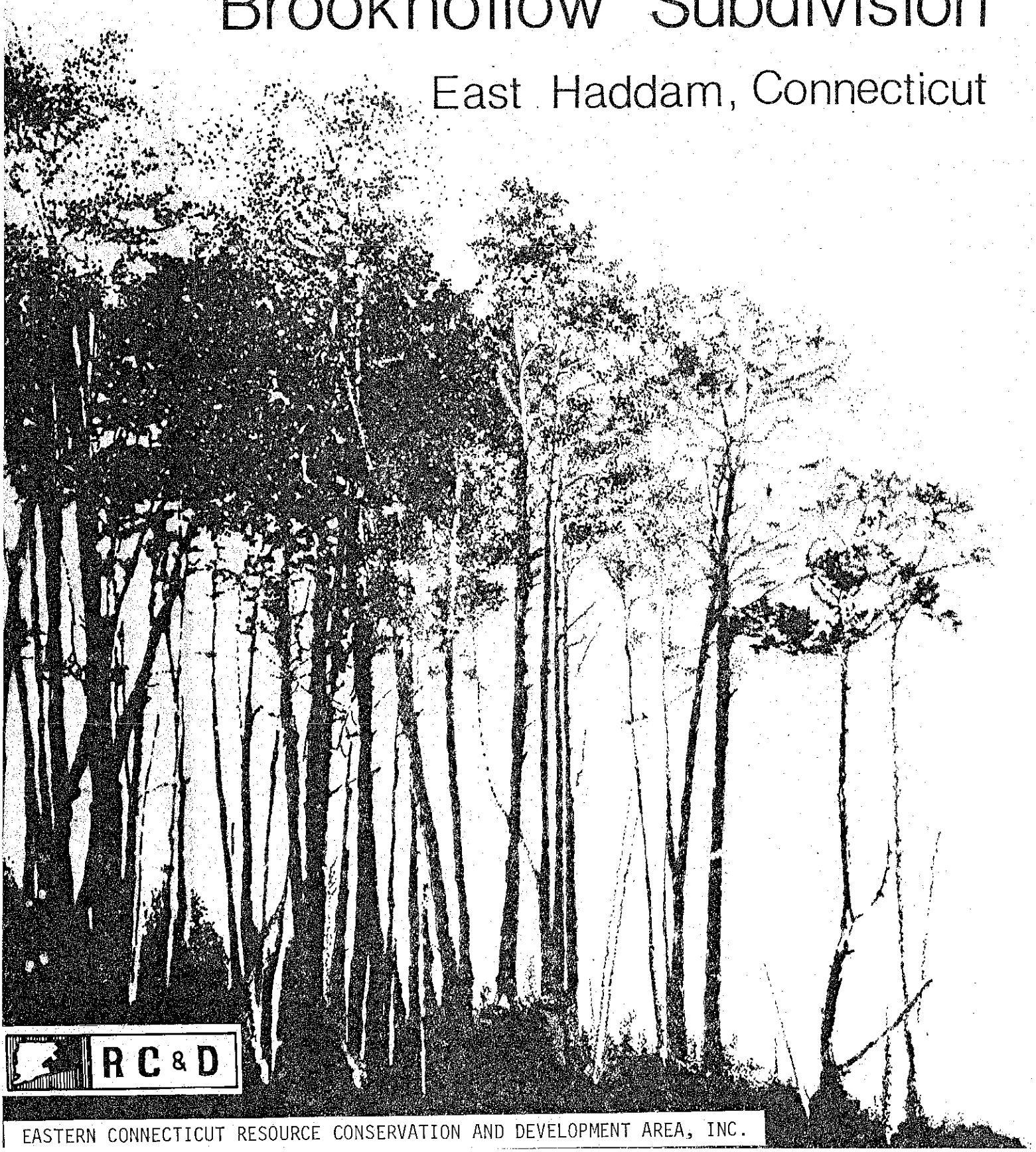
Environmental Review Team Report

Brookhollow Subdivision

East Haddam, Connecticut



R C & D

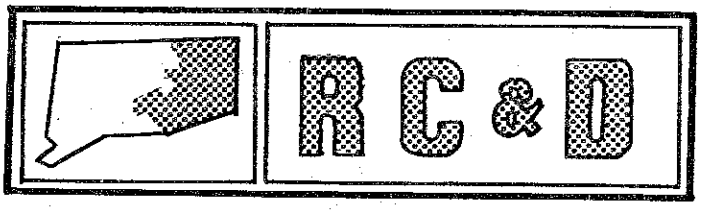
EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team Report on

