

HEMLOCK RIDGE SUBDIVISION

COVENTRY, CONNECTICUT

APRIL 1989

*EASTERN CONNECTICUT
ENVIRONMENTAL
REVIEW TEAM
REPORT*



EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

HEMLOCK RIDGE SUBDIVISION COVENTRY, CONNECTICUT

REVIEW DATE: MARCH 23, 1989

REPORT DATE: APRIL



*EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.
EASTERN CONNECTICUT ENVIRONMENTAL REVIEW TEAM
P.O. BOX 70, ROUTE 154
HADDAM, CONNECTICUT 06438
(203) 345-3977*

ENVIRONMENTAL REVIEW TEAM REPORT
ON

HEMLOCK RIDGE SUBDIVISION
COVENTRY, CONNECTICUT

This report is an outgrowth of a request from The Coventry Town Planner for the Inland Wetland Commission and 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 Thursday, March 23, 1989. Team members participating on this review included:

Barbara Buddington	Senior Planner	Windham Regional Planning Agency
Kevin DesRoberts	Wildlife Assistant	DEP - Eastern District Headquarters
Steve Hill	Wildlife Biologist	DEP - Eastern District Headquarters
Joe Neafsey	District Conservationist	USDA - Soil Conservation Service
Elaine Sych	ERT Coordinator	Eastern CT RC&D Area
Bill Warzecha	Geologist	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 subdivision plans and other information. The Team met with, and were accompanied by the Town Planner, the Zoning Enforcement Officer and the developer. 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 subdivision.

If you require additional information, please contact:

Elaine A. Sych
ERT Coordinator
Eastern Connecticut RC&D Area
P.O. Box 70
Haddam, Connecticut 06438
(203)345-3977

TABLE OF CONTENTS

1. Location, Zoning and Land-Use	1
2. Topography	1
LOCATION MAP	2
TOPOGRAPHIC MAP	3
3. Geology.....	4
SURFICIAL AND BEDROCK GEOLOGIC MAP.....	5
4. Soil Resources.....	6
<i>General Soils Information</i>	6
<i>Wetland Boundary Information</i>	6
<i>Soil Erosion and Sediment Control Plan</i>	6
<i>Stormwater Runoff</i>	8
SOILS MAP.....	12
5. Hydrology	13
WATERSHED BOUNDARY MAP	15
6. Sewage Disposal	16
7. Water Supply	17
8. Wildlife Resources	19
<i>Wildlife Habitat Description</i>	19
<i>Wildlife Species</i>	19
<i>Effects of Development on Wildlife</i>	20
<i>Mitigation of Impacts of Development on Wildlife</i>	20
<i>Literature Cited</i>	21
9. Planning Review	22
<i>Consistency with State, Regional and Local Plans</i>	22
<i>Other Considerations</i>	23

1. Location, Zoning and Land-Use

The subdivision site, about 14 acres in size is located in eastern Coventry overlooking the Willimantic River. The site is situated on a north-facing wooded slope. It abuts Lewis Hill Road on the east and private, undeveloped land on the north, west, and south. Access to the proposed 10-lot subdivision will be provided from Lewis Hill Road and completed as a 1,190 foot cul-de-sac. The latter will require two crossings of an intermittent streamcourse and its accompanying wetlands in the eastern parts. Additionally, cut embankments will be required in order to maintain satisfactory road grades (10% or less).

The site currently is encompassed by a RU-40 zone, which allows single family homes on lots of at least 40,000 square feet. Present plans indicate lots will range between +1 acre to +2 acres in size and therefore appear to be compatible with town zoning requirements. Each lot would be served by individual on-site wells and septic systems.

The area surrounding the parcel subject to development is characterized by low density residential land-use. Agricultural fields are also visible in the vicinity of the site.

