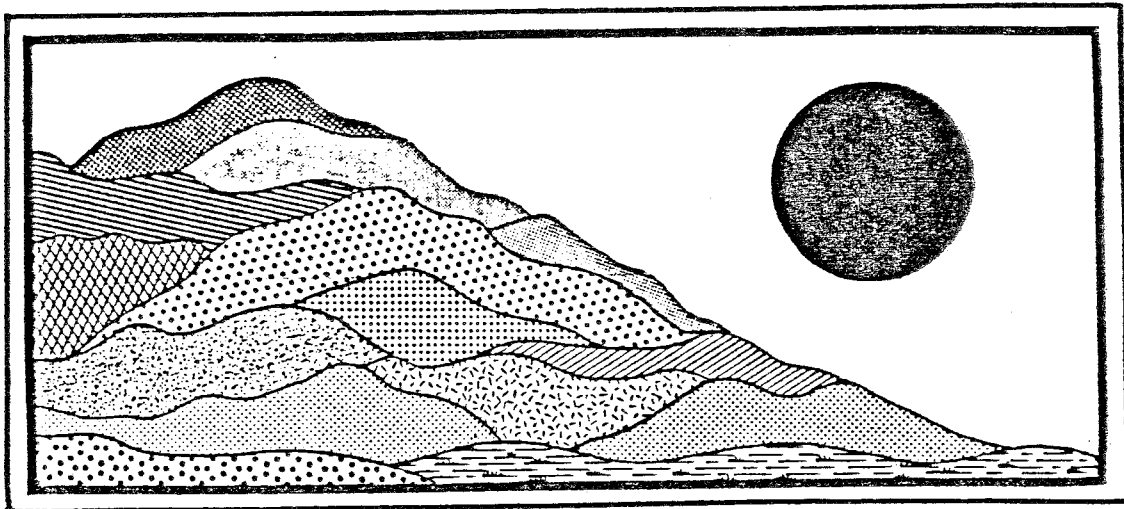


# Kings Hill Estates

East Windsor, Connecticut

August 1987



ENVIRONMENTAL

REVIEW TEAM

REPORT

# Kings Hill Estates

East Windsor, Connecticut

**Review Date:** JULY 14, 1987

**Report Date:** AUGUST 1987



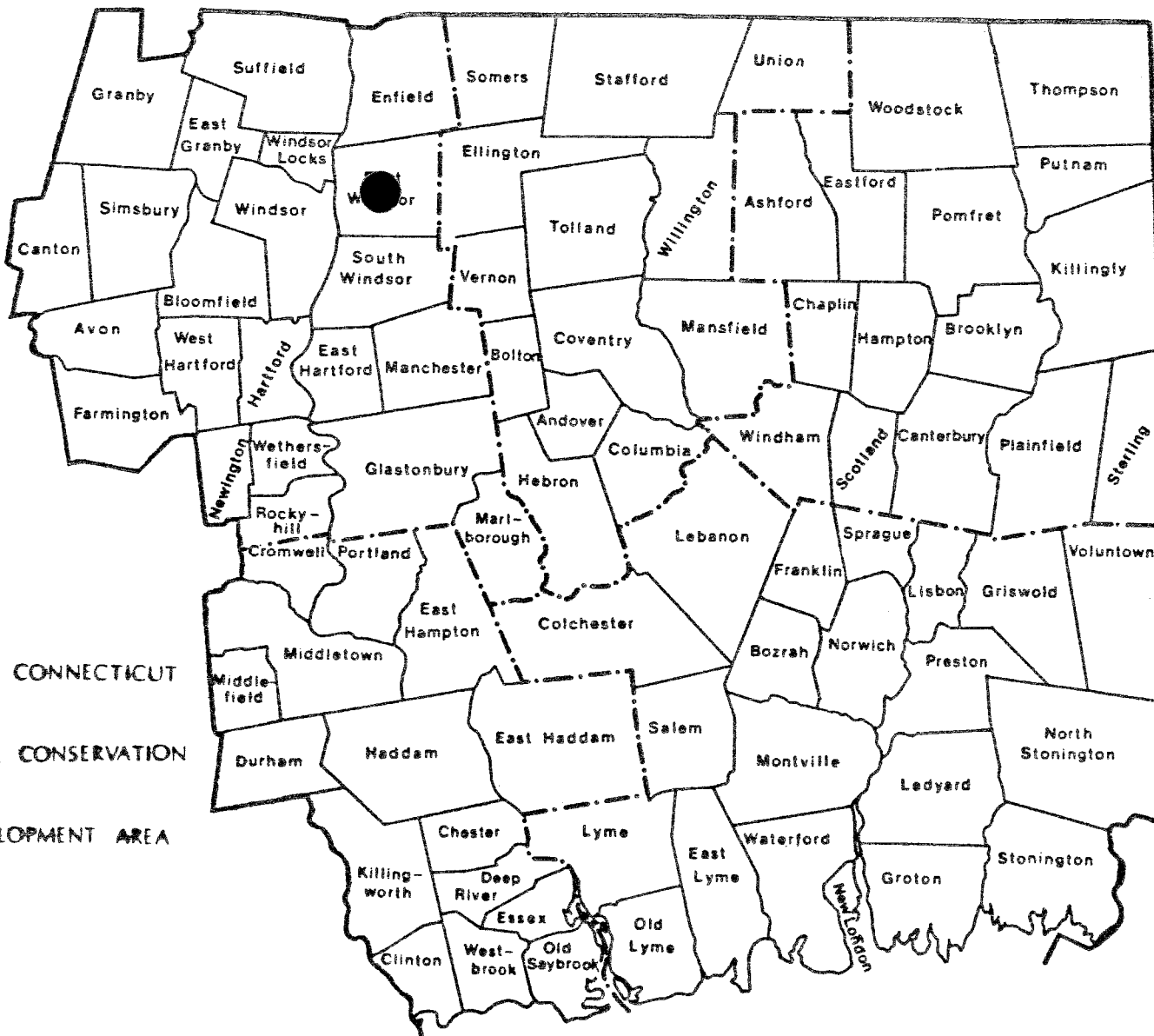
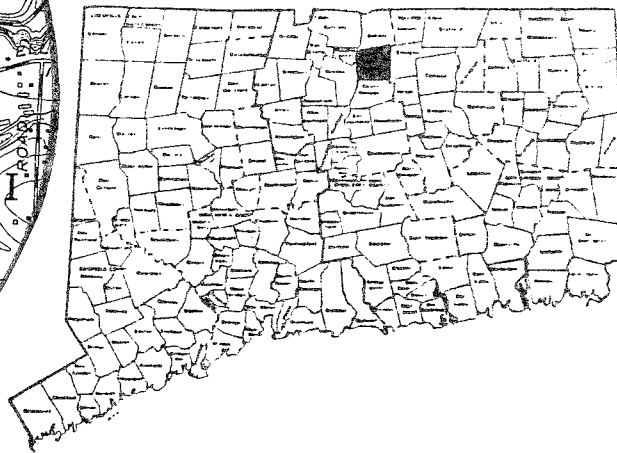
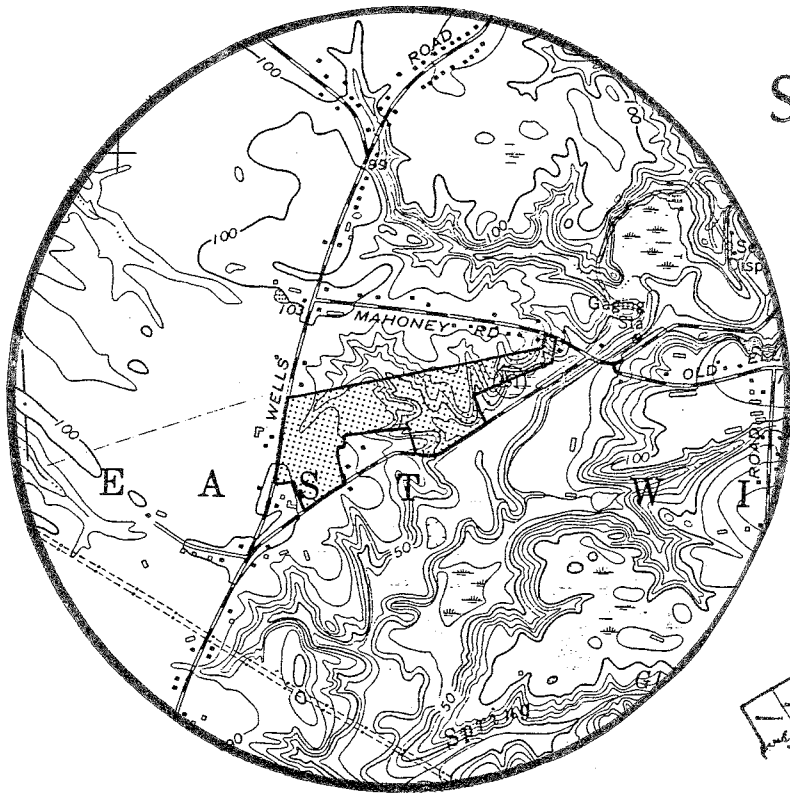
ENVIRONMENTAL REVIEW TEAM

