

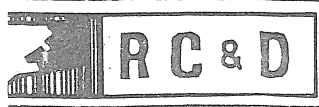
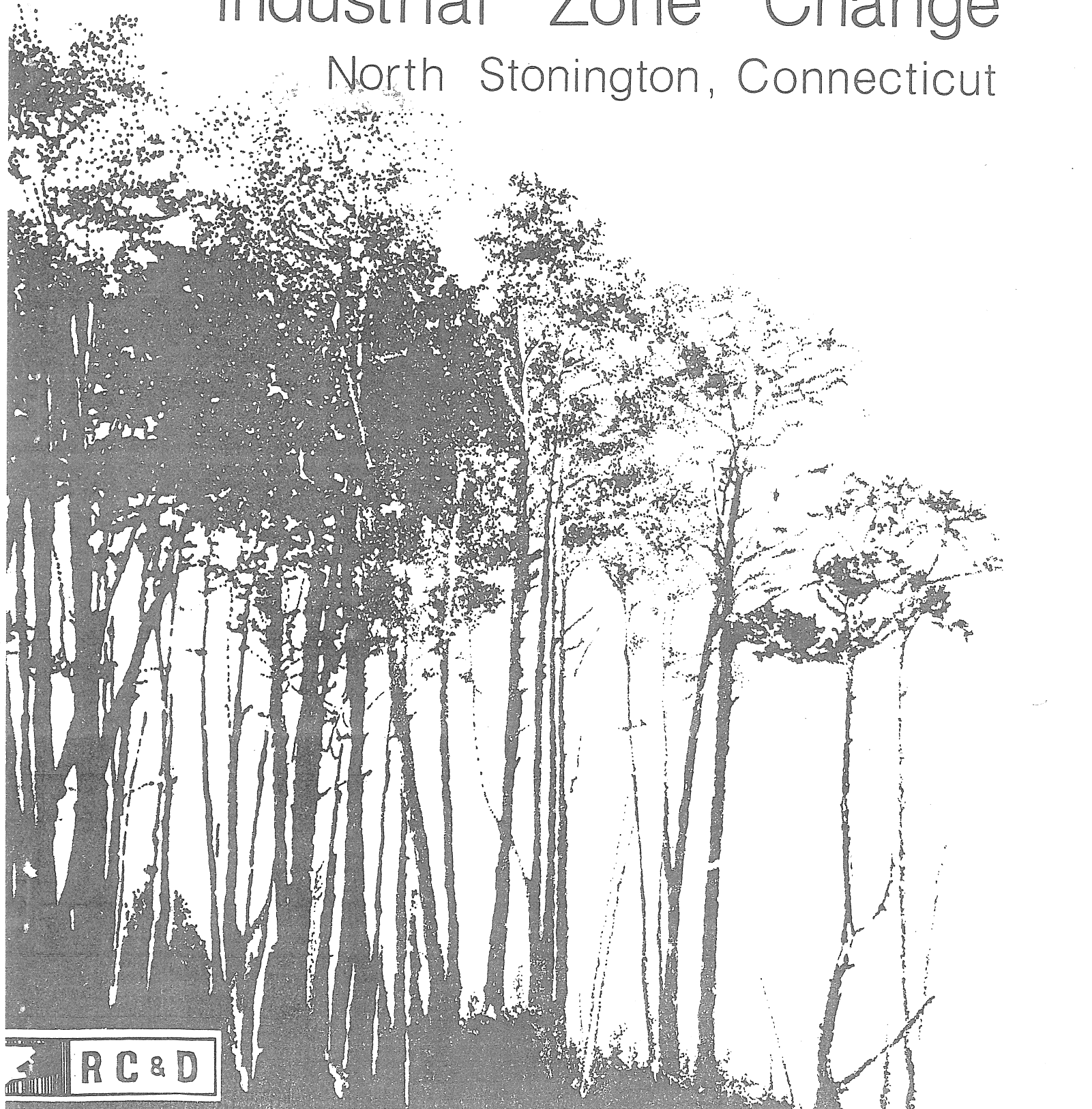
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Environmental Review Team Report

*New York*

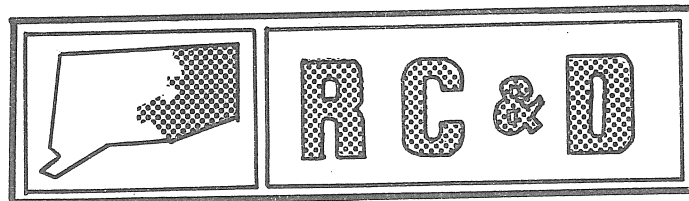
# Industrial Zone Change

North Stonington, Connecticut



EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

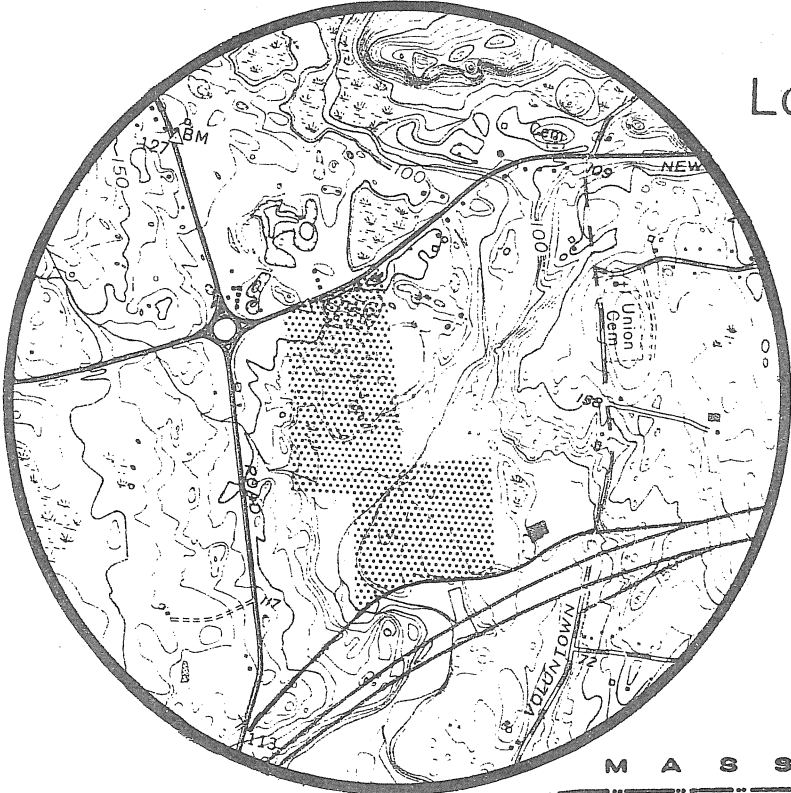
Environmental Review Team  
Report  
on  
Industrial Zone Change  
North Stonington, Connecticut  
January 1981



eastern connecticut resource conservation & development area  
environmental review team  
139 boswell avenue  
norwich, connecticut 06360