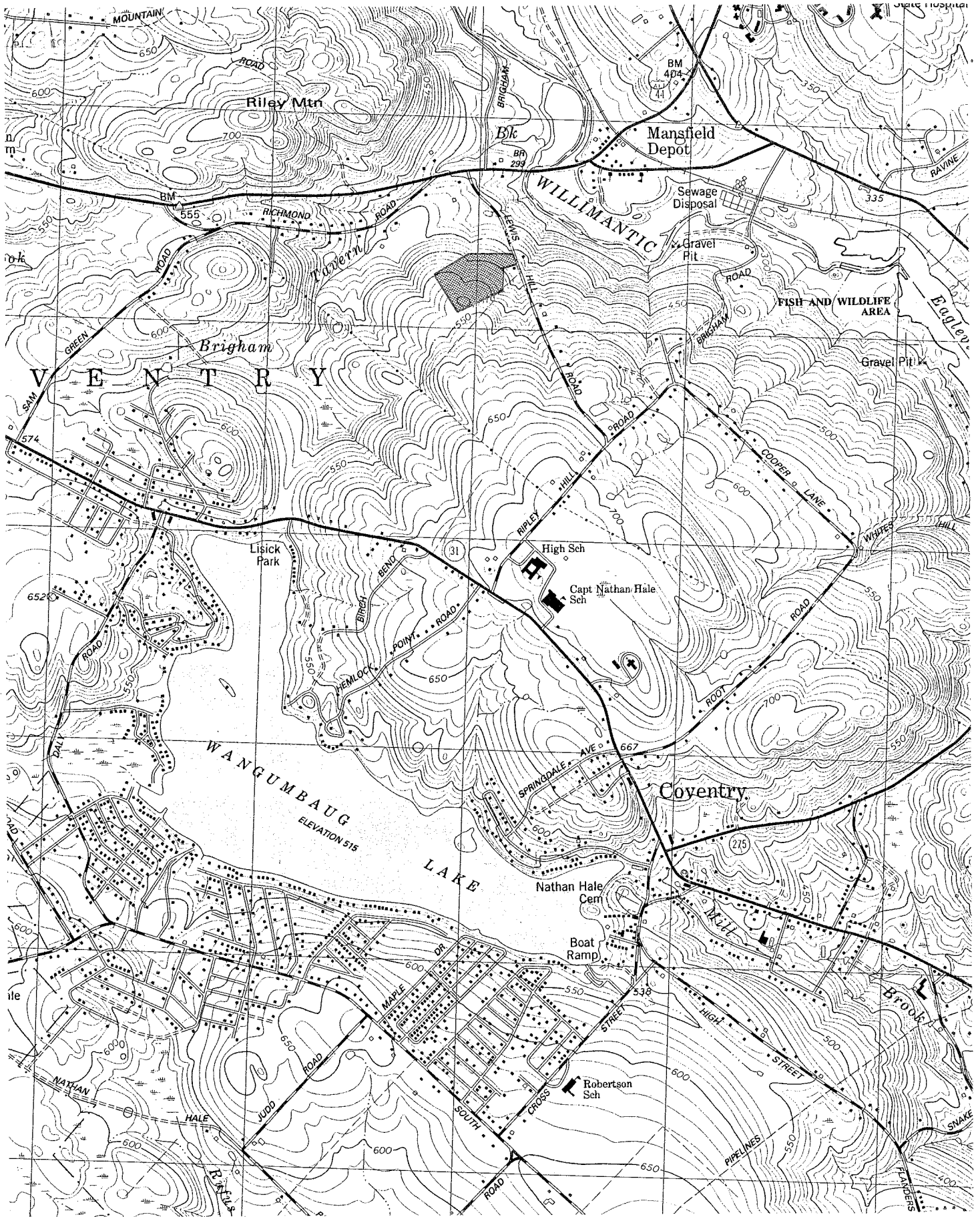
2. Topography

The +14 acre site is located on the north slope of a large hill northeast of Coventry Lake. It ranges in elevation from about 430 feet above mean sea level at Lewis Hill Road to 550 feet above mean sea level at the southern limit. From southwest to northwest, the slope averages about 10.5 percent. Steeper slopes 15-25 percent are concentrated along the southern limits.



LOCATION MAP

SCALE 1" = 2000'





TOPOGRAPHY

SCALE 1" = 1000'

— APPROXIMATE SITE BOUNDARY



3. Geology

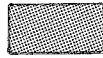
The site is covered entirely by glacial till. Till consists of an unstratified, unsorted mixture of sediments that range in size from clay to boulders. These materials were transported and deposited directly by glacial ice. In general, the texture of the till on the site appears to be predominantly sandy and loose. Deep test holes for on-site sewage disposal exploration revealed some compact soil zones, which were encountered at depths averaging about 28-30 inches below ground surface. The presence of this compact soil zone commonly results in seasonally high water tables and slow percolation rates.