PO BOX 198

BROOKLYN, CONNECTICUT 06234

# Site Location

KINGS HILL ESTATES  
EAST WINDSOR, CONNECTICUT



EASTERN CONNECTICUT

RESOURCE CONSERVATION

& DEVELOPMENT AREA

ENVIRONMENTAL REVIEW TEAM REPORT

ON

KINGS HILL ESTATES

EAST WINDSOR, CONNECTICUT

This report is an outgrowth of a request from the East Windsor Conservation Commission to the Hartford 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. 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, July 14, 1987. Team members participating on this review included:

Denise Conkling	--District Manager Hartford County SWCD
Kip Kolesinkas	--Soil Resource Specialist U.S.D.A. - Soil Conservation Service
Brian Murphy	--Fisheries Biologist DEP - Eastern District
Nancy Murray	--Biologist DEP - Natural Resources Center
Jim Parda	--Forester DEP - Eastern District
Paul Rothbart	--Wildlife Biologist DEP - Eastern District
Eric Scherer	--District Conservationist U.S.D.A. - 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, topographic map and a soils map. During the field review the team members were given subdivision plans. The Team met with, and were accompanied by the Town Planner, the Chairman of the Conservation Commission, the developers, the engineers and a reporter for the Hartford Courant. 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 and conclusions 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 Committee hopes you will find this report of value and assistance in making your decisions on this proposed subdivision.

If you require any additional information, please contact:

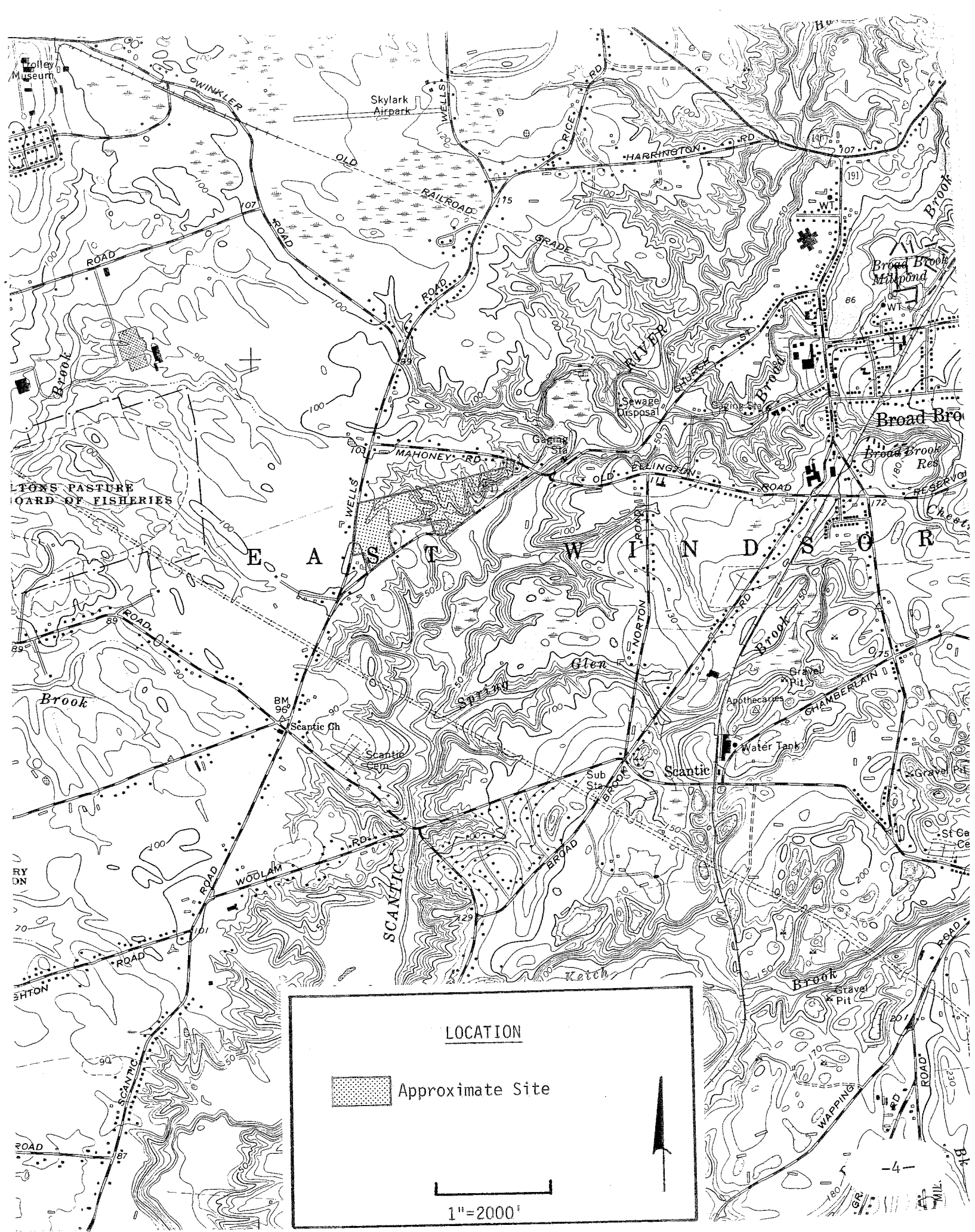
Elaine A. Sych  
ERT Coordinator  
Eastern Connecticut RC&D Area  
P. O. Box 198  
Brooklyn, CT 06234  
(203) 774-1253

