good. Stockhouse Road is a local-jurisdiction road which is not built for heavy traffic. It extends between Fitchville (about a mile to the southwest of the site) and Route 87. Widening and minor realignment would probably be needed if traffic on it were substantially increased. Route 87 in the vicinity of the site would probably require some minor widening between Stockhouse Road and Route 32, a distance of only 2500 feet. An interchange with the Route 2 expressway is approximately one mile from the site, via Routes 87 and 32. Exit 81 on the Connecticut Turnpike is slightly over two miles from the site.

Another transportation asset for the industrial development potential of this site is the existing spur line of the Central Vermont Railroad which forms the southern border of the site. In recent years this railroad line has helped attract several businesses to neighboring Franklin.

However, the rail spur in Bozrah has some limitations. The eastern part of the site fronts on the rail spur but is separated from it by an escarpment that severely limits rail use on this part of the site. Thus, about 25 of the approximately 65 acres of better building land on the site are not particularly well suited for rail-oriented uses.

The availability of public water and sewers are important features of an industrial park. The main transmission line from Norwich's Deep River Reservoir passes about 1000 feet south of the site. A crossing of the Yantic River would be required to make this vital utility available to the site. The Norwich sewer system presently provides service as far as the Norwich Industrial Park, a mile east of the Bozrah site. This service could conceivably be extended to the site.

Development of this site should be planned with possible future expansion in mind, particularly in the direction of Route 87. This area contains very low-density residential development at present, but abutting land uses and zoning suggest that a future change to industrial uses might be more appropriate, especially if development of the Bozrah Industrial Park is successful. The slope of the land and the apparent presence of bedrock indicate that the best use of the site will depend on a careful layout of interior roads. Planning for such a layout should not be based solely on the needs of the industries that may use the site.

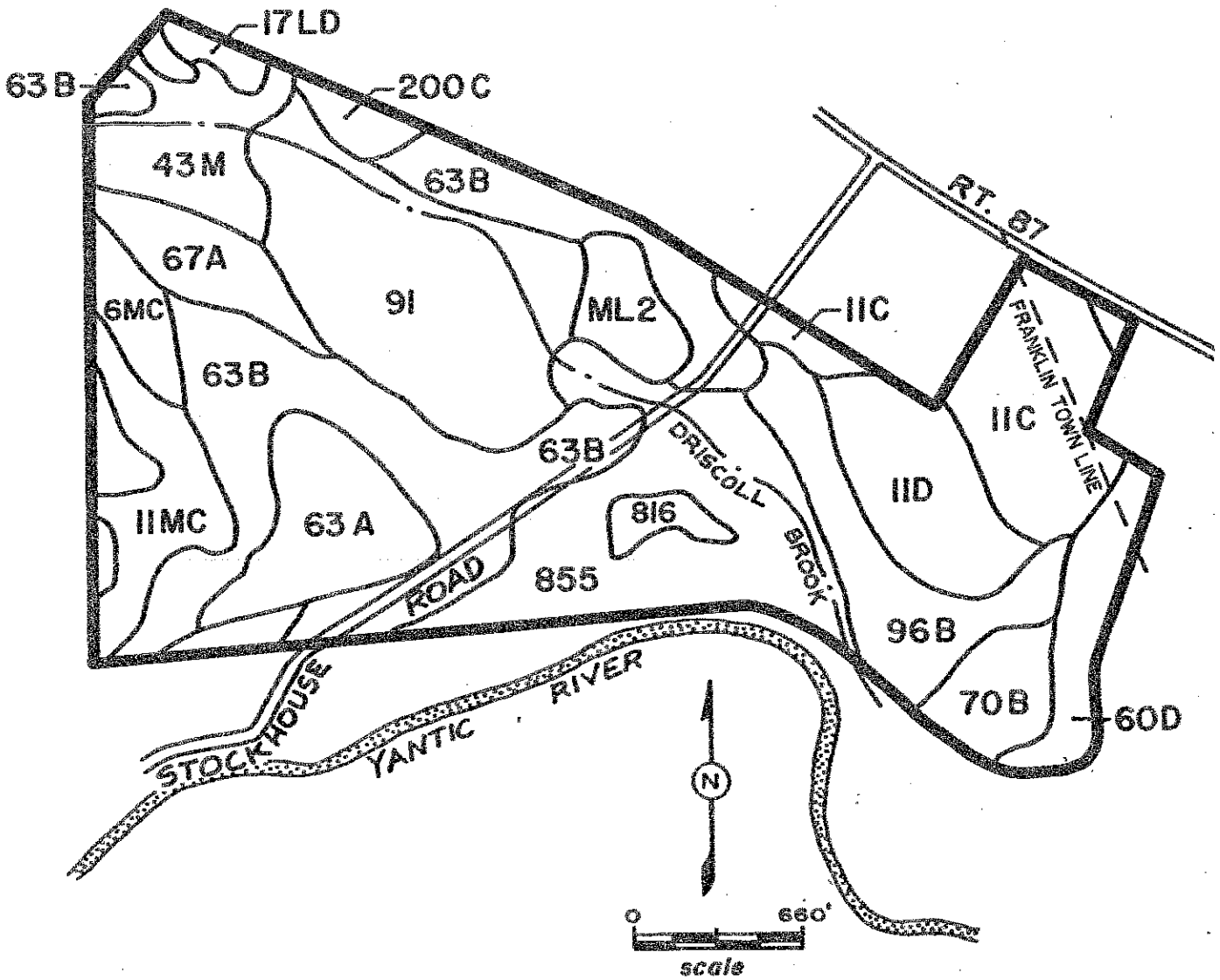
Initial development, based on the property presently proposed for acquisition, offers little layout flexibility. There are essentially three separate usable parcels: 1) the fields northwest of Stockhouse Road and south of the wetland; 2) the triangular field bordered by the railroad, Stockhouse Road and Driscoll Brook; 3)