The exact thickness of till is unknown but it probably does not exceed 10 feet in most places. Bedrock was encountered in only one deep test hole (T.P.#21) at a depth of 66 inches. Deep test holes penetrated 6 feet or more in most cases.

Bedrock underlying the site has been identified as crystalline, metamorphic rock. In general, it is described as a mostly medium grained light-gray to greenish-gray, well-bedded schist composed of the minerals quartz, plagioclase and biotite. These rocks are referred to as the Southbridge Formation. Provided it is capable of transmitting water, the underlying bedrock appears to be the likely source of domestic water to the proposed subdivision.

SURFICIAL AND BEDROCK GEOLOGY

SCALE 1" = 1000'



Till

*Entire site underlain by Southbridge Formation.
See Geology section of report for detailed description



4. Soil Resources

General Soils Information

The information contained in the Soil Survey of Tolland County, CT appears to be adequate for planning purposes. If the Commission requires additional information it is 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

Wetland boundaries on this site could not be verified in the field because boundary flag locations and station numbers were not shown on the plan map. Wetland boundaries should be located in the field by a qualified soil scientist. Boundary flags should be numbered sequentially and the information transferred to the plan maps. The soil scientist who performed the field work should then review this information and then sign and date the map indicating that the information is an accurate representation of conditions in the field. The District suggests that the Commission and/or appropriate staff arrange to meet with the applicant and the soil scientist in the field to review these boundaries and compare field conditions to the information submitted, especially in areas where alterations to the wetlands, road crossings, or stormwater discharges are proposed. Ask the soil scientist to explain any discrepancies between the SCS soil maps and the more detailed soil survey of the site, if this is a concern. If this procedure is followed and discrepancies cannot be resolved, the Tolland County Soil and Water Conservation District may on request review the submitted information for adequacy and provide comments and/or on-site technical assistance.

Soil Erosion and Sediment Control Plan

The road network for this project is proposed at a continuous 12% grade. Proposed driveways are sloping towards the road at a 10% to 12% grade. It is

estimated that about 65% of the area is within the proposed limits of disturbance. Several cut slopes are proposed at 45% or 1 to 1. With these conditions the site can be considered to have an extremely high potential for serious soil erosion which will result in off-site sediment damages if soil erosion and sediment control is not carefully planned and implemented.

The best strategy on a site such as this is to break the project into manageable phases or sections and complete the road construction and cut slope stabilization before starting any work on subsequent sections. It is suggested that the Commission require this as a condition of approval. 400 feet should be considered an appropriate maximum section length. It is also recommended that the Commission require that driveways in excess of 6% be paved and driveway cut slopes be vegetatively stabilized prior to starting other construction on the lot. Storm drainage system silt barriers should be maintained until all disturbed areas are stabilized and reinstalled as needed during driveway construction. Driveway cuts and paving and vegetative stabilization should be done during the appropriate road construction phase to avoid disturbing the area twice. This is especially important on Lots 1, 2, 9, and 10.

A very specific, detailed, step by step soil erosion and sediment control plan including a narrative, checklist, and details 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 (1985). The Tolland County Soil and Water Conservation District would appreciate the opportunity to review this plan prior to final approval. The plan submitted with the ERT request has several deficiencies that need to be addressed. The marked up plans were returned to the consultant engineer for information. An checklist noting deficiencies is included in this report.

A pre-construction meeting between the developer, contractor, engineer and appropriate Town enforcement personnel is strongly recommended. The meeting should include a discussion on the soil erosion and sediment control plan so that all understand and agree to its provisions. A copy of model soil erosion and sediment control notes were sent to the engineer for information. The District encourages the inclusion of at least notes 15, 20 and

21 in the final plans. These notes refer to site inspection, the pre-construction meeting and marking the limits of disturbance.

On request the District can provide on-site technical assistance to the Town inspector assigned to this project.

Stormwater Runoff

Runoff calculations and an assessment of downstream impacts were not provided with the review packet. There is concern about the stability of the channel below the discharge point of the storm drainage system on the east side of Lewis Hill Road. The District suggests that the Commission require the applicant to use one of the methods described in Chapter 9 of the CT Guidelines for Soil Erosion and Sediment Control to estimate changes in peak flows and submit for review a hydrologic report for the area and assessment of possible off site impacts. The present and developed conditions should be analyzed for the 2-year and 10-year, Type III distribution, 24 hour storms. The report summary should use the calculated values to demonstrate whether or not stormwater control is needed. Measures to control runoff and minimize off-site impacts should be addressed in the soil erosion and sediment control plan and shown on the plan sheets.

