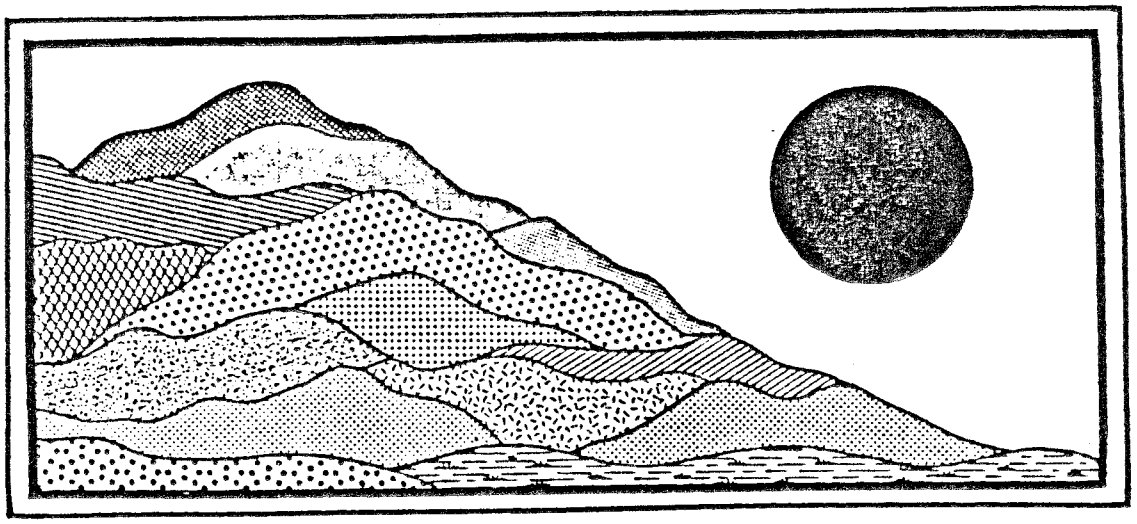
School Property

Salem, Connecticut

January 1988



ENVIRONMENTAL REVIEW TEAM REPORT

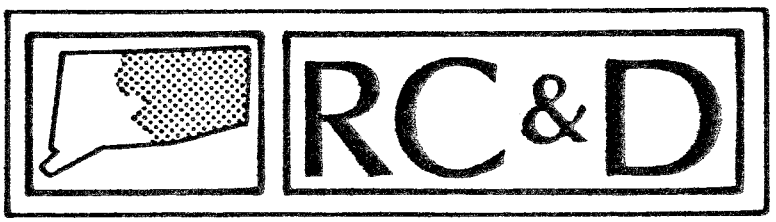
EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

School Property

Salem, Connecticut

Review Date: NOVEMBER 16, 1987

Report Date: JANUARY 1988

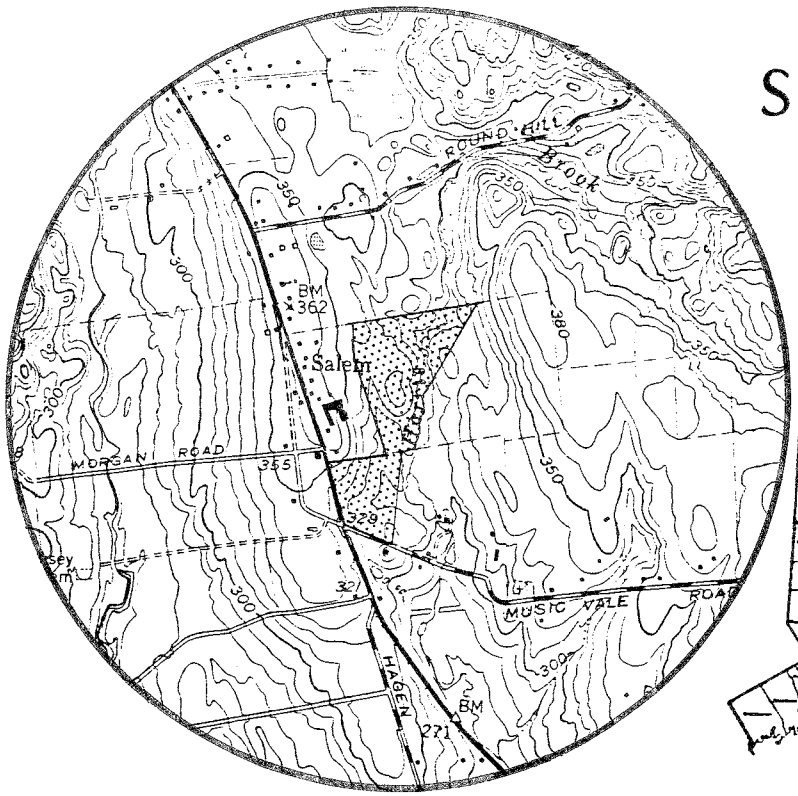


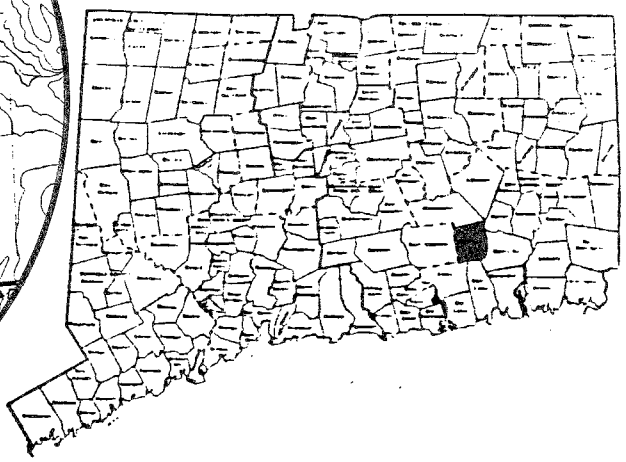
ENVIRONMENTAL REVIEW TEAM
PO BOX 198
BROOKLYN, CONNECTICUT 06234

Site Location

SALEM SCHOOL PROPERTY

SALEM, CONNECTICUT





EASTERN CONNECTICUT

RESOURCE CONSERVATION

& DEVELOPMENT AREA

ENVIRONMENTAL REVIEW TEAM REPORT

ON

SALEM SCHOOL PROPERTY

SALEM, CONNECTICUT

This report is an outgrowth of a request from the School Superintendent to the New London County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource Conservation and Development (RC&D) Area Executive Committee for their consideration and approval. 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 Monday, November 16, 1987. Team members participating on this review included:

Gerry Amt	--Regional Planner - Southeastern CT Regional Planning Agency
Steve Hill	--Wildlife Biologist - DEP, Eastern District Headquarters
Pete Merrill	--Forester - DEP, Patchaug State Forest
Chuck Phillips	--Fisheries Biologist - DEP, Eastern District Headquarters
Liz Rogers	--Soil Conservationist - U.S.D.A., Soil Conservation Service
Elaine Sych	--ERT Coordinator - Eastern CT RC&D Area
Bill Warzecha	--Geologist - DEP, Natural Resources Center

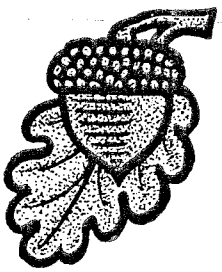
Prior to the review day, each team member received a summary of the proposed project, a list of the Town's concerns, a location map, a soils map, an assessors map and a topographic map. During the field review the team members were given sketches of proposed plans. The Team met with, and were accompanied by the Superintendent of Schools for Salem. 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 school property.