the eastern part of the property, consisting of four large fields. Each of these areas could contain multiple building sites and would probably be best served by three separate driveways directly off Stockhouse Road.

Appendix

Soils

PROPOSED INDUSTRIAL PARK
BOZRAH, CONNECTICUT



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

Information taken from: Interim Soil Survey Report, New London County, Connecticut; 1978; Soil Survey Sheets No. 1392, 1394; United States Department of Agriculture, Soil Conservation Service. Advance copy, subject to change.

SOIL LEGEND

6MC	Narragansett extremely stony silt loam, 3-15% slopes
11B	Canton and Charlton fine sandy loam, 3-8% slopes
11C	Canton and Charlton fine sandy loam, 15-25% slopes
11MC	Canton and Charlton extremely stony fine sandy loam, 3-15% slopes
17LC	Charlton-Hollis fine sandy loams, 3-15% slopes
17LD	Charlton-Hollis fine sandy loams, 15-35% slopes
43M	Ridgebury, Leicester and Whitman extremely stone fine sandy loams
60D	Hinckley gravelly sandy loam, 15-35%
63A	Haven silt loam, 0-3% slopes
63B	Haven silt loam, 3-8% slopes
67A	Windsor loamy sand, 0-3% slopes
70B	Merrimac sandy loam, 3-8% slopes
91	Adrian and Palms mucks
96B	Agawam fine sandy loam, 3-8% slopes
200C	Narragansett-Hollis complex, 3-15% slopes
816	Podunk fine sandy loam
855	Rumney fine sandy loam
ML2	Udorthents, smoothed (made land)

CLASSIFIED SOILS ON THE SITE

INLAND WETLAND SOILS

Name	Mapping Unit
Adrian	91
Leicester	43M
Podunk	816
Ridgebury	43M
Rumney	855
Whitman	43M

PRIME AGRICULTURAL LAND (national)

Agawam	96B
Canton	11B
Charlton	11B
Haven	63A
Haven	63A
Merrimac	70B
Podunk	816
Windsor	67A