TOLLAND COUNTY SOIL AND WATER CONSERVATION DISTRICT SITE & PLAN REVIEW

In order to complete the site and plan review of Hemlock Ridge - Lewis Hill Road - Coventry, Connecticut submitted by Alford Assoc. on January 13, 1989 the following information should be incorporated on final plans. Upon request, the Tolland County District will be available to review revised plans.

Narrative

Project description: purpose of the activity and extent of the land disturbance.

Schedule of major land activities - need detailed, step-by-step schedule, example attached

See comments on narrative submitted

Vicinity Map

Major drainage and watershed limits - East of Lewis Hill Road

Project Features

Limit and acreage of disturbed area

Natural Features

Inland Wetlands: Flagged in field by Soil Scientist, flags numbered - Flag # missing from plans

Topographic Features

Areas of cut or fill (acreage)

Areas (location and acres) to be cleared, staging and sequence of clearing

Areas to be graded, staging and sequence of grading

Areas and acreage to be vegetatively stabilized

Temporary erosion protection of disturbed area

Temporary erosion protection when time of year or weather prohibit establishment of permanent vegetative cover

Drainage System

Design calculations and construction details for culverts, storm sewers, see comment #3 sheet 5

Existing peak flows with calculations (24 hour storms)

Planned peak flows with calculations (24 hour storms)

Changes in peak flows

Off-site effects on increased peak flows or volumes

Measures with design calculations and construction details to control off-site erosion caused by the project

Survey and soil information below culverts and storm sewer outlets

Measures with design calculations and construction details to control erosion below culverts and storm sewer outlets

Measures with design calculations and construction details to control groundwater, i.e., seeps, highwater table, etc. - Road cuts, driveway cuts.

Utility System

Location of other planned telephone, electric - if underground plan as part of soil erosion plan

Erosion Control Measures

See comments on plan map submitted

Plan map showing location of temporary and permanent measures

Construction drawings and details for temporary and permanent measures

Maintenance requirements of measures during construction of project

Person responsible for maintenance during construction of project

Checklist on plan showing proposed sequence of measure installation, and columns for documenting installation dates, initials of inspector, maintenance dates, removal dates for temporary measures. See attached example. Fill out completely using items from narrative.

MODEL SOIL EROSION & SEDIMENT CONTROL NOTES

15. "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."
16. Hay bale and/or fabric filters will be is installed at all culvert outlets with and along the toe of all critical cut and fill slopes.
17. Stockpiles of soil shall be surrounded by a sediment barrier. Soil stockpiles to be left bare for more than fifteen (15) days shall be stabilized with temporary vegetation or mulch. If soil stockpiles are to remain for more than sixty (60) days. Filter fabric shall be used in place of hay bales. Side slopes shall not exceed 2:1.
18. The contractor shall be responsible to control dust and wind erosion throughout the life of his contract. Dust control shall include, but is not limited to, sprinkling of water on exposed soils and haul roads. Contractor shall control dust to prevent a nuisance to neighboring property owners, and to prevent a hazard to traffic on adjacent roadways.

19. Hay bales shall be used as a temporary measure where control measures will be required for longer than sixty (60) days and where the slope is more than 150 feet upgrade of the barrier, filter fabric shall be used.
20. "There shall be a pre-construction meeting with the Town soil erosion and sediment control agent, the Town wetlands agent, the contractor and the contractor's professional soil erosion and sediment control specialist to discuss the plan and inspection and report requirements."
21. Yellow construction tape or the equivalent shall be used to set the limits of disturbance for construction equipment. Limits will be inspected in the field at the pre-construction meeting.

SOILS

SCALE 1" = 1320'

Tolland County USDA-SCS
24 Hyde Avenue
Rockville, CT 06066
875-3881



5. Hydrology

The site lies entirely within the Willimantic River drainage. It can be divided into two subdrainage areas. Surface runoff in the western parts of the site flows in a northerly direction to a small man-made pond located on the westerly side of Lewis Hill Road. The pond is about 1,00 feet from the property. The outlet stream for the pond is piped under Lewis Hill Road and ultimately flows into Willimantic River. Surface runoff in the eastern parts of the site flows downslope to the wetland area in the eastern parts of the site. It flows via a man-made drainage channel along the westerly side of Lewis Hill Road ultimately discharging to the outlet stream for the man-made pond mentioned above. Additionally, surface flow in this area may be intercepted by a 36" pipe located just north of the proposed Eastview Drive. Once water reaches the easterly side of Lewis Hill Road it flows parallel to the road ultimately discharging to Willimantic River.

