

MERROW ROAD CONDOMINIUMS

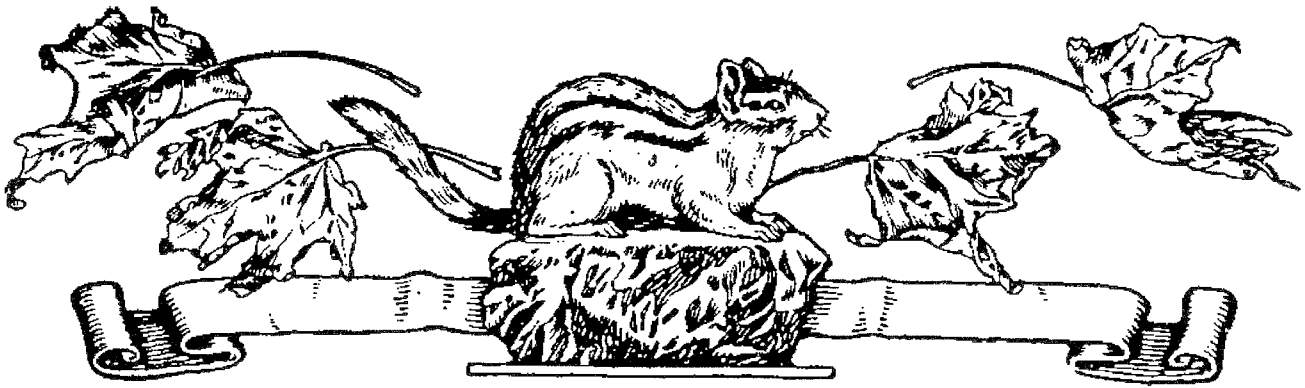
COVENTRY, CONNECTICUT

NOVEMBER 1989

*Eastern Connecticut
Environmental
Review Team
Report*

Eastern Connecticut Resource Conservation and Development Area, Inc.





MERROW ROAD CONDOMINIUMS

COVENTRY, CONNECTICUT

REVIEW DATE: OCTOBER 17, 1989

REPORT DATE: NOVEMBER 1989

*Eastern Connecticut Resource Conservation and Development Area, Inc.
Eastern Connecticut Environmental Review Team
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**ENVIRONMENTAL REVIEW TEAM REPORT
ON**

**MERROW ROAD CONDOMINIUMS
COVENTRY, CONNECTICUT**

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

The ERT met and field checked the site on Tuesday, October 17, 1989. Team members participating on this review included:

| | | |
|---------------------------|---------------------------------|---|
| Barbara Buddington | Senior Planner | Windham Regional Planning Agency |
| Joyce Purcell | District Conservationist | USDA - Soil Conservation Service |
| Elaine Sych | ERT Coordinator | Eastern CT RC&D Area, Inc. |
| Bill Warzecha | Geologist/Sanitarian | DEP - Natural Resources Center |

Prior to the review day, each Team member received a summary of the proposed project, a list of the town's concerns, a location map, a topographic map and a soils map. During the field review the Team members were given preliminary site plans, soils information, special permit regulations and water supply information. The Team met with, and were accompanied by the Planning Director, the engineer and the soils/hydrology consultants for the project. Following the review, reports from each Team member were submitted to the ERT Coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site designs or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project -- all final decisions rest with the Town and landowner. This report identifies the existing resource base and evaluates its significance to the proposed development, and also suggests considerations that should be of concern to the developer and the Town. The results of this Team action are oriented toward the development of better environmental quality and the long-term economics of land use.

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

If you require additional information, please contact:

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TABLE OF CONTENTS

| | |
|--|----|
| 1. SETTING, LAND USE AND TOPOGRAPHY..... | 1 |
| 2. GEOLOGY..... | 5 |
| 3. SOIL RESOURCES..... | 10 |
| 4. SOIL EROSION AND SEDIMENT CONTROL PLAN..... | 13 |
| 5. HYDROLOGY..... | 14 |
| 6. ON-SITE SEWAGE DISPOSAL..... | 18 |
| 7. WATER SUPPLY..... | 20 |
| 8. PLANNING COMMENTS..... | 22 |

TABLE OF MAPS

| | |
|-----------------------------|----|
| LOCATION MAP..... | 3 |
| TOPOGRAPHIC MAP..... | 4 |
| BEDROCK GEOLOGIC MAP..... | 8 |
| SURFICIAL GEOLGIC MAP..... | 9 |
| SOILS MAP..... | 12 |
| WATERSHED BOUNDARY MAP..... | 17 |

1. SETTING, LAND USE AND TOPOGRAPHY

The ± 78 acre parcel which is proposed for 156 condominium units is located in north central Coventry. It abuts Merrow Road on the north, which will provide access to the proposed development site, Laidlaw Park, a recreational field and wooded undeveloped land on the west, a condominium development on the east and wooded, undeveloped land on the south.

The site and vicinity is located in a RU-40 zone which allows single family homes on lots 40,000 square feet (about 1 acre) in size. It appears that the proposed condominium project is not compatible with the RU-40 zone and will require a special permit to allow a "Designed Apartment/Condominium District".

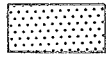
Land uses in proximity to the site include low to medium density residential, but occasional agricultural lands comprising open fields also occur. Laidlaw Park, a recreational facility for the town, is located northwest of the site. It should be pointed out that the land in the north central parts of the site was extensively disturbed probably by a sand and gravel mine operation that commenced at some point in time after April 1980. A relatively narrow northwest-southeast trending valley that filled with stratified drift (sand and gravel) was the source of material for the operation. The remains of this work are visible on the site and includes stockpile areas, ponds, and poorly drained depressions all of which have disrupted the natural drainage in the area.

During the field walk, Team members observed two piles of waste materials that were deposited in the mining area. The wastes appeared to be associated with an automotive business (batteries, motor oil containers, car cleaners, etc.) as well as residential wastes. So that further illegal dumping does not occur on the site, it is suggested that the property owner secure the entrance to the site. In addition, empty barrels and containers were observed in an excavated pit near the middle of the site. This area may have been a central work station for a past timber harvest operation on the site. All of these waste disposal sites may be sources of contamination to the local groundwater and, therefore, pose a threat to drinking water supplies in the area. For further information regarding this matter, interested persons should contact the Department of Environmental Protection - Water Compliance Unit at 566-3654.