FARMLAND OF STATEWIDE IMPORTANCE

Rumney	855

PROPOSED INDUSTRIAL PARK
BOZRAH, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Soil Symbol	Principal Limiting Factor	Urban Use Limitations*		
			Shallow Excavations	Small Commercial Buildings	Streets & Parking
Canton-Charlton	6MC	Slope,Frost Action	3	3	3
Canton-Charlton	11B	Slope,Cut Banks Cave			
Canton Part			3	2	1
Charlton Part			1	2	1
Canton-Charlton	11C	Slope,Cut Banks Cave			
Canton Part			3	3	2
Charlton Part			2	2	2
Canton-Charlton	11MC	Slope,Cut Banks Cave			
Canton Part			3	3	2
Charlton Part			2	3	2
Charlton-Hollis	17LC	Slope,Depth To Rock			
Canton Part			2	3	2
Hollis Part			3	3	3
Charlton-Hollis	17LD	Slope,Depth To Rock	3	3	3
Ridgebury,Leicester,Whitman	43M	Wetness,Frost Action	3	3	3
Hinckley	60D	Slope	3	3	3
Haven	63A	Slope,Frost Action,Cut Banks Cave	3	2	2
Haven	63B	Slope,Frost Action,Cut Banks Cave	3	2	2
Windsor	67A	Cut Banks Cave	3	1	1
Merrimac	70B	Cut Banks Cave,Slope	3	2	1
Adrian-Palms	91	Wetness,Low Strength,Floods	3	3	3
Agawam	96B	Slope,Cut Banks Cave	3	2	1

PROPOSED INDUSTRIAL PARK
BOZRAH, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Soil Symbol	Principal Limiting Factor	Shallow Excavations	Small Commerical Buildings	Streets & Parking
Narragansett-Hollis	200C	Slope,Frost Action,Depth to Rock	2	3	2
Narragansett Part			3	3	3
Hollis Part					
Podunk	816	Wetness,Floods	3	3	3
Rumney	855	Floods,Wetness,Frost Action	3	3	3
Udorthents	ML2	Limitations Determined On Site.			

* Limitations For Urban Uses: 1 = Slight; 2 = Moderate; 3 = Severe.

SOIL INTERPRETATIONS FOR URBAN USES

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

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

Slight Limitations

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

Moderate Limitations

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

Severe Limitations

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

Ridgebury series

The Ridgebury series consists of nearly level, poorly drained soils on drumlins, and rounded or elongated hills of uplands. They formed in compact glacial till. Ridgebury soils have moderate to moderately rapid permeability in the surface layer and subsoil, slow or very slow permeability in the substratum (fragipan), and a high water table at or near the surface 7 to 9 months of the year. Major limitations are related to stoniness, wetness, and slow permeability in the substratum.

Rumney series

The Rumney series consists of nearly level, poorly drained soils on flood plains. They formed in recent alluvial sediments. Rumney soils have moderately rapid to rapid permeability, flood annually at times of maximum runoff, commonly for 2 to 7 days duration, and have a high water table at or near the surface 7 to 9 months of the year. Major limitations are related to flooding and wetness.

Whitman series

The Whitman series consists of nearly level, very poorly drained soils on uplands. They formed in compact glacial till. Whitman soils have moderate to moderately rapid permeability in the surface layer and subsoil, slow or very slow permeability in the substratum (fragipan), and a water table at or near the surface 9 to 10 months of the year. Major limitations are related to slow permeability, wetness and stoniness.

Windsor series

The Windsor series consists of nearly level and gently sloping, excessively drained soils on stream terraces and outwash plains. They formed in glacial outwash. Windsor soils have rapid or very rapid permeability. Major limitations are related to droughtiness, and seepage due to very rapid permeability.

Udorthents

Udorthents are areas that have been disturbed, to an extent that the natural layers are no longer recognizable. This occurs when soil material has been removed, or filling occurs and the soil profile is buried and no longer a major factor in interpreting an area for land use.

About the Team

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

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

PURPOSE OF THE TEAM

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

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

REQUESTING A REVIEW

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

For additional information regarding the Environmental Review Team, please contact Jeanne Shelburn (889-2324), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360.