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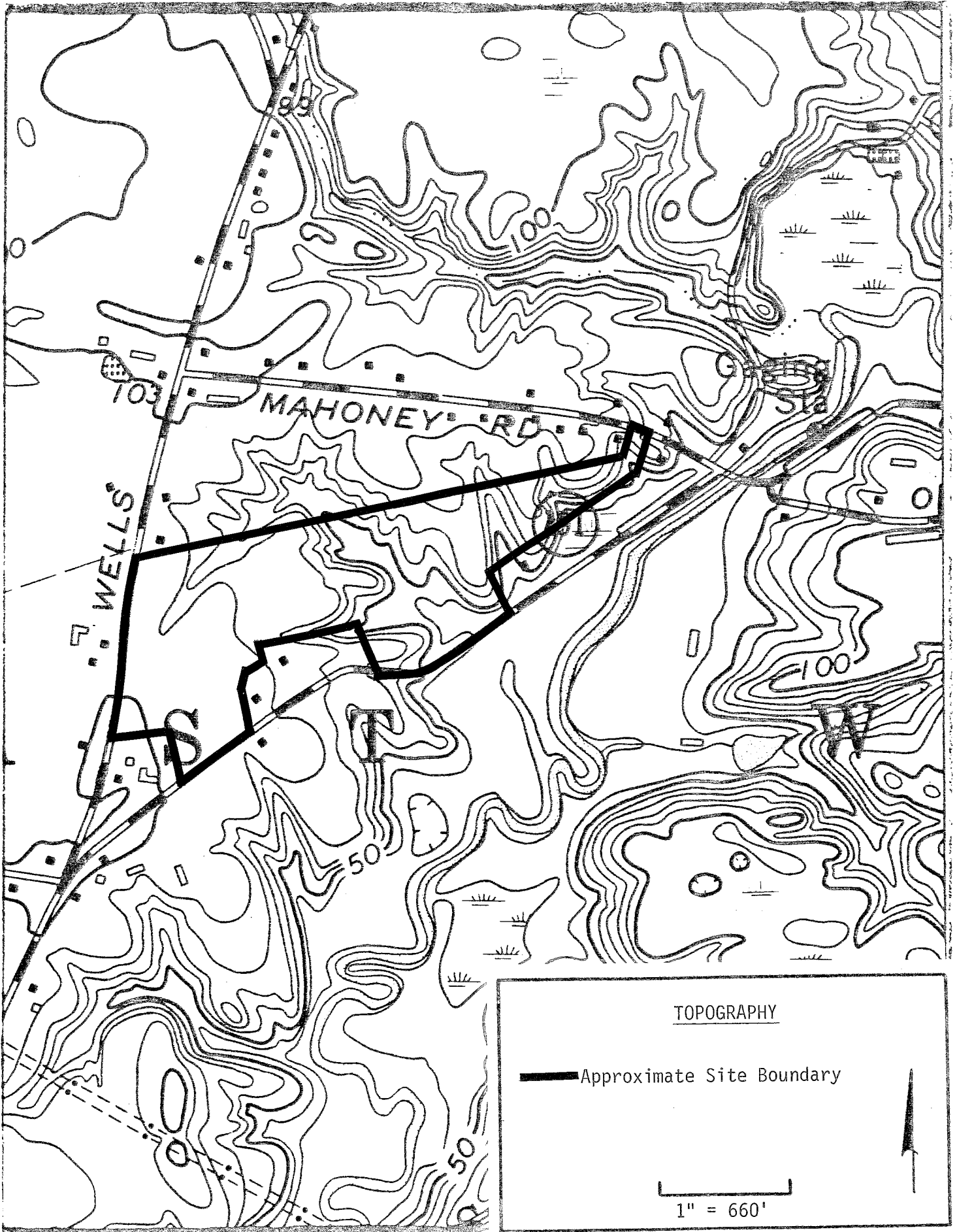
LOCATION



Approximate Site

1" = 2000'







## 1. INTRODUCTION

The Eastern Connecticut Environmental Review Team has been asked to assist the Conservation Commission in reviewing the proposed Kings Hill Estates Subdivision. The following sections of this report address areas that were of concern to the Commission and the Team. This report highlights those areas of concern, makes recommendations as to the best way to mitigate potential problems, and provides natural resource information for planning purposes.

The proposed 20 lot subdivision is about 39 acres in size and is located west of the Broad Brook section of East Windsor. It consists primarily of former farmland. The western half is comprised of farmfields that are open, while the eastern parts are largely wooded. The densest part of the proposed subdivision, which includes lots of about one (1) acre in size, are located on the open farmfields. The larger lots, which range from + 2 acres to + 7 acres are located in the wooded sections.

The parcel has frontage on Scantic Road to the south, Wells Road to the west, and Mahoney Road to the north. Access to interior portions of the site will be via Connie Drive and Marilyn Drive off of Wells Road and Scantic Road, respectively.

The site is controlled by the unconsolidated materials overlying the bedrock surface. Except for moderately steep slopes, which parallel drainage-ways that have incised the landscape within the site, the proposed subdivision is characterized by gentle slopes.

## 2. GEOLOGY

A combined surficial and bedrock geologic map (GQ-434) for the Broad Brook quadrangle, which encompasses the site, has been prepared by Roger Colton (1965) and published by the U. S. Geological Survey.

According to Colton's map, the bedrock surface lies deeply below the site. It ranges from about 50 to 100 feet below the ground in the eastern part, 100 to 150 feet below the central part, and 150 to 200 feet below the western part. He identifies the bedrock as Portland Arkose. It consists mostly of a reddish-brown arkose and gray siltstone. The terms "arkose" and "arkosic" are used to describe the rock's mineral composition; generally feldspar and quartz. The Portland Arkose formation consists of sediments that were deposited mostly by streams, but occasionally in lakes, during the early to middle Jurassic geologic period about 170-180 million years ago. They were subsequently cemented into consolidated rock, i.e. sandstone.

Because the proposed subdivision will be served by public water and sewer lines, and because the bedrock's surface beneath the site ranges between 50 feet and 200 feet, the underlying bedrock should pose no problems with respect to development. It should be noted that many homes in the area rely on the underlying bedrock as a source of water to domestic wells.

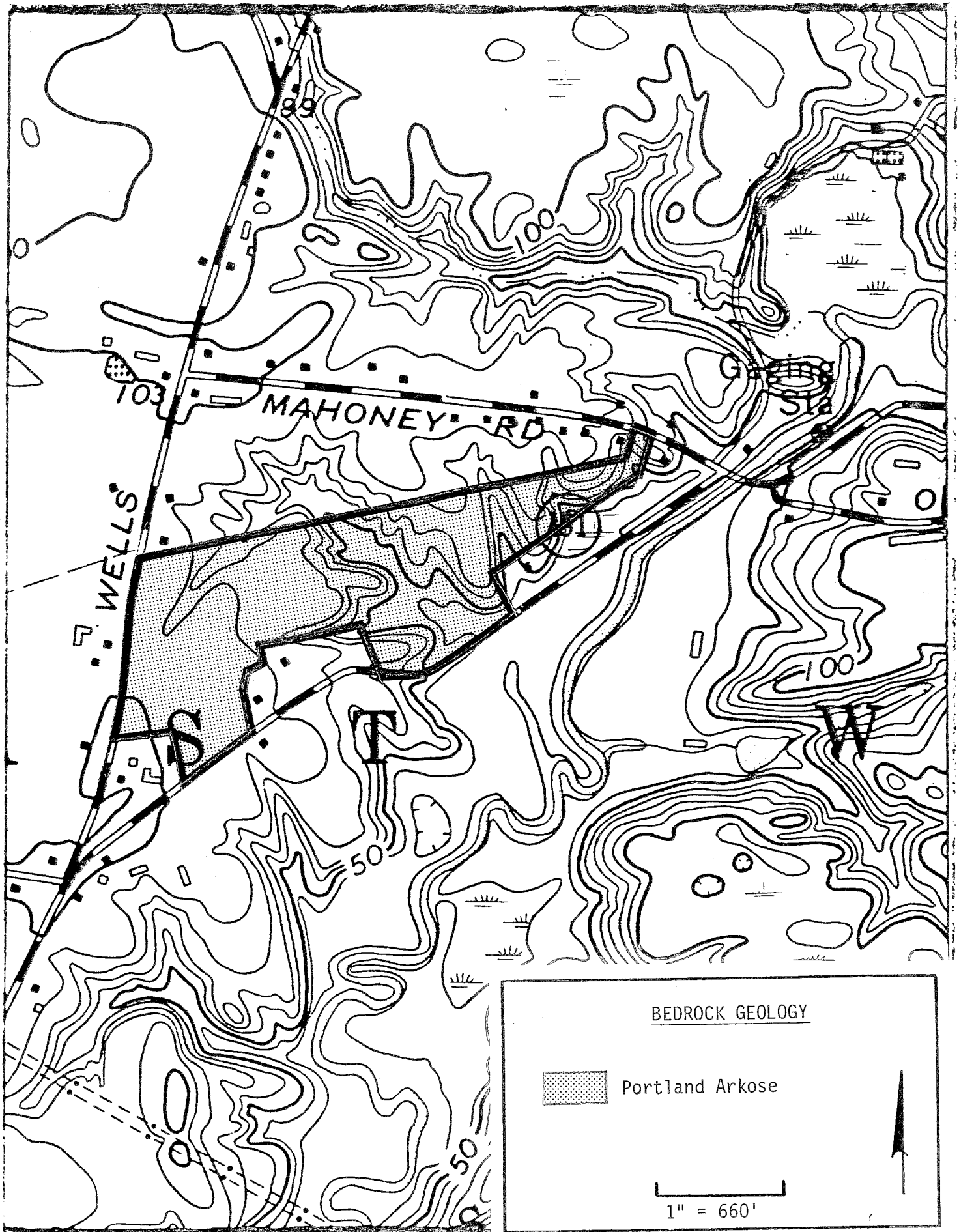
The unconsolidated materials overlying the bedrock on the site are of more recent origin. The majority of these materials were deposited by glacier ice or meltwater streams. The following paragraphs briefly describe the unconsolidated materials covering the site which includes till, stratified drift, terrace deposits, lake deposits and sand dunes. (see Figure 1)

