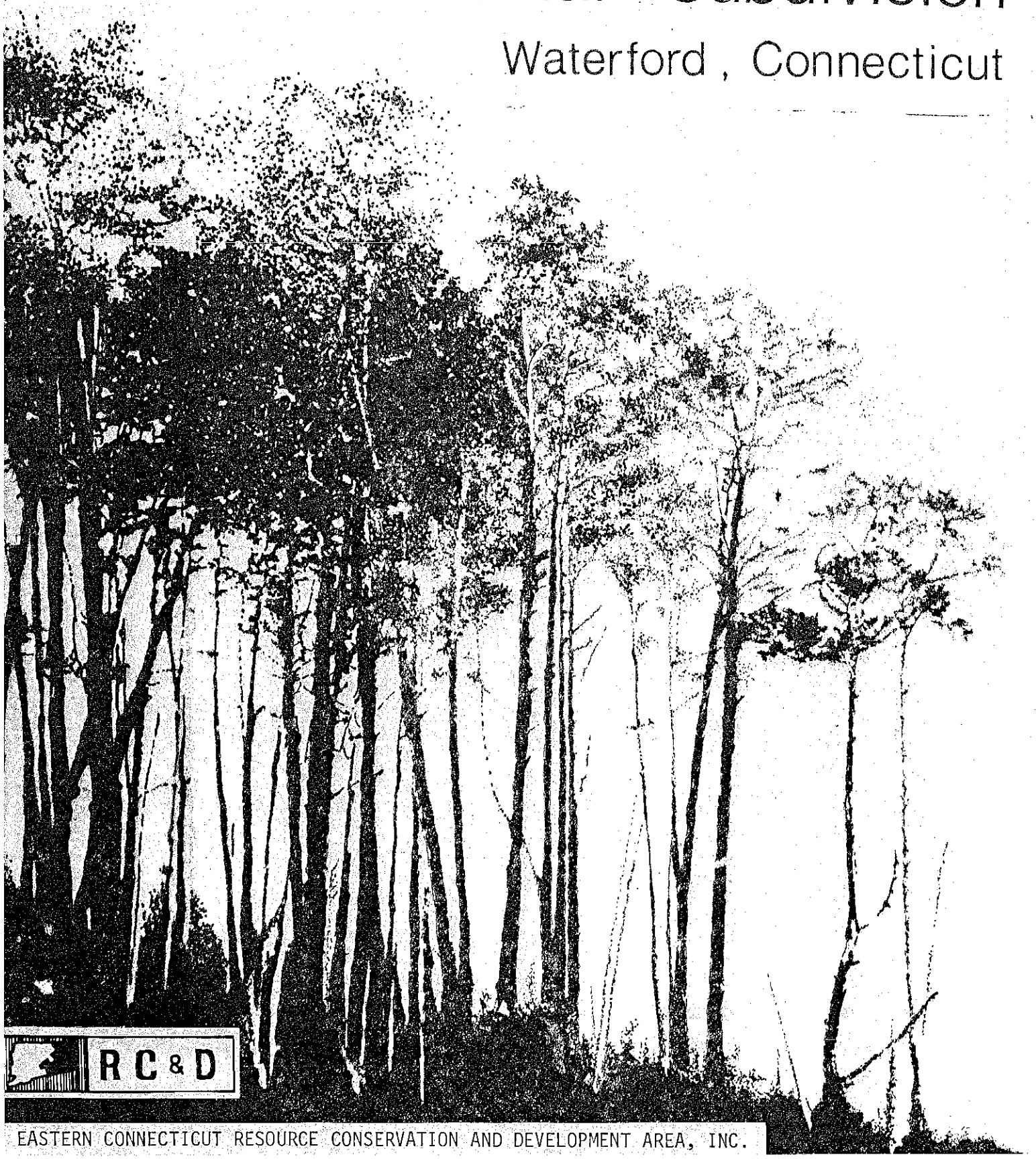
Environmental Review Team Report

Savin Industrial Subdivision

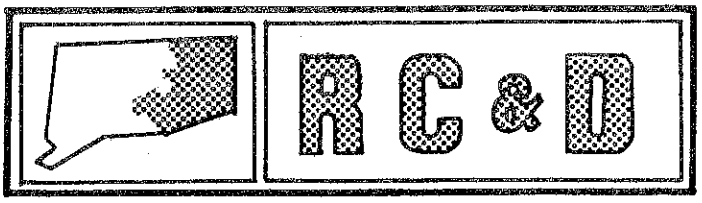
Waterford, Connecticut



RC&D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team Report
on
Savin Industrial Subdivision
Waterford Connecticut
November 1978