# Location of Study Site

INDUSTRIAL ZONE CHANGE  
NORTH STONINGTON, CONNECTICUT



EASTERN CONNECTICUT  
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT  
ON  
INDUSTRIAL ZONE CHANGE  
NORTH STONINGTON, CONNECTICUT

This report is an outgrowth of a request from the North Stonington Inland Wetlands 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.

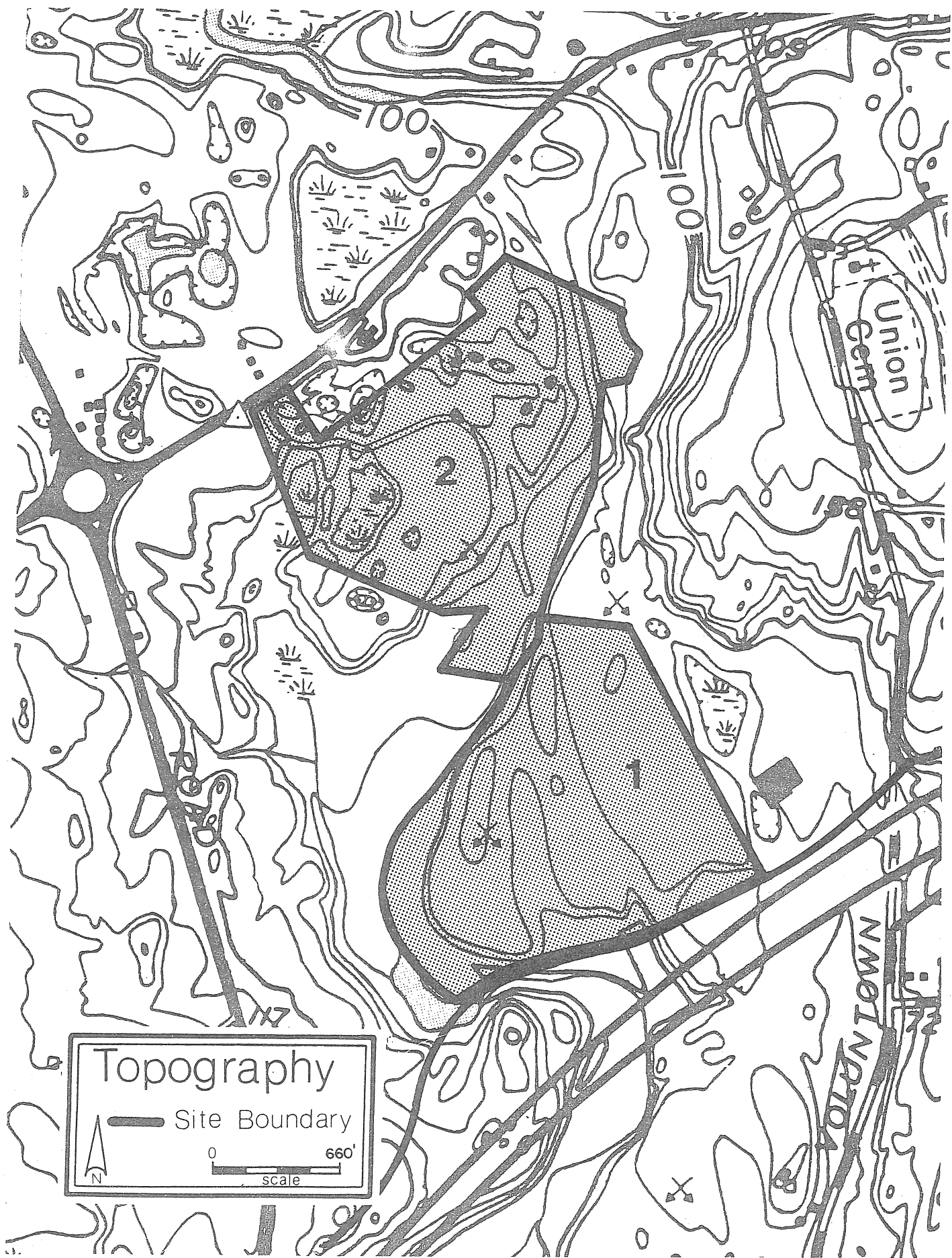
The ERT that field checked the site consisted of the following personnel: Gary Domian, District Conservationist, Soil Conservation Service (SCS); Mike Zizka, Geologist, Department of Environmental Protection (DEP); Don Capellaro, Sanitarian, State Department of Health; Tom Seidel, Regional Planner, Southeastern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

The Team met and field checked the site on Thursday, October 30, 1980. 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 North Stonington. 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

## INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare an assessment for a proposed industrial zone change in the town of North Stonington. The site proposed for zone change (Parcel 2) is located south of Route 184 and is approximately 40 acres in size. An adjacent parcel of equal size, (Parcel 1) fronting on Route 617 was also reviewed for industrial use, however, this site is already in an industrial zone. Both parcels are presently in the private ownership of James Romanella and Sons, Inc.

Gravel on both sites has been removed and replaced with fill material. Parcel 1 will be marketed for industrial use. Parcel 2 is proposed for zone change from RV (village-residential) to industrial to facilitate location of earth processing operations, an office and maintenance repair building for personnel and equipment. On-site wells and on-site septic systems will be needed on both parcels as no public sewer or water is available in this area. Both sites are presently used for industrial purposes; Parcel 1 for vehicle storage and maintenance and Parcel 2 for rock crushing and earth material storage. Materials for the on-going operation are being trucked to the site from a nearby source. Two pond areas, a water intake pond and a settling basin have been created on Parcel 2 for use in conjunction with the stone and gravel processing operations.