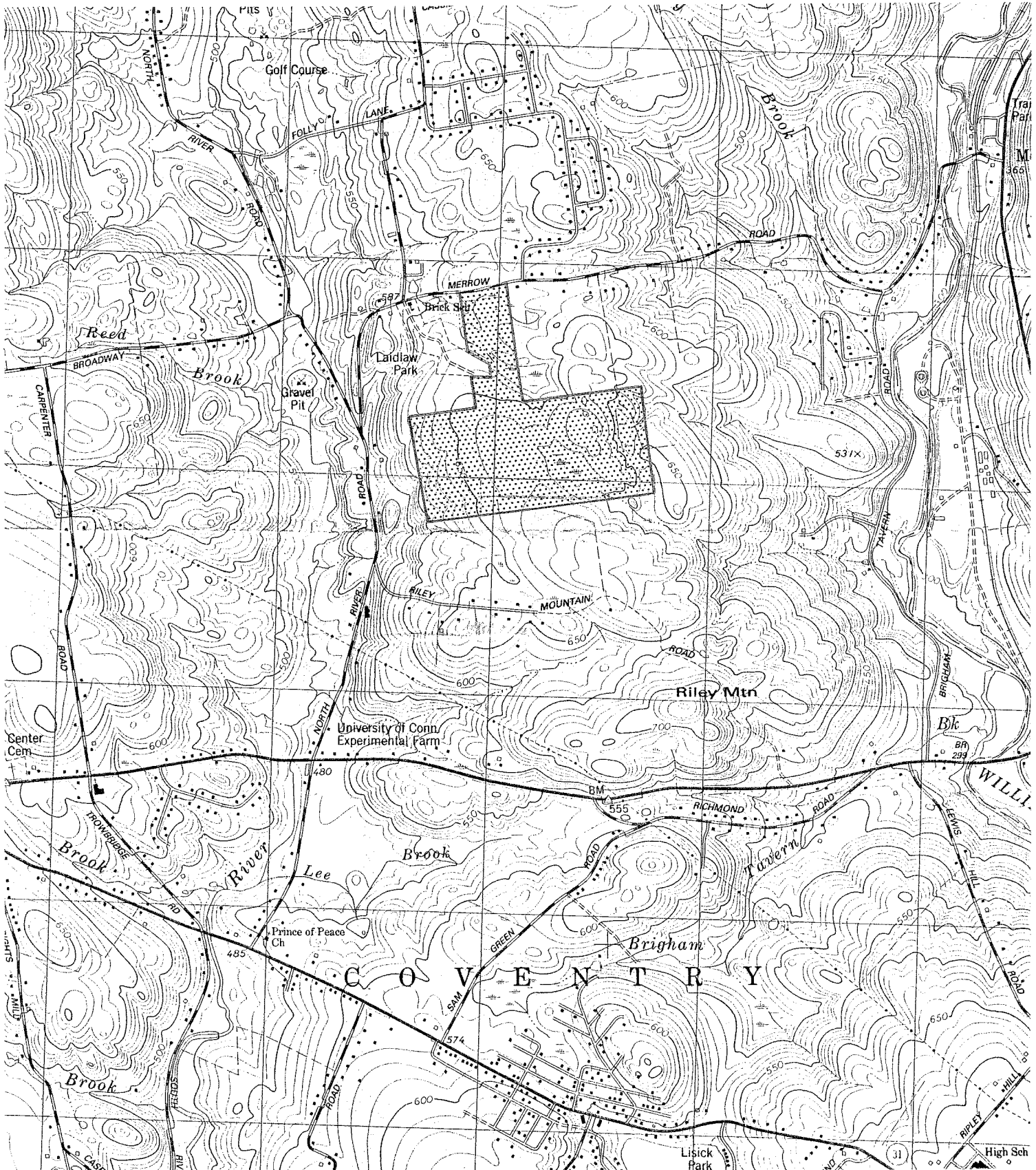
The northern parts of the site which includes the site's principle watercourse and its accompanying wetlands are generally flat. From this part of the site the land surface rises moderately quickly to a broad, flat to gentle area that characterizes the remainder of the site. The terrain in the eastern limits of the site which appears to be controlled by the underlying bedrock also includes moderate slopes.

LOCATION MAP

Scale 1" = 2000



Approximate Site

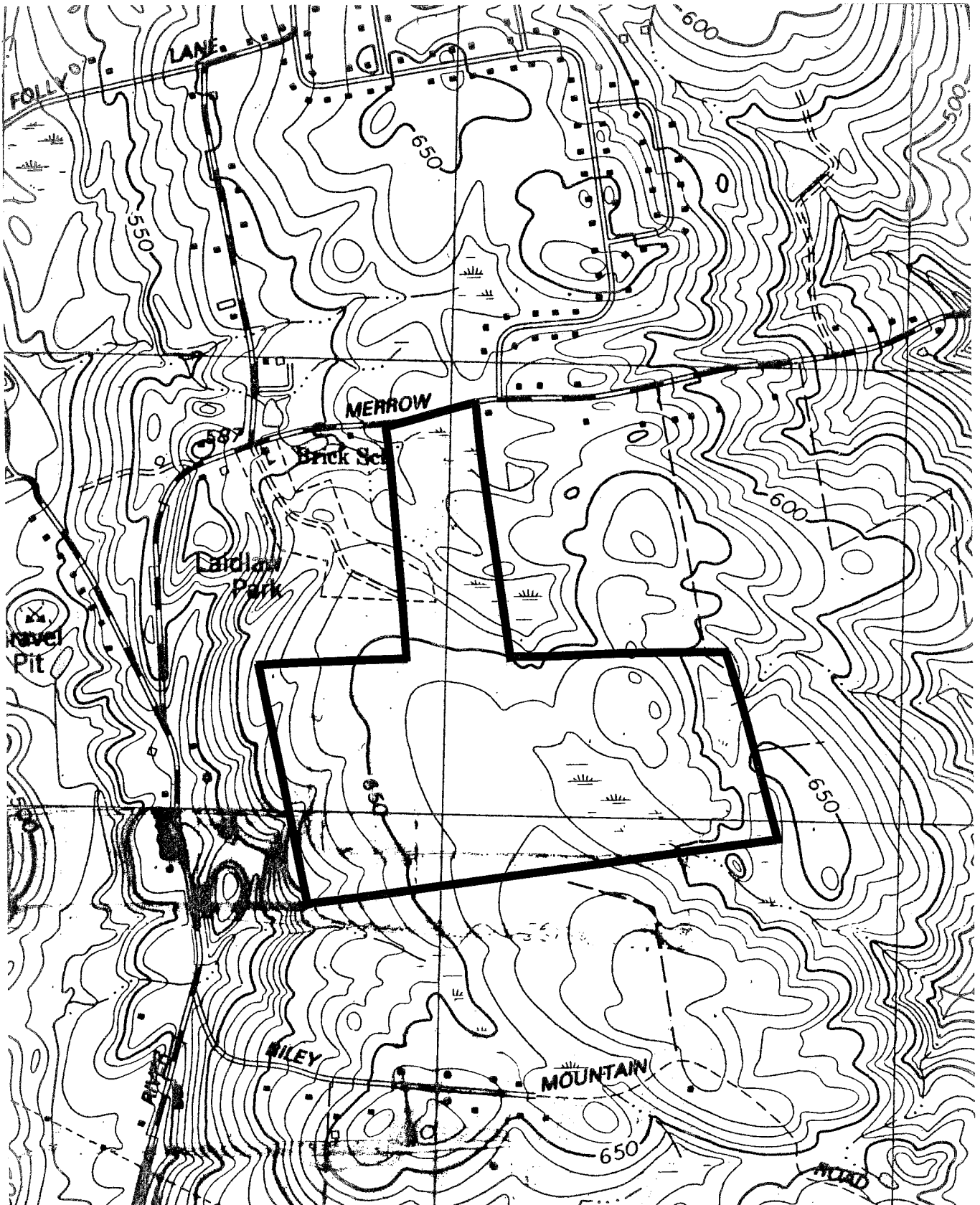


TOPOGRAPHIC MAP

Scale 1" = 1000'



— Approximate Site Boundaries



2. GEOLOGY

Neither surficial or bedrock geologic mapping data has been published for the South Coventry topographic quadrangle. Nevertheless, unpublished geologic data available at the Department of Environmental Protection's Natural Resource Center in Hartford was reviewed for this section of the report. Also, referenced was the Bedrock Geological Map of Connecticut, John Rodgers, 1985 and the Soil Survey for Tolland County, Connecticut.