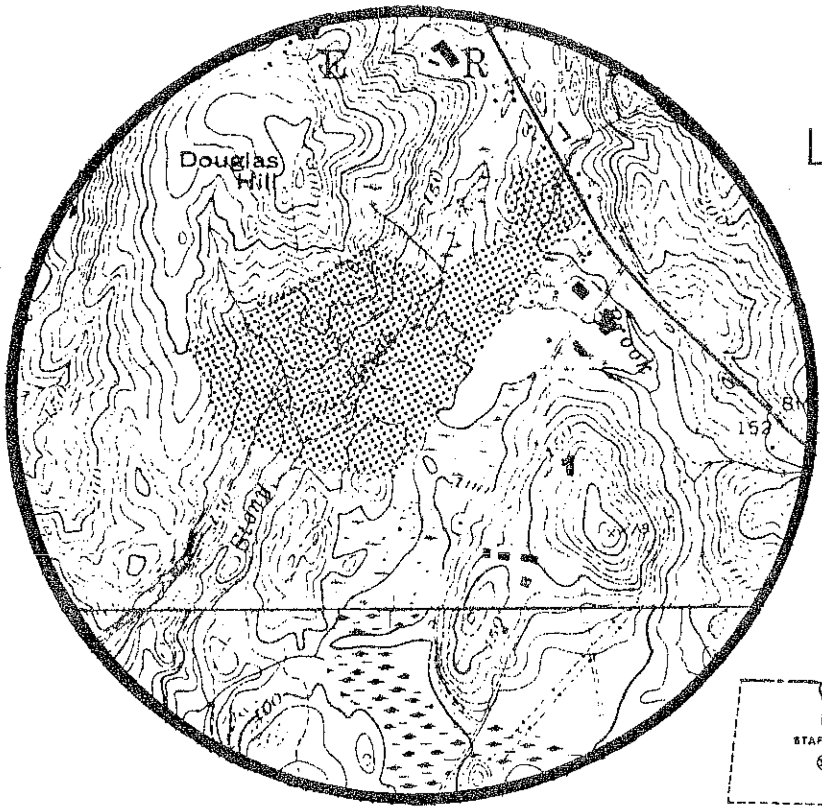


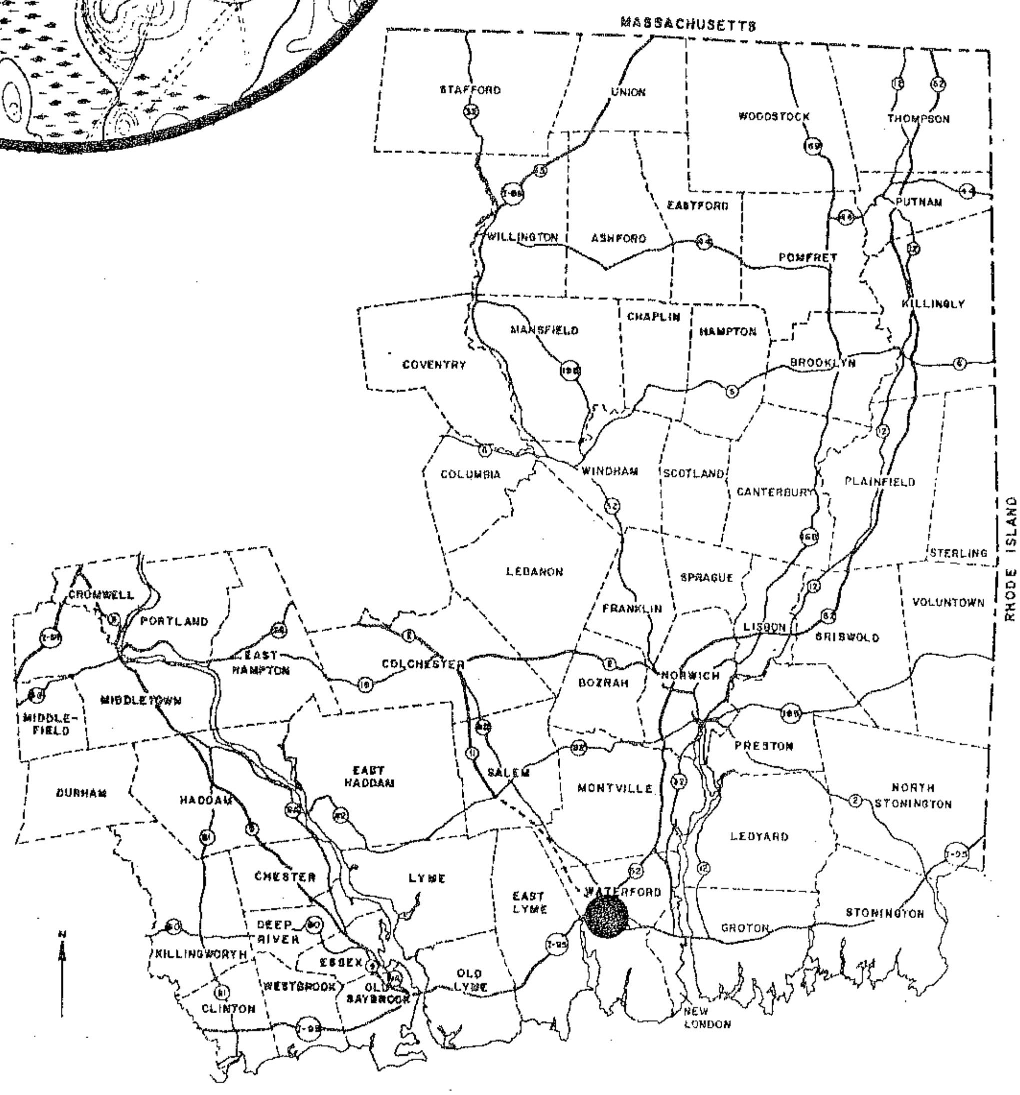
eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site

SAVIN INDUSTRIAL SUBDIVISION
WATERFORD, CONNECTICUT





EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
SAVIN INDUSTRIAL SUBDIVISION
WATERFORD, CONNECTICUT

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

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

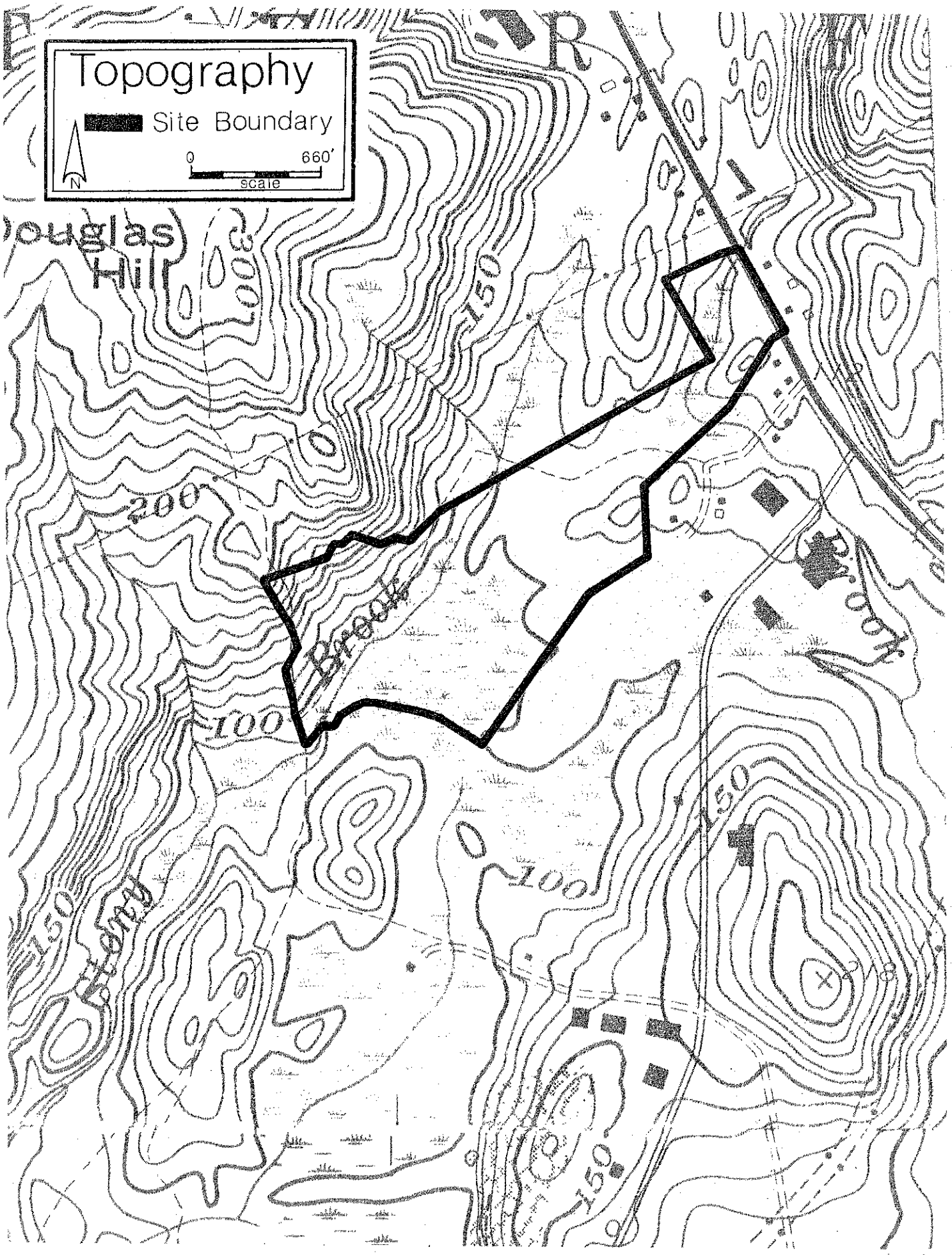
The ERT that field checked the site consisted of the following personnel: Gary Parker, District Conservationist, Soil Conservation Service (SCS); Mike Zizka, Geologist, Department of Environmental Protection (DEP); Tom Smith, Biologist, (DEP); Tim Hawley, Forester, (DEP); Bill Sawicki, Sanitarian, State 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, September 28, 1978. 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 Waterford. 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
Douglas
Hill
100
150
200
Brook
Brook
Brook

INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to review a proposed industrial subdivision located in the Town of Waterford. The 55 acre site is located on Route 85 with approximately 500 feet of road frontage. The parcel extends 3,300 feet to the west of Route 85, just south of the Jayfro Corporation building and generally north of the warehousing development at the northern end of Cross Road. Zoning in this area is specified as I-1, which permits a very broad range of manufacturing and storage uses.

The property is presently owned by Savin Brothers, Inc. of Newington. Engineering plans have been prepared by James P. Purcell Associates, a Glastonbury engineering firm.

The applicant proposes to subdivide the property into 14 industrial building lots. The roads, drainage features and other improvements would become the responsibility of the Town after construction is completed. The subdivision plan indicates that a single road would provide access from Route 85 and terminate at the cul-de-sac at the western-most lot in the subdivision. A branch road to the main access road would serve five lots in the southern part of the subdivision. It, too, would terminate in a cul-de-sac.

Public water is available to this area and would be utilized. Public sewers are expected to serve the site in the near future, but initial development would use on-lot septic disposal systems.

The land is hilly, with considerable rock at or near the surface. Approximately 1/3 of the site was filled some ten years ago; the remainder of the site is forested. Two important streams, Jordan Brook and Stony Brook, and their associated wetlands pass through the site. The developer proposes to level the site by cut-and-fill techniques. Sediment and erosion control measures are proposed to protect the streams and wetland areas during construction. Most forested areas will be removed.

The Team is concerned primarily with the amount of cut and fill to be done on this site in close proximity to relatively significant wetlands. The stability of existing fill material should also be of considerable concern to both the developer and the Town. The proposed drainage, sediment and erosion controls and storm water management systems appear to be well thought-out and well engineered. Soils on this site were recently remapped by a soil scientist from the Soil Conservation Service. The map included in this report reflects these changes and should be used by the Commission when considering the soil types in relation to development on this site.

Team research indicates that if this site is developed prior to sewer availability, possible pollution of the Jordan Brook system, may occur which would restrict the removal of shellfish from Jordan Cove. The Team also feels that the access road system should be redesigned to avoid an addition crossing of Jordan Brook and creation of an additional access on to Route 85. Interior roads should also connect to form some sort of loop system, thereby eliminating the proposed cul-de-sacs which could prove to be a safety hazard.

The use of this area for industrial purposes is in accord with current zoning

and the existing Town Plan of Development. If the zoning regulations and the Town plan of Development are to be implemented in this case, then the extensive alterations which have been planned are essential to overcome the limitations of the site (approximately 70% of the site contains soils presenting severe limitations for the proposed use).

ENVIRONMENTAL ASSESSMENT

GEOLOGY

The bedrock underlying the Savin Brothers property is mapped detail in the "Bedrock Geologic Map of the Montville Quadrangle", U.S. Geological Survey Map GQ-609, by Richard Goldsmith (1967). The rock units are entirely metamorphic and principally gneissic (granular rocks containing linear bands of different minerals). Mineral compositions, both within and among the different units, may vary widely. Principal minerals are quartz, feldspar, hornblende, and biotite. Less common minerals include garnet, sillimanite, and diopside. No economically valuable mineral concentrations are believed to exist.