The subdivision of the property as planned, followed by the construction of new homes, interior road, and driveways will lead to increase in runoff from the property. Present plans indicate that road drainage and building-footing drains from 5 homes in the subdivision will be artificially collected in catch basins and piped to the existing 36" culvert under Lewis Hill Road. As a matter of policy, it is recommended that applicant's engineer prepare a hydrological study which analyzes pre- and post-development runoff conditions. Connecticut's Guidelines for Erosion and Sediment Control should be closely followed with regard to the stormwater management plan. Special attention to the impacts of post-development runoff should be clearly understood in terms of flooding and potential for streambank erosion. Of particular concern is the culvert passing under Lewis Hill Road near the entrance to the subdivision and the potential for flooding problems to the house east of the entrance. It appears that stormwater passing through the 36" pipe may flow overland towards the house and its on-site well.

In view of the moderate to steep slopes and land disturbance, the potential for erosion and siltation problems would seem great. A comprehensive erosion

and sediment control plan, properly enforced by town officials must be prepared for the site.

In order to access the site two road crossings of wetland are necessary. Additionally, the driveway serving lot 8 needs to cross regulated wetland soils. The regulated wetland soils on the site have been field checked by a certified soil scientist and their boundaries superimposed into the subdivision plan.

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. Any unstable, organic or mucky material should be removed and replaced with a permeable road base material. Culverts should be properly sized and located so they do not alter the water levels in the wetland or cause flooding problems.

Classified inland-wetland soils in Connecticut are regulated under Connecticut General Statutes 22a-36 through 45. Any activity which involves modification, fillings, removal of soils, etc. Will require a permit and ultimate approval by the Town's 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

SCALE 1" = 1000'



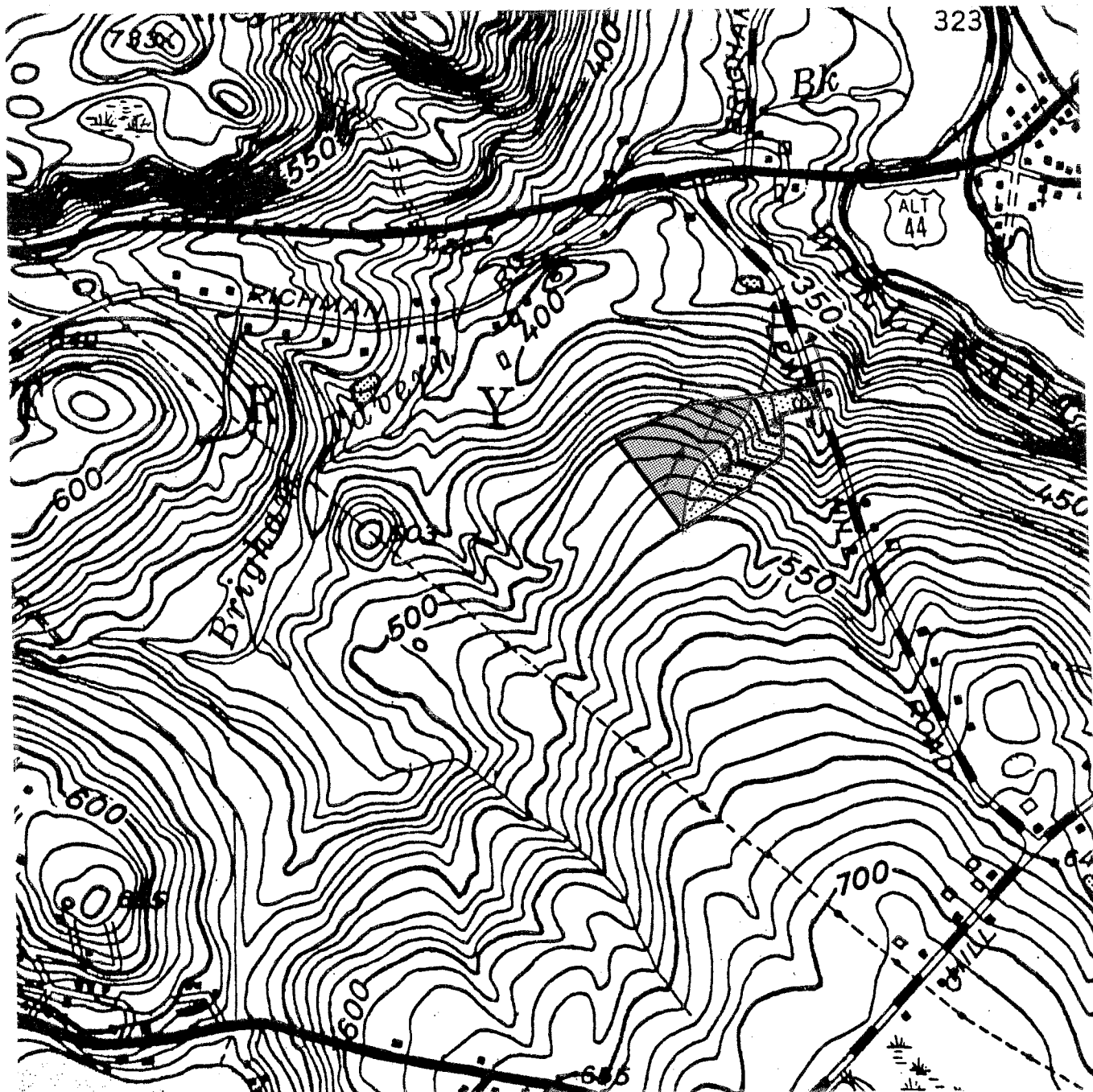
Portion of site that drains to the wetland area near the entrance to the subdivision.