The bedrock surface was encountered in numerous deep test holes during subsurface exploration for on-site sewage disposal on the parcel. It was encountered at depths ranging between 1.3 feet and about 7 feet below ground surface. Bedrock exposures are visible in an excavated pit in the central parts. Soil mapping data indicates that shallow to bedrock soils may be encountered in the eastern parts of the site. Borings for subsurface exploration confirm the shallow to bedrock soils in the eastern parts.

The rock core of the majority of the site is identified as the Hebron Gneiss, and consists of an interlayered dark-gray schist and greenish-gray fine to medium grained calc-silicate gneiss. This rock formation also underlies most of the central and northern parts of Coventry. The northern limits of the site are underlain by Brimfield Schist which consists of gray, rusty weathering medium to coarse grained interlayered schists and gneisses. In the eastern parts especially, the bedrock structure has influenced the shape of the site's landform and drainage.

A geologic development concern with respect to shallow to bedrock soils is the potential for blasting that may be required in order to place utilities such as electric and water lines and road and house foundations. Any blasting that takes place on the site should only proceed with great care and under the strict supervision of persons experienced with state-of-the-art blasting technology. The major concerns with blasting in the area will be the chance for undue seismic shock and airblast, particularly in view of the site's proximity to existing single family and multi-family residences. It would be wise for the applicant's blasting contractor to conduct a pre-blast survey of the area. In general, it is only when blasting is conducted without regard to the potential environmental effects that there are problems to surrounding properties.

There are certain blasting techniques that can be employed to minimize the environmental effects of blasting in the area, but the latter will depend upon the blasting requirements and geology of the site. If significant amounts of blasting are required, consideration should be given to a geotechnical study of the bedrock beneath the site.

Overlying bedrock on most of the site is a ground-up rock material called glacial till. This till, which was plastered by moving glacial ice on a core of crystalline bedrock, consists of a mixture of sediments ranging in size from clay-sized particles to large boulders, but is predominantly sand and silt. Deep test holes excavated in the till-covered areas encountered topsoil, a silty fine sand (loose), and then a silty sand and gravel (glacial till). As mentioned earlier, refusal or bedrock was encountered in several holes.

In consideration of soil mapping data for the site and deep test hole information supplied by the applicant, two types of till occur on the site. The western half of the site contains a relatively shallow "hardpan" that developed below the subsoil layer. This layer, which is compact (dense) and which contains silts and clays has a low vertical permeability. Seasonally high water tables generally characterize "hardpan" soils. The texture of the till in the eastern parts appears to be sandy and loose to moderately loose. In places, the bedrock is at or near ground surface in the eastern parts. The exact thickness of the till is unknown but it is inferred to be thickest in the western half of the site where it may be 40 feet thick. It is probably ten feet or less on the remainder of the site.

Another glacial sediment found on the site, called stratified drift, was deposited by a wasting chunk of glacial ice northwest of the site. These deposits probably 10 feet or less thick filled a northwest-southeast trending valley, that bisects the northern neck of the parcel. Sand and gravel are the major components of stratified drift. These materials were mined on the site probably for construction materials. They are commonly rapidly permeable.

The principal wetlands occur throughout the neck of the property (the area of the access boulevard) mainly in the area of the former sand and gravel removal operation. The soils in this area were extensively disturbed by man. Based on visual

observations made during the field walk, it appears that the sand and gravel materials excavated in this area were pushed over naturally occurring poorly or very poorly drained soils and/or where the naturally occurring wetland soils have been considerably mixed with the sand and gravel so that area of wetland soil is no longer identifiable. In addition, it appears that a former peat and muck deposit was excavated below the water table in this area. The result is a kidney-shaped surface water body. This work appears to have coincided with the sand and gravel operation mentioned earlier.

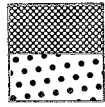
The remaining wetland pockets occur along the southern and eastern property line and consist of Lg (Leicester-Ridgebury-Whitman very stony complex). Additionally, a \pm 1.8 acre wetland area, which comprises Lg soils, occurs south of the proposed clubhouse. It is estimated that 17% of the site or 13.4 acres comprise regulated wetland soils.

The Lg soils mentioned above have been mapped as a undifferentiated unit comprising Leicester, Ridgebury and Whitman soils. All three soils are very deep, loamy soils that formed in glacial till. The Ridgebury and Whitman soils develop in the compact glacial till, while the Leicester soils develop in the more friable till. They range from poorly drained (Leicester and Ridgebury) to very poorly drained (Whitman). In general, the Leicester and Ridgebury soils are nearly level or gently sloping soils in drainageways and low-lying positions of till covered uplands. The Whitman soils occur on nearly level to gently sloping depressions and drainageways on till covered uplands.

The major concern of these soils from an engineering standpoint focuses on a seasonally high water table. A high water table condition is at or near ground surface in the Leicester and Ridgebury soils generally between November and May. In the Whitman soils, a high water table condition at or above ground surface occurs September through June.