Both sites are located within the Shunock River watershed and are separated from each other by the Shunock River. Vegetation on each site is sparse and limited to the outer perimeter of each parcel and to a narrow corridor on either side of the Shunock River. Trees in the area were predominantly oak, understory species included spice bush, sweet pepperbush and multi-flora rose. Gravel has been removed from both sites and the resultant topography has been graded to a relatively flat surface. Various types of fill have been used to achieve a flat grade, however it was impossible for the Team to determine all types of fill which may have been deposited here. The Shunock River aquifer underlies the entire site and furnishes water for the Westerly Water Works which supplies drinking water for Westerly, Rhode Island and Pawcatuck, Connecticut.

The Town and adjacent landowners are concerned about the effects of industrial land use in close proximity to the aquifer. They have submitted questions to the Team (which appear in the appendix to this report) to help them in determining the potential for adverse effects if this land is rezoned for industrial use.

The Team is concerned with the effect of this proposed zone change and the actual industrial use of this land on the natural resource base of the site. The Team Hydrologist has prepared a detailed explanation of most of the concerns expressed by the town, which can be found in the Hydrology section of this report. Generally, Team members have concluded that any type of development could potentially cause pollution to the water supply of the Shunock River aquifer, however contamination from the actual well site would be more critical as the potential for dilution of the contaminant would be less. If proper controls are used, most types of land usage could be compatible with high stream and groundwater quality. The two least desirable uses would be high density residential or commercial (due to their high concentration of pollutant sources) and heavy industrial uses which would discharge wastes other than normal septic effluent into either the ground or the stream. In addition, those soils found on the site are

poor renovators of septic effluent due to their rapid percolation rate or high water table.

In order to fully protect the aquifer for future use as a drinking water supply, land use restrictions should be considered for the entire Shunock River watershed. Restrictions on portions of the watershed may be of only minor value.

The Team Planner has suggested several potential solutions for dealing with the immediate planning problem at hand. These are outlined in the Planning section of this report.

## ENVIRONMENTAL ASSESSMENT

### GEOLOGY

Both land parcels involved in this review are located in an area encompassed by the Ashaway topographic quadrangle. Bedrock and surficial geologic maps of the quadrangle have been prepared by Tomas Feinenger and J.P. Schafer, respectively, and have been published by the U.S. Geological Survey (Maps GQ-403 and GQ-712). No bedrock outcrops were observed on the sites. Regional data suggests that the bedrock underlying the property is a strongly foliated granite gneiss. The major mineral components of this rock are quartz, microcline, oligoclase (or rarely albite), biotite, magnetite, and muscovite.

The sand and gravel deposits in the valley of Shunock River (also called Shunock Brook) were formed during the final stages of glaciation in the area. The margin of the active ice sheet, which had become laden with rock debris, gradually retreated to the north during these stages. Blocks of stagnant ice were left in the valleys. As these stagnant ice masses wasted, streams of meltwater were generated. With occasionally torrential velocities, the streams washed the rock debris from the ice, transporting and depositing it down valley. During periods of rapid, turbulent flow, gravel and larger rock particles were deposited. During quieter flow periods, sand, silt, and clay were laid down. The resulting sediment became either distinctly or crudely layered, leading to its scientific designation as "stratified drift".

The stratified drift in most of the Shunock River valley consists of sand, silt, and fine gravel overlain by 3 to 15 feet of pebble gravel or cobble gravel. Virtually all of the coarser gravel (the "cap") has been removed from the two study sites. In several areas, the cap extended, and was excavated, below the water table. These excavations created temporary pools. At the time of the field review, all of the pools created in this manner had been filled in and graded (an active sedimentation pond and another partially filled sedimentation pond remain in the northern parcel). Questions were presented at the pre-review meeting about the nature of the fill and its possible danger to groundwater supplies. Visual inspection of the filled areas suggests that the majority of the fill consists of bony cobble and boulder gravel. It was apparent, however, that rubble from demolished buildings was also included in the fill. No evidence of organic or toxic wastes of any sort was observed. Although the Team's inspection was limited to surface materials, the landowner expressed the willingness to re-excavate in the filled areas in order to provide a clearer picture of the type of fill used. If the town has serious reservations about this aspect of the site, it may wish

to pursue the offer to reexcavate. Assuming that only "clean" demolition debris was included in the fill, it seems unlikely that serious damage to groundwater supplies will result. An increase in the mineral content of the water may be the most noticeable result, and this effect should be largely restricted to the site itself. In addition, high mineral-content problems are generally correctable by filtration.