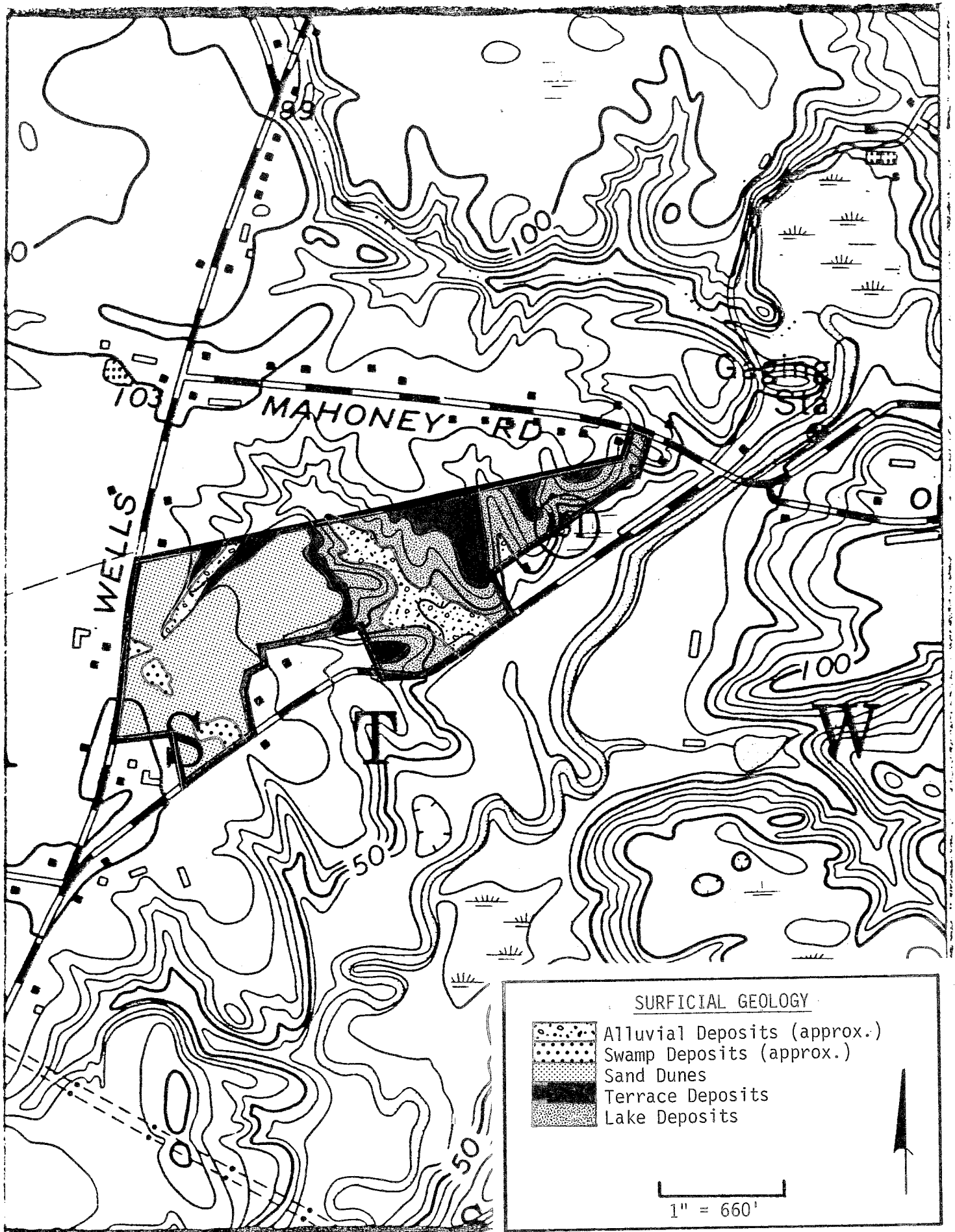
Geologists believe that glaciers advanced southward over Connecticut several times during the last million years or more. Most of the glacial sediments in Connecticut appear to date from the most recent of these advances, which climaxed about 18,000 years ago. Glacial till is the oldest sediment. It was deposited directly from the surface of, within, and beneath the ice, while the ice was continuing to advance southward. As a result, the various grain sizes range from clay to boulders and are mixed together in a complex, irregular fashion. A relatively thin layer of till lies directly over the bedrock surface on the site. It is not exposed on the surface within the parcel.

Approximately 13,000 -- 14,000 years ago, the ice from the most recent glacial advance had melted back to northern Connecticut. Thinning at the margins resulted in the detachment of large blocks of ice while continuing flow in the thicker ice to the north produced more and more rock debris. The debris was carried forward by meltwater streams, which sorted it by grain size and deposited it on and adjacent to the "dead ice" blocks. This deposition produced abundant quantities of sediment known as "ice-contact stratified drift". The major component of stratified drift are sand and gravel. These deposits overlie the till mentioned above.

At some time during the period of glacial retreat, ice and sediment formed a blockage or dam in the Connecticut Valley in the vicinity of Rocky Hill. Water backed up from the blockage, resulting in a lake of large proportions. The glacial lake has been given the name glacial Lake Hitchcock. The site is covered by materials deposited in the glacier lake. They include terrace deposits, lake deposits, and sand dunes.

Fine materials (clay, silt, and fine sand) were deposited on the lake bottom, often in a varved (alternating) sequence. These lake deposits have been exposed by the moderate slopes that parallel the incised drainageways on the site. They overlie the stratified drift mentioned in the preceding paragraph.





As meltwater streams entered the lake they deposited sediment rapidly, building a series of coalescing delta's (terraces) along the lake shore. These sediments, called terrace deposits, formed when pre-existing glacial streams emptied into the glacial lake. The sudden changes in stream velocity caused the streams loads of suspended materials to drop out at the margin of the lake. Terrace deposits which generally parallel the lake deposits on the site consist of yellowish brown sand, silt and clay. They overlie the lake deposits mentioned above.

The final glacial lake deposit found in the site, which covers the southwest portions and a small northeast portion, are sand dunes. They consist of sand and silt that were deposited by wind action following the draining of glacial Lake Hitchcock.

A critical concern for the installation of sewers, waterlines and electric lines is the possibility of "cutback cave-ins" in the sandy soils mentioned above. The trenches in sandy soils should have the pipes and conduits placed and backfilled as soon as possible after excavation. Proper shoorings of sides should be installed in trenches over 5 feet deep.

Also, because of the presence of erodible soils and potentially unstable clay soils near the gullies on the site, every effort should be made to keep houses set back safely from these eroded areas.

Post glacial sediments found on the site include alluvial deposits and swamp deposits. Alluvial deposits consist of recent stream deposits of light, grayish brown silt, and sand and gravel along small streams. Swamp deposits consist of sand, silt, clay and organic remains that were deposited post-glacially in stagnant or slow-moving, well vegetated bodies of water.