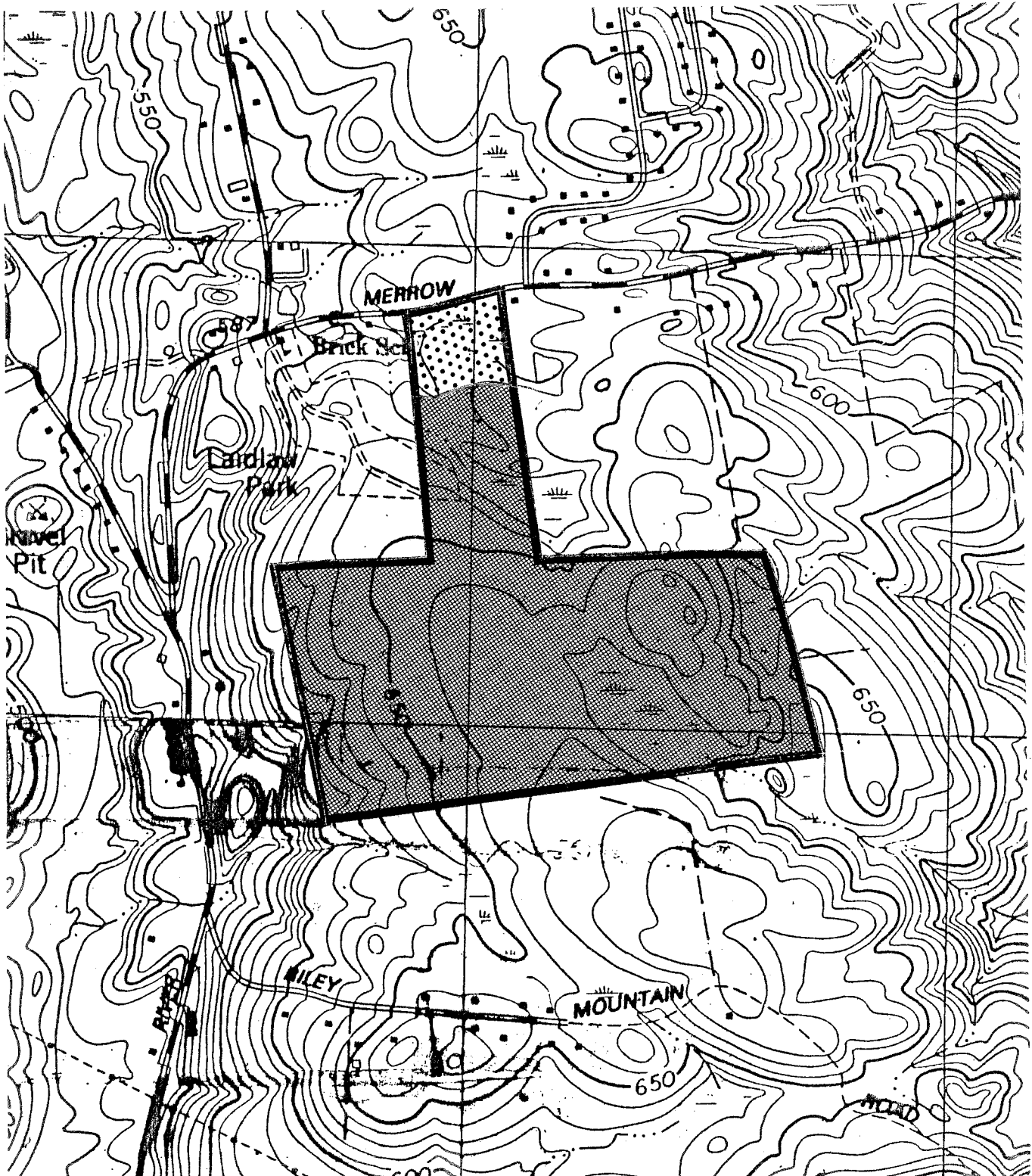
BEDROCK GEOLOGIC MAP

Scale 1" = 1000'



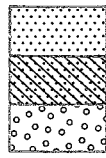
Hebron Formation

Brimfield Schist

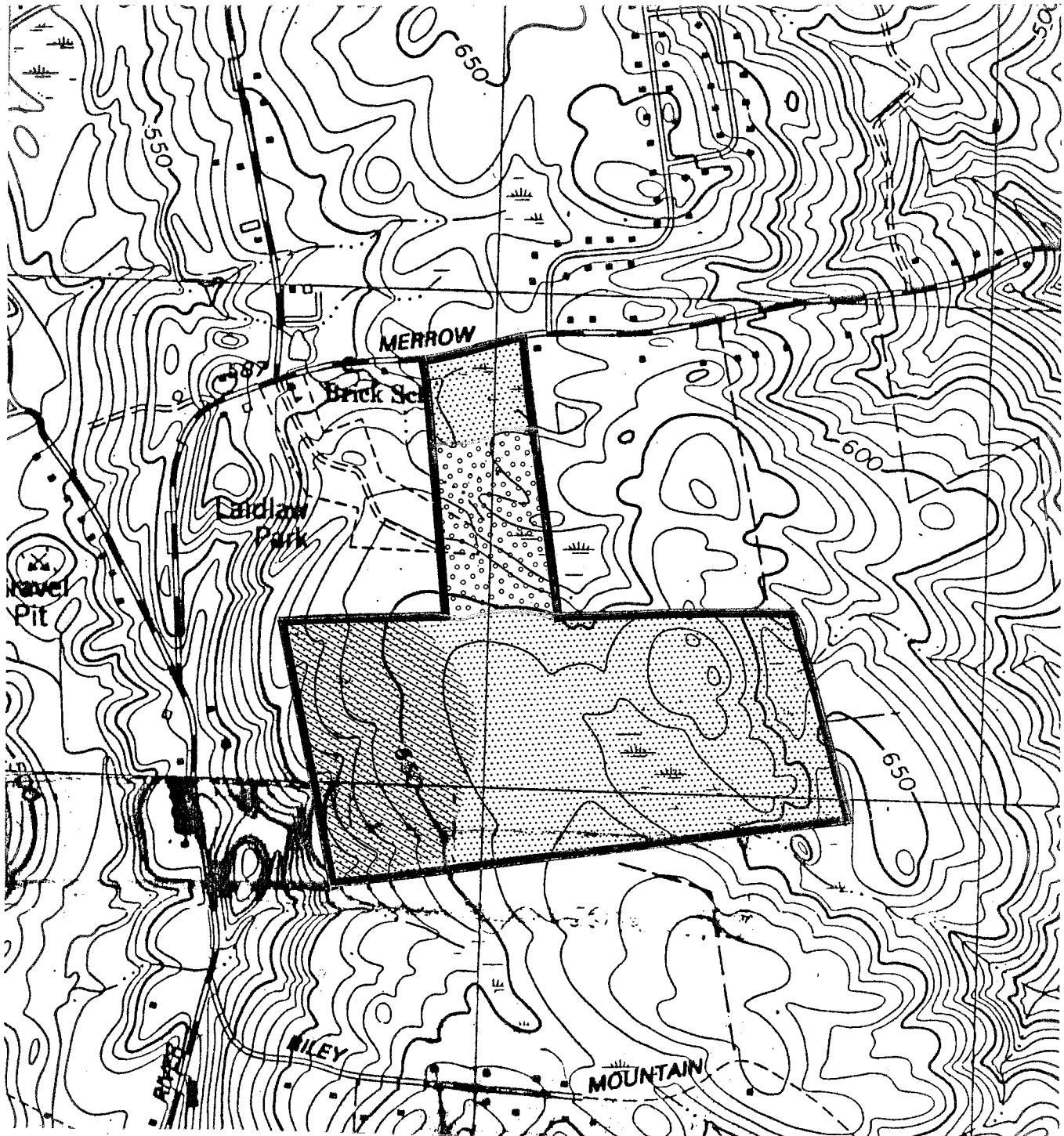


SURFICIAL GEOLGIC MAP

Scale 1" = 1000'



Till
Thick Till (Greater than 40')
Stratified Drift



3. SOIL RESOURCES

General Soils Information

Soils information was provided by the applicant on the preliminary site layout given to Team members on the review day. The District Conservationist did not know if the applicant had referred to the information contained in the Soil Survey of Tolland County, CT or if a certified soil scientist had delineated the soils for planning purposes. It was suggested that the applicant retain the services of a qualified private soil scientist to review the information contained in the Soil Survey of Tolland County, CT, examine conditions in the field and provide the Commission with a verified map and more detailed interpretive information for the site.