## HYDROLOGY

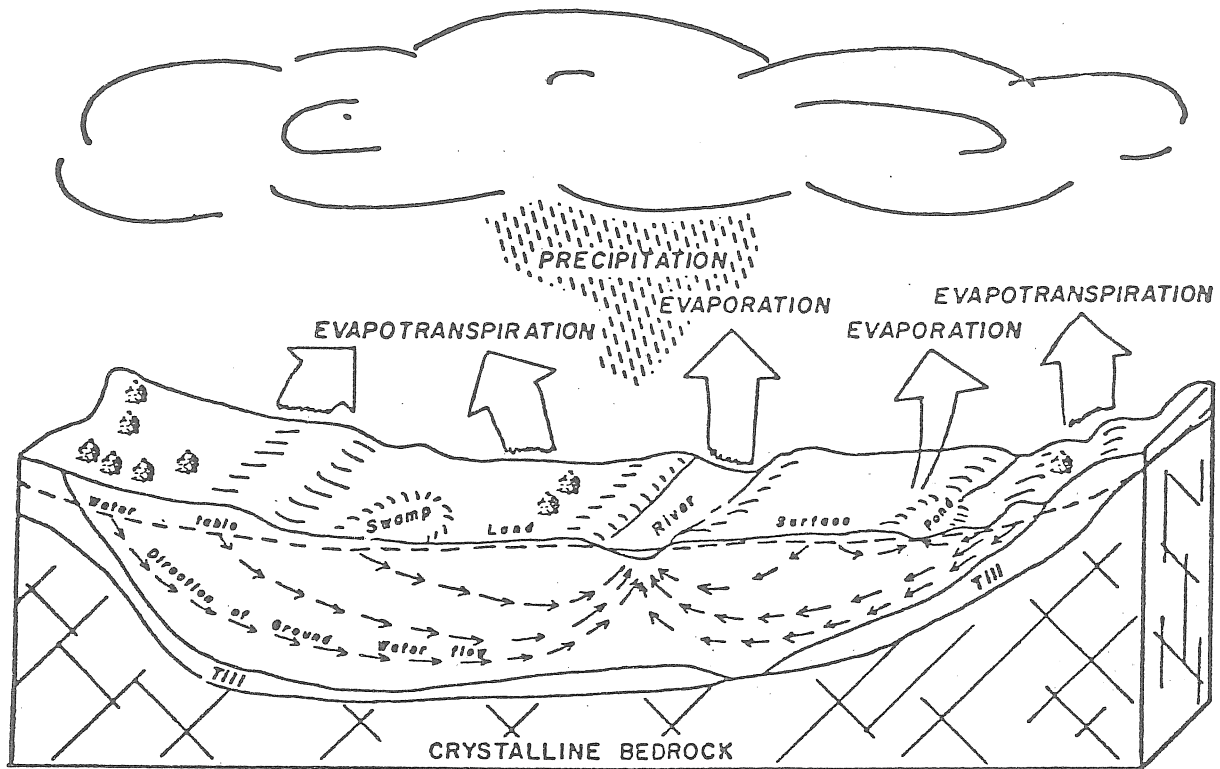
The two tracts reviewed lie entirely within the watershed of Shunock River, a major tributary of Pawcatuck River. The stratified drift deposits in the valleys of the two rivers are extensive; they have been identified in Connecticut Water Resources Bulletin No. 15 as a major potential source of future groundwater supplies. The Westerly Water Company, which supplies the villages of Pawcatuck, Connecticut, and Westerly, Rhode Island, draws its water from wells drilled into this stratified drift deposit.

The principal concerns of the town and of landowners abutting the Romanella property relate to the potential effects of development of the sites on the underlying aquifer and the groundwater supply. In view of the importance of the aquifer (the stratified drift in the Shunock River valley is estimated to be capable of supplying at least 66-70 million gallons per day on an average of 7 out of every 10 years), the town is wise to be particularly cautious with regard to the development of aquifer land.

The North Stonington Inland Wetlands Agency has addressed several questions to the Team in regard to the usage of the Romanella property. Two of the questions are phrased in terms of "preventing" pollution and "insuring the best protection" of the aquifer and of Shunock River. It would be virtually impossible to eliminate completely the risk of contamination of the Shunock valley's water resources unless no development at all were permitted in the watershed. Water withdrawn from high-yielding wells tapping coarse-grained sediments in the river valleys may be partly derived from the rivers themselves. This situation occurs when the water table in the vicinity of the well is drawn down by pumping, to a level that is lower than the level of the nearby stream (see accompanying illustration). Hence, any source of stream pollution, whether it be on the well site or in the upper reaches of the watershed, may still be an effective source of contamination of the well water. Of course, contamination from the well site is more critical since there is much less potential for dilution before the water is withdrawn. In addition, some types of pollutants may be less readily renovated in the highly permeable, clay-poor stratified drift deposits than they would be in finer-grained soils such as till.

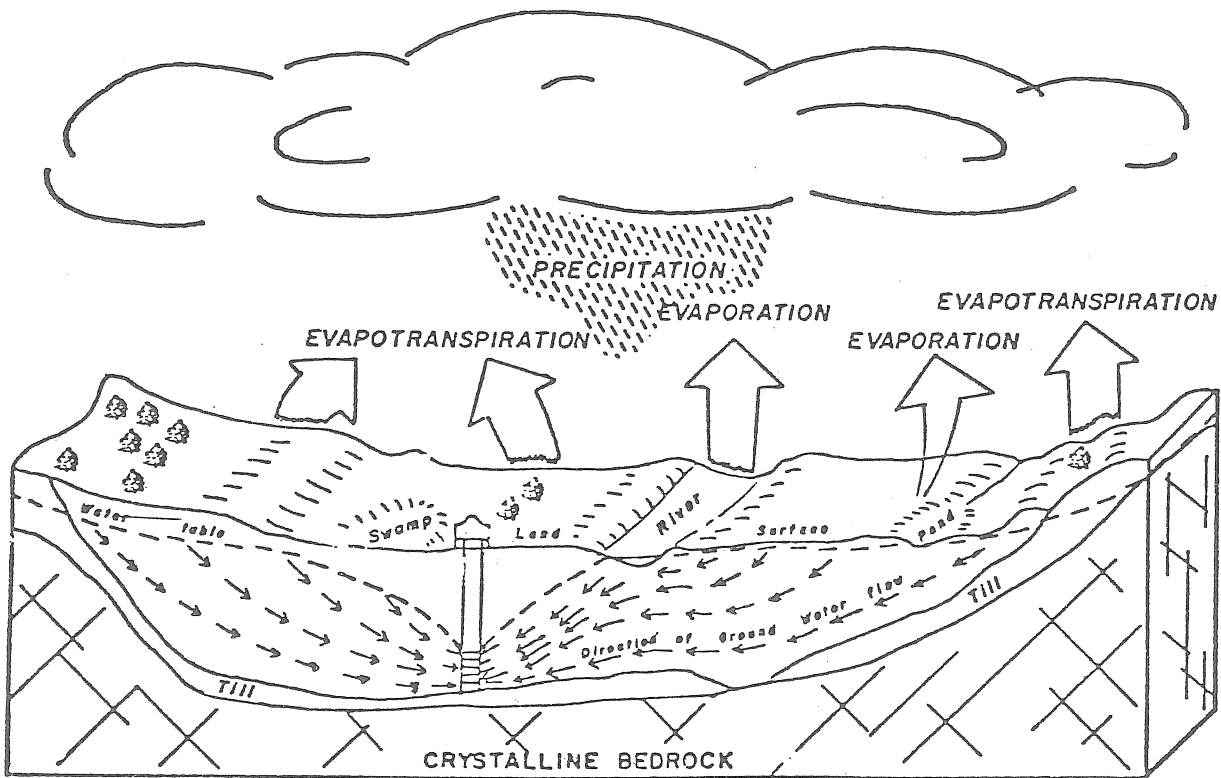
If development of the site is carefully planned and proper controls are used, most types of land usage of the Romanella property could be compatible with the maintenance of high stream and groundwater quality. Nevertheless, it is possible to determine uses wherein the controls would have to be most stringent in order to assure an appropriate safety margin. It is that type of high-risk development which would deserve the closest scrutiny by the town. Perhaps the two least desirable uses of the property would be high-density residential or commercial uses, and heavy industrial uses that would require discharges of waste liquids (other than normal septic-tank effluent) into the ground or stream. The Department of Environmental Protection must examine and approve most industrial discharge proposals, so a safety check is provided; however, it is always best to avoid rather than to try to minimize such a risk in a high-potential aquifer zone. High-density residential or business development involves the risk of an