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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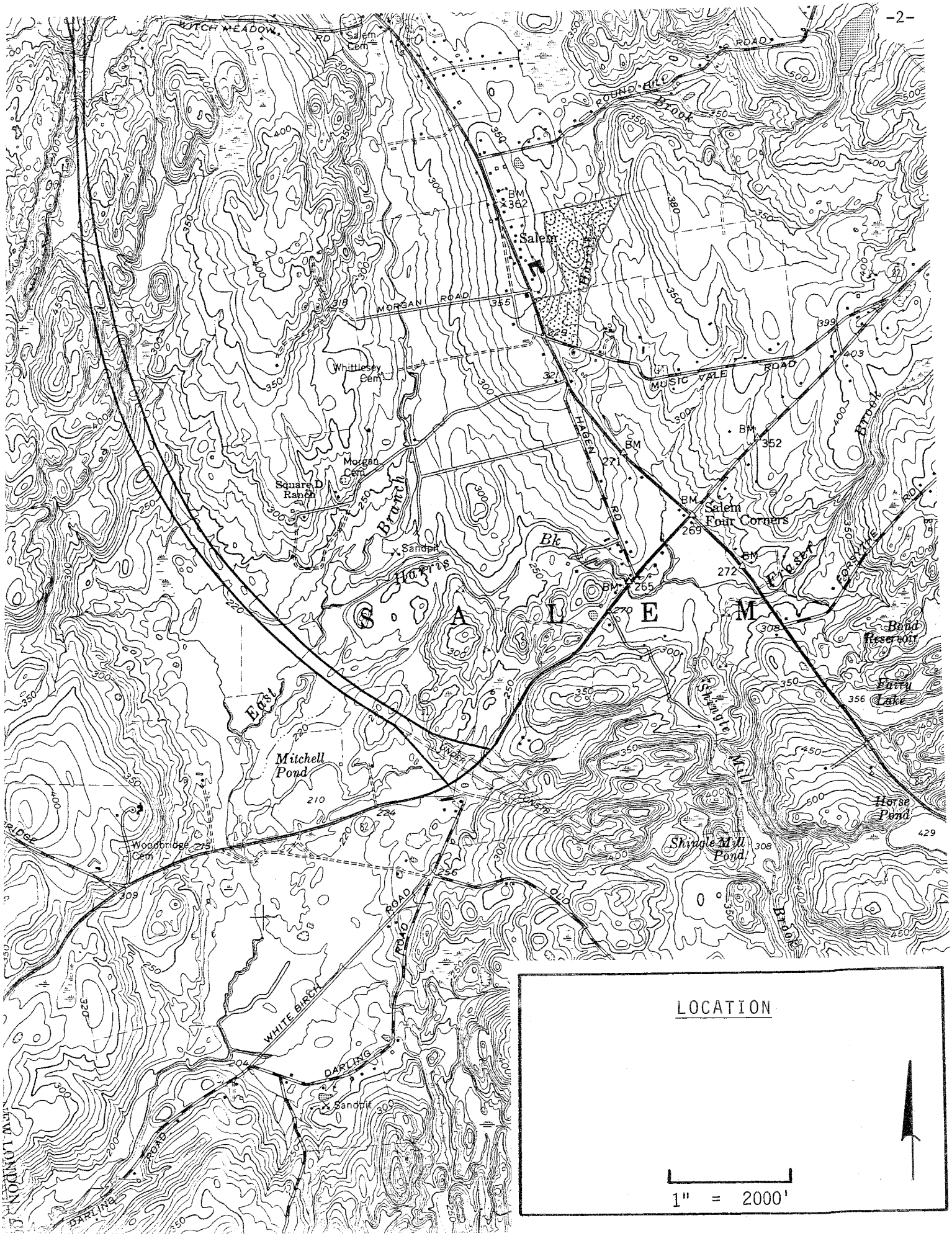
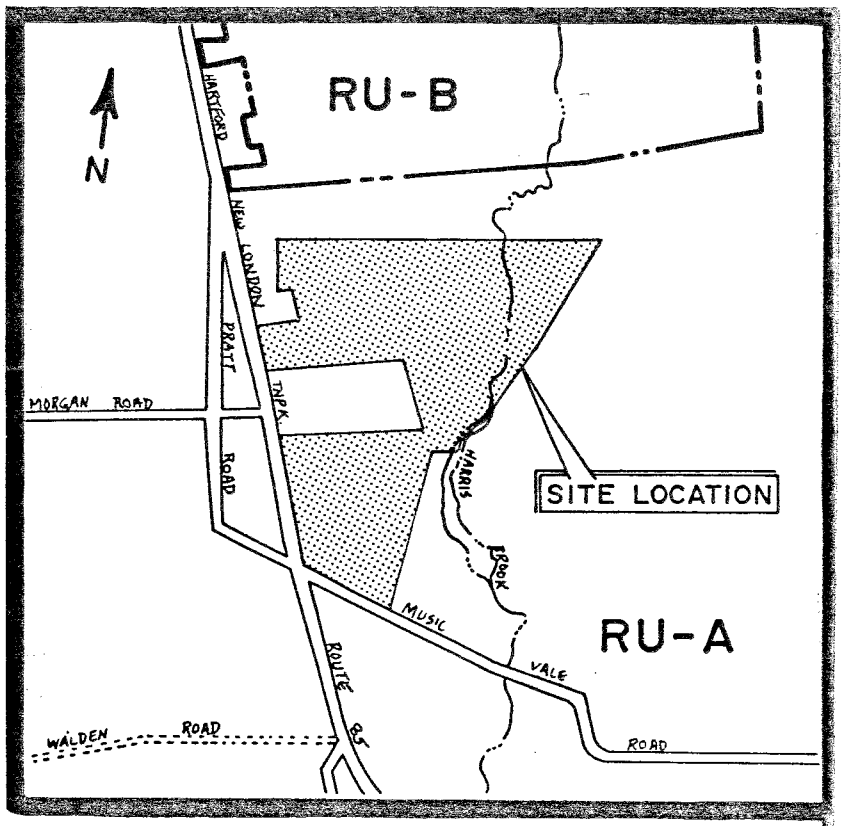

WITCH MEADOW RD
Salem Cem
ROUND HILL ROAD
Round Hill Brook
BM 362
Salem
MORGAN ROAD
Whittlesey Cem
MUSIC VALE ROAD
HAGEN RD
BM 352
Morgan Cem
Square D Ranch
Harris Branch
Sandpit
Salem Four Corners
FORSYTHE RD
Fraser Brook
Bound Reservoir
Fairy Lake
Shingle Mill Brook
Horse Pond
Shingle Mill Pond
East Mitchell Pond
Woodbridge Cem
RIDGE ROAD
OLD
WHITE BIRTH ROAD
DARLING ROAD
Sandpit
LOCATION
1" = 2000'



LOCATION PLAN

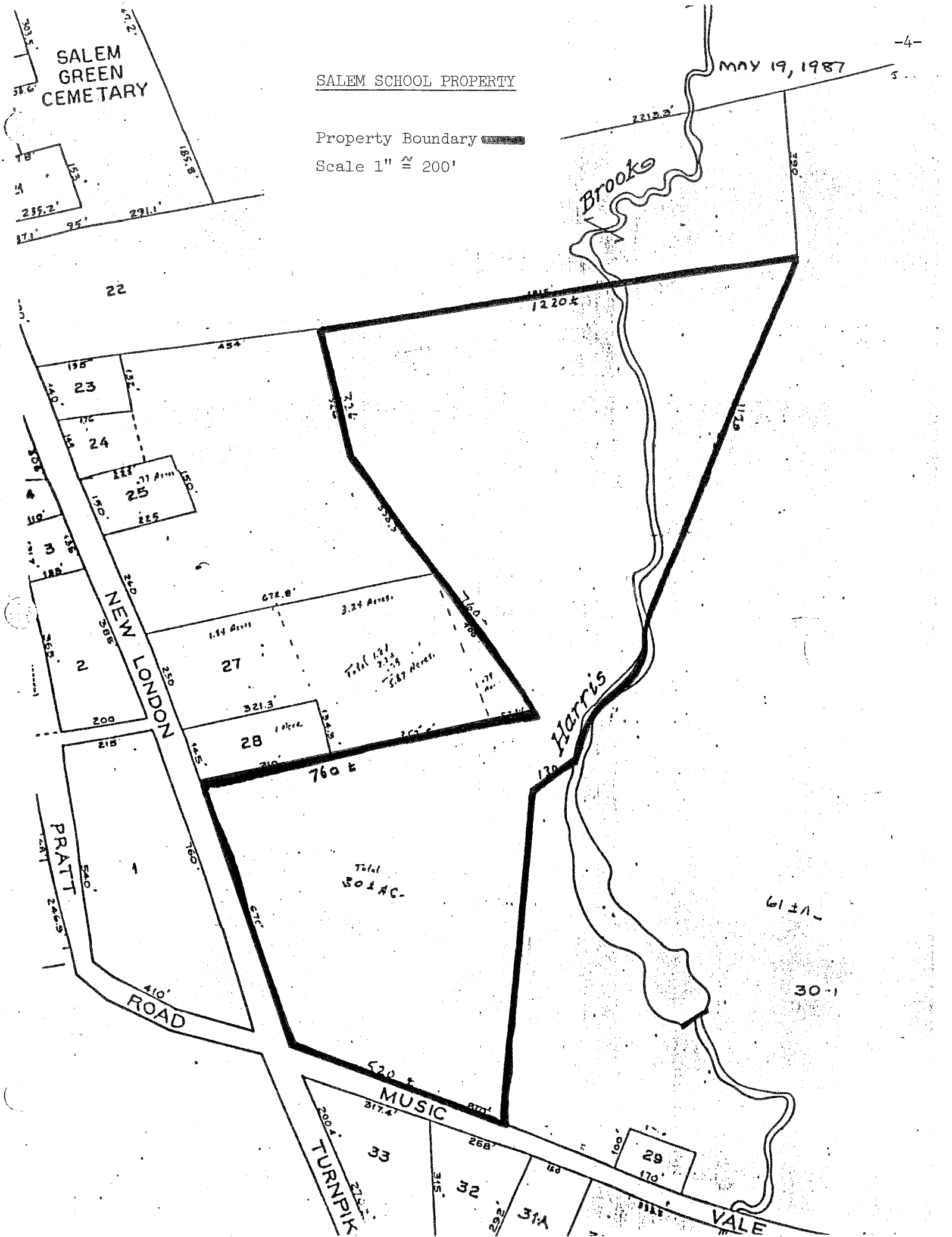
SCALE: 1" = 1000'