Brookhollow Subdivision

East Haddam, Connecticut

June 1978

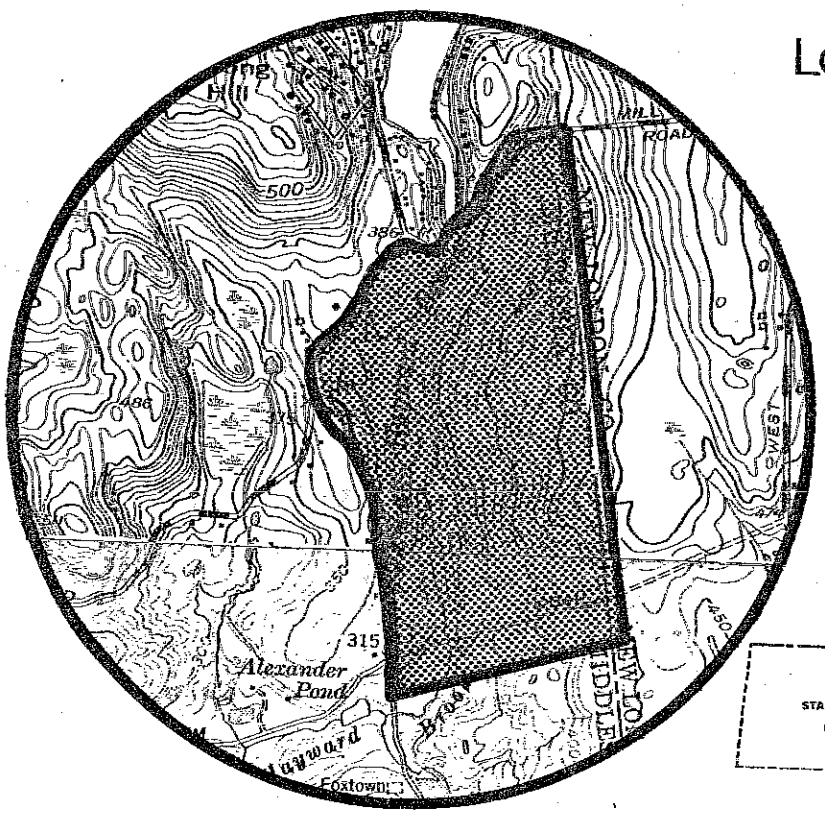


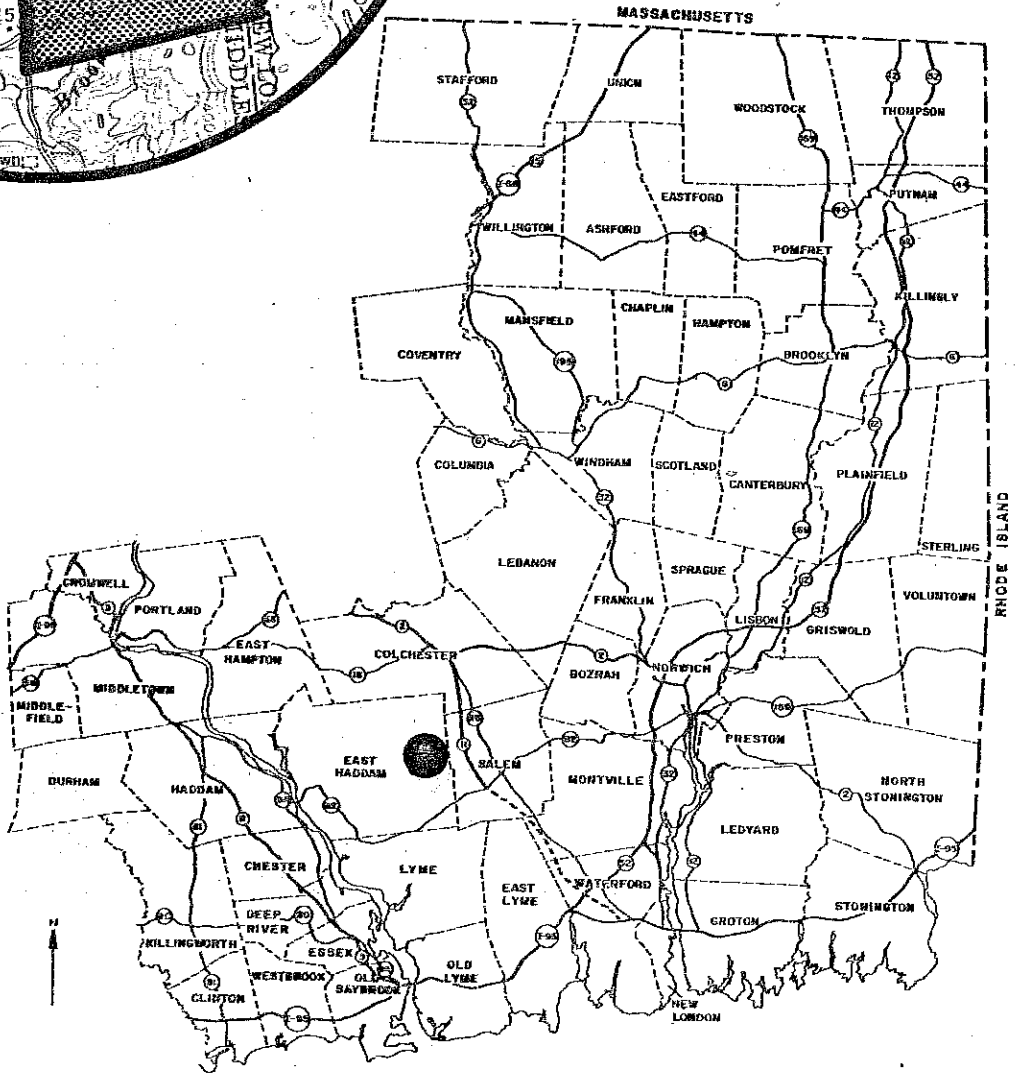
eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site

BROOKHOLLOW SUBDIVISION
EAST HADDAM, CONNECTICUT





EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
BROOKHOLLOW SUBDIVISION
EAST HADDAM, CONNECTICUT

This report is an outgrowth of a request from the East Haddam Planning and Zoning Commission to the Middlesex 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 for the RC&D Executive Committee by David Syme, Committee President, and the measure was reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The soils of the site were mapped by a soil scientist from the United States Department of Agriculture, Soil Conservation Service (SCS). Reproductions of the soil survey map, a table of soils limitations for certain land uses and a topographic map showing property boundaries were distributed to all Team members prior to their review of the site.