Portion of the site that drains to the small man-made pond about 1000 feet north of the site.



Direction of surface flow



6. Sewage Disposal

Detailed soil testing for on-site sewage disposal has been performed on the subdivision site by Alford Associates, Inc. for the applicant. Coventry's town sanitarian, Gilbert Sass, witnessed deep test holes on the site. It does not appear that percolation tests have been conducted to date. This should be done prior to subdivision approval.

A total of 46 deep test holes were excavated on the site. In general, a typical soil profile consisted of about 6 inches of topsoil layer, a weathered and rooted sub-soil layer from 6 inches to about 30 inches and a sandy till that ranges from loosely packed to medium packed. Bedrock was encountered in only one deep test hole. Shallow mottling, an indicator of a seasonally high water table, has stained the soil in numerous deep test pits at depths ranging from 32" - 38".

From a subsurface sewage disposal standpoint, it appears that the major design constraints on the site includes the potential for seasonally high water tables, slow percolation rates and slope in some places.

According to the applicant's engineer, all septic systems will need to be engineered. Each system will probably need to be fairly large (depending on percolation rates), filled and raised with suitable, well-drained material.

Building footing drains, which will help to keep basements dry and which may be able to help protect the leaching field areas from infiltrating groundwater, are planned for each lot. Groundwater will be intercepted by the drain and routed away from the house and, where feasible, septic systems. The outlet for the drain(s) should not be directed toward well sites, neighboring properties, or on steep slopes where erosion problems may arise. The discharge point also needs to be properly protected. Present plans indicate 5 lots will be discharged to the stormwater system on Eastview Drive. Special care needs to be taken for septic systems (primary and reserve areas) in proximity to cut embankments anticipated for East View Drive. The concern here is the potential for partially treated effluent to breakout at the cut embankment (example - Lot 7).

Before subdivision approval, the applicant's engineer must show that each of the proposed lots in the subdivision meets the minimum soil standards set forth in Section 19-13-B103e(a)(3) of the Public Health Code. Each system should be able to hydraulically disperse the expected discharge into the site's natural soil layers per Section 19-13-B103e(a)(4) of the Code.

7. Water Supply

Based on review of hydrogeologic data, the principal aquifer on the site is the underlying crystalline, metamorphic rock. Wells drilled in bedrock generally supply small but reliable yields of groundwater that fill the fractures (cracks and seams) 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 of predicting the yield of a well in a specific location, outside of drilling the well. However, experience has shown that most fractures generally occur within the first few hundred feet of the bedrock surface. The probability of increasing the yield of a well usually decreases with depths below 300 feet.