Wetland Boundary Information

The District suggests that the Commission require the applicant to provide for ***review a plan map with the field delineated boundaries and station numbers shown. The soil scientist who performed the field work should then review and sign a statement on the map(s) certifying that the information is substantially correct.*** The certification statement should be similar to the following:

"The wetland soils on this site were identified in the field using the criteria required by Connecticut P.A. 72-155 as amended by Conn. P.A. 73-571, Conn. P.A. 87-338 and P.A. 87-533. The boundaries of these soils and of identified watercourses are accurately represented on the plot plan. "

The Commission and/or appropriate staff should then arrange to meet with the applicant and the soil scientist to review these boundaries in the field and compare field conditions to the information submitted, especially in areas where alterations to the wetlands, road crossings, or stormwater discharges are proposed. If this procedure is followed and discrepancies are found and cannot be resolved, the Tolland County Soil and Water Conservation District can on request review the submitted information for adequacy and provide comments and/or on-site technical assistance.

Other

Areas on the site have been severely abused in the past with disturbance of natural vegetative cover and random excavation within wetland areas. The site plan for this project should also address restoration and stabilization of the already disturbed areas.

The town should also consider requiring the developer to set aside major wetlands, watercourses and ponds as open space on the site as well as upland soil buffer areas. Without a permanent protection scheme, the open space and interrelated natural values of the wetlands are potentially in jeopardy of being lost. This type of preservation would provide excellent wildlife habitat among other benefits and would also minimize the amount of wetland disturbance.

SOILS MAP
Scale 1" = 1320'



4. SOIL EROSION AND SEDIMENT CONTROL PLAN

A detailed soil erosion and sediment control plan should be developed and implemented for this site. The plan should be developed using the criteria contained in the Connecticut Guidelines for Soil Erosion and Sediment Control. The Tolland County Soil and Water Conservation District would appreciate the opportunity to review this plan prior to final approval.

The Commission may also want to require the following (or similar) statements on the plan which relate to implementation and inspection of the soil erosion and sediment control plan:

1. "The contractor shall secure the services of a certified professional soil erosion and sediment control specialist or professional engineer who shall verify in the field that the controls required by this plan are properly installed, shall make inspection of such facilities not less frequently than weekly and within forty-eight (48) hours of any significant rainfall, and shall by written report, inform the owner or his agent not less frequently than weekly and the town Planning and Zoning Commission not less frequently than monthly of observations, maintenance, and corrective activities undertaken. An approved checklist may be used to document the inspection findings."
2. "There shall be a pre-construction meeting with the town wetlands agent, the town soil erosion and sediment control agent, the contractor, and the contractor's professional soil erosion and sediment control specialist to inspect erosion and sedimentation control structures and to discuss the plan and report requirements."

5. HYDROLOGY

The site can be divided into two major surface drainage basins, the Willimantic River Basin and the Skungamaug River Basin. The eastern parts of the site drain to the Willimantic River via intermittent streamcourses. The latter streamcourses are unnamed and flow generally in a southeast direction to the Willimantic River. The remainder of the site drains either to the wetland and its accompanying streamcourses that occurs in the neck of the site or flows overland in topographic swales, both of which ultimately route water to the Skungamaug River. The outlet stream for the wetland located at the neck of the site flows through two surface water bodies near the intersection of North River Road and Mellow Road.

Surface waters occurring on the site have not been classified by the Department of Environmental Protection but, by default, are considered to be class "A" water resources. (Water Quality Classification Map of Connecticut, Murphy, 1987.) A class "A" water resource comprises surface waters that may be suitable for drinking water supply and or bathing; characteristically excellent and may be subject to absolute restrictions on the discharge of pollutants. The Willimantic River and Skungamaug River are classified by the Department of Environmental Protection as Bc and B/A, respectively. These classifications mean that the water quality is currently known or inferred to be degraded. The State's goal is to upgrade the Skungamaug River to a class "A" water resource.

Converting the site to a condominium development at proposed densities would be expected to increase the amount of runoff shed from the site. Increased runoff would result from soil compaction, removal of vegetation and placement of impervious surfaces (roof tops, roads, parking areas, etc.) over otherwise pervious soils.

Because plans are preliminary, it is not known how storm drainage will be handled on the site or what the hydrologic impacts will be once it is developed. The latter will depend upon the ultimate density of the development and the amount of impervious surfaces created. It is expected that stormwater arising from roads and parking areas would be artificially collected in catch basins and routed at various points to the streamcourses on the site or to detention basins. Since town regulations require that post-development flows not exceed pre-development flows, it seems likely that the stormwater management plan for the project will use detention basins for

controlling peak flows leaving the site. The design engineer should reference Connecticut's Guidelines for Soil Erosion and Sediment Control for the design of the stormwater management plan and detention basins(s) if needed. Close examination of all downstream culverts is warranted. Once, the stormwater drainage plans and computations have been finalized, the Town's engineer should carefully review the plan and calculations.

The other concern with post-development runoff is the potential for gullying, streambank erosion and siltation problems. Because of the moderate slopes, silty soils and anticipated large land disturbance area, the potential for erosion would be expected to be high. In order to reduce the chance for erosion problems, it is suggested that a sound sediment and erosion plan be devised, closely followed and regularly checked by the town. Every effort should be made to protect the streamcourses and wetlands on the site from silty soil. Failure to control erosion on the site will result in highly turbid water to these streamcourses and to downstream areas i.e., surface waterbodies mentioned earlier, the Skungamaug River and Willimantic River.

In order to gain access to the developable or the interior parts of the site, regulated wetlands will need to be crossed by the proposed boulevard along the neck of the property. No alternate routes appear feasible, since the site's only access is Merrow Road. As mentioned earlier the soils in the above area were greatly disturbed, probably in conjunction with the former sand and gravel removal operation. The preliminary site layout does not show any other wetland road or driveway crossings, but it appears that land grading for roads, buildings and/or septic system areas may infringe on regulated wetland soils.

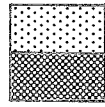
Although undesirable, wetland crossings are feasible, provided they are properly engineered. The road should be constructed adequately above the surface elevation of the wetlands. This will allow for better drainage of the road and decrease the frost heaving potential. Road construction through wetlands should be done during the dry time of year and should include provisions for effective erosion and sediment control. Culverts should be properly sized and located so they do not alter the water levels in the wetland or cause flooding problems. Also, any unstable, organic or mucky material should be removed and replaced with a permeable road base material. In comparing a 1980 air photo to a 1986 air photo for the site vicinity, it

appears that fill material was placed over pre-existing wetland soils in places on the neck of the property. The proposed boulevard is approximately aligned with this formerly disturbed area. It is suggested that borings, which penetrate the fill material, be drilled or dug along the proposed boulevard route to determine the texture and nature of the underlying materials and whether or not they can support the proposed roadway.

Classified inland-wetland soils in Connecticut are regulated under the Connecticut Inland-Wetlands Act (Section 22a-36 through 22a-45 of the Connecticut General Statutes). Any activity which involves modification, fillings, removal of soils, etc. will require a permit and ultimate approval by the Coventry Inland Wetland Commission. In reviewing a proposal, the Commission needs to determine the impact that the proposed activity will have on the wetlands. If Commission members determine that the wetland is serving an important hydrological or ecological function and that the impact of the proposed activity will be significant, they may deny the activity altogether, or at least require measures that would minimize the impact.