MAY 19, 1987

SALEM SCHOOL PROPERTY

Property Boundary

Scale 1" ≅ 200'



A. INTRODUCTION

The Eastern Connecticut Environmental Review Team has been asked to review a parcel of town owned land for future development.

The site, 33 acres in size, is located behind the Salem Elementary School at the corner of Music Vale Road and Route 85. Preliminary plans include a 75-100 car parking area, additional athletic fields, and a playground. Potential future uses also discussed include new school buildings, a scout camping area and nature trails.

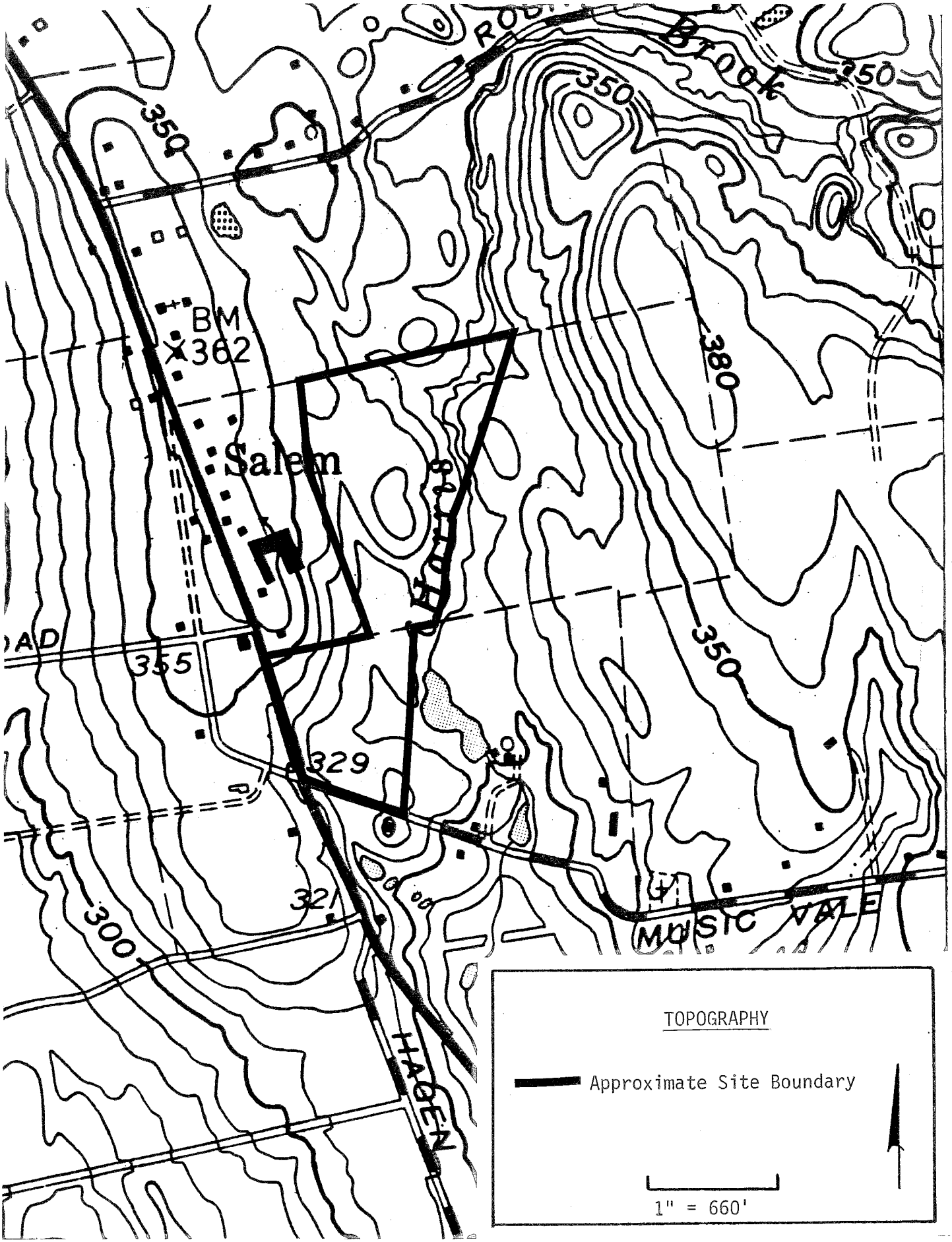
This report contains nature resource information about the site and recommendations and suggestions concerning possible development. The Town should use this report as a first step in analyzing immediate plans and in cautiously developing long term plans for community needs.

B. SETTING, TOPOGRAPHY AND GEOLOGY

The Salem school property, which consists of about 33 acres, is located slightly less than one mile north of Salem Four Corners. Generally speaking, the parcel is bounded on the north by privately owned land, on the east by Harris Brook (a small northern section of the school property is located on the easterly side of the brook), on the south by Music Vale Road and Route 85 on the west. Except for three inactive farm fields in the southern parts, the site is characterized by wooded land. Land surface within the site is predominently gently sloping.

Harris Brook, a perennial streamcourse, flows in a southerly direction in the western limits and ultimately discharges into East Branch Eight Mile River. At its confluence with East Branch Eight Mile River near Salem Four Corners, Harris Brook drains an area of about 6.95 square miles or 4,448 acres.

The 33 acre parcel is covered entirely by till. Till is a glacial sediment that was deposited directly from glacier ice. The sediment consists of varying proportions of sand, silt, gravel, clay and boulders. Particles of different sizes are generally mixed together in a complex fashion. According to the soil survey for New London County, the texture of the till on the site ranges from sandy, stony and moderately loose to silty, moderately stony and compact. The latter type of till is characterized by a "hardpan" layer which has developed at a relatively shallow depth (1.5-2.0 feet below ground surface). Because of the low permeability of the "hardpan" layer, the soil zone above the "hardpan" layer becomes saturated with groundwater during the wet time of year. On the other hand, the sandy, moderately loose variety of till found on the site lacks the "hardpan" layer and is not usually characterized by a seasonally high water table.


350
350
350
380
350
BM
362
Salem
355
329
321
300
MUSIC VALE
HAGEN
TOPOGRAPHY
Approximate Site Boundary
1" = 660'

The looser, sandier variety of till covers the broad, flat topped upland area east of the school, the small upland section on the east side of Harris Brook, and the southernmost farm field near Music Vale Road. The remainder of the site is characterized by a silty, compact variety of till. The exact thickness of the till on the site is unknown, but it probably is less than 10 feet in most places.

Overlying the till soils on the site primarily along Harris Brook and its small tributaries are regulated inland-wetland soils. Because these soils are wet from November to May, they hold low potential for any type of development.