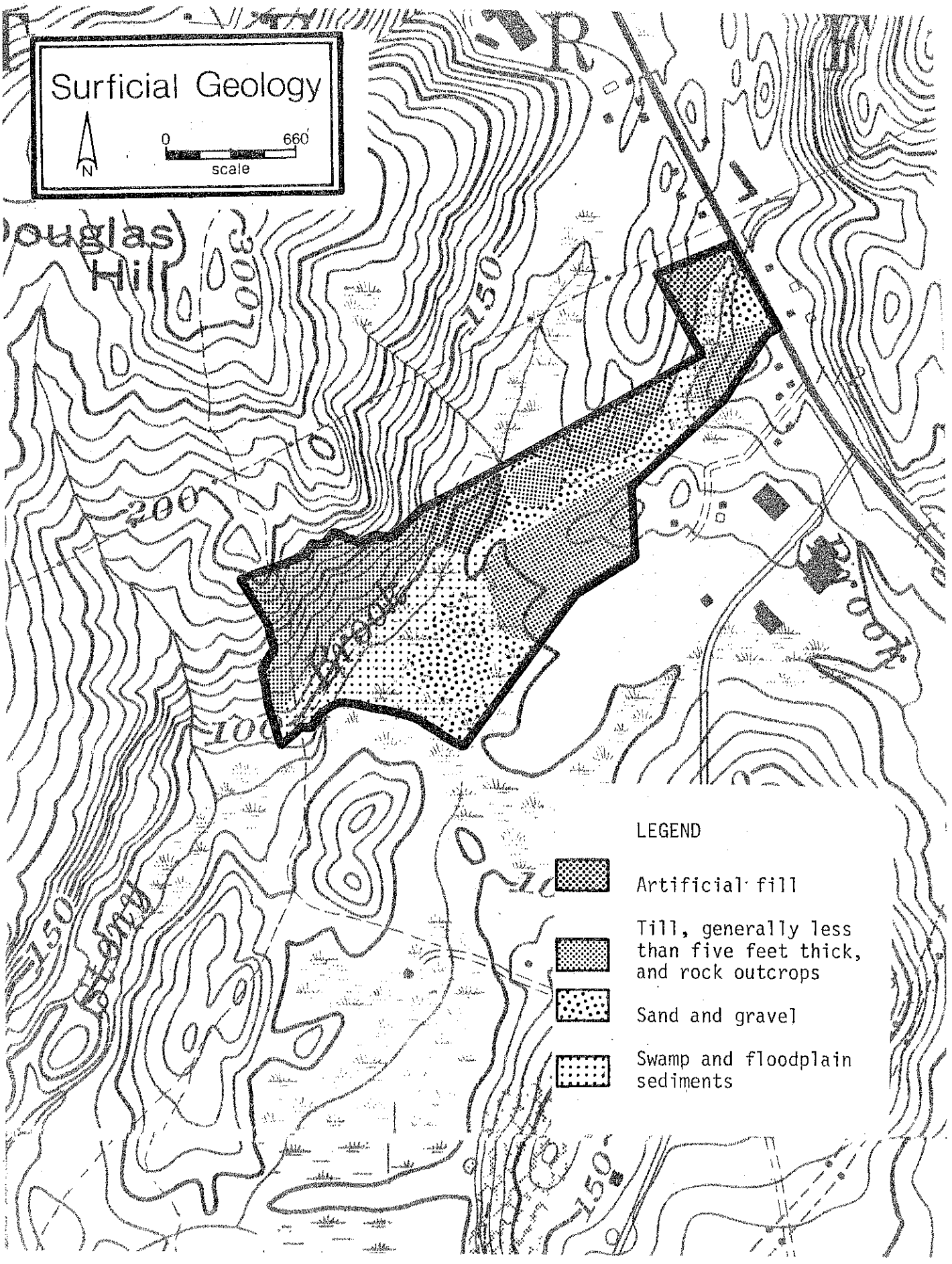
The surficial geology of the property - those earth materials overlying solid bedrock but underlying the biologically active soil zone - is mapped in the "Surficial Geology of the Montville Quadrangle", U.S. Geological Survey Map GQ-148, by Richard Goldsmith (1962). A modified surficial geologic map of the property is shown in an accompanying illustration.

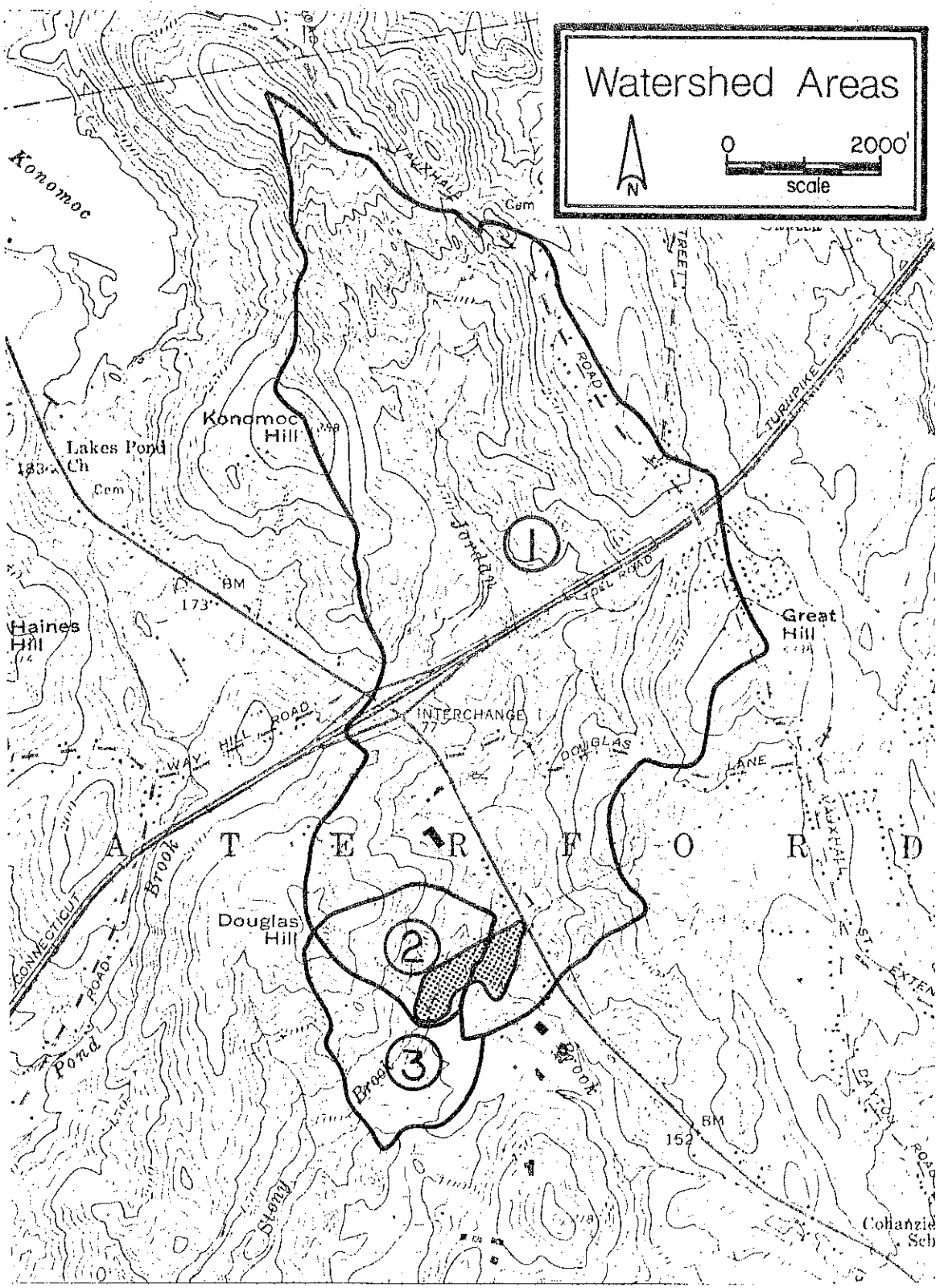
The knobby, moderately steep sections of the site consist of bedrock thinly covered with a glacial deposit known as till. Till is a nonsorted mixture of rock particles, which range in size from clay to bounders and in shape from round to angular to flat. Most of the till on the property probably was plastered directly onto the preexisting land surface by glacier ice. This type of till generally is compact and resistant to digging. A loose, sandier till may have settled out from the ice as it melted in some areas.