WATERSHED BOUNDARY MAP

Scale 1" = 1000'

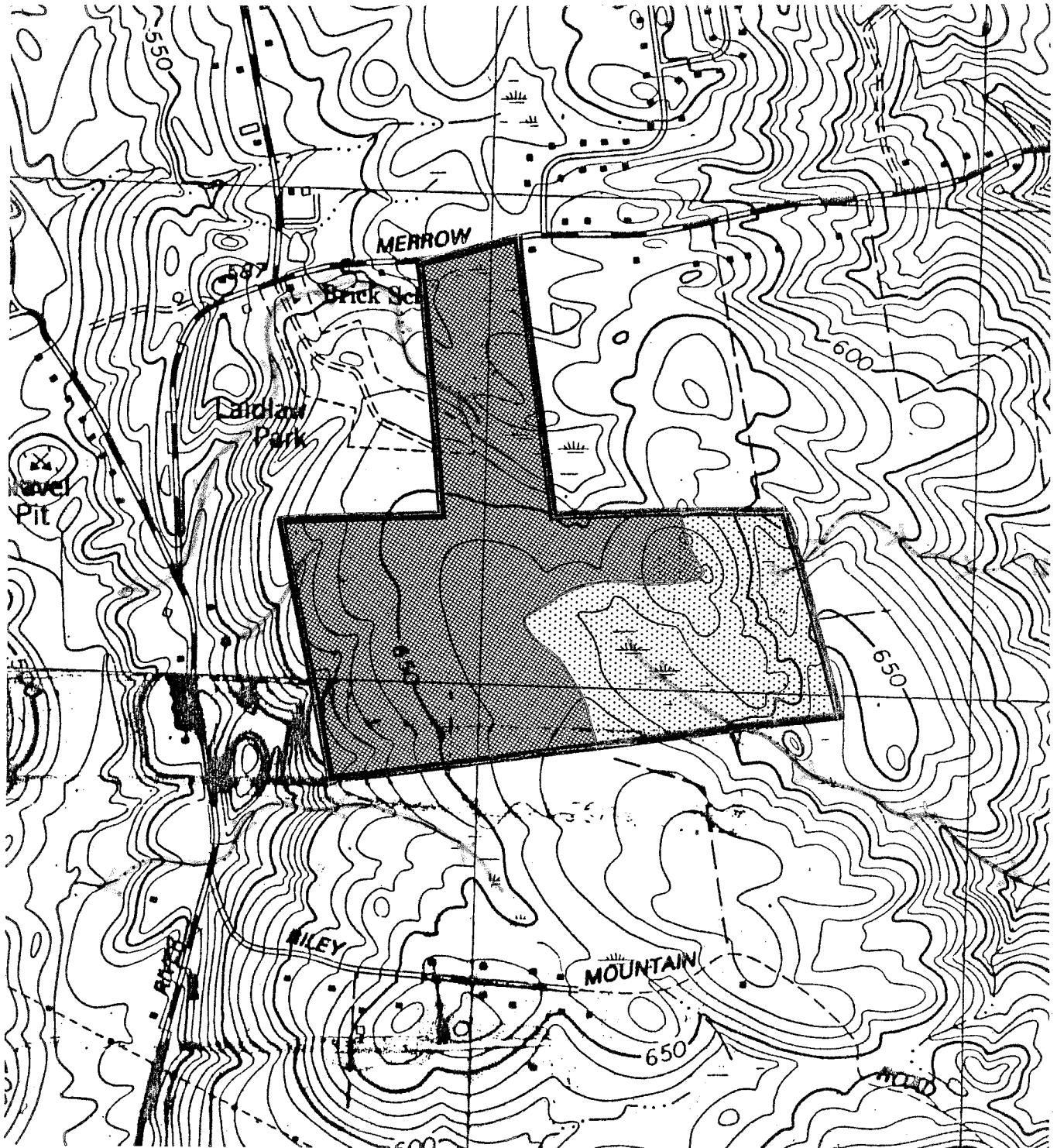


Portion of site that drains to the Willimantic River

Portion of site that drains to the Skungamaug River



Watercourses showing direction of flow



6. ON-SITE SEWAGE DISPOSAL

Since municipal sewers are not available to this part of Coventry, the proposed condominium project will require on-site sewage disposal system(s). The preliminary site layout plan made available to Team members on the review day indicates that the proposed condominium development would be served by a number of common or public subsurface sewage systems. This type of arrangement will require a permit from the Department of Environmental Protection's Water Compliance Unit (Land-Disposal Section).

Extensive subsurface exploration of the site has been performed by Haley and Aldrich, Inc. This work which was conducted in April, 1989 and July, 1989 involved numerous deep test pits, generally 6 to 10 feet deep. Typically, the test pits encountered topsoil, a subsoil zone, ranging between .5 to 2 feet and then glacial till and/or outwash. Ledge, an important design constraint with respect to on-site sewage disposal, was reported in seven of thirty test holes at depths less than seven feet. The areas of shallow bedrock occur mainly in the eastern parts of the site near test pits 104 - 107, 213, 225 and 226.

A high groundwater table condition and/or shallow mottling, an indicator of seasonal high water tables, which will also be an important design constraint with respect to on-site sewage disposal, was reported in numerous deep test holes mainly in the western parts. According to the soils map made available to Team members, Woodbridge soils, which are commonly characterized by a relatively shallow hardpan zone and seasonal high water tables occurs throughout the western parts. It is considered likely that the seasonal high water level noted during the April testing is a perched water table, resulting from the relatively low permeability of the hardpan.

In view of the seasonal high water table condition and shallow to bedrock condition it seems essential that the septic systems will have to be fairly large (percolation rates ranged between 4 minutes/inch and 22 minutes per inch), filled and raised. In addition, it seems likely that in areas characterized by seasonally high water tables, surface and ground waters will need to be controlled by installing curtain drains and/or land grading to provide additional protection of the septic systems. Depending on local topography, it may be possible to tie building foot drains, which will help protect basements from becoming wet, to the curtain drain system. A properly

designed and constructed curtain drain will hopefully intercept groundwater so that it does not rise up into the leaching system and impair the hydraulic capacity.

As mentioned earlier, because of the proposed septic system arrangement the Department of Environmental Protection's Water Compliance Unit must issue a permit. Before the Department of Environmental Protection could act on a permit application, the applicant's technical consultant would have to provide detailed technical information on the hydrogeologic conditions in the disposal area, the design of each sewage disposal system; a thorough hydraulic analysis of the disposal areas, and analysis of the probable impact on any nearby water resources and the underlying aquifer from a drinking water quality standpoint.

This last requirement should include an analysis of bacterial travel, virus removal and nitrate and phosphate transport. The "burden of proof" is clearly upon the developer to show that the proposed sewage disposal system(s) will function properly and not pose a threat to the environment or public health. Prior to acting on a permit application, the applicant should be required to make arrangements for ownership, operation and maintenance of the sewage disposal system. The local health department will also play an important role in the permit application, review of the plans and inspection of the sewage disposal system(s) during installation.

It seems likely that more detailed testing will be required on the site with respect to on-site sewage disposal. The testing should be done with a representative from the Department of Environmental Protection.

Overall, the presence of shallow to bedrock areas and seasonal high water table conditions are not particularly favorable for on-site sewage disposal and warrant careful excavation. Development of the condominiums should proceed only within the limits of acceptable density as to the capacity of the soil and site characteristics. It should be kept in mind the public sewers are not available in the area and that successful sewage disposal for the long term needs to be accomplished for the proposed development.