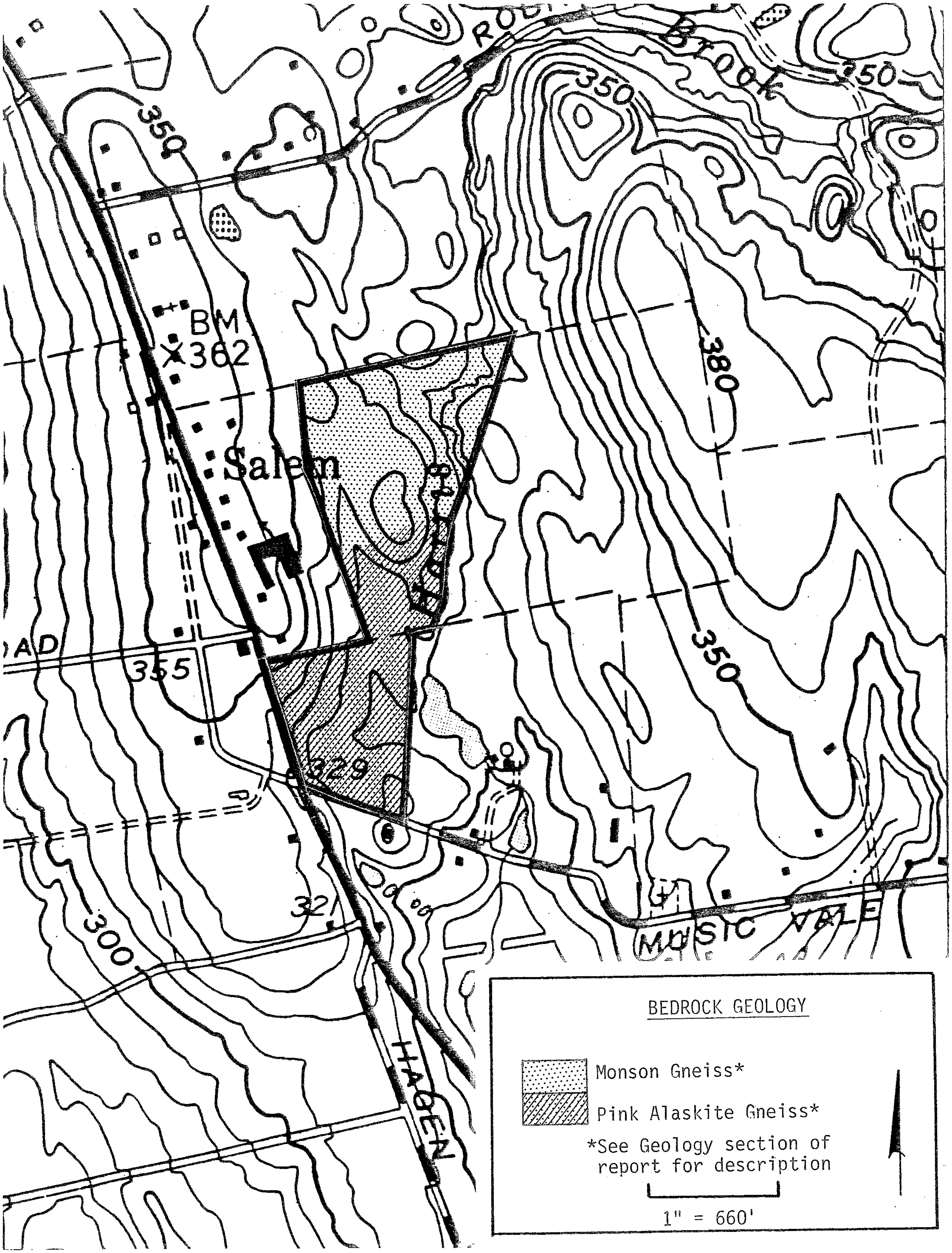
The Salem School site lies entirely within the Hamburg topographic quadrangle. A bedorck geologic map (QR-19, by L. Lundgren) has been published for the quadrangle.

Bedrock outcrops were not visible on the site during the field review, Lundgren identifies the bedrock underlying the site as two subunits of a northeast trending belt of rocks known as Monson Gneiss. The northern part of the site is underlain by light to dark gray, medium grained gneisses composed of the mineral plagioclase, quartz, biotite and hornblende and dark-gray to greenish black amphibolite. The remainder of the site is underlain by pink alaskitic gneisses composed largely of light-colored minerals such as quartz and feldspur.

According to Map QR-19, the northern boundary of the site demarcates the Honey Hill fault, a zone of deformed rocks approximately a mile wide.

A "fault" is a fracture or crack in the earth's crust, often accompanied by movement of one side of the fracture relative to the other. Some geologists believe the Honey Hill fault is a thrust fault, formed where the earth is compressed or pushed together. The fault was activated approximately 400 million years ago during the formation of the Appalachian Mountains, but it is not known to be seismically active at the present time. As a result of being subjected to these geologic forces, the rocks contain certain noticeable characteristics compared to surrounding rocks of the region. For example, these rocks are typically darker, better layered and more closely jointed than surrounding rock types. Also, they contain polished or striated (scratched) surfaces called slickensides, which result from friction along a fault plane. Based on the description above, the rock type (amphibolites) underlying the northern part clearly contain these characteristics.

Gneisses are crystalline metamorphic rocks; which means that the rocks have been changed in texture and composition by heat and pressure within the earth's crust. Gneisses consist of light and dark colored minerals arranged in layers with a banded streaky or speckled appearance.


Brook
350
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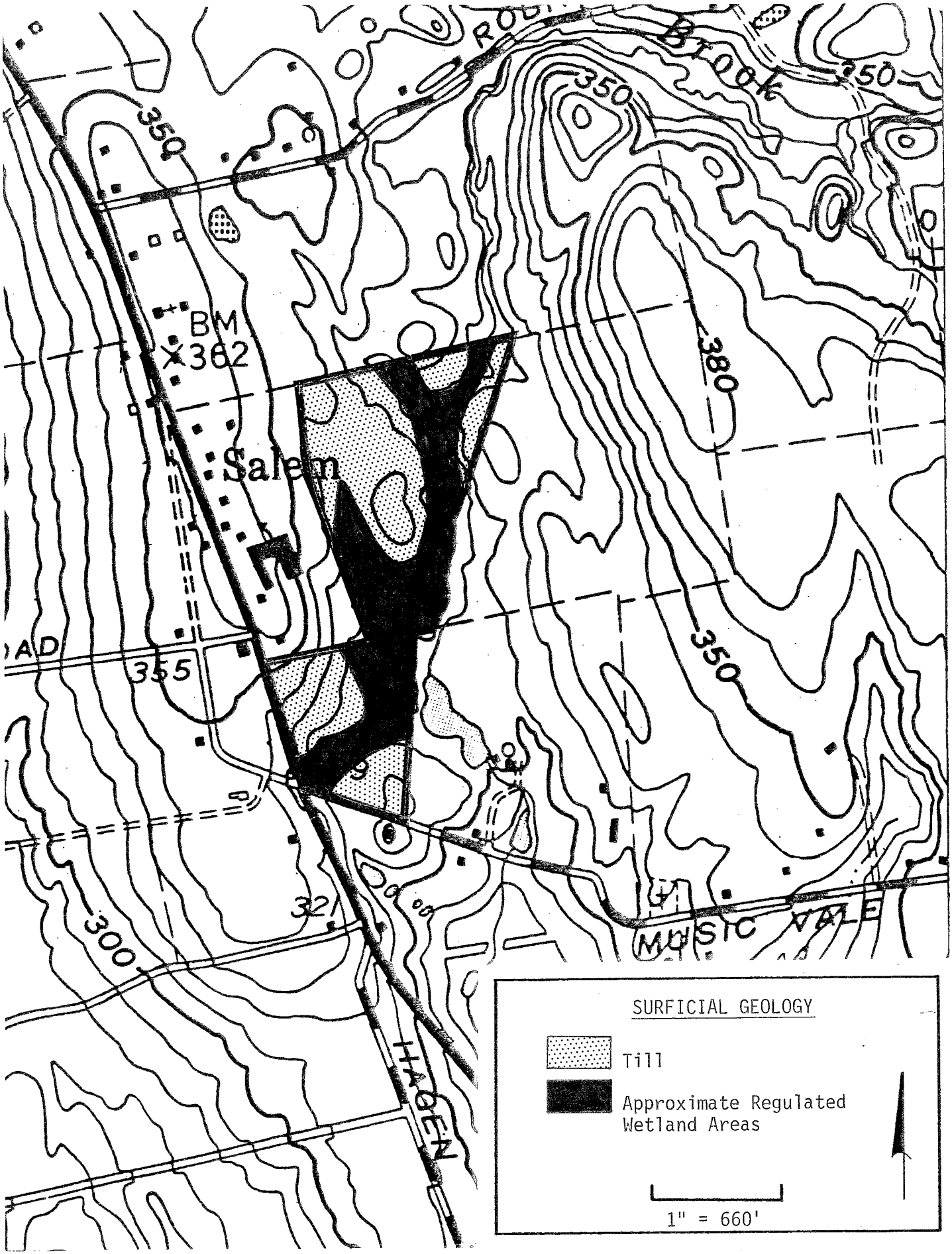
BM
362
Salem
355
329
321
300
MUSIC VALE
HAGEN
BEDROCK GEOLOGY
Monson Gneiss*
Pink Alaskite Gneiss*
*See Geology section of report for description
1" = 660'