The ERT that field-checked the site consisted of the following personnel: Barry Cavanna, District Conservationist, Soil Conservation Service (SCS); Joe Neafsey, Soil Conservationist (SCS); Mike Zizka, Geologist, Connecticut Department of Environmental Protection (DEP); Don Smith, Forester, DEP; Steve Holmes, Regional Planner, Midstate Regional Planning Agency; Don Capellaro, Sanitarian, State Department of Health; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Thursday, May 11, 1978. Reports from each contributing Team member were sent to the ERT Coordinator for review and summarization for the final report.

This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the developer and the Town of East Haddam. The results of this Team action are oriented toward the development of a better environmental quality and the long-term economics of the land use.

The Eastern Connecticut RC&D Area Committee hopes that this report will be of value and assistance in making any decisions regarding this particular site.

If you require any additional information, please contact: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360, 889-2324.

INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to review a parcel for proposed subdivision located directly south of Lake Hayward and bordering the East Haddam-Salem town line. The 265 acre parcel, known as Brookhollow Subdivision, has frontage on Haywardville, Alexander and Foxtown Cemetery Roads and is currently in the private ownership of Sunrise Associates, a development corporation. Sunrise Associates intends to subdivide this large parcel into 37 lots, ranging in size from two acres to 40 acres. Most lots in this subdivision are from 3 to 5 acres in size with 200 to 250 feet of frontage. The developer intends to service these lots with on site sewage disposal and on site wells.

An unimproved section of Salem Road extends through the southern portion of the property. The developer intends to upgrade this road with gravel paving and construct a bridge over Lake Hayward Brook to serve as an access road for all lots fronting on Salem Road.

This property was at one time managed as a wildlife habitat by the East Haddam Fishing and Game Club. It has also been logged, sometime during the last five to six years. The most striking features of the site are its varied topography, Lake Hayward Brook and its associated wetlands, and the vegetative diversity present.

The Team is concerned with high water table on this site and the effects it will have on the proposed development. The major problems will be with the proposed on-site sewage disposal systems. We also feel that the Town may wish to obtain information on certain concerns which have been omitted on the subdivision plan, before final action is taken on this proposal. Briefly, no sediment and erosion control plans appear on the subdivision plans, no details for the bridge installation are shown; no provisions for minimizing the steep grade of Salem Road have been included; driveway cuts are not shown on the plans; there appears to be no provision made for handling water from cross culverts and no methods for overcoming severe soils limitations for on-site sewage have been indicated.

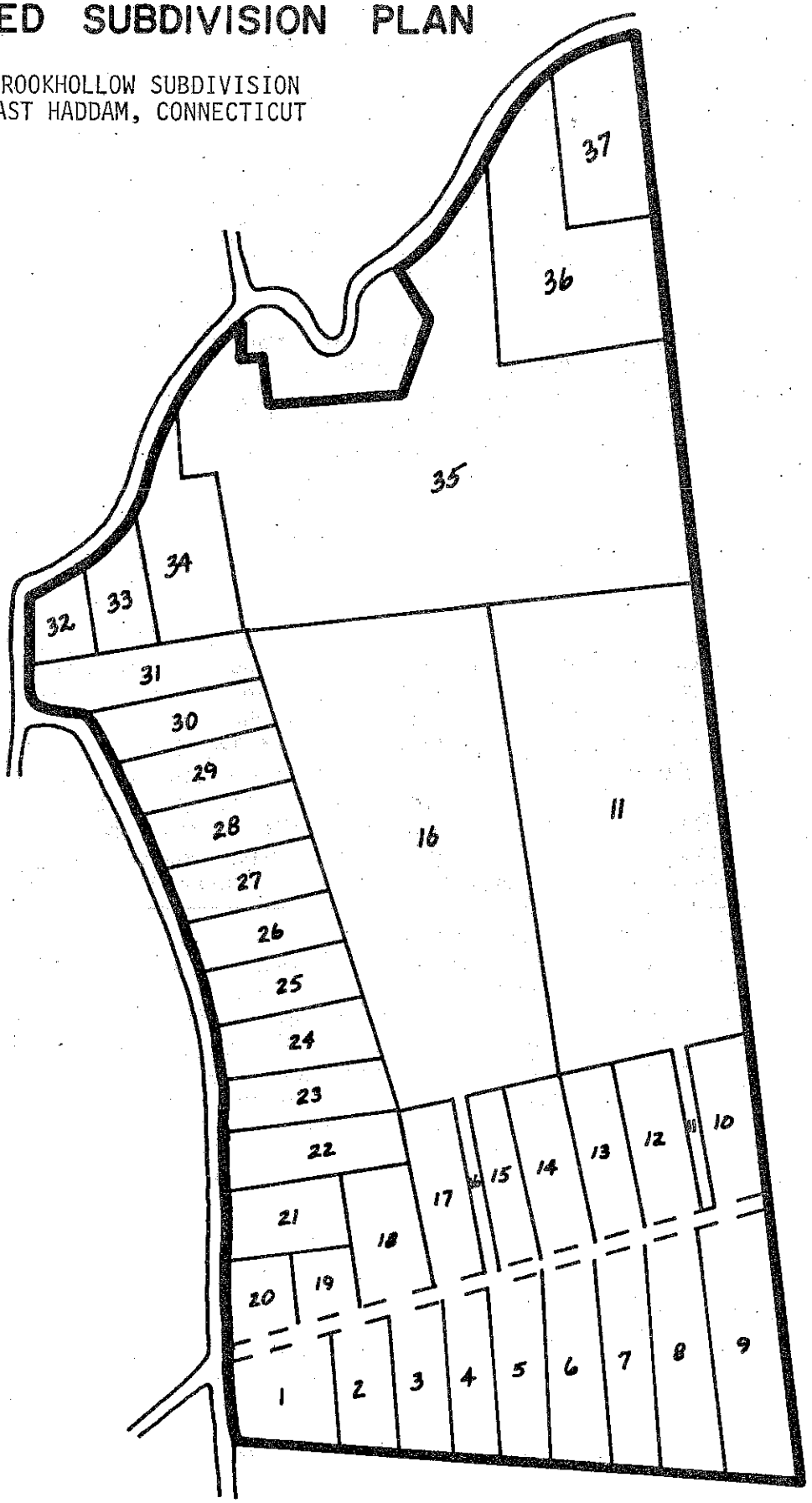
The Brookhollow subdivision site presently provides excellent elements of habitat for native woodland wildlife. Recent selective logging and management has further improved the value of the area. Developing the area as residential land will eliminate this habitat and may have a significant negative impact on native wildlife, if surrounding woodlands cannot support the displaced populations.