**NATURAL CONDITIONS**

Hypothetical cross section showing major elements of the hydrological cycle under natural conditions.



**PUMPING CONDITIONS**

Hypothetical cross section showing major elements of the hydrological cycle under pumping conditions.

(Taken from U.S.G.S. Water Resources Investigation 78-77)

undesirable concentration of pollutant sources.

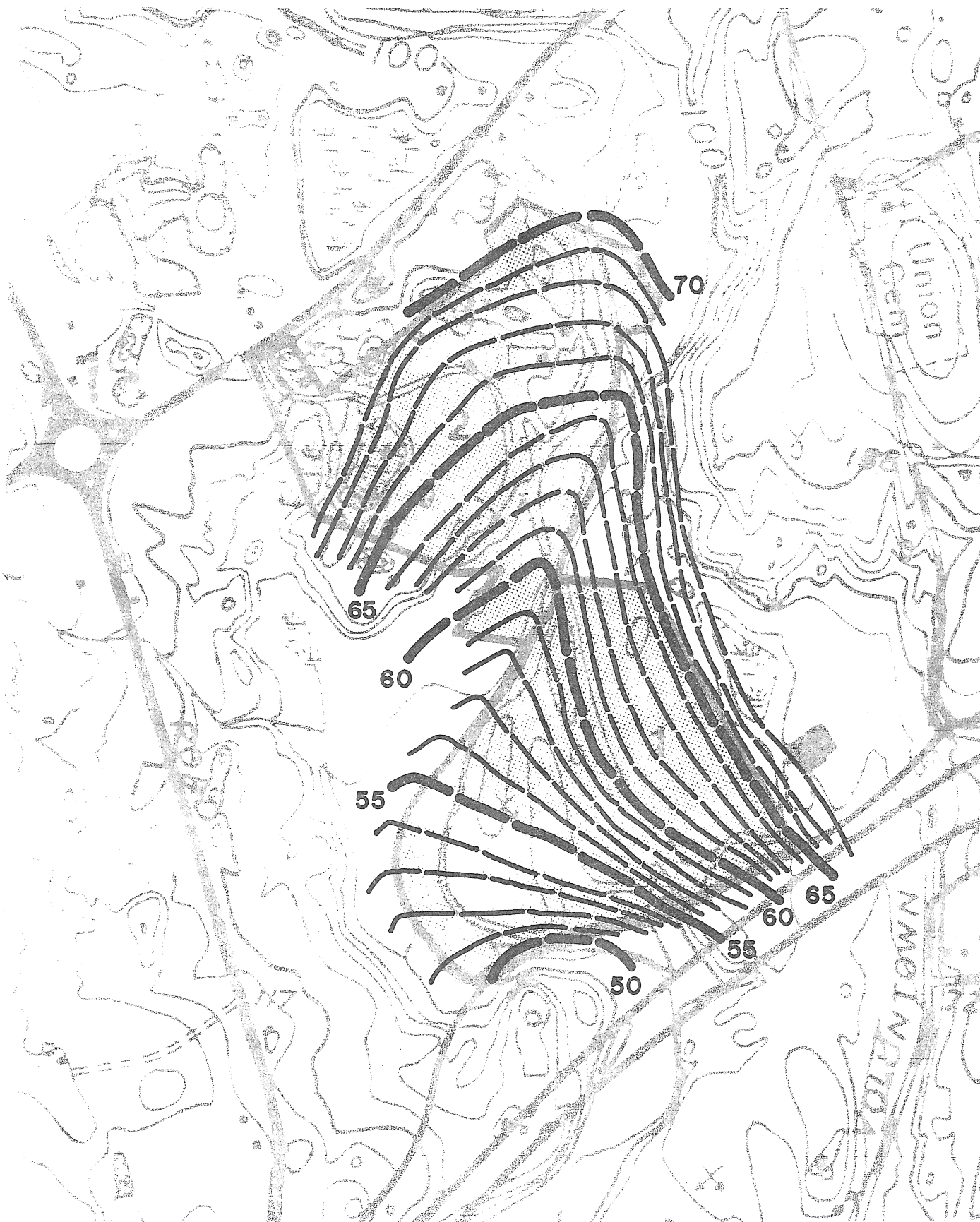
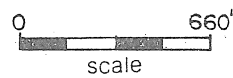
From a purely environmental standpoint, the "best" (safest) use of the property would be open space or passive recreation. This approach seems hardly practical, however. The excavated site would require considerable grading and landscaping to be truly valuable as an aesthetic or recreational resource. Of course, grading and landscaping would be necessary for an attractive residential development as well, but the monetary return on the latter would certainly provide more justification for the landowner to undertake such a project. Industrial tenants would be least likely to require significant landscaping activity on the site.