ROD
BROOK
350
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BM
X362
380
Salem
AD
355
350
321
300
MUSIC VALE
HAGEN
SURFICIAL GEOLOGY
Till
Approximate Regulated
Wetland Areas
1" = 660'

The geology of the site should pose no major obstacles to recreational development. The broad, relatively flat upland area east of the Salem school contains a variety of till which is well drained, sandy and loose. Because of its geologic make-up and close proximity to the school, it seems likely this would be a good choice for a new playground and athletic field. In order to gain access to this part of the site, a relatively narrow band of wetlands will need to be crossed. Seasonally high groundwater tables and wetness limit the remainder of the site, except for the southernmost farm field near Music Vale Road and the small, upland section east of Harris Brook. The latter two areas contain the well drained, sandy and loose quality of till. As discussed on the review day, the upland areas east of Harris Brook would be satisfactory for camping, since it is elevated and dry. The open farm field at the southern limits might support another school building but moderate slopes and small area may be limiting factors. Since municipal sewers are not available in Salem, any new building would require an on-site septic system. In this regard, detailed soil testing would be required in order to determine subsurface conditions and the capabilities of the soils to handle wastewater discharges from a potential school building.

C. SOILS INFORMATION

PRINCIPAL LIMITATIONS AND RATINGS
AS RECREATIONAL/BUILDING SITE DEVELOPMENT

Soil name and map symbol	Playgrounds	Local Roads and Streets	Lawns and Landscaping
CbB - Canton	Severe-slope	Slight	Slight
Charlton	Moderate-slope, small stones	Slight	Slight
CcB - Canton	Severe-large stones	Slight	Moderate-large stones
Charlton	Severe-large stones	Slight	Moderate-large stones
CcC - Canton	Severe-slope, large stones	Moderate-slope	Moderate-slope, large stones
Charlton	Severe-slope, large stones	Moderate-slope	Moderate-slope, large stones
*Rn - Ridgebury	Severe-wetness, large stones	Severe-wetness, frost action	Severe-wetness
Leicester	Severe-wetness, large stones	Severe-wetness, frost action	Severe-wetness
Whitman	Severe-ponding, large stones	Severe-frost action,ponding	Severe-ponding
WxA - Woodbridge	Moderate-percs slowly,wetness	Severe-frost action	Moderate-wetness
WxB - Woodbridge	Moderate-slope, percs slowly, wetness	Severe-frost action	Moderate-wetness
WyB - Woodbridge	Severe-large stones	Severe-frost action	Moderate-large stones,wetness

*Designated inland wetland soil by Public Act 155

SOIL MAP

Owner TOWN OF SALEM Operator SAME

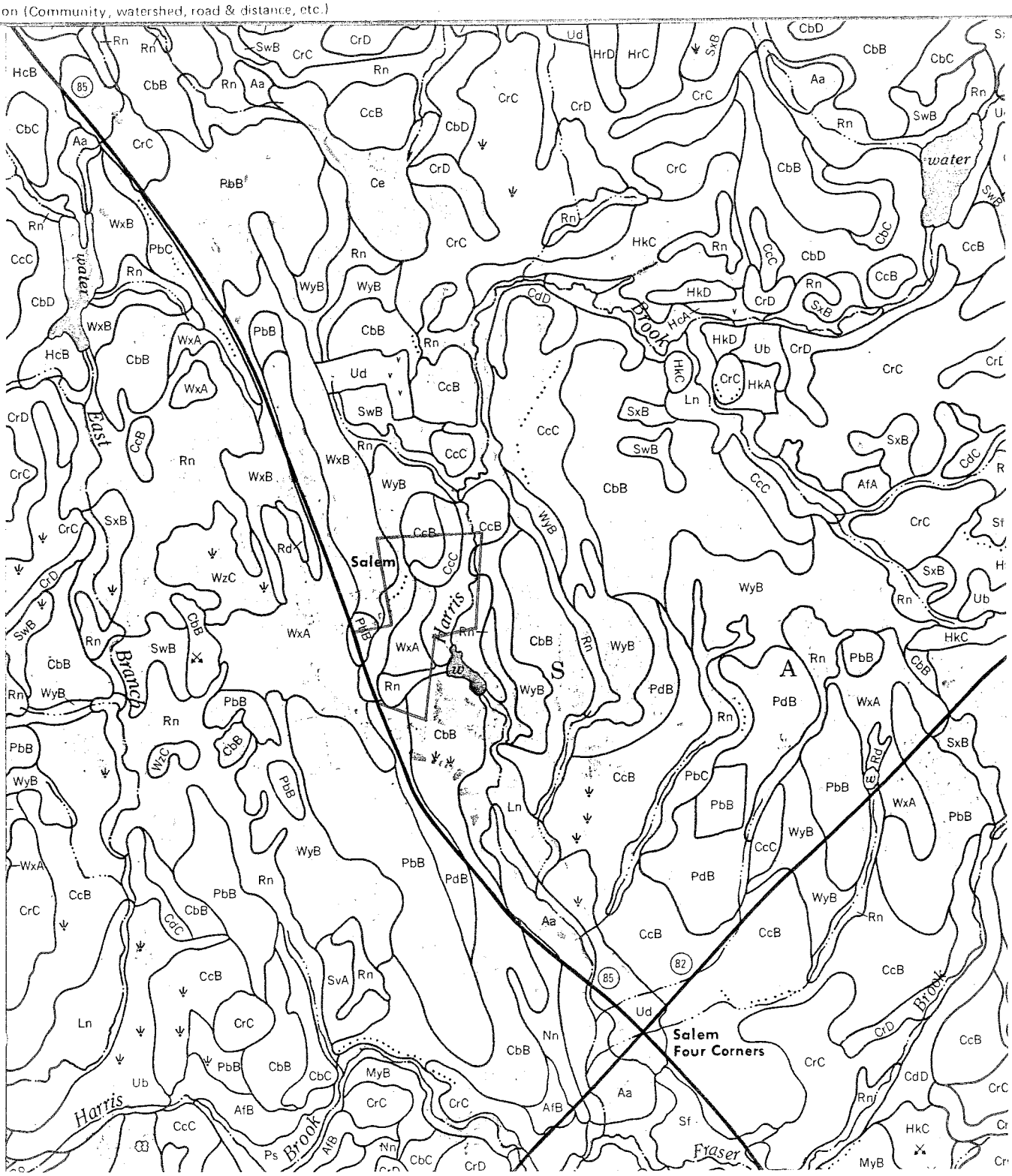
County NEW LONDON State CT

Soil survey sheet (s) or code nos. 44 Approximate scale 1" = 1320'

N

Prepared by U. S. Department of Agriculture, Soil Conservation Service cooperating with NEW LONDON SOIL & WATER Conservation District

Location (Community, watershed, road & distance, etc.)



CbB-Canton and Charlton fine sandy loams, 3 to 8 percent slopes

These gently sloping, well drained soils are on glacial till upland hills, plains, and ridges. Areas of this unit consist of either Canton soil or Charlton soil, or both. These soils were mapped together because there are no major differences in use and management. Permeability of the Canton soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is medium. This soil warms up and dries out rapidly in the spring. Unless limed, the soil is strongly acid or medium acid.

Permeability of the Charlton soil is moderate or moderately rapid. The available water capacity is moderate. Runoff is medium. The soil warms up and dries out rapidly in the spring. Unless limed, the soil is strongly acid or medium acid.

These soils are well suited to cultivated crops. These soils are in capability subclass IIe.

CcB - Canton & Charlton very stony fine sandy loams, 3-8 percent slope

These gently sloping, well drained soils are on glacial till, upland hills, plains and ridges. Stones and boulders cover 1-8 percent of the surface.

Typically, the Canton soil has a black, fine sandy loam surface layer 1 inch thick. The subsoil is dark yellowish-brown, fine sandy loam and sandy loam 23 inches thick. The substratum is grayish-brown gravelly sand to a depth of 60 inches or more.