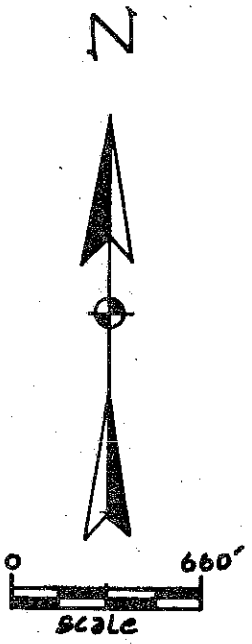
The proposed improvements to Salem Road should also be examined closely, as this could represent a considerable expense to the Town, should the residents request that the road meet East Haddam accepted road standards.

It is hoped that the Town will take all of these factors into consideration when evaluating this proposed subdivision application.

PROPOSED SUBDIVISION PLAN

BROOKHOLLOW SUBDIVISION
EAST HADDAM, CONNECTICUT





ALL LOT LINES SHOWN ARE APPROXIMATE.

ENVIRONMENTAL ASSESSMENT

GEOLOGY

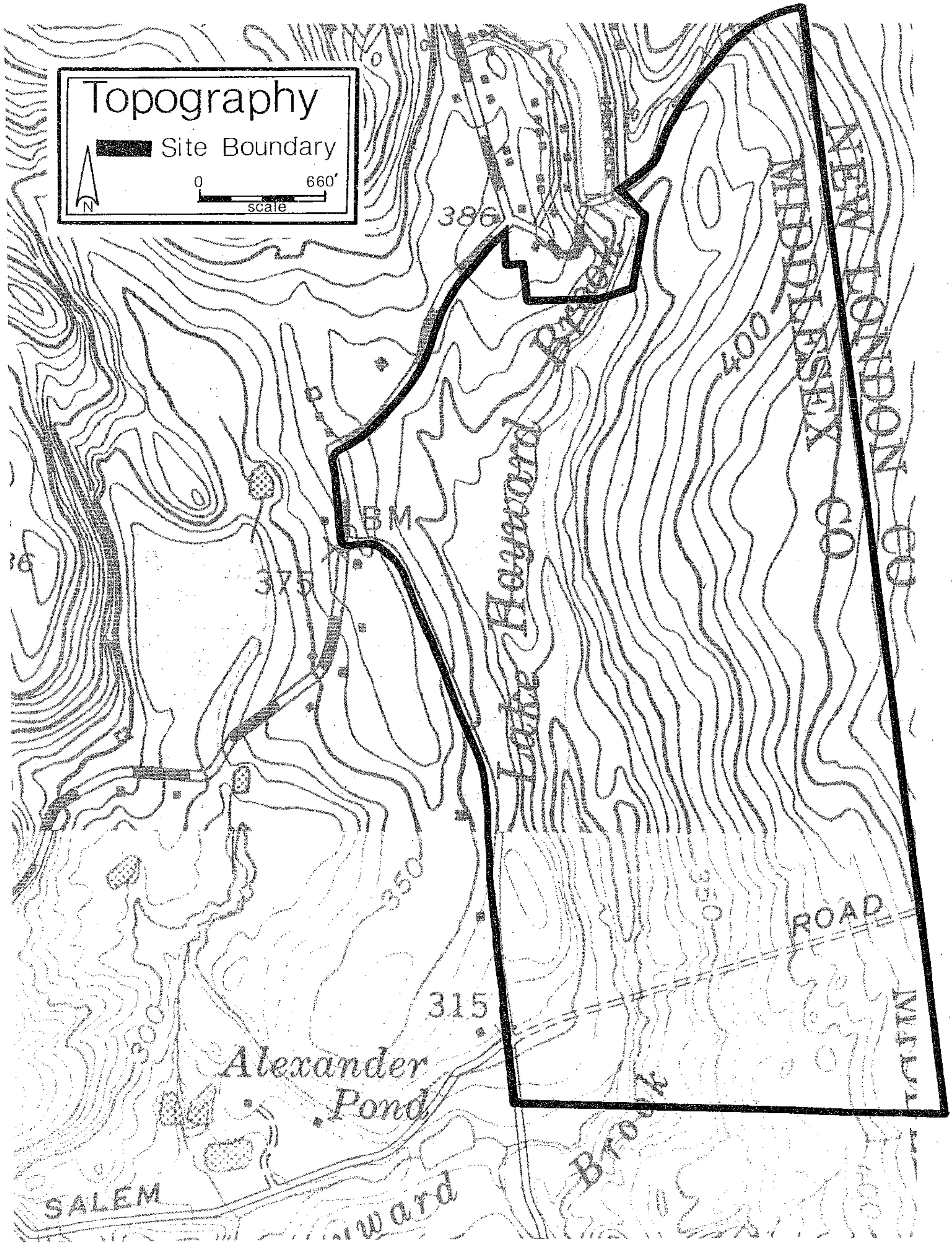
The bedrock geology of the property is mapped in two publications of the Connecticut Geological and Natural History Survey: The Bedrock Geology of the Moodus and Colchester Quadrangles, Quadrangle Report No. 27; and The Bedrock Geology of the Hamburg Quadrangle, Quadrangle Report No. 19. Almost all of the bedrock underlying the property is Brimfield Schist, which is described as a gray or rust-stained garnetiferous biotite-muscovite schist, with subordinate sillimanitic schist, garnetiferous quartz-biotite schist, garnetiferous calc-silicate granofels, and amphibolite. In the northwest corner of the property, west of Lake Hayward Brook, Middletown Gneiss underlies the overburden. This rock unit consists of interbedded amphibolite and light-colored or rust-stained quartz-feldspar gneiss. Scattered about the property are numerous boulders of pegmatite, an intrusive rock of granitic composition, with very large grains of quartz, feldspar, and mica. One boulder in the southern part of the property measured approximately 30 ft. x 20 ft. x 20 ft. Lenses of pegmatite are assumed to be locally interlayered with Brimfield Schist on the property.