Flatter sections of the property consist of sand and gravel, deposited by meltwater near wasting glacier ice. These deposits probably are no more than 25 feet thick, and they may overlie either till or bedrock. In some sections, the glacial sand and gravel is overlain by sand, silt, clay, and organic materials. Most of these sediments accumulated in swamps or in standing water bodies, but some represent floodplain deposits.

HYDROLOGY

Surface funoff from the Savin Brothers property drains either into Jordan Brook or into the Stony Brook system. Substantial topographic modifications were made during development of the Jayfro Corporation site, immediately north of the property. These modifications have apparently affected the water quality of the two brooks. Jordan Brook has not been as greatly affected, probably because of its large upstream drainage area (almost 900 acres). On the other hand, approximately 19 percent (11 out of 59 acres) of the headwater area of Stony Brook was filled, and the water quality changes in that brook appear to have been drastic.


Surficial Geology
N
0
660'
scale
LEGEND
Artificial fill
Till, generally less than five feet thick, and rock outcrops
Sand and gravel
Swamp and floodplain sediments



Watershed areas affected by the proposed development.

Area 1: Jordan Brook watershed, to point of exit from the property.
Area 2: Stony Brook watershed, to point of exit from filled area.
Area 3: Additional watershed of Stony Brook, to point of exit from the property.
Shaded section: Area of fill.

Analyses of the two brooks were performed by Purcell Associates of Glastonbury. An analysis of Stony Brook where the stream emerges from the present area of fill showed that the water was somewhat acidic, and that it was very high in color, turbidity, and dissolved mineral constituents, particularly iron. Slightly downstream from the fill, the brook showed lower concentrations of most elements, but it was still rather acidic. Jordan Brook had moderately high mineral concentrations and turbidity and was highly colored. It is likely that most of these changes are the result of groundwater flow through the fill. The blasting of the bedrock exposed a tremendous amount of mineral surface area, which when used in the fill, became available for oxidation and dissolution by groundwater. It is also possible that the septic system used by the Jayfro plant has contributed some chemical elements to the streams. Because of the highly porous nature of the fill and the lack of fine particles therein, the filtration of contaminants from the sewage effluent is probably not as efficient as it would be in a natural soil. Road salt apparently has diminished the quality of the local surface water also. Chloride concentrations were moderate in Jordan Brook, which flows near Route 85 slightly south of two salt storage areas. Nevertheless, the extremely high iron concentrations in Stony Brook near the fill area indicate that groundwater percolation through the fill is the major detrimental factor on the water quality.

Substantially more topographic modification is entailed in the proposed industrial development, particularly in the areas of lots 4, 5, 6, 7, 8, 11, 12, and 13. The effects of these modifications on Stony Brook may be expected to be similar to those that have resulted from the Jayfro development. Jordan Brook probably would not be greatly affected because the amount of surface modification within its watershed would be small. Effluent from septic systems on lots 1, 2 and 3 could have some effect on the stream. The quality of Stony Brook, however, may be expected to be significantly altered by development, since most of the blasting and grading would be done within its watershed. Moreover, if the public sewer system does not become available to the park, eleven of the proposed lots would have to use on-site septic systems, which would discharge through the fill into the brooks.

The proposed storm drainage network would have a mitigating effect on some of these problems. Much of the precipitation on the property would be collected and discharged into a retention basin, thereby preventing its percolation through the fill. This would consequently reduce the amount of dissolution of minerals. Furthermore, the analyses performed by Purcell Associates showed that a considerable reduction in most dissolved mineral constituents in Stony Brook occurred slightly downstream from the fill area, suggesting that a natural buffering of these elements had taken place. It is possible that the wetlands further downstream and the additional dilution from runoff would return the water in the two brooks to a more natural state.

It would be helpful to compare the quality of water of the two streams at the site with that of water taken from the streams on the same day approximately 1,000 feet north of Interstate Route 95. This comparison would offer some guidance as to the mitigation of undesirable concentrations of elements downstream from the site. If the development does take place, it would be especially prudent to monitor pH levels in the brooks to assess the danger to fish and other freshwater organisms. pH levels recorded by Purcell Associates for spring, 1974, showed that the water in Stony Brook near the fill area was relatively unfavorable for fish populations. It is suspected that dilution in the brook downstream from the fill

offsets the acidity, but it would not be harmful to check this out.

Damaging effects of the development on groundwater quality would be expected to be confined principally to the vicinity of the development itself. Since the public water supply will be available, this problem may not be of much concern. Within a short distance of the property, most groundwater probably discharges into surface flow channels. Except under unusual and temporary hydrologic conditions, the surface water generally would not re-enter the soil. If a well pumping at a high rate were located near a stream, and the well tapped a sand-and-gravel aquifer, some infiltration from the stream into the well might be expected. If wells should be developed in the gravel aquifers downstream from the proposed industrial site, the surface water quality would then be of some concern.

VEGETATION

The vegetation on this site is represented primarily by northern mixed hardwoods. Some open field areas exist where recent filling has occurred. Descriptions of the vegetation types illustrated on the Vegetation Map are included in the following text.