Using some basic assumptions, the Team's geologist evaluated available recharge and predicted water use of the subdivision to estimate the potential impact on the bedrock aquifer. Specifically, recharge calculations show that the amount of water available to the site each day is about 7,736 gallons per day. This is based on groundwater recharge amounts of 8 inches per year for an upland site and 13 pervious acres (minus 1 acre for Eastview Drive), allowing for infiltration. Predicted water use at the site is estimated at 3,000 gallons per day. This is based on a 75 gallons per day per capita water usage. An assumption of 4 persons per single family residence was used.

Based on these figures, it is estimated that the planned development will receive about 2.5 times the recharge as is necessary to balance water demand. This, of course assumes the underlying bedrock is fractured and capable of transmitting water to wells. In addition, induced recharge by properly renovated septic system effluent plays an important role in the groundwater

budget. This stresses the need for properly designed and installed septic systems.

Each well should ideally be located on a relatively high portion of lot, properly separated from the sewage disposal systems, stormwater and gutter drains or any other potential pollutant associated with residential land uses and in a direction opposite the expected direction of 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 Town sanitarian will need to inspect and approve well locations. Every effort should be made to adequately separate neighboring wells. A spacing of 200 feet is desirable, since this would permit about a one acre (598 gallons of water/day) of recharge per well. This should help to minimize the chances for mutual interference. Present lot layout is not amenable to this arrangement on most lots.

Generally speaking, bedrock wells yield between 2-5 gallons of water per minute. A well yield of 3 gallons is generally satisfactory for most domestic uses.

The natural quality of groundwater should be satisfactory. However, the bedrock beneath the site may have elevated amounts of iron, iron sulfide and minerals, which could lower the overall quality. In either cases, there are suitable treatment filters available to ameliorate these potential water quality concerns.

Groundwater in the area is classified by the Department of Environmental Protection (DEP) as GA, which means that it is suitable for private drinking water supplies without treatment.

8. Wildlife Resources

Wildlife Habitat Description

The area of the proposed Hemlock Ridge subdivision is composed of three major wildlife habitat types; mixed hardwoods, softwoods, and wetland areas.

Mixed hardwoods occupy about 7.9 acres of the site. The overstory is dominated by black birch, sugar maple, shagbark hickory, white oak, red oak, ironwood, and scattered white pine. Understory cover is light and consists primarily of witch hazel, spicebush, maple saplings, oak saplings, viburnum spp, and scattered highbush blueberry. Ground vegetation is dominated by club moss, Christmas ferns, and scattered mountain laurel, lowbush blueberry and juniper.

Eastern hemlock is the dominant overstory species occupying the western 6 acres of the site. Understory cover is sparse and consists of hemlock saplings, oak saplings, and viburnum spp. Ground vegetation consists of club moss spp, Christmas ferns, and juniper.

A small amount of seasonal wetlands (wet depressions and intermittent brooks) occur throughout the site. Seasonal wet depressions provide important breeding pools for woodland amphibians and reptiles.

Wildlife Species

Bird species observed utilizing the area include white breasted nuthatches, black-capped chickadees, downy woodpeckers, and various other songbirds.

Mammalian species utilizing the site consist of raccoons, grey squirrels, white-tailed deer and various other small mammals.

The existence of wetlands provides habitat for amphibians and reptiles.

Effects of Development on Wildlife

As the subdivision plans indicate, development will occur in all three of the habitat types mentioned. This will result in the fragmentation of habitat types, which will in turn reduce species diversity and richness. Species that are intolerable to human disturbances will be forced to emigrate into adjacent habitat. Species dispersion into adjacent habitats may result in competition with species already occupying the area. Many species will also be forced to inhabit less desirable habitat; decreasing survivability. Species inhabiting adjacent habitat that frequent the hemlock ridge (conifers provide roosting areas, escape cover, and protection from the cold) will be forced to seek this habitat requirement elsewhere. Evergreens also provide nesting cover for many species of warblers (Devlin 1985).

Since five of the proposed building lots contain wetlands (lots 2,3,6,8,9) there will be a negative impact on these areas if there is any clearing or removal of vegetation within wetlands. Vegetation removal in wetlands would have severe impacts on wildlife, especially reptiles and amphibians. Soil and water types, cover, food, breeding grounds, and hibernation areas may be altered so that species dependent on specialized habitats are eliminated and more adaptable species reduced (Campbell 1973). Barriers to seasonal movement and population dispersal, such as roads are also serious threats (Campbell 1973). The construction of the road will result in a small amount of wetland disturbances (near intersection with Lewis Road) and access to lot 8 will require a wetland crossing.