7. WATER SUPPLY

It is understood the proposed condominium development would be served by an existing community water supply system that services the condominium project east of the site. There was no information available to Team members regarding this water supply system except that it is owned and operated by Aqua Treatment and Service Company of Stafford, Connecticut.

According to Connecticut General Statute Section 16-262m (Certificate of Public Convenience and Necessity), expansion of the community water supply mains to the Merrow Road Condominium site will first require approval by the State Department of Health Services (Public Water Supply Section) and the Department of Public Utilities Control. Rich Albani, Connecticut Department of Public Utilities Control should be contacted regarding expansion of the community water supply system. He can be reached at 827-2600. This type of approval will also be required if a community well is drilled on the site.

Information on projected needs of the final development in terms of water quantity, plans for pumpage, storage and treatment, if necessary, and the distribution system will be necessary in order to assess the feasibility of serving the proposed condominium project by the adjacent condominium water supply.

Based on present projections, it is estimated that if the population to be served for 26 buildings (2-2 bedroom units and 4-1 bedroom units per building) is 364 people, then 27,300 gallons of water would be required per day for the proposed development. The latter figure is based on 75 gallons of water per capita per day. Based on a 24-hour pumping period, a well pumping approximately 19 gallons of water per minute would satisfy a water demand of 27,300 gallons.

If there is a desire to drill a well or wells on the site, the principal aquifer is the underlying crystalline, metamorphic rock. Although sand and gravel deposits can be favorable for groundwater development, the deposits to the north appear to be too thin and of insufficient areal extent.

Wells drilled in bedrock generally supply small but reliable yields of groundwater that fill openings (fractures and joints) in the rock. Since the yield of a given well

depends upon the number and size of water bearing fractures that it intersects, and since the distribution of the fractures is irregular, there is no practical way to predict the yield of a well in a specific location, outside of drilling the well first. The presence of a mapped fault, aligned with the stratified drift valley in the northern parts, may have increased the secondary porosity and hydraulic conductivity of the bedrock aquifer in the area by creating fractures, cracks and openings in the rock (Preliminary Bedrock Geologic Map of the South Coventry Quadrangle, Fahey and Pease, 1977). While the underlying bedrock aquifer would probably be adequate for most single family residences on lots one acre or more in size, a geotechnical study that includes fracture trace analysis would be advisable to determine the aquifer potential of the underlying bedrock for community water supply development.

If there is a desire to drill a community water supply well or wells, every effort should be made to locate it on a relatively high portion of the site properly separated from the sewage disposal systems or any other potential pollutant (e.g., road drainage, curtain drain pipe, etc.) and in a direction opposite the expected groundwater movement. They should all be cased with steel pipe into the underlying bedrock. In order to provide adequate protection of the quality of bedrock water, all wells will need to be properly installed in accordance with all applicable State Public Health Code and Connecticut Well Drilling Board regulations. In addition, the Public Water Supply Section of the Department of Health Services and the Town sanitarian will need to inspect and approve well locations.

The natural quality of groundwater should be satisfactory, but the rock units underlying the site may have elevated concentrations of iron and manganese. The iron or manganese would be recognizable by its reddish or blackish staining qualities. Filters are available on the market to remove most undesirable mineral induced concentrations of elements in well water. Well or wells that tap the Brimfield Schist in the northern parts would likely be most mineralized by iron or manganese.

Groundwater on the site is classified by the Department of Environmental Protection (DEP) as GA, which means that it is suitable for private drinking water supplies without treatment. (Water Quality Classifications Map of Connecticut, Murphy, 1985.)

8. PLANNING COMMENTS

Compliance with State, Regional and Local Plans

State Policies Plan for the Conservation & Development of Connecticut, 1987 - 1992.

The State Plan recommends the proposed site for "Rural Land" uses. Such uses would limit development to that which can be supported by on-site water and sewer and which are consistent with the open rural character of adjacent lands. The proposed plan is consistent with such recommendations.

State Master Transportation Plan

There are no State funded highway projects scheduled in the vicinity of the proposed project. The closest projects scheduled in the Master Transportation Plan are on Route 31 south of Route 44.

Regional Growth and Preservation Guide Plan, WRPA 1981

The region's land use plan recommends this parcel for low density rural use. Appropriate policies for such use are given at the end of this section.

The plan also specifically recommends that compact, efficient, and less visible forms of development be encouraged in these areas, through use of such techniques as planned unit development and cluster design.

The proposed development is consistent with the regional plan in that it maintains the rural appearance of the region by showing only a single driveway from Merrow Road to the development interior parcel. The proposal as presented, however, can not be described as compact and efficient. The overriding impression is one of roadways and parking areas. The buildings are just far enough apart to provide a feeling of separation and some open areas. These patches of open space (grass?), however, do not appear to be large enough to be usable for recreation.

To a large degree, the final layout of this development will be dependent on the septic system(s) which will serve it. If a community septic system is a viable alternative (rather than one for each building as the plans currently show) then closer clustering of the buildings could eliminate, or at least lessen, the sprawl effect of the development. More clustering would also reduce roadway and drainage costs.

Regional Transportation Plan - Draft, Fall 1989, WRPA

The 1989 draft of the Regional Transportation Plan Update retains from the 1988 Plan Coventry's priority for sight line improvements at the intersection of Routes 44 and North River Road. This intersection has been experiencing increased traffic volumes due to the new condominium and subdivision developments in the area and increased commuter traffic in general. The development of the Merrow Road condominiums would affect the traffic volumes at this intersection, since North River Road would provide the most direct route connecting the development with Route 44. The WRPA has requested, but not yet received from ConnDOT, a copy of traffic counts made at the Route 44/North River Road intersection.

Town Plan of Development, Coventry, December, 1978

Coventry's plan encourages "the construction of clustered single family homes with individual lots and common space open areas, clustered multi-family developments, and innovative planned residential developments with a variety of housing types and layouts to provide housing types for all ranges of income and simultaneously protect sensitive areas" (p. 13). It encourages shared driveways and internal roads for developments to retain the town's rural character.

The proposed development of 156 moderate income units is consistent with the plan's encouragement of various types of housing and moderate income housing, and with the concept of shared roads. It should be noted, however, that "moderate income" remains undefined, and no assurances have been given that they will in fact be targeted (or restricted) to families with moderate incomes (however defined). It conforms to current zoning. The proposed layout, however, does not give the real advantages of clustering as discussed above.

The town plan recommends that density be based on **usable** land, rather than total acreage in the parcel. The proposal is for 156 units on 78 acres. Some of this is wetlands and therefore unusable. The number of units should be reconsidered after the unusable land has been identified and removed from the total acreage used in the calculation.

Surrounding Land Use

The parcel to be developed abuts a similar condominium complex to the east. To the west lies the town-owned 37.3 acre Laidlaw Memorial Field. A direct pathway between the development and this park would provide easy access to recreation for the residents. It must be noted that this would also allow easy access to the development by other park users' which may or may not be a desirable feature.

Effect on Population

The proposal includes 156 moderate income condominium units, 104 of which will have one bedroom and 52 of which will have two bedrooms. Each of the 26 buildings will contain six units. Because "condominium" refers to the form of ownership rather than the housing type, no standard demographic multipliers apply to "condominiums". To estimate the population increase from the development, we used standard multipliers* for both garden apartment and town houses, as shown in the following table.