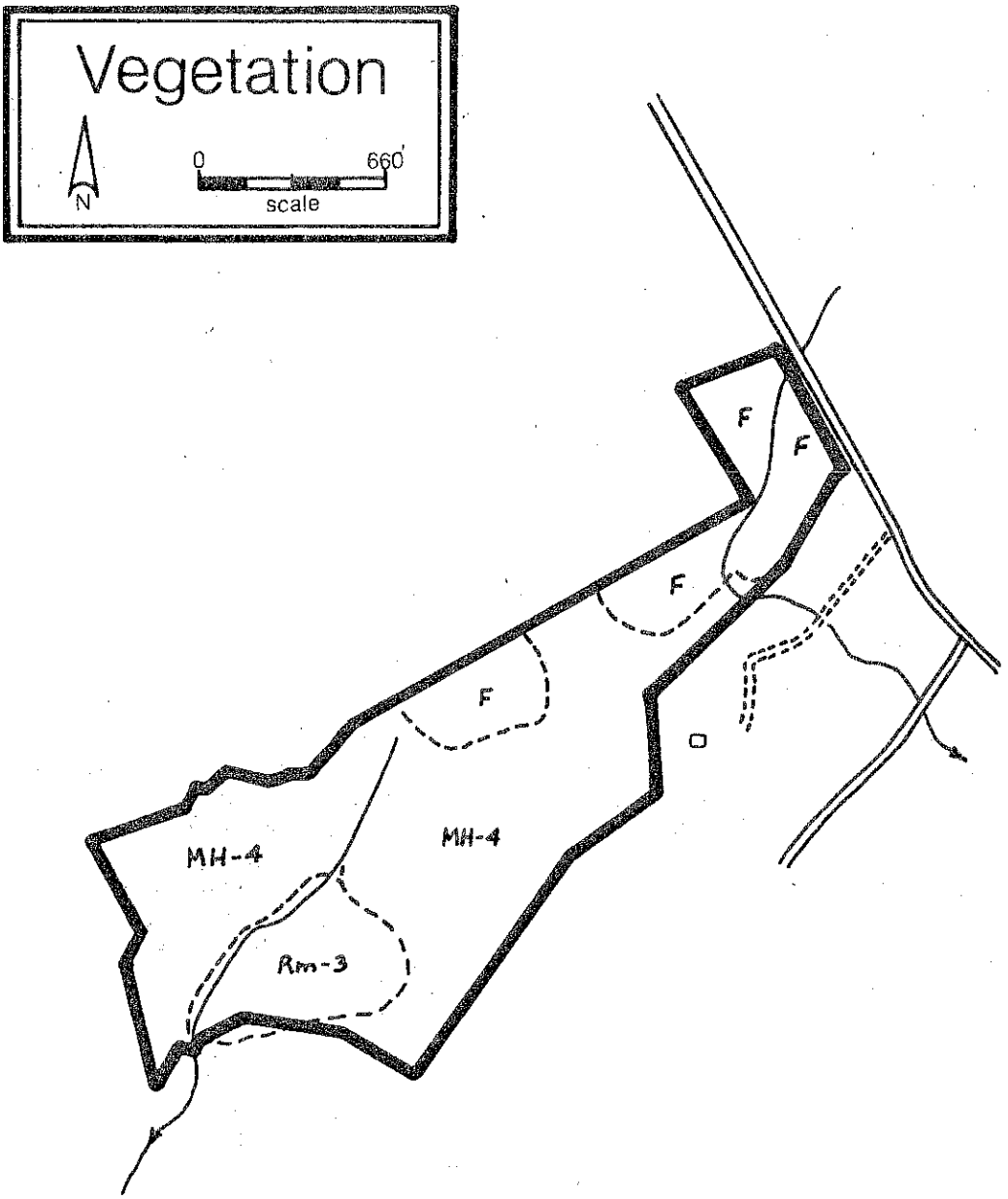
Type F: Open fields on recently disturbed soils, approximately 12 acres. Grasses, goldenrod, clumps of sweet fern and cow vetch predominate. Cottonwood and gray birch are beginning to invade along the field edges.

Type RM-3: Red maple swamp, approximately 6 acres. Pole-sized red maple forms a sparse overstory. There is a very dense understory of spicebush, sweet pepperbush, azalea and poison sumac. Cinnamon fern, royal fern and cat briers are also common.

Type MH-4: Mixed hardwoods, approximately 37 acres. Black oak, red oak, and white oaks occur in a mixture with beech, tulip tree, and red maple of small sawlog-size. Dense mountain laurel occupies the understory in most of this area. On the most droughty parts, huckleberry, viburnum, and oak seedings replace the mountain laurel.

Due to neglect in the past, the trees in this area are not beyond the stage at which thinning out low quality trees to encourage growth of the better quality trees could be effective. Clearcutting this area in irregular patches or strips up to ten acres in size at five to ten year intervals would be appropriate if the area is to be kept in a forested condition. This would yield substantial revenue from the sale of sawtimber and firewood. A private forester should be hired to provide marketing and utilization expertise and supervise the actual harvest.

Wetlands serve important functions in reducing peak runoff flows and removing suspended silt particles in water. If part of a wetland is filled, there will be a corresponding decrease in the area's ability to perform these roles. Changes in water level or silt level may cause those trees remaining in the buffer zones to die. To avoid this problem, cuts and fills should not be made within 20 feet of buffer zones, and natural drainageways should not be altered.



LEGEND

MH-4	Mixed hardwoods, pole-sawlog size, 37 acres
Rm-3	Red maple swamp, pole size, 6 acres
F	Open land, 12 acres

WILDLIFE

This area consists of good habitat for such wetland and forest species as duck, muskrat, mink, deer and grouse. Development of this site as proposed will eliminate all habitat for these wildlife species with the exception of transient types following the relocated stream; i.e. raccoons and opossum. Site development will also have an adverse effect on non-game species such as song birds and smaller mammals. No species found on the U.S. Fish and Wildlife Service Endangered Species List were observed in the area on the date of the field review.

Most of the site is included in the headwaters of a larger wetlands system associated with Stony Brook and Jordan Brook. Development of this site could result in the loss or elimination of wildlife habitat beyond the primary site area. Extensive wetland alterations according to the plan (approximately 28% of the site) may have a detrimental effect on the downstream ecosystem.

SOILS

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

The soils most representative of the Savin Industrial Subdivision include the Charlton-Hollis series, the Agawam series, the Raypol series, the Udorthents series and the Adrian-Palms series. These soils limit development by their associated slope, large stones, shallow depth to bedrock, excess humus and flooding potential.

The Charlton series (17LC, 17LD) consists of gently sloping, sloping, moderately steep, and steep, well drained soils on uplands. They formed in friable glacial till. Charlton soils have moderate to moderately rapid permeability. Major limitations are related to slope and stoniness.

The Hollis series (17LC, 17LD) consists of gently sloping, sloping, moderately steep, and steep, shallow, well drained soils on uplands where relief is influenced by the underlying bedrock. They formed in glacial till less than 20 inches deep, over granite, gneiss and schist bedrock. Hollis soils have moderate permeability. Major limitations are related to depth to bedrock, rockiness, and slope.