Surficial geologic maps that include the Brookhollow Subdivision area have not been published to date. Numerous excavations, however, indicate that the principal type of overburden is till. Till is a complex, stony sediment derived from glacial erosion of bedrock and preexisting overburden. Deposited directly by glacier ice, till contains an assortment of particle sizes ranging from clay to boulders. Till textures on the property range from sandy and loose to hard, clayey, and compact. Small, layered, sandy and gravelly pockets may be locally present within the till as a result of meltwater flow through cracks or channels within wasting glacial ice. Most of the till observed, however, had a fine-grained matrix containing a high percentage of mica flakes derived from schist.

In 1972, and for several years thereafter, the property was considered for use as a regional sanitary landfill site. In conjunction with that proposal, many test holes were placed throughout the site, primarily in the southern half. In most of the excavations, bedrock was found within 10 ft. of the surface. Numerous outcrops, principally schist, but including coarse-grained granitic or quartzose lenses, were seen along the dirt road near the south boundary of the property, as well as near the paved roads that form the north and west boundaries. Although the interior part of the site was not walked extensively during the field review, aerial photographs and topography suggest that numerous outcrops and thin surficial deposits characterize most of the land.

HYDROLOGY

Lake Hayward Brook, the principal stream on the property, receives runoff from the entire site. Numerous small rivulets, many of which may be seasonal, are tributaries of the brook. Groundwater surfaced at several points along the dirt road in the southern part of the property. Groundwater levels in most excavations observed during the field review were within 2 feet of the surface. As part of a previous investigation of the property for potential use as a regional


Topography
Site Boundary
N
0
660'
scale
386
375
BM
400
350
315
300
Lake Hayward Brook
NEW LONDON CO
MIDDLESEX CO
ROAD
Alexander Pond
SALEM

landfill, groundwater levels were monitored for 20 test holes during November, 1972, through January, 1973. The conclusion drawn from that study was that the water table seasonally rose to within 2 feet of the surface over much of the site. Test holes at which the groundwater level was observed to be deeper than 2 feet were generally situated on small knolls that had no influence on the general shape of the water table.

VEGETATION/WILDLIFE RESOURCES

Most of the 265 acre site has been selectively logged and managed for wildlife within the last six years and this has had a significant beneficial impact on the value of the area for wildlife. The vegetation on the site consists of mixed hardwood species with maple, oak, ash, cherry, hickory, beech, tulip poplar, yellow and black birch, and hornbeam predominating. A small area of pine exists near the southwest corner of the property. Because the canopy is open, light penetration is good and a brushy understory exists. Hardwood saplings and seedlings as well as greenbrier, maple leaf viburnum, blueberry, huckleberry, blackberry and spicebush dominate the understory. Numerous fern species, wildflowers and club moss were found on the forest floor. Many small open areas exist in which native grass species are present.

The presence of thick brushy growth, old logging roads (which crisscross the area at about 200-foot intervals), open areas, many suitable den trees, stone walls, and the wetland-stream corridor which bisects the property make excellent habitat for most woodland species including deer, ruffed grouse, squirrels, and seasonal song birds.

The construction of logging roads has created many small woodland pools, and the brush piles left from the logging provide additional water and cover for woodland species. Many intermittent streams are on the property. These provide additional diversity and habitat elements. Lake Hayward Brook is the major stream on the property. The stream bottom is gravelly to sandy, with numerous rocks and boulders. Many pools and riffle areas are present, and many tree snags exist. Mosses, green algae and diatoms are present on the stream bottom and a diverse aquatic invertebrate population exists. The habitat will probably support native or stocked trout, as well as other nongame fish species.

The wetland areas associated with Lake Hayward Brook and the other streams are vegetated with spicebush and hardwood species which are adopted to wet conditions. Skunk cabbage predominates the floor of the swamp. These wetlands are important as a buffer zone for the stream and have good value for woodland wildlife, but because the area has relatively steep slopes (3-8%), large areas of open standing water do not exist and the value of the area for wetland wildlife species is relatively poor.

Development impact on this area will include the destruction of the high value wildlife habitat which presently exists. As the area has been managed for and is heavily utilized by wildlife, the severity of this impact will depend on how well the surrounding unmanaged woodlands can support existing populations.

Approximately 1.5 to 2 acres of wetland will be affected by the proposed bridge construction and road crossing of Lake Hayward Brook. Any final plans for development should provide for measures to control silt loss during construction of the road crossing. The discharge of stormwater from the roads could also cause some downstream degradation. It is also suggested that an open space-streambelt zone be established along Lake Hayward Brook as described in the Environmental Protection Agency publication "The Public Benefits of Cleaned Water: Emerging Greenway Opportunities." This zone should include the stream and major tributaries, associated wetlands, and a buffer strip of upland area. The buffer strip should be 75 to 100 feet wide wherever feasible to allow for maximum filtration of soil sediment and organic nutrients from the development sites.