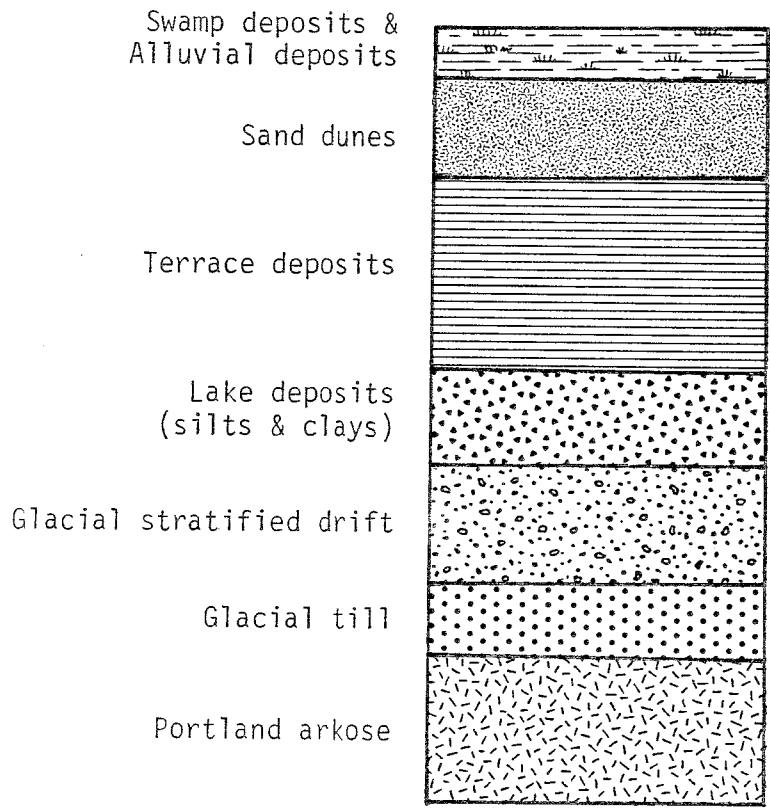
The soils comprising the swamp and alluvial deposits are regulated under Connecticut's Inland Wetland and Watercourses Act (Connecticut General Statutes Sections 22a-36 through 22a-45, inclusive). Because the areas comprised of swamp and alluvial deposits are prone to flooding and because water is present on the surface of the ground most of the year, these areas hold low potential for development purposes.

Any activity which involves modification, filling, removal of wetland or alluvial 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 the Commission determines 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.

Wetland and alluvial soils on the site have been flagged by a certified soils scientist and their boundaries superimposed on the subdivision plan. (Also see Hydrology section)

A cross section of the surficial (unconsolidated) geologic deposits covering the site is shown below. As can be seen by the surficial geologic maps, erosion or down-cutting by watercourses on the site have exposed all of the deposits listed below, except the last three.

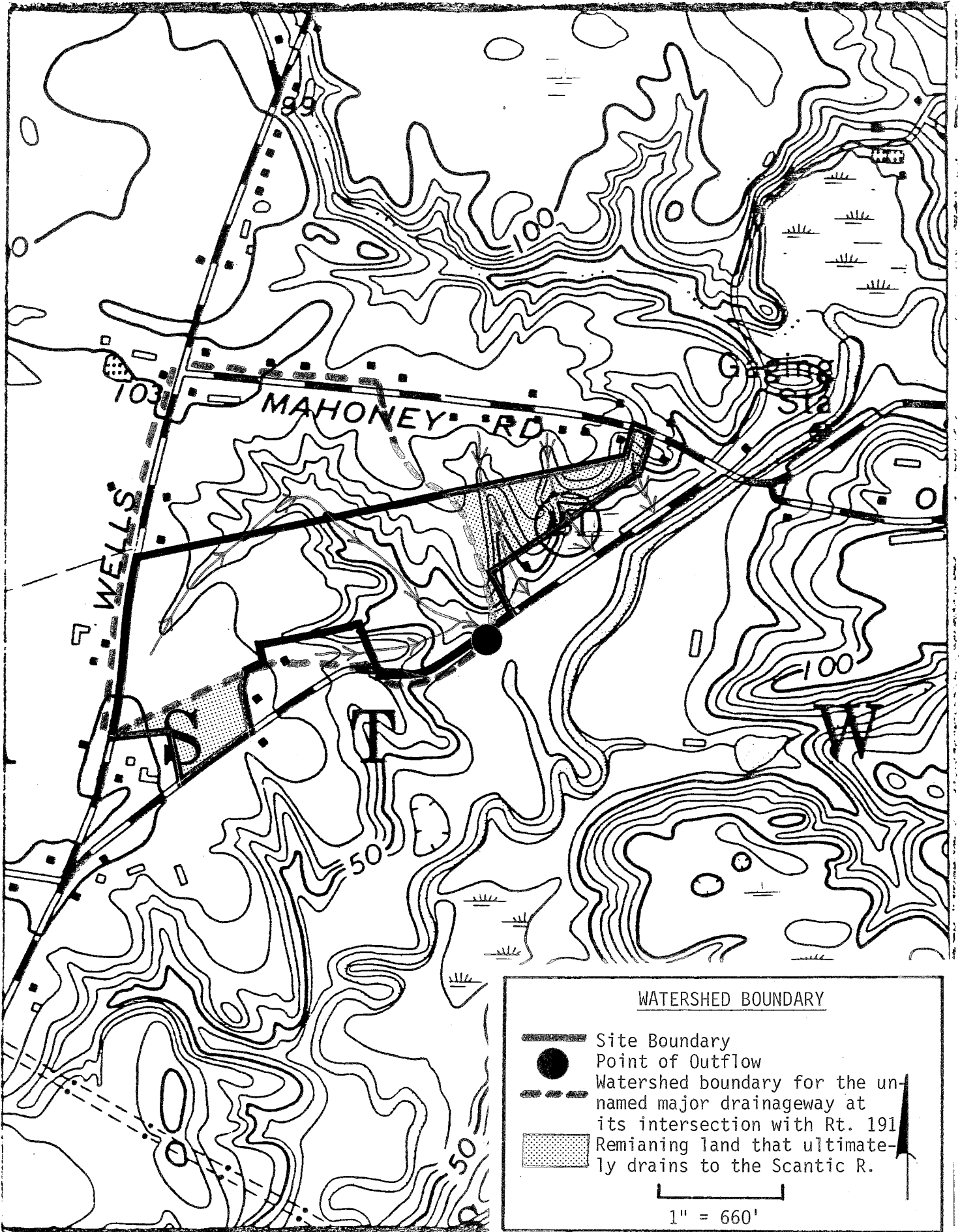
FIGURE 1  
CROSS SECTION OF SURFICIAL GEOLOGIC DEPOSITS



Not To Scale

3. HYDROLOGY

The entire site lies within the Scantic River watershed. Surface water on the site drains mainly towards the incised drainageway in the central parts of the site. Water in the drainageway is routed under Route 191



to the Scantic River. A small pond has been impounded on the drainageway in the northeast section.

Evidence of old drainage tile which was used to improve the drainage conditions in the fields was visible in the southeast corner. These pipes should not interfere with development of the site. It would probably have been a concern if on-site sewage disposal systems were required for each lot. Every effort should be made to keep homes out of topographical swales that may contain seasonal water and/or water from tile drainage.

Drainage calculations had not been prepared by the review date. According to the project engineer, preliminary stormwater data for the subdivision revealed little or no change in the amount of runoff shed from the site following development of 20 house lots and access roads. This was attributed mainly to the conversion of former farm fields in the southeastern part to house lots with lawns. Active farm fields, such as cornfields tend to have a higher rate of runoff than house lots with established lawns, particularly where best conservation measures are not employed. As a result, increases in runoff from a flooding standpoint does not appear to be a concern. It seems likely that the small pond in the northeastern part as well as wetland areas on the site will have some ability to detain runoff from the site following storm events. As a matter of policy however, the Town should require the applicant to provide drainage calculations for review by the Town Engineer.

Another concern with regard to increased runoff, is the potential for erosion and siltation problems. This appears to be more of a concern because of the erodible soils present on the site. During active construction periods, soil excavations for roads, house foundations, etc., will unavoidably disturb and mobilize the finer soil particles. If the development of the subdivision is well managed, any disturbed water or soil on the site will be filtered and/or contained so as to avoid environmental damage and complaints from abutting landowners. The small pond mentioned above may also have the ability to provide a sediment retention function. If so, plans to maintain the pond will be required.

The project calls for three (3) wetland road crossings of + 105 feet, + 200 feet, and + 50 feet. Wetland road crossings are feasible, provided they are properly engineered. Provisions should be made for removing unstable material beneath the roadbed, backfilling with a permeable road base fill material, and installing culverts as necessary. When crossing any wetland, the roads should be at least 1.5 feet and preferably 2 feet above the surface elevation of wetlands. This will allow for better drainage of the roads. It will also decrease the frost heaving and should be done during the dry time of the year. Provisions should include an effective erosion and sediment control plan.