Light industrial uses (warehousing, distribution centers, etc.) or low to moderate density business, commercial, or residential developments pose slight to moderate risks of groundwater pollution. The actual degree of risk would depend more upon the nature of the particular project and the safeguards used, than on the general type of use. For instance, a 10-lot residential subdivision, each lot containing its own septic system, may be more of a risk than a single, large warehouse. The most notable potential difference between a residential development and a business or light industrial development may be the higher risk of hydrocarbon pollution from the latter. Again, the degree of increased risk would depend on the specifics of the project. Underground fuel storage tanks would present the greatest threat, although again this danger could be minimized by using high-quality materials, employing extreme caution in installation, and providing regular and frequent checks. Above-ground fuel storage tanks would be marginally safer in the sense that leaks would be more readily discernible. Other potential sources of hydrocarbon contamination are more speculative. Accidental spillage of fuels, careless cleaning and maintenance of vehicles, and other similar circumstances have one common denominator: they are the result of human error. In any land use involving a large number of heavy trucks or other equipment, there is certainly a higher probability of an accident involving fuel spillage than there is in a use that does not involve such equipment. Because the equipment would be a regular occupant of the site, there would be more occasion for error than there would be in a situation where, for instance, a fuel-supply vehicle periodically visits a residential neighborhood. Nevertheless, the risk is not inherent in the land use per se; it is simply a function of the degree of care used in any operation.

It is the same problem of how to assess the chance for error that affects any consideration of the risks from solid waste handling and disposal. If proper procedures are used, there may of course be a risk of water pollution. However, similar problems may arise in a residential neighborhood. As to the question of pollution from materials used in fill on the site, that problem, if it exists, must be addressed regardless of the types of land use ultimately allowed on the site. As mentioned in the Geology section of this report, reexcavation and examination of part of the fill material may be desirable if there are serious concerns about the nature of the material.

In considering all of the foregoing points, the town should also be aware of the fact that, unless a water-supply well field were located on the Romanella property itself or near to that property, the practical risks of hydrocarbon or other chemical pollution of the aquifer from a development on the property may be no different than if the same development were to occur in another part of the watershed. In other words, in order to fully protect the aquifer as a possible future source of drinking water, land use restrictions should be considered for the entire Shunock River watershed. Development of the Romanella property need not be given particular attention unless the water supply would be obtained on or near the site. This is not to say

# CONTOUR MAP OF THE WATER TABLE



that any land-use restrictions should be any less potent; rather, it is meant to point out that restrictions on only isolated portions of the aquifer and its watershed may be of minor value.

Other hydrological concerns of the town were related to floodprone areas and depths to groundwater on the site. It was not possible for the Team to delineate floodprone-area boundaries that are any more accurate than the consultant's maps already available to the town. The exact determination of flood elevations in any given place requires engineering studies that are well beyond the normal capabilities and purview of the Team. However, the Team wishes to note that further excavation and other reshaping of the topography of the two sites may cause corresponding changes in the flood boundaries as presently mapped. In the event of such reshaping, the town may be able to revise the flood boundaries to its own satisfaction simply by comparing floodwater elevations as provided by the consultant to land elevations as shown on an updated topographic map (one-foot contour interval) of the sites.

As to groundwater elevations within the property, an accurate determination would depend upon the placement of a large number of observation wells or holes on the two sites. This would be a considerable inconvenience for the landowner. However, on the basis of available information, the Team has provided a generalized groundwater contour map. An estimate of the depth to groundwater at any point may therefore be made by simply subtracting the groundwater elevation mapped at that point from the present land elevation at the point. Because of the lack of data, however, differences of several feet between the estimates and the actual values may be anticipated. The Team geologist also wishes to note that, on a follow-up visit to the site, he observed the digging of a test hole at the proposed location for the Romanelas' office building. Groundwater was at a depth of nine feet in that hole.

## 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.

Land areas that have been disturbed, to an extent that the natural soil layers are no longer recognizable are mapped as Udorthents. These soils are designated with the mapping unit symbol ML2. Interpretations and limitations are too variable to rate because natural soil horizons have been altered.

The moderately steep to steep terraces, kames or eskers are occupied by Hinckley gravelly sandy loam. The soils are designated by the mapping unit symbol 60D. The symbol "D" denotes a 15-35 percent slope. Hinckley soils are formed in water sorted outwash. The soils are excessively drained and have rapid permeability in the surface layer and subsoil, and very rapid permeability in the substratum. Runoff is slow.

The gently sloping stream terraces and outwash plains are occupied by Haven silt loam. The soils are designated by soil mapping unit symbol 63B. The symbol "B" denotes 3 to 8 percent slopes. Haven soils formed in water sorted loamy material over stratified outwash. The soils are well drained and have moderate permeability in the surface layer and subsoil, and very rapid permeability in the substratum. Surface runoff is medium.

The concave nearly level areas along floodplains are occupied by Rippowam fine sandy loam. The soils are designated by the soil mapping unit 855. (Note: Rippowam fine sandy loam was formerly mapped as Rumney fine sandy loam with the same mapping unit symbol.) Rippowam soils formed in recent alluvial sediments. The soils usually flood annually, mostly in the spring. The soils are poorly drained and have moderate or moderately rapid permeability in the surface layer and subsoil and rapid to very rapid permeability in the substratum. The high water table is at or near the surface 7 to 9 months of the year. Surface runoff is slow. This soil is designated as a wetland and is regulated under Public Act 155.

The nearly level depressional areas within outwash plains are occupied by Adrian and Palms mucks. These soils are designated by soil mapping unit symbol 91. Adrian soils formed in mucky organic deposits, 16-51 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. Palms soils formed in mucky organic deposits, 16-51 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. This soil is designated as a wetland and is regulated under Public Act 155.

The soils mapped 96B and 60C that are located in the northern portion of parcel #2 have been excavated and removed. The substratum that remains is sandy and has been leveled.

The remaining soil on the Romanella property is mapped G.P., Gravel Pits. The soil in the area has been excavated and removed. The natural soil layers are no longer recognizable. Interpretations and limitations are too variable to rate because natural horizons have been altered.

The exposed substratum is sandy and has a permeability range of rapid to very rapid. This type of soil material is severely rated for septic tank absorption fields due to permeability rates and because the soil is a poor filter of septic effluent. Effluent seepage in these soils can lead to groundwater pollution. Depth of groundwater is a critical factor in areas where soils have been excavated to the substratum. Establishment of test wells is advised to determine the depth to water table in these soils.

Depth of the water table is also an important factor when constructing the commercial buildings. If the water table is high, wetness and frost heaving of the foundation may occur. Roads or parking lots may also be susceptible to frost heaving. Test holes should also be dug before the buildings and roads are constructed.