Clearing and creation of new edge areas near new roads and homesites may provide some benefits to wildlife. However, urbanization usually reduces the suitability of the habitat for native wildlife and the result is an increase in urban wildlife forms such as robins and other bird species and mammals such as opossum, skunk and raccoon. The presence of free-roaming cats and dogs will further degrade the value of the area for wildlife.

FOREST RESOURCES

The Brookhollow Subdivision site had been logged during the past six years, as a result potentially hazardous trees on this site are minimal. This canopy opening allowed remaining trees to become windfirm for potential subdivision development. This site is a high quality area for forest and wildlife management.

Forest resources for the Brookhollow subdivision site have been divided into three stands which are representative of the types of vegetation present. These are shown in the accompanying illustration.

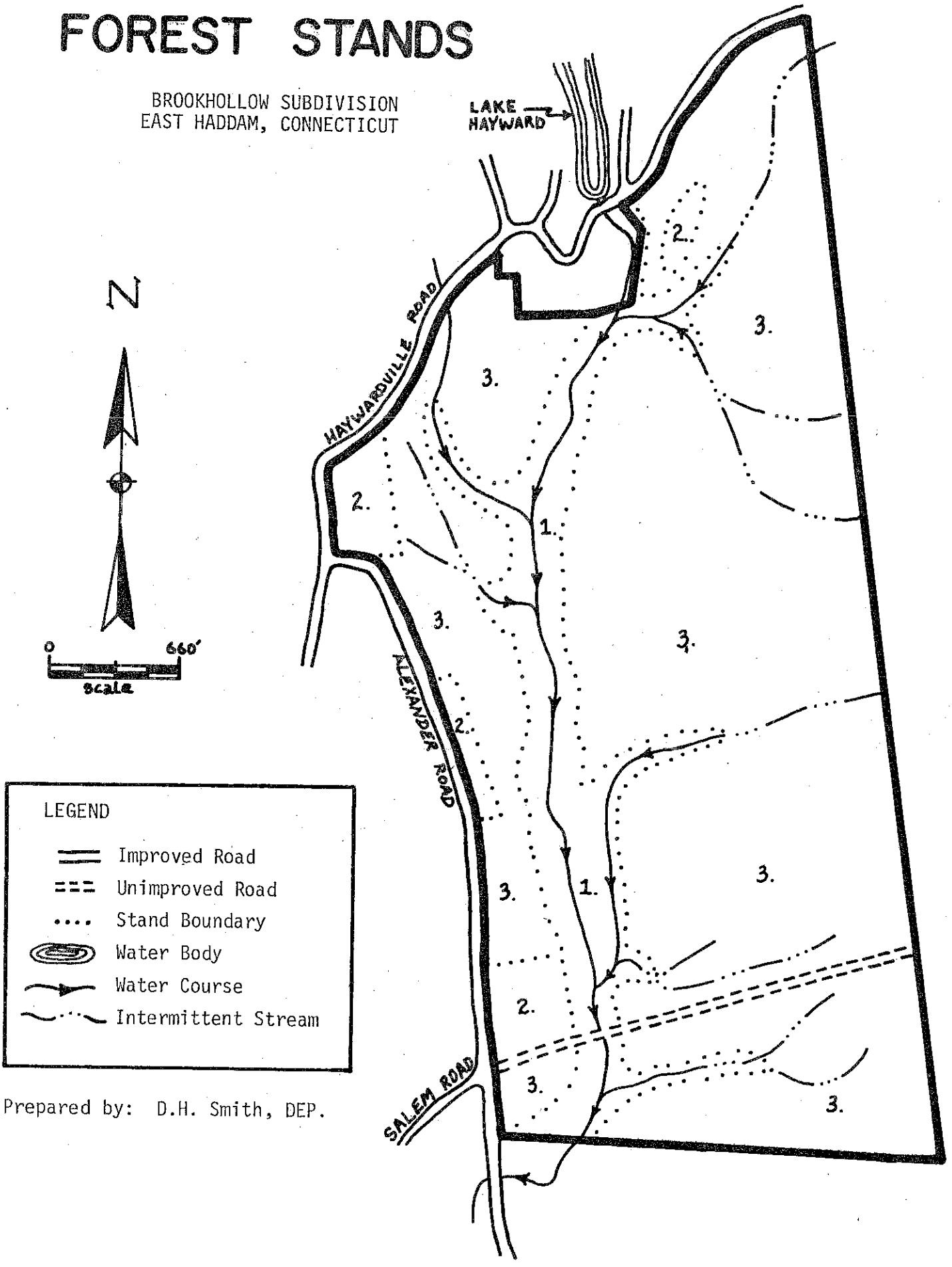
STAND ONE: This 41 acre wetland area is occupied by poor quality black birch and red maple. The heavy understory is dominated by spicebush and witch hazel. There is very little to no reproduction evident here. All cordwood was harvested approximately 5 years ago. This area should remain undeveloped as any further removal of the forest canopy could result in raised water temperature and a general degradation of the water quality.

STAND TWO: The open areas and typical old field vegetation cover approximately 13 acres of the site. This stand is dominated by pole size red oaks, white oaks and black birch. White pine and red cedar are also present. The understory is open, with occasional oak and white pine seedlings; mountain laurel is also evident, but sparse. Development in this area should be designed to encourage growth of softwoods such as white pine and Canadian hemlock.