Typically, the Charlton soil has a very dark grayish-brown, fine sandy loam surface layer 3 inches thick. The subsoil is dark yellowish-brown, yellowish-brown and light olive brown fine sandy loam 26 inches thick. The substratum is grayish-brown fine sandy loam to a depth of 60 inches or more.

Permeability in the Canton soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is medium. The soil warms up and dries out rapidly in the spring.

Permeability of Charlton soil is moderate to moderately rapid. The available water capacity is moderate. Runoff is medium. This soil warms up and dries out rapidly in the spring.

These soils are in capability subclass VIs.

CcC - Canton & Charlton very stony,
fine sancy loams, 8 to 15 percent slope

These sloping, well-drained soils are on glacial till, upland hills, plains and ridges. Stones and boulders cover 1 to 8 percent of the surface.

Typically, the Canton soil has a black, fine sandy loam surface layer 1 inch thick. The subsoil is dark yellowish-brown, fine sandy loam and sandy loam 23 inches thick. The substratum is grayish-brown gravelly sand to a depth of 60 inches or more.

Typically, the Charlton soil has a very dark grayish-brown, fine sandy loam surface layer 3 inches thick. The subsoil is dark yellowish-brown, yellowish-brown and light olive brown fine sandy loam 26 inches thick. The substratum is grayish brown fine sandy loam to a depth of 60 inches or more.

Permeability of the Canton soil is moderately rapid in the surface layer and subsoil and rapid in the substratum. The available water capacity is moderate. Runoff is rapid. The soil warms up and dries out rapidly in the spring.

Permeability of the Charlton soil is moderate or moderately rapid. The available water capacity is moderate, runoff is rapid. The soil warms up and dries out rapidly in the spring.

These soils are in capability subclass VIs.

Rn-Ridgebury, Leicester, and Whitman extremely
stony fine sandy loams

These nearly level, poorly drained and very poorly drained soils are in drainageways and depressions of glacial till upland hills, ridges, plains, and drumloidal landforms. Stones and boulders cover 8 to 25 percent of the surface. These soils were mapped together because there are no major differences in use and management. The Ridgebury soil has a seasonal high water table at a depth of about 6 inches. Permeability is moderate or moderately rapid in the surface layer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is very slow or slow. Ridgebury soil warms up and dries out slowly in the spring. It is strongly acid through slightly acid.

The Leicester soil has a seasonal high water table at a depth of about 6 inches. Permeability is moderate or moderately rapid. The available water capacity is moderate. Runoff is very slow or slow. Leicester

soil warms up and dries out slowly in the spring. It is very strongly acid through medium acid.

The Whitman soil has a high water table at or near the surface for most of the year. Permeability is moderate or moderately rapid in the surfacelayer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is very slow, or the soil is ponded. Whitman soil warms up and dries out very slowly. It is very strongly acid through slightly acid.

These soils are not suited to cultivated crops. Stoniness makes the use of farming equipment impractical. These soils are in capability subclass VIIs.

WxA - Woodbridge fine sandy loam, 0 to 3 percent slopes

This nearly level, moderately well drained soil is on drumloidal, glacial till, upland landforms. Typically, this Woodbridge soil has a very dark brown, fine sandy loam surface layer 9 incheses thick. The subsoil is dark yellowish brown, light olive brown, and grayish brown, mottled fine sandy loam and sandy loam 19 inches thick. The substratum is very firm, brittle, olive sandy loam to a depth of 60 inches or more. The Woodbridge soil has a seasonal high water table at a depth of about 18 inches. Permeability is moderate in the surface layer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is slow. This Woodbridge soil warms up and dries out slowly in the spring. Unless limed, it is strongly acid or medium acid in the surface layer and subsoil and strongly acid through slightly acid in the substratum. This soil is in capability subclass IIw.

WxB-Woodbridge fine sandy loam, 3 to 8 percent slopes

This gently sloping, moderately well drained soil is on drumloidal, galcial till, upland landforms. The Woodbridge soil has a seasonal high water table at a depth of about 18 inches. It has moderate permeability in the surface layer and subsoil and slow or very slow permeability in the substratum. The available water capacity is moderate. Runoff is medium. This soil warms up and dries out slowly in the spring. Unless limed, it is strongly acid or medium acid in the surface layer and subsoil and strongly acid thorough slightly acid in the substratum. This soil is well suited to cultivated crops. This soil is in capability subclass IIw.

WyB - Woodbridge very stony fine sandy loam, 0 to 8 percent slopes

This nearly level to gently sloping, moderately well drained soil is on drumloidal, glacial till, upland landforms. Stones and boulders cover 1 to 8 percent of the surface. Typically, this Woodbridge soil has a very dark brown, fine sandy loam surface layer 6 inches thick. The subsoil is yellowish brown, light olive brown, and grayish brown, mottled fine sandy loam and sandy loam 22 inches thick. The substratum is very firm, brittle, olive sandy loam to a depth of 60 inches or more. The Woodbridge soil has a seasonal high water table at a depth of about 18 inches. Permeability is moderate in the surface layer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is medium. This Woodbridge soil warms up and dries out slowly in the spring. It is strongly acid or medium acid in the surface layer and subsoil and strongly acid through slightly acid in the substratum. This soil is in capability subclass VIs.

D. WATER RESOURCES

The entire site lies within the Harris Brook watershed. Harris Brook is tributary to East Branch Eight Mile River. Surface drainage from the site is either collected by the small drainageways on the site and routed to Harris Brook or flows overland directly to Harris Brook. Subsurface flow parallels surface flow to a great extent on the site.

Harris Brook and any downstream ponds should be properly protected from contamination i.e., silt-laden soil, septic system effluent, etc. if development of the school site occurs. Potential siltation problems due to uncontrolled runoff during active construction periods and runoff from future parking lots would probably be the principal source of surface water contamination. Judicious planning, which includes a formal erosion/ sediment control plan and sediment basins can mitigate the deleterious effect of such runoff.

Any new septic system would first require detailed soil testing, special engineered design, and ultimate approval by the Town of Salem and the State Departments of Health Services and Environmental Protection.

E. WATER SUPPLY

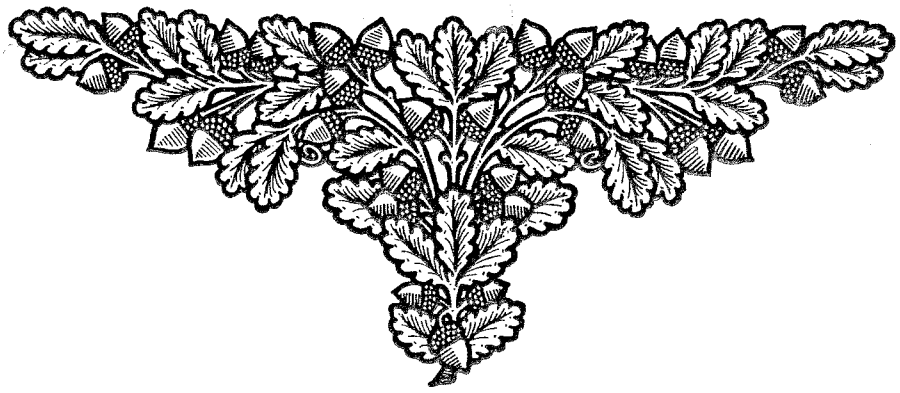
The underlying bedrock is the source of water to most domestic wells throughout Salem.

Unless public water facilities become available, bedrock would be the only practical source of water for the site. Bedrock is commonly capable of providing small but reliable yields of groundwater to individual wells. A survey of bedrock wells in the lower Connecticut River basin (see Connecticut Water Resources Bulletin No. 31) indicates that more than 80 percent of those wells that were drilled into a rock type similar to that found on the site yielded 3.5 gallons per minute or more, and 90 percent yielded just under 2 gallons per minute or more. These yields are equivalent to 5040 gallons per day and 2596 gallons per day, respectively. If the school required a substantial amount of water, it would probably necessitate the drilling of more than one well. On the other hand, short-term daily needs for high flow rates might be met by a low-yielding well in conjunction with a water storage tank.

Because of the particular mineralogy of the bedrock underlying the site, there is a chance that the water will have undesirable concentrations of iron or manganese, which will discolor the water and impart a metallic taste. As a result, it may be necessary to treat the water with an appropriate filter system.