These recommendations also apply to parcel #1 prior to construction of buildings, roads or septic systems.

## WATER SUPPLY

The Romanella property overlies sand and gravel deposits that are likely to have a high water-supply potential. Adequate yields of groundwater should be easily obtained for any type of development on the two sites. A test hole freshly dug at the location of the proposed office building showed groundwater seeping rapidly through sandy stratified drift. This observation indicates that the sediment has a high transmissibility, at least in the upper levels. If possible, however, any water-supply well on the site should tap the stratified drift at deeper levels. This would serve two purposes: it would allow more drawdown, which in turn would permit higher sustained yields, and it would place the well in a better position to avoid contamination that might exist in the upper levels of the saturated section.

The natural quality of the groundwater should be moderate to good. Troublesome concentrations of iron or manganese and excessive hardness have occasionally been encountered in groundwater withdrawn from wells in Southeastern Connecticut. These problems generally may be corrected with filters or softening systems and should therefore not be insurmountable if encountered on the sites. Care should be taken with any development to protect wells from contamination. Wells should be located as far as possible from potential sources of pollution. If several residences or offices are built on the site, a community well may be preferable.

## WASTE DISPOSAL

The town does not have public sewerage facilities. The property in question, therefore, would be served by on-site sewage disposal facilities. A possible sanitary waste disposal system to accommodate employees (office, drivers, plant and maintenance workers) of the Romanella Company on the parcel fronting on Route 184 would appear to be feasible. It is understood the company would probably only have some 10 full time employees which should result in a low volume of sewage. Soil conditions would be favorable for leaching purposes, however, rapid percolation may lead to poor renovation of septic effluent and subsequent contamination of groundwater. Several deep test pits had been dug on the property and groundwater was at 9 feet in the area where construction and installation would probably take place.

It has been recommended that property lying within a priority or major public water supply aquifer, as a protective measure, should not have more than 350 gallons of sewage effluent discharged per acre per day. This would be in keeping with having minimum size residential house lots of at least one acre. Of course, a lower density would afford still further protection with less impact on the aquifer. If subsurface sewage disposal leaching systems are installed over a relatively shallow aquifer, the system should be kept shallow and spread out. The separating distance from a water course should also be increased to at least 50 feet.

It would appear that Parcel 1 would be less suitable for on-site sewage disposal as the groundwater table was indicated to be at a much shallower depth. This, along with the determination of the location or encroachment of potential high surface or flood waters (both parcels) would be factors to be considered and evaluated. There

is also a question that demolition materials were buried on the site towards the western (river) boundary. Depending upon the nature and quantity of disposed material, this could in itself present a leachate condition.

In general, the main concern would seem to be one of protecting the stream and underlying aquifer from various chemicals and industrial wastes which could seriously degrade or pollute the water quality. The Romanella operations involve the storage and use of fuels, oils, solvents (degreasers), antifreeze and possible other hydrocarbon products. If truck washing facilities are also provided, this could also increase the amount of road salt being contributed to the area during the winter months. Such chemicals are not normally removed or broken down by soil filtration but rely mainly on being reduced by dilution and dispersion.

Measures should be taken to ensure the integrity of any fuel storage tank with provisions to prevent and/or collect accidental spills. Other hydrocarbon or toxic materials either alone or in combination with water, such as from floor drains of an automotive repair and maintenance building, should be collected (holding tank) and removed to a suitable location for disposal. Disposal on or into the ground where pollutants can seep and reach the groundwater should be avoided. At the time of the review, there was visual evidence of where some petroleum products had come in contact with the ground in and around the area where trucks and other earth moving equipment are serviced and repaired. This method of working in the open did not appear to offer much in the way of safeguards and protection for the land and underlying aquifer.

In addition to the concern for adequate measures to protect surface and ground waters, there should also be some concern for the constant noise associated with the running of the rock crushing-screening plants and necessary vehicles to move the natural and processed materials. During dry and windy periods blowing dust could also be an unwanted nuisance or health problem.

A potential industrial user of Parcel 1 should be evaluated as to the type of industry, the number of employees, the type and quantity of waste products, proposed methods for handling and disposing of wastes.

## PLANNING CONCERNS

### Parcel 1

The majority of this area is composed of a former sand and gravel mining site. A portion of the site is used for equipment storage and maintenance. Access to I-95 is available to the site via a frontage road connecting Routes 2 and 49. This area was extensively reviewed in a 1973 SCRPA study entitled Special Land Use Study, North Stonington, Connecticut and in a 1979 SCRPA update to this study. The earlier report indicated that the area could be developed for light industry uses if development occurred above the flood level and a public sewer system were available to the site. This conclusion was also confirmed in the 1979 update. In 1980 Lee Pare and Associates prepared a study entitled Industrial Waste Water Collection and Disposal for the industrial zone in the vicinity of Routes 49 and I-95. This study indicated that the majority of the site 1 area had limitations for on-site disposal of waste water and that the development potential of this area will remain below maximum with on-site disposal systems.

## Parcel 2

This area is composed of a former sand and gravel mining site and a current sand and gravel processing site with material brought in from off-site. The 1973 and 1979 SCRPA studies recommended this area for low intensive uses such as natural areas and recreation areas. This area was immediately outside of the area examined in the Lee Pare study. The proposal is a zone change from residential village to industrial to accommodate a maintenance building, office, and scales for the processing operation. The danger is that a zone change to industrial will potentially permit any industrial use enumerated in the zoning regulations and not just a maintenance facility. An enclosed maintenance facility would be an improvement over the current conditions - maintenance is conducted outside with a trailer and van providing the only facilities. A maintenance facility would allow for inside operations and would provide better collection facilities for oil, antifreeze, brake fluids, etc. thereby reducing the chances of accidental spillage. To improve the current use of the site without opening the door to all industrial uses the following options should be considered:

1. Build the maintenance facility east of the Shunock River in the existing industrial zone.
2. Apply for a variance under Section XI of the zoning regulations to build the facility in the residential-village zone.
3. Amend the zoning regulations to that a private equipment garage is a special permit in the residential-village zone just as a Town equipment garage is a special permit in the residential-village zone.
4. Amend the zoning regulations to create an Industrial-Processing zone similar to the Industrial-Quarrying zone which would allow as a special permit the processing of earth materials. Accessory uses to this main use such as an office building, equipment service facility, and weighing scales would be permitted also.