The town might anticipate a total population increase of 248 - 264 (2.6 - 2.8% of the town's 1988 population as estimated by the Department of Health Services), and an increase in the number of children in grades K-12 of 11-13 (less than 1% of the current school age population).

Total and School Population Effects of 156 New Housing Units

| <u>Type of Housing</u> | <u># of Units</u> | <u>Multipliers* Total/School age**</u> | <u>Population Increase Total/School Age**</u> |
|------------------------|-------------------|--|---|
| Garden Apts. | | | |
| 1-BR | 104 | 1.295/.007 | 135/ 0.7 |
| 2-BR | 52 | 2.142/.203 | 111/10.6 |
| TOTAL | 156 | | 246/11 |
| Town Houses | | | |
| 1-BR | 104 | 1.491/.053 | 155/ 5.5 |
| 2-8R | 52 | 2.098/.147 | 109/ 7.6 |
| TOTAL | 156 | | 264/13 |

* Demographic Multipliers for the New England region are from the U.S. Dept. of Commerce, Bureau of the Census, U.S. Census of Population and Housing (Public Use Sample). 1980 as presented in Burchell, Listokin, and Dolphin. The New Practitioner's Guide to Fiscal Impact Analysis, 1989 Exhibits 12, 13.

** School Age includes children in grades K-12.

Other Concerns

Traffic Volumes

Local roads would be used by residents of this development to reach Route 31 to the west, Route 32 to the east, and Route 44 to the south. ConnDOT's average daily traffic (ADT) volume estimates for 1987 and 1988 are shown below. These estimates were based on the last actual counts on Coventry's state highways (approximately three years ago) and have been adjusted by the average annual growth in traffic volume for rural areas since that count. Actual traffic counts for state highways in Coventry are again scheduled for this fiscal year.

Average Daily Traffic (ADT)

| | <u>Route 31</u> | <u>Route 44</u> | <u>Route 32</u> | |
|------|----------------------------------|---------------------|-------------------------|--------------------------|
| | Tolland Town Line to Route 44 | Overlap Route 31 | Route 31 to Route 32 | Route 44 to Route 195 |
| 1987 | 2,200 | 12,800 | 6,500 | 5,500 |
| 1988 | 2,400 | 14,300 | 7,200 | 5,900 |

Based on an average number of daily trips per housing unit of 6.8 for apartment complexes (Trip Generation Study of various Land Uses, Israel Zevin, ConnDOT 1974), we would expect the development to generate 1,057 additional vehicle trips per day. Depending on where they are destined, these vehicle trips will use Merrow Road, Goose Lane, Broadway and/or North River Roads to get to collector roads, such as RT 31, 32, 44 and 195. (See also comments under "Regional Transportation Plan" above).

Solid Waste Generation and Recycling

An additional 250 residents from this development would generate between 175 and 212 tons of solid waste per year, (depending on whether the generation rate

is closer to the local estimate of 0.7 or the statewide average of .86 tons per person per year). Some of this will be recycled with the January 1, 1991 onset of the state's mandatory recycling program. The rest will shorten the remaining life of Coventry's landfill to the extent that the population increase represented exceeds the population growth used in calculating the landfill's estimated life. It is the WRPA's understanding that a forthcoming report on the landfill will suggest that, with aggressive recycling and compacting, the landfill should last for another 16 years. We do not know what population growth is assumed in this study.

With all of the driveways and parking areas on the street side of the condominium buildings, there is no obvious location for dumpsters for trash and collection bins for recyclable materials. Because the recycling of newspapers and of glass and metal food containers, among other items, becomes mandatory as of January 1, 1991, the siting of collection containers should be included in the project design. Some thought needs to be given to their placement and buffering so that they are accessible to collection vehicles and yet not an eyesore to the residents.

Water Supply

The proposal for a small water company to supply water to the development requires that the company be certified by the state, pursuant to Section 16-262M of the General Statutes. Although the plan is for the development to be served by the same company which now supplies water to the adjacent condominium complex to the east, that complex may have preceded the state certification regulation. The town should make certain that the water company involved has proper certification; otherwise the town would be responsible for the operation of the water company in the event that the company can not or does not provide adequate service to this development. (Refer to the provisions of Connecticut General Statutes Section 16-262M which requires a "certificate of public convenience" for new or expanded community water suppliers after October 1, 1984. Such provisions pertain to water companies supplying 15 to 250 service connections or 25 to 1000 persons).

Recommendations for Changes and Alternatives

The existing plans give neither the privacy of single family homes nor the sense of community and the usable common open space of a good cluster design. The plans

in fact, seem similar to the layout and design of the existing condominium development to the east, in which the "sprawl" effect and preponderance of pavement is noticeable.

The Team Planner would prefer to see an improved, tighter cluster design. If other considerations, such as septic systems, precludes a more focused cluster, then consideration should be given to a reduction in the number of proposed condominium units or to a cluster design for single family homes. At the very least, the services of a good landscape architect should be used to make the layout look and work better. Good landscaping could visually minimize the sense of sprawl and strengthen the impression of a cluster community.

Policies Recommended for Low-Density Rural Areas
(from the Regional Growth Preservation Guide Plan, WRPA, 1981)

The low density rural district contributed the bulk of the aesthetic appeal of the region and offers most of the low density recreational opportunities. Emphasis in planning and land regulation should be on minimizing the development of existing road frontages. People living in this district must be automobile oriented and, due to the high utility and energy costs associated with low-density development, they must be willing to pay significantly more to maintain this way of life.

(Policy For Low-Density Rural District)

Development incentives should be provided to encourage residential development on internal parcels of land rather than along existing road frontages. Not only will the rural appearance of the region be maintained but traffic flow will be enhanced and traffic accidents reduced through having two or more residences on a single driveway instead of each individual residence have a driveway entering a state highway or town road.

Preservation of agricultural lands and operations should be encouraged. Two acre building lots should be the minimum and the prevailing lot size.

Public services such as sewer, water and trash collection should not be available in the district.

Large residential development projects should be discouraged in the low density rural district. However, if such development occurs, subdivision standards for such developments should be designed to place all possible burdens for serving the residents of the proposed development on the developer (e.g., roads which at least meet town road specifications, drainage, dedication of land for recreation and perhaps additional school facilities or payment in lieu of dedication, etc.). Provision should be made for allowing small developments (e.g., through zoning incentives) to encourage the development of interior parcels.

Where opportunities to develop recreational facilities or nature preserves of regional or statewide significance exist they should be exploited.

Very light density development and open space preservation techniques should be used to protect areas along streams, watersheds which drain to public water supply sources and scenic and historic areas.

The development of limited access highway interchanges should be discouraged.

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, soil specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area --- an 86 town region.

The services of the Team are 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, landfills, commercial and industrial developments, sand and gravel excavations, 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 official 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 and the ERT Coordinator. A request form should be completely filled out and should include the required materials. 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 and request forms regarding the Environmental Review Team please contact the ERT Coordinator: 203-345-3977, Eastern Connecticut RC&D Area, P.O. Box 70, Haddam, Connecticut 06438.