The Agawam series (96B) consists of nearly level and gently sloping, well drained soils on outwash plains and stream terraces. They formed in water-sorted sands. Agawam soils have moderately rapid permeability in the surface layer and subsoil, and rapid permeability in the substratum. They have few limitations.

The Raypol series (464) consists of nearly level, poorly drained soils on stream terraces and outwash plains. They formed in silty deposits, less than 40 inches thick, over sand and gravel. Raypol soils have moderate permeability in the surface layer and subsoil, rapid or very rapid permeability in the substratum, and a high water table at or near the surface 7 to 9 months of the year. Major limitations are related to wetness.

Udorthents (ML2) 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.

The Adrian series (91) consists of nearly level, very poorly drained soils in depressional areas within outwash plains, lake plains, till plains and moraines. They formed in mucky organic deposits, 16 to 51 inches thick, over sandy mineral deposits. Adrian soils have rapid permeability, and a high water table at or near the surface 9 to 10 months of the year. Major limitations are related to wetness and low strength.

The Palms series (91) consists of nearly level, very poorly drained soils in depressional areas within outwash plains, lake plains, till plains and moraines. They formed in mucky organic deposits, 16 to 51 inches thick, over loamy mineral deposits. Palms soils have moderately slow permeability and a high water table at or near the surface 9 to 10 months of the year. Major limitations are related to instability and wetness.

Due to extensive land alterations proposed for this site and the relatively large wetland areas which the site contains, the proposed sediment and erosion control measures should be installed before construction begins and closely monitored during the construction process. Hay bales should be replaced as they wear out and sloped areas should be vegetated as soon after construction as possible. Before any construction takes place on this site, existing fill should be stabilized. Sink holes were observed by Team members on the date of the field review.

The proposed drainage, sediment controls, and storm-water management systems (as shown on plans dated November 1977) appear to be well thought-out and well engineered. The criteria used to design these controls do not conform to Soil Conservation Service criteria; however they are accepted by the Connecticut Department of Transportation.

FOUNDATION DEVELOPMENT/GRADED CONDITIONS

The proposed plans indicate that extensive measures will be taken to minimize sedimentation in Jordan Brook and Stony Brook. These measures include staked hay bale barriers at the toe of all disturbed slopes, two sediment basins at the storm drain outlets, and a sediment filter in Jordan Brook itself.

These measures appear adequate if proper maintenance is performed. Such maintenance would include periodically removing accumulated sediment, and replacing damaged hay bales. The plans do not indicate how the disturbed and filled areas will be revegetated or stabilized. All such areas should be seeded and mulched as soon after construction as possible. Since it is likely that a period of years could elapse between final grading and the completion of building construction, all disturbed areas should be seeded to a permanent grass mixture to prevent wind and water erosion. Specifications for such seedings are contained in the Erosion and Sediment Control Handbook published by the U.S. Soil Conservation Service.

Two sediment basins are designed to function as retention basins when construction is completed. These basins will collect run-off from the storm drain system and release that water at a rate approximately equal to existing conditions. The proposed plantings for the sediment basins appear unnecessarily complicated. If the dikes were seeded to a permanent grass mixture, natural succession would revegetate the bottom of the basins when construction is completed.

The design of these basins was based on hydrologic data developed for a storm producing 2.2" of rainfall. According to the U.S. Weather Bureau Maps, a storm of this magnitude would be approximately a 25 year 1 hour storm or a 5 year 2 hour storm. The basin designs are correct for a storm of this magnitude.

The plans also indicate that three 48" reinforced concrete pipes will be installed for the Savin Road crossing of Jordan Brook. This brook crossing could be eliminated if the existing Jayfro access road were utilized. If the crossing is necessary, precast concrete box culverts are available and might be a more satisfactory and economical alternative to multiple culverts.

WATER SUPPLY

The preliminary plans for this development, prepared by Purcell Associates, indicate that all of the proposed industrial sites are to be served by the public water-supply system.

WASTE DISPOSAL

The preliminary plans indicate that all 14 proposed sites are to be temporarily served by on-site sewage disposal. This would mean that all sites built upon prior to the extension of public sewers to this area must be served by subsurface sewage disposal systems.

Soil mapping data of this property combined with visual observations indicate that a considerable portion of this area would have severe limitations for the installation of septic systems. Much of the area is wetland and would have to be adequately prepared and filled. Observation of the areas already filled shows them to be unsuitable for subsurface sewage disposal due to the nature of the fill material used. Products of decomposing materials are already observable leaching through the edge of the filled area into the wetlands. Should septic systems be installed in this material, sewage will most likely also penetrate this fill and cause serious health and environmental problems.

In addition, Jordan Brook, which flows through this property, eventually empties into Jordan Cove. Jordan Cove is currently open for the taking of shellfish. Development of this land as proposed will have an effect upon the wetlands associated with Jordan Brook as well as the brook itself. If development of this site is approved, a deterioration of water quality may result.

Water quality restrictions placed on waters approved for the taking of shellfish are quite demanding. Less than 70 coliforms per 100 ml must be present to take shellfish compared to less than 1,000 coliform per 100 ml to be acceptable for bathing use. Should loss of the wetlands and a deterioration of water quality in Jordan Brook occur, a change in water quality may be observed in Jordan Cove. Should this happen, the status of Jordan Cove, as an approved open area for taking shellfish, would have to be re-evaluated.

It would appear that in view of these observations, the development of this area should be accompanied by the extension of public sewers.

The proposal for temporary use of on-site sewage disposal does not seem feasible in view of the unacceptable filled areas and the majority of other unsuitable soil types present on this property. Installation of subsurface sewage disposal systems on this property may result in sewage entering the ground water in this area and contributing to the deterioration of the water quality in Jordan Brook and possibly Jordan Cove.

ROADS/TRAFFIC CONSIDERATIONS

Traffic and circulation appear to cause some of the most noticeable problems with the current proposal. Since there is no way of knowing the size or types of uses that would be attracted to the subdivision, it is not possible to forecast precisely the traffic it will generate. We can only assume that the 14 potential uses will produce high volumes of traffic.