F. SEWAGE DISPOSAL

As was discussed on the review day, the student population at the Salem School is growing at a rate which will probably require the expansion of the existing septic or an entirely new septic system. Because of the limited area directly behind the school and because the water supply well serving the school are located near the existing athletic field, the area most likely suited for septic system expansion would be on the broad, flat upland area directly east of the school. Soil mapping data indicates that conditions are generally favorable for construction of on-site sewage disposal system. However, detailed soil testing would be required in order to determine the capacity of the soils in this area to handle sewage effluent. It appears that in order to utilize this area, sewage effluent would need to be ejected via grinder pump(s) from pumping chambers located near the school. Elimination of the existing sewage disposal system area would allow for expansion of a parking area directly behind the school. Also, by locating the septic system on the upland area east of the school will allow for evapotranspiration of septic system effluent to take place. The existing septic system cannot take advantage of evapotranspiration, since it is covered by pavement.



G. VEGETATION

Area #1 - This is an intermittent stream and area of poorly drained soils. The overstory is mostly red maple with a few small American elms, black cherry and sugar maple. The density of the understory is variable and is primarily spice bush with some witch hazel, highbush blueberry and blue beech.

If this area were bridged to provide access to the higher ground to the east for a recreation field or as a septic leach field, care should be taken not to impede the water drainage as a change in the water table will affect adjacent trees.

Area #2 - This top of the knoll is broad and nearly flat, with only a slight easterly slope. Most of the trees are six inches or less in diameter and composed of species of the oak family: red oak, black oak, scarlet oak and white oak. There is also some red cedar and red maple.

The understory is composed mostly of huckleberry and highbush blueberry.

The outstanding vegetation feature for this area and also in Area #3 are several large shad bush specimens. This is a large shrub to small tree, (maximum thirty feet plus in height and six plus inches in diameter) that has a mass of white flowers in the early spring. They might be something to note when clearing or developing this area.

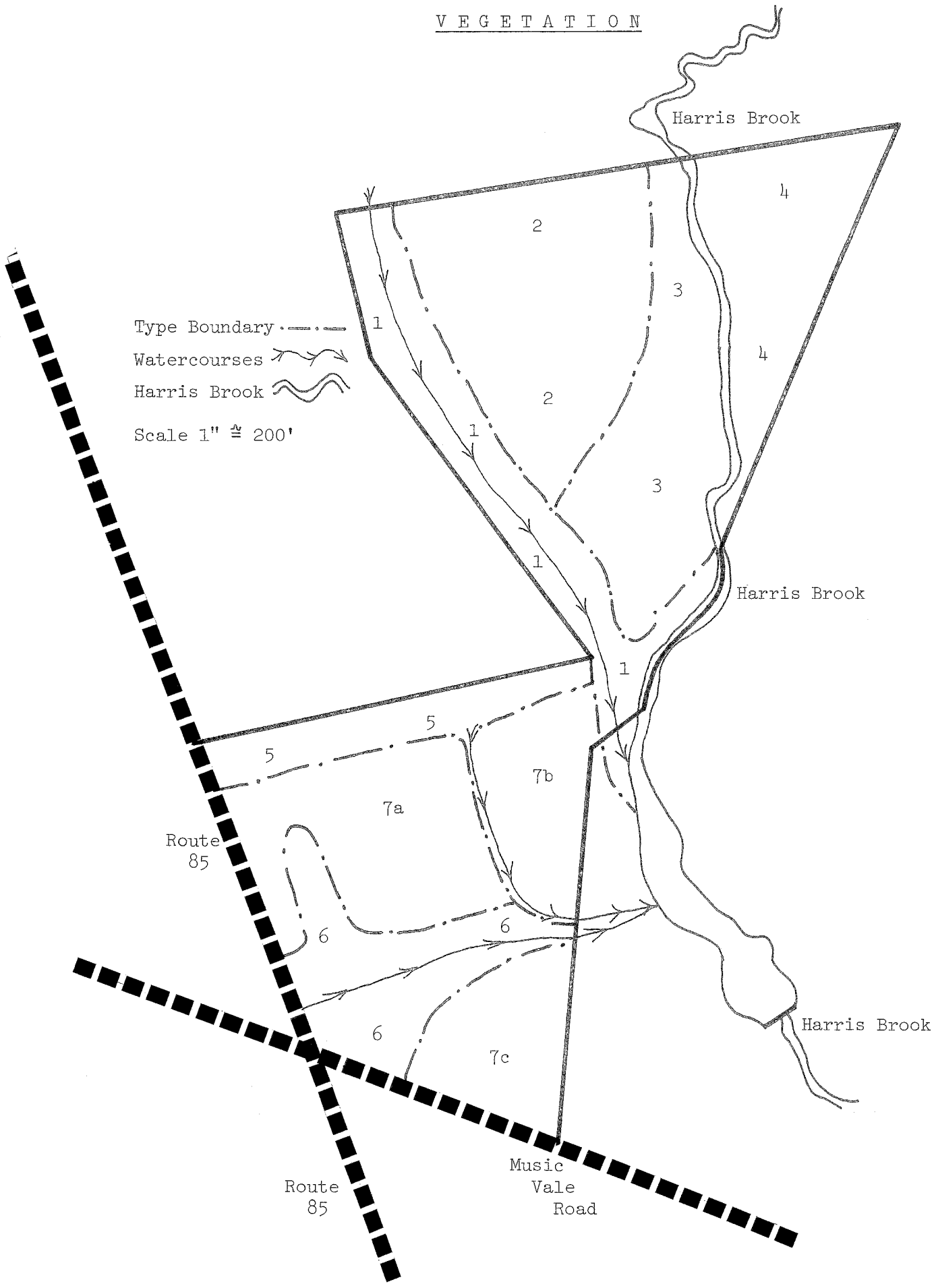
Area #3 - This includes the lower slopes of the knoll and the so-called floodplain of the brook. The ground is more moist and better suited to growing hardwood trees, but not as good for drain fields, building or recreation fields.

The overstory is mostly red or black oak with a thick understory of blue beech, highbush blueberry, wild azalea and some green briar. The oaks are much larger and would require a much more extensive clearing operation than Area #2.

Area #4 - Tree size and composition are similar to Area #3, however this is on higher ground sloping up from the brook. In addition to the oak in the overstory, there is also considerable American beech.

If some of this parcel was to be designated as a scout camping area, this would seem ideal. It is separated from the rest of the area by the brook, the ground is high and dry and the mature hardwood stand would lend itself to clearing for campsites.

VEGETATION


Harris Brook
Type Boundary
Watercourses
Harris Brook
Scale 1" ≅ 200'
1
2
3
4
5
6
7a
7b
7c
Harris Brook
Harris Brook
Route 85
Route 85
Music Vale Road

Area #5 - This is just an extra hedge row along the edge of the fields. There are a few large oaks, hickories and red maples along the wall. The understory or invading saplings would include these species, plus red cedar, species of sumac, and along the drainages speckled alder.

Area #6 - These are poorly drained sections of the fields that have been filled in with brush and small trees. There is some red cedar, wild apple and oaks, but most of the tree and shrub species are those commonly found in poorly drained areas, such as highbush blueberry, spicebush, blue beech, red maple and several species of the viburnum family.

Area #7 - These are open fields that are beginning to show signs of filling in with brush. Seven A and Seven B are separated by a narrow wet drainage area. Seven A has a moderate east to south cast slope, and is fairly well drained. Seven B is nearly flat with a fairly high seasonal water table, which would place some limitation on it's use. Seven C is smaller, has a moderate northeast slope and is drier than much of the other two fields. It is separated from 7A and 7B by the drainage area and could only be accessed from Music Vale Road unless the drainage is bridged.

The parcel offers a wide variety of ecological conditions and sites from recently abandoned corn fields, reverting hay fields, alder thickets, maple swamps, mature oak stand to ridge top red cedar groves. There are even several sugar maples that could be tapped for a science class to make their own taste of maple sugar. Coordinated plans can fit the necessities within this site and still leave representative samples of the widely diversified sites.

H. WILDLIFE HABITAT

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

Mixed Hardwoods

This habitat type dominates the site and consists of a variety of hardwood species including red and white oak, hickory, and red maple. Understory vegetation includes beech, iron-wood, low and highbush blueberry, and various hardwood seedlings.

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

Open Field

This habitat type consists of early successional vegetation. Vegetation species include golden rod, dogwood, multiflora rose, ragweed and pokeweed.

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 cover consists of dense berries, shrubs and grasses.

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

Riparian

This habitat type consists of a small brook and its associated vegetation. Vegetation is similar as in mixed hardwoods with scattered hemlock and mountain laurel.