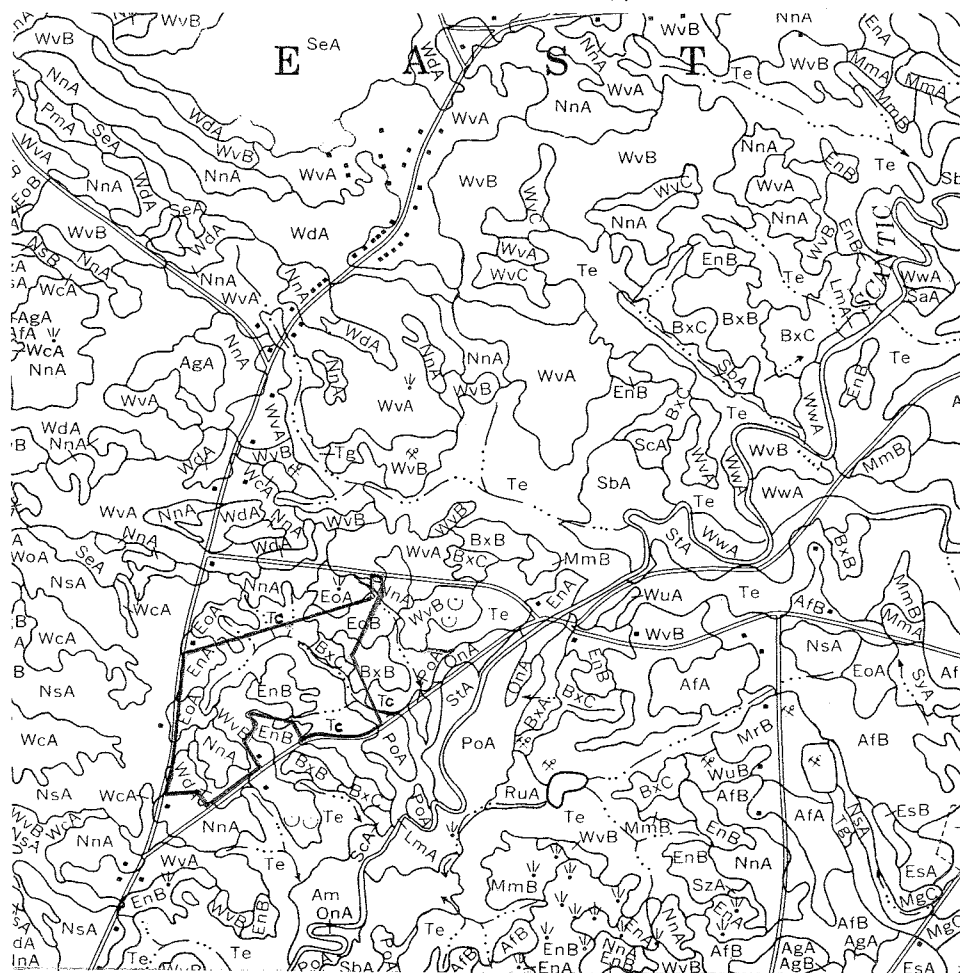
United States  
Department of  
Agriculture

Soil  
Conservation  
Service

Hartford County USDA-SCS  
Midway Office Park  
1101 Kennedy Road, Rm. 105B  
Windsor, CT 06095  
688-7725

Scale 1"=1667'

— Approximate Site Boundary



MAJOR LIMITATIONS TO THE DEVELOPMENT OF:

MAP UNIT	GENERAL SOIL PROPERTIES	DRAINAGE CLASS AND DEPTH TO SEASONAL HIGH WATER TABLE	HOMES WITH BASEMENTS	ROADS AND STREETS
BxB-Buxton silt loam 3-8% slopes	Silty and Clayey lacustrine materials	Moderately well drained 1-2.5 ft.	Seasonal wetness	Low strength Subject to frost action
BxC-Buxton silt loam 8-15% slopes	Silty and Clayey lacustrine materials	Moderately well drained 1-2.5 ft.	Seasonal wetness Slope	Low strength Subject to frost action
EoA-Elmwood very fine sandy loam, 0-3% slopes	Loamy over silty and clayey lacustrine materials	Moderately well drained 1.5-3.0 ft.	Seasonal wetness	Low strength Subject to frost action
EoB-Elmwood very fine sandy loam, 3-8% slopes	Loamy over silty and clayey lacustrine materials	Moderately well drained 1.5-3.0 ft.	Seasonal wetness	Low strength Subject to frost action
EnA-Elmwood sandy loam, 0-3% slopes	Loamy over silty and clayey lacustrine materials	Moderately well drained 1.5-3.0 ft.	Seasonal wetness	Low strength Subject to frost action
EnB-Elmwood sandy loam, 3-8% slopes	Loamy over silty and clayey lacustrine materials	Moderately well drained 1.5-3.0 ft.	Seasonal wetness	Low strength Subject to frost action
NnA-Ninigret fine sandy loam, 0-3% slopes	Loamy over sandy glacial outwash materials	Moderately well drained 1.5-3.0 ft.	Seasonal wetness	Subject to frost action
PoA-Podunk sandy loam, 0-3% slopes	Loamy recent alluvium	Moderately well drained 1.5-2.5 ft.	Flooding Seasonal wetness	Flooding Subject to frost action
WdA-Walpole sandy loam, 0-3% slopes	Sandy glacial outwash materials	Poorly drained 0-1.0 ft.	Wetness	Subject to frost action Wetness
WvB-Windsor loamy fine sand, 3-8% slopes	Sandy glacial outwash materials	Excessively drained >4 ft.	Cutbanks subject to cave-ins	-
Tc-Terrace escarpments, clay 15-45% slopes	Silty and clayey lacustrine materials	Moderately well drained 1.-3.0 ft.	Slope Subject to slippage	Low strength Slope Subject to frost action

#### 4. SOIL RESOURCES

The landscapes of the "Kings Hill Estates" property are dominated by very deep, gently sloping to very steep soils formed in highly dissected lacustrine deposits of silts and clays. The plateaus of gently sloping fields have a 6 inch to 10 foot cap of loamy to sandy wind blown or water deposited materials over the lacustrine deposits and range from well drained to very poorly drained. The steep to very steep dissected drainageways are moderately well drained, with a number of intermittent watercourses and poorly to very poorly drained wetland soils in the center.

The soil map included in this report is slightly modified from the Soil Survey of Hartford County (1962) to represent current changes in the way the Soil Conservation Service classifies and interprets soils. This map can be used for a general discussion of soil limitations on the parcel. All discussions about inland wetland locations and boundaries should use the latest (revised 7-20-87) wetland boundary maps provided by the developer. They show much more mapping detail than could possibly be shown at the scale mapped in the original soil survey. Below is some additional information about the map units on the parcel.

(1) Tc Units - These map units are dominated by stable to actively eroding moderately well drained soils formed in deposits of silts and clays. Included in mapping are small areas with a sandy to loamy cap, soils on 8 to 15 percent slopes, and narrow areas of wetland soils. Cuts and fills on these soils can result in severe erosion problems and unstable slopes due to low strength and slippage. The applicant is to be commended for modifying the development plans to minimize impact on these difficult soils.

(2) Additional areas of wetland soils and watercourses were identified in the field on July 14, 1987 and have since been shown on the plans dated 7/7/87 and 7/20/87 revised wetland boundaries.

(3) Because of the large number of map units involved, a chart of important soil features and interpretations has been prepared.

## 5. SOIL EROSION AND SEDIMENTATION CONTROL

The overall Soil Erosion and Sediment Control Plan that has been developed for this site shows that sound planning consideration has been used in reducing negative impacts to on and off site areas as a result of construction. The planner is commended for his efforts. The following suggestions are offered for review and should be included in plans.

--Construction entrance pads should be located on site plans. Pads should be at any location where construction traffic will exit/enter public rights-of-way.

--The second drainage way crossing on Lot 20 will need to be shown on plans. The associated control measures for this crossing will also need to be shown. Extend rock riprap lining of the channels downstream of both culverts.

--Move the sediment barriers on Lot 19 to the eastern side of proposed sanitary sewer right-of-way and continue it along the right-of-way through Lot 19 to SMH #2.

--Place sediment barriers on both sides of proposed wetland crossing on Lot 20 for waterline crossing.