At the present time, plans for the proposed extension of Route 11 southward beyond Route 82 in Salem indicate a widening of Route 85 to four lanes between Route 52 (the Turnpike) and I-95 in Waterford. This is not envisioned as a non-access road, but certainly the number of accesses should be kept to a minimum. The proposed access to the subdivision lies only 500 feet south of the Jayfro access road and about 800 feet north of Cross Road. It would be in the best interests of both the Town and future employees in this subdivision to obtain access to the site from Cross Road. If this is not possible, a joint access with Jayfro would be better than adding another major access point on Route 85. Depending on how this were arranged, it might eliminate the need to construct an additional crossing of Jordan Brook.

The Jayfro site was originally a part of the tract now proposed for development. Its site plan appears to have been approved with no consideration for the possible future development of adjacent land. Now a similar approach is proposed. If the proposed subdivision is approved, successfully developed (in spite of the site preparation difficulties), and successfully marketed, the possibilities of adjacent land being similarly developed are very good. It is, therefore, important to anticipate access requirements of these adjacent lands. The proposed cul-de-sacs are both proposed in locations at least 300 feet from the nearest boundary

of the site. It may be desirable to have one or both of these extended to the property line in order to provide the opportunity to develop an interior circulation system in the Waterford Triangle area.

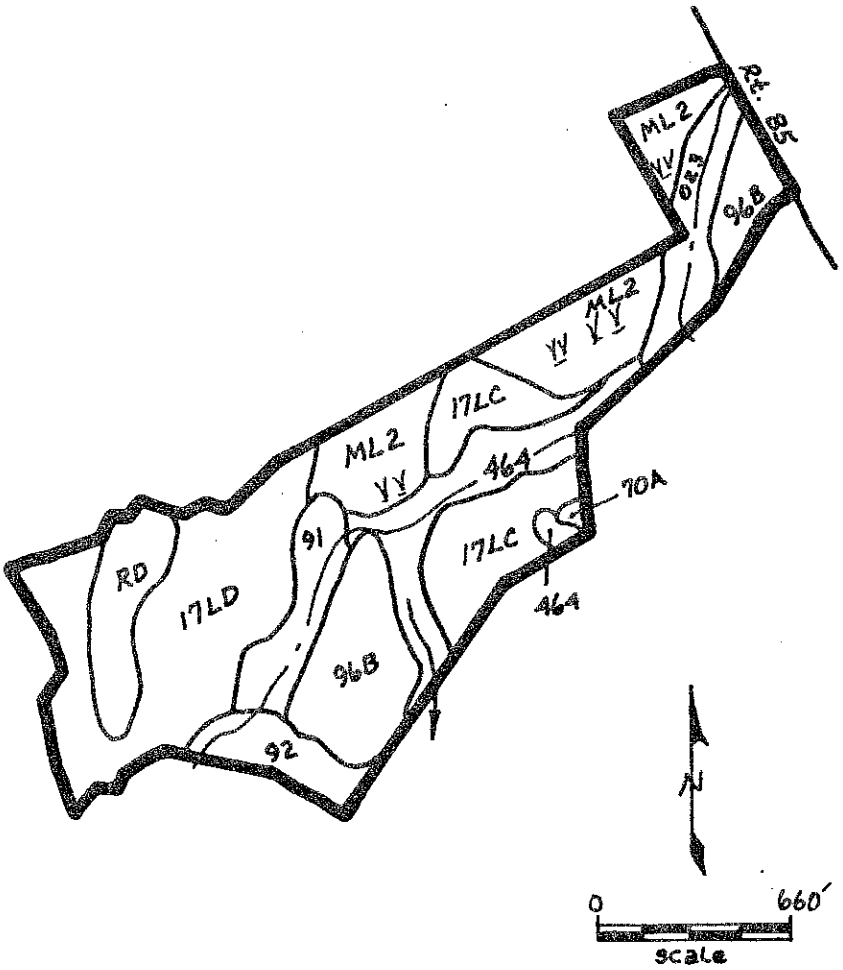
As presently proposed, the access arrangement could prove hazardous. Many subdivision regulations limit the length of cul-de-sacs, or dead-end roads, to distances ranging generally between 600 and 1,200 feet. (The Waterford Subdivision Regulations state: A cul-de-sac shall not exceed eight hundred feet in length unless it is of a temporary nature and is planned for extension and can reasonably be expected to connect with an existing or proposed road on adjoining land".) The reason for the limitation is safety, and it simply implies that there should be some limit on the number of people (or properties) dependent on a single soute of access and egress for themselves and vehicles serving them, particularly emergency vehicles. The proposed subdivision could eventually have a dozen or more industries, employing several hundred persons, all served by a single access route.

Appendix

SOILS

SAVIN PROPERTY

WATERFORD, CONNECTICUT



This map 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 Sheet No. 580, prepared by the United States Department of Agriculture, Soil Conservation Service. Advance copy, subject to change.

Soil Legend

Map symbol	Name
17 LC	Charlton-Hollis fine sandy loam 3-15% slopes
17 LD	Charlton-Hollis fine sandy loam 15-35% slopes
023	Limerick silt loam sandy subsoil variant
70 A	Merrimac sandy loam 0-3% slopes
91	Adrian-Palms mucks
92	Carlisle muck
96B	Agawam fine sandy loam 3-8% slopes
464	Raypol silt loam
ML 2	Udorthents, smoothed
RD	Rock outcrop - Hollis complex

SAVIN PROPERTY

WATERFORD, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Soil Symbol	Approx. Acres	Percent of Acres	Principal Limiting Factor	Urban Use Limitations*			
					On-Site Sewage	Buildings with Basements	Streets & Parking	Land-Scaping
Agawam	96B	7	13%		1	1	1	1
Merrimac	70A	1	2%		1	1	1	1
Charlton-Hollis	17LC	7.5	13%	slope,large stones	2	2	2	2
Charlton Part								
Hollis Part				depth to rock	3	3	3	3
Charlton-Hollis	17LD	11	20%	slope,depth to rock	3	3	3	3
Adrian-Palms	91	4	7%	wetness,floods excess humus	3	3	3	3
Carlisle	92	3	5%	floods,wetness, low strength	3	3	3	3
Limerick	023	3.5	6%	floods	3	3	3	3
Raypol	464	5.5	10%	wetness	3	3	3	3
Udorthents	ML2	10	18%	Limitations determined on site				
Rock outcrop	RD	3.5	6%	slope,depth to rock	3	3	3	3

Limitations: 1=slight, 2=moderate, 3=severe.

SOIL INTERPRETATIONS FOR URBAN USES

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

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

Slight Limitations

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

Moderate Limitations

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

Severe Limitations

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

About the Team

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

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

PURPOSE OF THE TEAM

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

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

REQUESTING A REVIEW

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

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