Mitigation of Impacts of Development on Wildlife

Several measures can be taken to minimize impacts of development on wildlife. There should be at least a **100 foot** buffer surrounding all wetland areas in which no vegetation removal should take place. Owners of lots containing wetlands should be discouraged from any removal of vegetation within this buffer. These buffer strips will help limit disturbances to wetlands and provide important corridors for a number of wildlife species.

As much of each lot as possible should be left wooded. This will reduce vegetation removal, habitat destruction, and be more aesthetically pleasing for the residents of the development. Owners of lots should be discouraged from removal of understory vegetation and dead wood. Understory vegetation provides food and cover for a number of birds and small mammals. The existence of many wildlife species depends on the presence of dead trees. Removal of snags will reduce potential nest sites for both primary (cavity excavating) and secondary cavity nesting birds (i.e. black-capped chickadees, downy woodpeckers, white-breasted nuthatches) (Best et al. 1978). Fallen trees are also a necessity for many species (i.e. salamanders, snakes, mice, shrews, insects) (Hassinger 1986) and should not be removed.

The insure protection of wetlands, the site should be inspected on a regular basis to verify that erosion and sedimentation control measures are properly implemented and maintained throughout the course of development.

Literature Cited

- Best, L. B., D. F. Stauffer, and A.R. Geier. 1978. Evaluating the effects of habitat alteration on birds and small mammals occupying riparian communities. Pages 117-124. in (Strategies For Protection and Management of Floodplain and Other Riparian Communities). Proc. symp. Dec. 11-13, 1978, Gallaway, GA. Gen. Tech. Rep. W0-12, Forest Serv., U.S. Dep. Agric., Wash. D.C. 410pp.
- Campbell, C. A. 1973. Survival of reptiles and amphibians in urban environments. Pages 61-66. in (Wildlife In An Urbanizing Environment). Proc. symp. Nov. 27-29, 1973, Springfield, Mass. Coop. Extn. Serv., Univ. of Mass., U.S. Dep. Agric., Cnty. Extn. Serv. 182pp.
- Devlin, D. 1985. Woodland wildlife management. Pennsylvania Woodlands. Penn. State Univ., Col. of Agric., Coop. Exten. Serv. 6 : 1-6.

Hassinger, J. 1986. Dead wood for wildlife. Pennsylvania Woodlands. Penn. State Univ., Col. of Agric., Coop. Exten. Serv. 7 : 1-6.

9. Planning Review

Consistency with State, Regional and Local Plans

State Plan

The fourteen acre parcel proposed as the Hemlock Ridge subdivision in Coventry is classified as "rural land" in the State Policies Plan for the Conservation and Development of Connecticut, 1987-1992. Land so classified lacks outstanding characteristics which would justify its inclusion in either a development or conservation classification. It's predominant features are forest resources and scenic areas. Low density rural development, such as proposed for Hemlock Ridge, is consistent with this designation.

Regional Plan

The Regional Growth and Preservation Guide Plan classifies this property as suitable for "Low density rural" uses, appropriate for very light density development and the use of open space preservation techniques to protect areas along streams, watersheds and scenic areas. The planned ten lots on fourteen acres is consistent with a low density rural use. The plan would be improved by the provision of some open space.

Local Plan of Development

Coventry's Plan of Development identifies several areas of the town which would benefit from special consideration (protection or development) as the town grows. These are the Wangumbaug Lake Drainage Basin, the Village Area Drainage Basin, River Aquifer Areas, and the Eagleville and Bolton Lakes Drainage Basins.

Hemlock Ridge is not included in any of these areas singled out for special concern. For this land, therefore, the town plan envisions low density rural residential development with on-site sewer and water, and with minimum lot sizes of 40,000 square feet exclusive of major environmental restrictions such as wetlands and steep slopes. Although the minimum lot size (exclusive of wetlands) planned for the subdivision is 40,137 square feet, it is not clear that all ten of the lots would meet the minimum requirement if steep slopes were also excluded. Fewer lots and the inclusion of some open space would seem better suited to this property.

Other Considerations

Because of its relatively small size (ten lots), the subdivision would have an insignificant effect on traffic and on support services needed for the added population.

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.