--Show driveway crossing of wetlands and associated fill for Lot 19. Also, show erosion control measures for crossing.

--Install a sediment barrier across rear of Lot 14 to protect wetlands.

--Develop plunge pool design for stormwater pipe outlets and show on plans.

## 6. SENSITIVE AREAS

Although the Hartford County Soil and Water Conservation District would like to see farmland and open space preserved, it is realized that this is not always possible. The next best thing is to have developers present a plan that is sensitive to environmental concerns. The Kings Hill Estates' plans show a willingness on the part of the developer to modify such plans in this manner. The plans, as presented, keep construction out of the wetlands and off the steep slopes wherever possible. This is especially important considering the high erodibility of the Tc soils.

In order to insure that these sensitive areas remain undeveloped, it is recommended that conservation easements be placed on them. It is often the case that, once in the hands of private homeowners, the land will be modified unless protected. Specifically, the conservation easement should prohibit construction, excavation and fill activities in the area. It is important that the restrictions of the easement be spelled out precisely so that homeowners will know what is and is not allowed.

## 7. VEGETATION

The tract proposed for subdivision has three (3) different vegetative types. The tract is predominantly grasses and early succession shrub growth (75% of area). Other vegetative types include mixed hardwood forest (15% of area) and open marsh (10% of area).

### A. Vegetative Type Descriptions

Type A: Mixed hardwoods, 6 acres, in 3 stands on the east half of the tract. These stands are composed of red maple, red and scarlet oak, elm, white oak and white pine. The understory is hophorn beam, blackberry and hardwood regenerations.

Type B: Open marsh, 4 acres, as a result of field drainage. Vegetation is varied and includes red maple, elm, golden rod, cattails, elderberry, witch hazel, dogwood, speckled alder, jewelweed, grasses and numerous wildflowers.

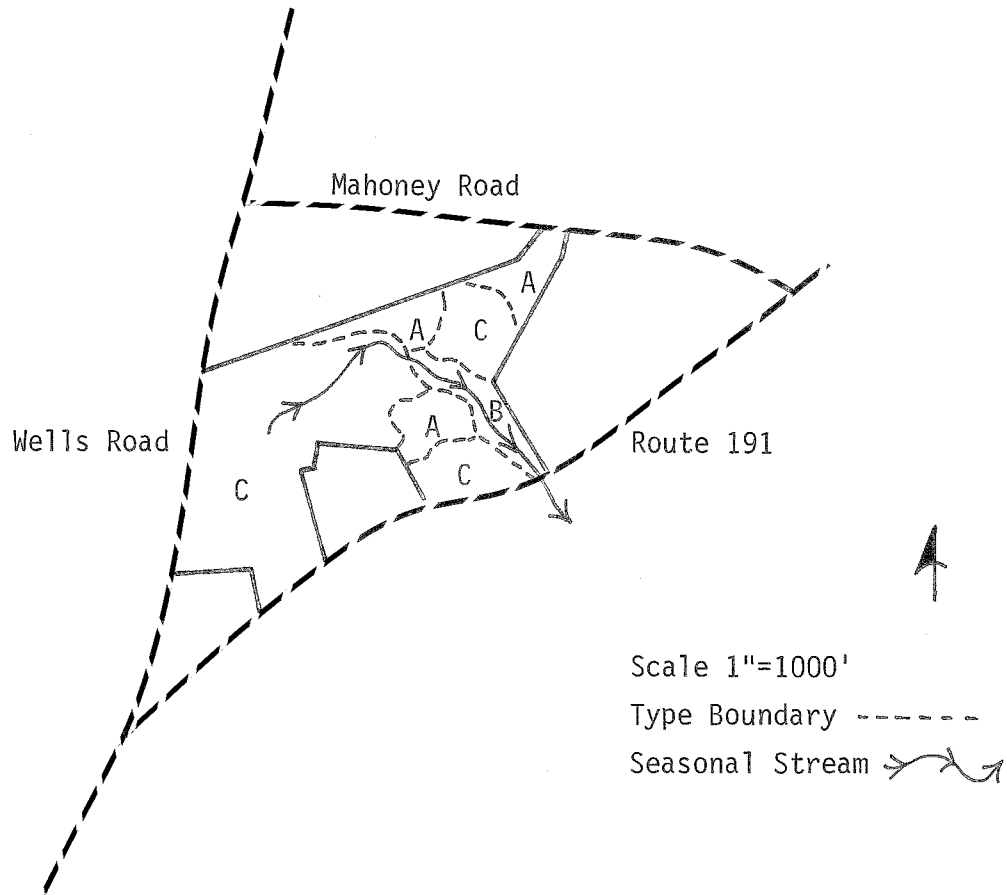
Type C: Openfield, 29 acres, composed of grass, including rye, timothy and hay, clover, golden rod, milkweed and early succession shrubs such as multiflora rose, dogwood, apple, autumn olive and black cherry. Scattered through this type, especially on the eastern end, are several large, healthy, full crowned trees which includes cottonwood, red cedar, scarlet oak, white pine, red maple, pitch pine, shagbark hickory and hemlock.

### B. Aesthetic Considerations

The large healthy trees in Type C have high shade and aesthetic value. These high value trees should be selected for retention and worked into a final site plan for the proposed development. Individual trees with large crowns and shade value can enhance the value of a house lot. Also, the three stands of mixed hardwoods which compose Type A serve as green islands that improve aesthetics, provide wildlife shelter and minimize erosion on the hill sides.

It should be noted that trees are very sensitive to the conditions of the soil within the entire area under their crowns. Development practices near trees such as excavation, filling and grading for construction of roads

VEGETATION



Type A: 6 acres - Mixed Hardwood

Type B: 4 acres - Open Marsh

Type C: 29 acres - Open Field

and buildings can disturb the delicate balance between soil aeration, soil moisture level and soil composition. These disturbances may cause a decline in tree health and vigor resulting in tree mortality in three to five years. Mechanical injury to trees from construction equipment may cause the same results. During construction take care not to disturb the trees that are to be retained. Be especially careful near hemlock and pine because of their shallow root systems.

#### 8. NATURAL DIVERSITY DATA BASE

The Natural Diversity Data Base maps and files regarding the proposed subdivision has been reviewed. According to the information, there are no known extant populations of Federally Endangered and Threatened species or Connecticut "Species of Special Concern" occurring at or near the site in question.

Natural Diversity Data Base information includes all information regarding critical biologic resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultation with the Data Base should not be substituted for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

If the Natural Diversity Data Base may be of further assistance, do not hesitate to call 566-3540.

#### 9. WILDLIFE HABITAT

The study site is comprised of three distinct wildlife habitat types. These are open field, mixed hardwoods, and wetland/riparian zones.

##### Open Field

This habitat type dominates the site and consists of early successional vegetation. Herbaceous species include rye, timothy, clover, goldenrod, ragweed, mildweed, Queen-Anne's lace, pigweed, mints, nighshade, thistle, asters and ironweed. Shrub and trees are scattered through portions of this habitat and species include multiflora rose, cherry, dogwood, apple, autumn olive, raspberry, blackberry, cedar, white pine, red maple, and hickory.

Such open land habitat is very beneficial to wildlife. Vegetation provides the obvious food items as well as structural diversity which creates cover for a great array of wildlife ranging from mice and shrews to deer. The fields also attract numerous insects which are a major food item of various wildlife species including birds, small mammals and bats. Another value of these fields is the edge which is created where fields meet forest. This valuable zone for food and cover consists of dense berries, shrubs and grasses.

Wildlife utilizing open field habitat include deer, woodcock, woodchuck, fox, raccoon, morning doves, eastern kingbird, mockingbird, flycatchers, warblers, robin, hawks, owls and rabbits.

#### Mixed Hardwoods

This habitat type consists of a variety of hardwood species including red maple, red oak, elm, hickory, white oak and scattered white pine and cedar. Understory vegetation includes witchhazel, elderberry, multiflora rose, grape, blackberry and hardwood regeneration.

Wildlife frequenting such habitat types include deer, fox, raccoon, gray squirrel, woodpeckers, owls, hawks and various non-game species.