STAND THREE: This 221 acre mixed hardwood stand is dominated by pole to sawlog size red oak, white oak, red maple, sugar maple, yellow poplar, black birch, yellow birch and hickory. Black cherry and gray birch occur sporadically. The understory is composed of five to six year old reproduction of these species on the drier sites, with witch hazel and spice bush restricting reproduction on the wetter sites. Development in this stand should encourage retention of as

FOREST STANDS

BROOKHOLLOW SUBDIVISION
EAST HADDAM, CONNECTICUT



Prepared by: D.H. Smith, DEP.

much forest cover as possible. Enough material has been removed in the recent harvest operation to facilitate excavation and construction with minimal vegetative disturbance. A limited cordwood harvest of broken, diseased or hazardous material should be considered to improve the overall vegetative health of the area. Retention of stonewalls and hedgerow trees is desirable in this area.

SOILS

A detailed soils map of this site is included in the Appendix to this report, accompanied by a chart which indicates soil limitations for various urban uses. As the soil map is an enlargement from the original 1,320'/inch scale to 660'/inch, the soil boundary lines should not be viewed as absolute boundaries, but as guidelines to the distribution of soil types on the site. The soil limitation chart indicates the probable limitations for each of the soils for on-site sewerage, buildings with basements, buildings without basements, streets and parking, and landscaping. However, limitations, even though severe, do not preclude the use of the land for development. If economics permit large expenditures for land development and the intended objective is consistent with the objectives of local and regional development, many soils and sites with difficult problems can be used. The soils map, with the publication Special Soils Report, Connecticut River Estuary Planning Region, can aid in the identification and interpretation of soils and their uses on this site. Know Your Land: Natural Soil Groups for Connecticut can also give insight to the development potentials of the soils and their relationship to the surficial geology of the site.

The soil series most representative of the Brookhollow Subdivision site are Canton, Canton and Charlton, Woodbridge, and the Ridgebury-Whitman Complex. Development limitations associated with these soils are related to wetness and stoniness.

The Canton series consists of gently sloping, sloping, moderately steep and steep, well drained soils on uplands. They formed in a fine sandy loam mantle underlain by friable gravelly sand glacial till. Canton soils have moderately rapid or rapid permeability. Major development limitations are related to slope and stoniness.

The Charlton series consists of gently sloping, sloping, moderately steep, and steep, well drained soils on uplands. They were formed in friable glacial till. Charlton soils have moderate to moderately rapid permeability. Major limitations are related to slope and stoniness.

The Ridgebury series consists of nearly level, poorly drained soils on drumlins, and rounded or elongated hills of uplands. They formed in compact glacial till. Ridgebury soils have moderate to moderately rapid permeability in the surface layer and subsoil, slow or very slow permeability in the sub stratum (fragipan), and a high water table at or near the surface 7 to 9 months of the year. Major development limitations are related to stoniness, wetness and slow permeability in the substratum.

The Whitman series consists of nearly level, very poorly drained soils on uplands. They were formed in compact glacial till. Whitman soils have moderate to moderately rapid permeability in the surface layer and subsoil, slow or very

slow permeability in the substratum (fragipan), and a water table at or near the surface 9 to 10 months of the year. Major limitations are related to slow permeability, wetness and stoniness.

The soil limitation chart included in the Appendix to this report, elaborates on the development problems which may occur on this site. The Team's major concerns with regard to the soils on this site relate to the lack of erosion and sediment controls which should be indicated on the site plan, the possible basement flooding problems which may occur due to the seasonal wetness of the soils, the severe soil limitations for on-site sewage disposal, and the grade of the Salem Road extension which is in some areas greater than 15% and if paved in gravel, will be subject to excessive erosion.

It is stongly urged that, due to the nature of the site with Lake Hayward Brook and its associated wetlands, a sediment and erosion control plan be included in this subdivision proposal. Connecticut's Erosion and Sediment Control Handbook published by the Soil Conservation Service will aid both the developer and the Town in preparing and approving an adequate erosion and sediment control plan. Standards and specifications for both mechanical and vegetative practices listed within the Handbook are available at the Middlesex County Soil Conservation Service office, Haddam, Connecticut.

WASTE DISPOSAL

Each lot in the subdivision is proposed to be 2 acres or larger, and each would be serviced by on-site waste-disposal systems. Locally limiting factors for such systems on this property include steep slopes, seasonally or perennially high groundwater levels, shallow-to-bedrock surficial deposits, and hard, compact till. The field review suggested that, by virtue of the size of the proposed lots, areas could be found within most that would largely avoid these problems. High groundwater levels, however, may be inescapable on many lots. Such levels could affect the systems in several ways: (1) flooding of the tile lines would cause backup in the system; (2) frequent saturation of leaching fields could plug pore spaces with fine sediments, causing the system to fail; (3) lack of aeration of the effluent would reduce the renovative capacity of the soil, allowing undesirable bacteria and biochemical constituents to enter the groundwater; (4) effluent may be carried downslope by general groundwater flow, surfacing in areas where the water table intersects the ground surface, or discharging into Lake Hayward Brook.

Soil data information previously taken and submitted to the town by the project's consulting engineers, reflects the dryest period of the year (August 1977). While soil percolation rates appear to fall in the satisfactory range, groundwater levels are indicated by mottling observed at that time. It is also noted that many of the test pits which were taken are located very close to existing roadways. While such pits may give general information, it cannot be construed as meaning the same conditions will necessarily exist in the areas of the leaching systems as such locations have not been determined.

As seasonally high water tables may retard the flow and reduce the quantity of waste water that can be carried away from the subsurface disposal areas, a more detailed engineering investigation on surface and groundwater drainage appears to be warranted.