Wildlife frequenting such habitat types include raccoon, beaver, wood ducks, and a variety of reptile and amphibian species.

Education/Nature Trails

The site provides an excellent area to develop a trail system which runs through each of the habitat types.

Development

If development is proposed in the open field area it will eliminate all of the open field habitat and associated wildlife species. Due to the degree of land slope, there is a major concern about run-off from construction and its negative effects on the riparian habitat.

I. STREAM ECOLOGY AND FISHERIES

Setting

The property to be developed is characterized by alternating plateaus and gullies. Harris Brook flows through the northeast corner of the property. A major gully collects all school area runoff and transports it several hundred yards to Harris Brook. (The School Superintendent indicated that there had been problems with downstream neighbors as a result of siltation during construction of the school's addition in 1987.)

Stream Characterization

Harris Brook is low gradient with a mixed sand-organic material bed throughout the reach on or adjacent to the school property. The elevation change of only ten feet in 3000 feet is a further indication that this reach of the stream is prone to siltation. The brook is stocked annually with more than 300 yearling (6-8") brook trout by the State of Connecticut. Other fish expected to inhabit the brook would include native brook trout, blacknose dace and white suckers. Degradation of the habitat through uncontrolled runoff could lead to serious damage to the brook as a natural resource.

Mitigative Measures

1. Development should be restricted from within 150 feet of the brook to minimize the amount of direct runoff reaching it.

2. Liming and fertilizing of disturbed areas should be carefully controlled to minimize the possibility of excess nutrients from entering the stream.

3. Drainage of the field and playground areas must be carefully controlled to disperse rather than concentrate runoff on the steep slopes leading to the gullies on the property.

Other Considerations

1. The private pond downstream shows the impacts of previous upstream erosion and sedimentation. Additional nutirents and silt entering private property from the school grounds could effect further difficulties with neighbors.

2. The stream corridor should be used as a field trip area by science classes (apparently it was utilized in the past). Stream animals and plants are particularly interesting for their abilities to withstand the harshest

of environmental conditions including ice, floods, summer heat and periodic low flows. Invertebrate, amphibian and mammalian life forms may be found along stream corridors in addition to the fish. The stream itself is a particularly vital and dynamic force in the ecological scheme of things constantly making course changes and corrections based on flow volumes, turbulence and blockages. Studying stream changes over time could be particularly interesting for students in grades four through eight who would have five years to observe this dynamic environment.

J. PLANNING COMMENTS

The Town of Salem now owns approximately 36 acres of contiguous land in the general vicinity of the Elementary School. Although the land is ample in area to accommodate a variety of new and expanded facilities and it contains few natural features to limit its use, it is severly lacking in desirable road frontage. The present school building spreads across almost the entire 265-foot width of the original school site, leaving only enough room for a walkway on the south side of the building and a driveway on the north side.

The recently-purchased land has about 600 feet of frontage on both Route 85 and Music Vale Road, but sight distances along both roads are limited by grade changes. Access driveways for any facilities related to the school should be located as far as possible from the intersection of these two roads, and traffic circulation related to school use of the new property should avoid vehicle movements from Music Vale Road into Route 85.

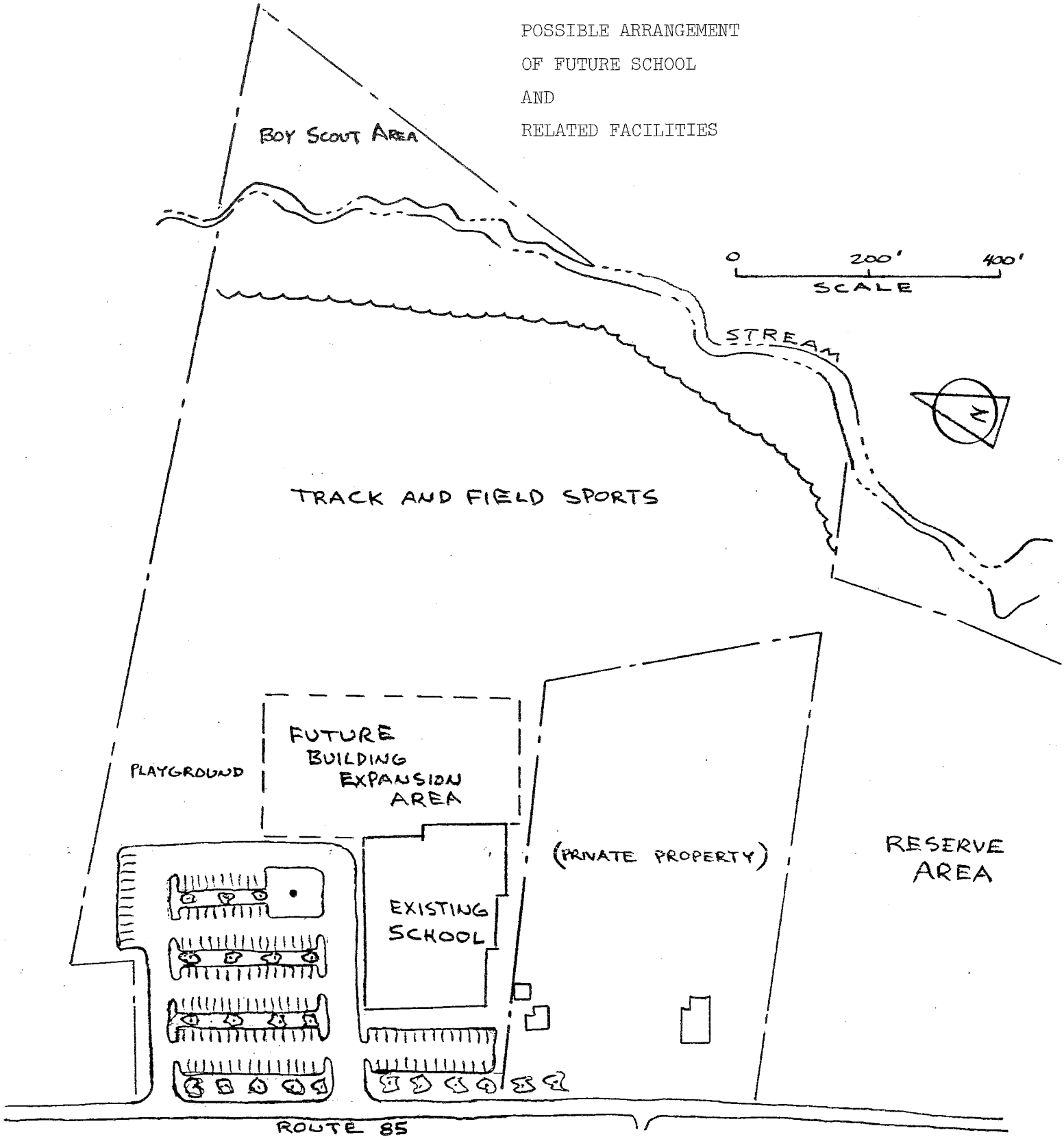
Traffic on Route 85 dropped significantly when Route 11 was constructed between Colchester and Route 82. However, residential growth in both Colchester and Salem along this corridor has generated steady traffic growth on the two-lane highway. Data from the Connecticut Department of Transportation indicate that between 1979 and 1985 average daily traffic on Route 85 grew from 2,400 to 3,200 vehicles per day, a 33% increase.

A long-range development plan for the school should include greater use of Route 85 frontage to the north of the school. Consideration should be given to acquisition of the adjoining house lot to the north and relocation of the library. This would provide over 600 feet of frontage on Route 85 in a location that affords reasonably good sight lines in both directions along the busy highway.

With more frontage on Route 85 north of the school, the opportunity for establishing parking areas, recreation facilities, bus loading lanes, and building additions in more reasonable locations and in closer proximity to each other becomes possible.

A possible arrangement of future uses is presented in sketch form on the accompanying illustration. Under this arrangement, the 12+ acre southerly part of the parcel would be either held in reserve for some presently unforeseen future use or sold. Future building space needs would be met by adding to the existing school building. Ample driveways and vehicle parking would be convenient to the whole structure. A playground would be located adjacent to the north end of the building, and the large upland area east of the building would be used for field sports. Leaching fields for subsurface sewage disposal systems could be located under the field sports area. The area along the stream at the eastern edge of the property would remain in its natural state and could be used as a camping area for local boy scouts.

POSSIBLE ARRANGEMENT
OF FUTURE SCHOOL
AND
RELATED FACILITIES



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.