#### Wetland/Riparian Zone

This habitat type consists of one small open marsh and several riparian strips. The marsh is the result of a water control structure which is presently in disrepair, thus only a small amount of water is being retained. Associated vegetation includes red maple, alder, cattails, dogwood, jewelweed, skunk cabbage, duckweed and various grasses and sedges.

The riparian strips are typically comprised of cattails, dogwood, cherry, sensitive fern, alder, raspberry, milkweeds, jewelweed and various grasses and sedges.

Wildlife utilizing such sites include deer, fox, raccoon, skunk, muskrat, mink, red-winged blackbirds, grackles, kingbirds, cedar waxwings, warblers, woodpeckers, and numerous amphibians and reptiles.

#### Discussion

In a small, but heavily developed and highly populated state like Connecticut, where available habitat continues to decline on a daily basis, it is critical to maintain and enhance existing wildlife habitat.

As the demand for land increases and land is developed, there will be an immediate and lasting negative impact on wildlife. The primary impact is the direct loss of habitat due to buildings, roads, driveways, parking areas, walkways, and recreational facilities. Another impact is the loss



of habitat where cover is cleared for lawns and landscaping. A third impact is the increased human presence, vehicular traffic, and a number of free roaming cats and dogs. This will drive the less tolerant species from the site, even in areas where there has been no physical change.

The state owned Flaherty Field Trial Area consisting of 361 acres is immediately west of the proposed development site. The proposal will not have an immediate direct impact on the use of this land, however, it is a heavily used multiple-use recreation site used principally for dog trials and hunting. These activities have been occurring for over 40 years and will continue to occur.

There are several management guidelines which should be considered during the planning process in order to minimize adverse impacts on wildlife:

1. Utilize natural landscaping techniques (avoid and/or minimize lawns and chemical applications) to lessen acreage of lost habitat and possible wetland contamination.
2. Maintain a 100 foot wide buffer zone of natural vegetation around wetland/riparian areas to help filter and trap silt and sediments. These vegetated zones particularly around the open marsh and eastern portion of property provide excellent wildlife cover and travel corridors.
3. Stone walls, shrubs and trees should be maintained along field borders.
4. During land clearing care should be taken to maintain certain forestland wildlife requirements:
  - a. Encourage mast producing trees (oak, hickory, beech).
  - b. Leave 3-5 snag/den trees per acre as they are used by many birds and mammals for nesting, roosting and feeding.
  - c. Exceptionally tall trees are used by raptors as perching and nesting sites, and should be encouraged.
  - d. Trees with vines (fruit producers) should be encouraged.
  - e. Brush debris could be windrowed to provide cover for small mammals, birds and amphibians and reptiles.
5. Implementation of backyard wildlife habitat management practices should be encouraged. Such activities involve providing food, water, cover and nesting areas.

# BIRDHOUSE POINTERS

Wood is the most suitable, all-around building material. Do not use tin cans because summer sun may kill the occupants.

Natural finishes or dull colors are better for exteriors than bright colors, except for martin houses, which should be painted white to reflect the sun.

Do not make the entrance hole too large.

Clean old nest materials out of birdhouses well ahead of the time for migrants to return in spring.

A few small holes in the nest box floor will permit drainage if rain blows in.

Ventilation gives greater comfort, and this can be accomplished with a few small holes or slits through the walls beneath the roof overhang.

Build houses so they can be easily opened for cleaning.

Remember that climbing predators, especially cats, are a threat to nesting birds. Protect the birds with metal posts or metal guards on posts.

Most birds do not need perches on the front of the box, and perches can aid predators in raiding the bird home.

Inner surfaces of the house should be rough so young birds can better cling to the sides when the time comes to leave home.

Face the entrance away from prevailing winds.

A deep woods is a poor location for most birdhouses, but the edge of the woods may be excellent.

## DIMENSIONS FOR BIRD BOXES

Species	Length and width Inches	Depth of cavity Inches	From entrance to floor Inches	Diameter of entrance Inches	Height above ground Feet
Bluebird	5 × 5	8	6	1½	5-10
Chickadee	4 × 4	8-10	6-8	1½	6-15
Titmouse	4 × 4	8-10	6-8	1½	6-15
Nuthatch	4 × 4	8-10	6-8	1½	12-20
House wren	4 × 4	6-8	1-6	1-1½	6-10
Bewick's wren	4 × 4	6-8	1-6	1-1½	6-10
Carolina wren	4 × 4	6-8	1-6	1½	6-10
Violet-green swallow	5 × 5	6	1-5	1½	10-15
Tree swallow	5 × 5	6	1-5	1½	10-15
Purple martin	6 × 6	6	1	2½	15-20
Prothonotary warbler	6 × 6	6	4	1½	2-4
Crested flycatcher	6 × 6	8-10	6-8	2	8-20
Flicker	7 × 7	16-18	14-16	2½	6-20
Golden-fronted woodpecker	6 × 6	12-15	9-12	2	12-20
Red-headed woodpecker	6 × 6	12-15	9-12	2	12-20
Downy woodpecker	4 × 4	9-12	6-8	1½	6-20
Hairy woodpecker	6 × 6	12-15	9-12	1½	12-20
Screech owl	8 × 8	12-15	9-12	3	10-30
Saw-whet owl	6 × 6	10-12	8-10	2½	12-20
Barn owl	10 × 18	15-18	4	6	12-18
Sparrow hawk	8 × 8	12-15	9-12	3	10-30
Wood duck	10 × 18	10-24	12-16	4	10-20

## DIMENSIONS FOR OPEN PLATFORMS

Species	Dimensions	Height above ground
Robin	6" × 8"	6-15 feet
Barn swallow	6" × 6"	8-12 feet
Phoebe	6" × 6"	8-12 feet

### Suitable Planting Materials for Food and Cover

<u>Herbaceous Vines</u>	<u>Shrubs</u>	<u>Small Trees</u>
panicgrass	sumac	dogwood
timothy	dogwood	crabapple
trumpet creeper	elderberry	hawthorn
grape	winterberry	cherry
birdsfoot trefoil	autumn olive	serviceberry
virginia creeper	blackberry	cedar
switchgrass	rasberry	
honeysuckle	cranberrybush	

Nesting sites can be provided for a great variety of birds with placement of artificial nest boxes (see Birdhouse Pointers).

6. Open water marsh should have control structure repaired and edges opened. Two wood duck boxes should be installed once repairs are made.

## 10. FISH RESOURCES

### A. Site Description

The Scantic River is the primary aquatic resource near the proposed subdivision. The subdivision will be located between the state owned Flaherty Field Trial area and the Scantic River. The subdivision property is at least 825 feet from the Scantic River at its closest location. The river is currently classified by the Department of Environmental Protection as a "Class B" surface water (swimmable-fishable water).

The Scantic River is slow moving in this stretch as it meanders southward through its flood plain. This stretch is characterized by numerous large pools and a limited amount of well-defined riffles. Stream bottom is comprised of mud, silt, sand and small rocks. Average stream width and depth are 25 feet and 2 feet respectively.

A small intermittent watercourse approximately 360 feet in length flows through lot number 18 of the proposed subdivision. It contained no flowing water at the time of the environmental review.

### B. Fish Population

The Scantic River is a major Connecticut trout stream. More than 1,800 adult brook, brown, and rainbow trout are stocked annually by the Department of Environmental Protection in the East Windsor area. In addition to trout,

the river supports a healthy and diverse fish population comprised of chain pickerel, white suckers, brown bullheads, and several species of shiners. The intermittent brook in lot #18 does not support a fish population

C. Impact and Recommendations

An adequate buffer zone (greater than 800 feet) exists between the proposed subdivision and the Scantic River. Thus, the construction and development of this property will have no significant impact upon the fish and aquatic resources of the Scantic River.

The developer plans to install a culvert in conjunction with a permanent road crossing over the intermittent brook. The impact of development on this brook can be minimized by the installation and maintenance of proper erosion and sediment control structures such as silt fences and hay bales. These structures will ensure that the brook does not receive excessive amounts of silt during construction.

# 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--an 86 town 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, a statement identifying the specific areas of concern the Team should address, and the time available for completion of the ERT study. 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 Elaine A. Sych (774-1253), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, P.O. Box 198, Brooklyn, Connecticut 06234.