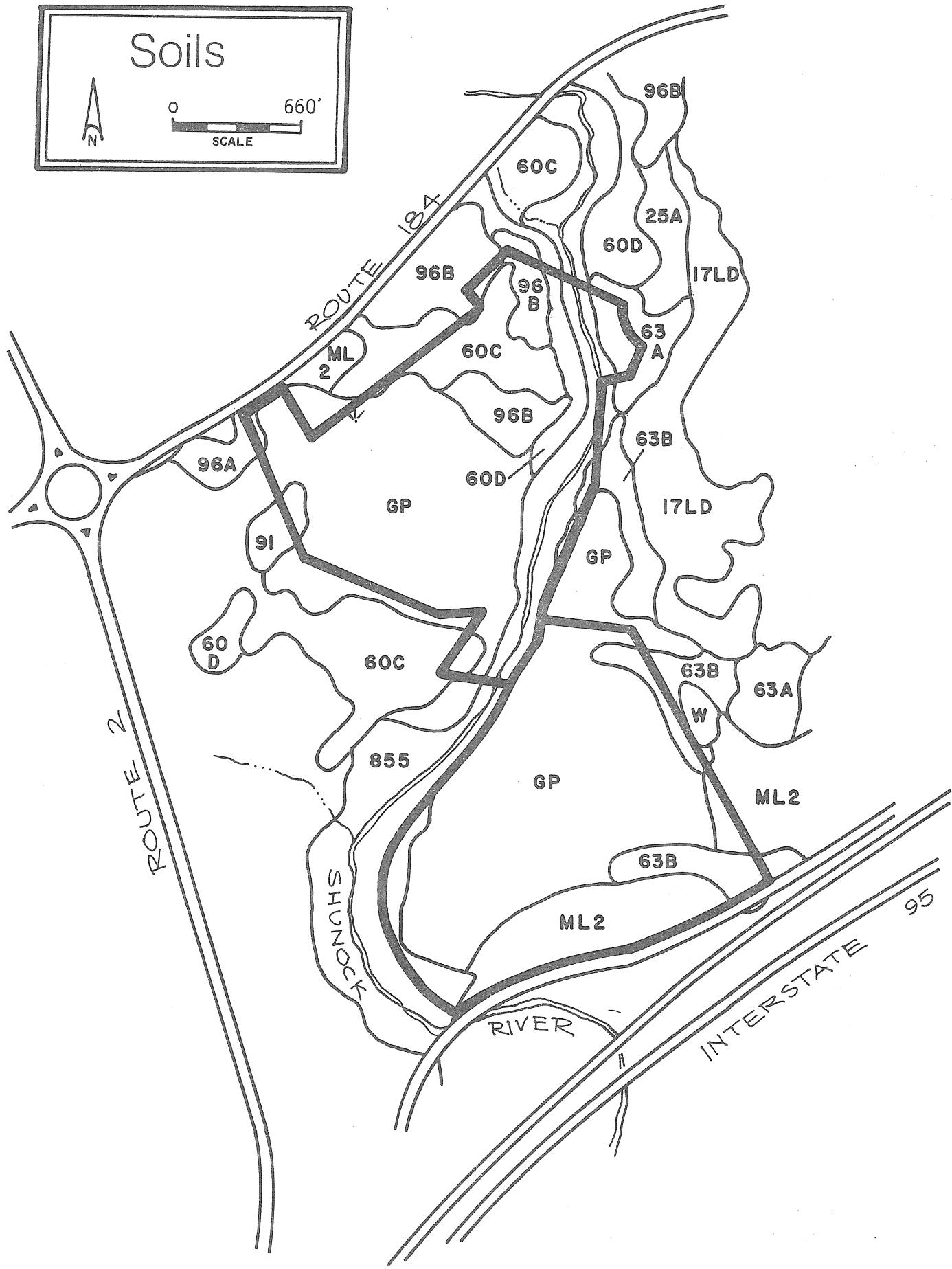




# Appendix

Soils

SCALE  
0 660'



ROMANELLA PROPERTIES  
NORTH STONINGTON, 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
Gravel Pit	GP	33	64					
Haven	63B	6	12	Frost action	1	2	1	1
Rumney**	855	4	8	Floods, wetness	3	3	3	3
Udorthents	ML2	$\frac{8}{51}$	$\frac{16}{100}$	Limitations determined on site.				
Adrian-Palms**	91	1	1	Wetness, excess humus, floods	3	3	3	3
Agawam	96B	7	13		1	1	1	1
Haven	63A	3	8	Frost action	1	1	2	1
Hinckley	60C	7	13	Slope	2	2	2	2
Hinckley	60D	2	4	Slope	3	3	3	3
Gravel Pit	GP	25	48					
Rumney**	855	$\frac{7}{52}$	$\frac{13}{100}$	Floods, wetness	3	3	3	3

Limitations: 1=slight, 2=moderate, 3=severe.  
\*\* Inland Wetland Soils regulated under P.A. 155.

----- PARCEL 1 -----  
----- PARCEL 2 -----

## 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.

NORTH STONINGTON, CONNECTICUT  
CONSERVATION COMMISSION  
INLAND WETLANDS AGENCY

October 30, 1980

Requests From The Inland Wetlands Agency Concerning the Property of James Romanella & Sons Inc. (located between Rt. 184 and the Service Rd. at I-95) Directed to the Environmental Review Team.

- 1.) Determine the exact location of the flood plain lines for the next 25, 50, 100 and 500 years.
- 2.) Determine on both parcels, how far below the existing surface, the water table is.
- 3.) Determine what restrictions should be placed on the use of this land, to prevent pollution of the aquifer and Shunock River.
- 4.) Determine what uses would be recommended for this area, regardless of zone-industrial or otherwise - for now and the future to insure the best protection of the stream and aquifer.
- 5.) Would any on site sewage be recommended on these two parcels in the absence of sewage lines? If so, where are the best locations for installation?
- 6.) Consideration should be given to the list submitted by the adjacent property owners.

Respectfully submitted,



David Birkbeck  
Chairman  
Inland Wetlands Agency



# 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.