It is recommended that groundwater levels be monitored on each lot for at least one year before houses are built. Lots with high levels should be left undeveloped unless engineering measures can first be proved to alleviate such problems on those specific lots. Curtain drains, for instance, commonly are suggested to remedy high water levels, but in certain types of overburden, such as compact till, the drains have very little effect. Special care should be taken with lots proximal to Lake Hayward Brook to avoid possible effluent contamination of the brook.

Care should also be taken in lots wherein bedrock or hard, compact till lies at shallow depths. Under such circumstances, effluent may be ponded or may flow laterally to a point of emergence onto the surface. Where bedrock is near the surface, percolating effluent may be carried into crevices and fractures that supply water to nearby wells. Septic systems on any lot should be located in an area in which the overburden is relatively friable (loose) and thick.

While the overall density of the project is low, some sites may require the preparation of detailed engineering plans. Consideration should also be given to having the leaching systems meet more than just the minimum standards as this rural development will have to depend upon on-site disposal for many years in the future.

WATER SUPPLY

It is doubtful that a high-yielding sand and gravel aquifer exists on this property. Generally, the surficial deposits are too thin and too poorly sorted by grain size to make the possibility of establishing a reliable dug well seem reasonable. Most homes will have to be supplied by wells drilled into bedrock. Although yields from such wells are unpredictable, it is typical for yields to equal or exceed 3 gallons per minute (gpm), a suitable amount for most domestic purposes. Because the predominant bedrock type is schist, fractures are likely to be thin, and few yields would be expected to be greater than 15 gpm. Reddish staining seen in places in the schist suggest that some wells may encounter water with an objectionable iron content. However, simple filtration methods often can be employed to make the water suitable for drinking.

ROADS

Twenty lots of the proposed subdivision would front on a section of Salem Road which is approximately 2,350 feet long and only eight to ten feet wide in some places. Salem Road extends from Haywardville Road, near the Early Brook crossing, easterly across Alexander Road, through the subject property and continuing into the Town of Salem where it aligns with Witch Meadow Road. Witch Meadow Road continues in the same direction for slightly over one-half mile until intersecting with Connecticut Route 2.

The section of Salem Road traversing the subdivision has no utilities or houses and is not currently maintained by the Town of East Haddam. However, the entire road is contained in the Connecticut Department of Transportation (CONNDOT) list of Town Roads and shown on the CONNDOT map entitled, "Town Roads -

East Haddam" (revised to December 31, 1976), as an "unimproved local road." It would appear from a cursory investigation of older U.S.G.S., state and county maps (such as the "Map of Middlesex County, Conn., from surveys under the direction of H.F. Walling - 1859") that Salem Road may have been used extensively in the past as part of a major east-west inter-town and inter-county road network.

Research also shows no record of the Town of East Haddam either abandoning or discontinuing Salem Road. This has been confirmed by the Town's Zoning Enforcement Officer, Allan Johanson, in a phone conversation on May 30, 1978. Without evidence to the contrary it is reasonable to assume that Salem Road is a public highway of the Town of East Haddam.

One of the primary issues that must be resolved prior to final approval of the subdivision is the question of responsibility for upgrading the road. Although it is classified as a town road, the town has not shown any interest in maintaining it or opening it for through traffic. Moreover, the town stands to gain relatively little in the way of tax base for the expenses which may be incurred by the cost of the road and the ultimate provision of public services to new residents.

The developer, on the other hand, will gain the proceeds from the sale of upwards of twenty house lots. This figure could be considerably higher depending on the extent to which lots #11 and #16 are developed at some time in the future.

It would seem reasonable to require the developer to upgrade the road to a level which is suitable to meet the potential traffic demands imposed by the subdivision and which is acceptable to the town. As an alternative to this approach, the town may proceed with road improvements and assess abutting property owners, under Section 13a - 83 of the Connecticut General Statutes.

However, since the developer has already indicated, as part of the subdivision plan, certain specifications for road, bridge and drainage improvements, the first approach is worth pursuing by the town.

The town should also be concerned with the types of road improvements which will be necessary to meet the increased traffic demands placed on this road and other area roads by new residents. The responsibility of the developer should reasonably extend to the provision of a basic level of service to the new subdivision residents, but not to a level necessary to meet future potential through traffic demands.

A recent memo from Midstate Regional Planning Agency to Mr. Douglas Ferrary, First Selectman, East Haddam, (Appendix B) begins to address the type of situation encountered in the Brookhollow Subdivision proposal. The three general standards contained in the Policy Statement of this memo propose guidelines for road width, road construction and drainage. They are recommended as minimum standards for upgrading of any unimproved roads in the town. In the case of Brookhollow Subdivision, however, more stringent and detailed requirements are warranted due to the excessive grade in certain areas, the presence of a water course and the significant potential increase in traffic generation.

A second, and more suitable, alternative to the Brookhollow road construction issue is contained in Appendix C (Section VI., Construction of Roads, pages four

and five of Proposed Specifications for Road and Street Construction - Town of Haddam). Compliance with these construction standards would more adequately address the limiting conditions mentioned above, specifically the potential increase in traffic generated by the subdivision itself, as well as the long-term implications of opening up a through road between East Haddam and the Witch Meadow Road interchange on Route 2 in Salem. The town should evaluate these standards, especially paragraph 605, which offers an alternative to bituminous concrete wearing surface.

A third solution would be to impose the existing road standards contained in the East Haddam Subdivision Regulations. These standards call for a roadway pavement width of 24 feet (which allows free flow of two-way traffic with parking on one side). This width may be the most realistic, given the nature of the subdivision proposal.

The town may elect to use a combination of these three alternatives. Whatever course of action the town pursues, it should be designed with an eye toward the long-term public interest of the Town of East Haddam, not simply the immediate demands of one subdivision. There is some room for reasonable negotiation between the developer and the town with regard to responsibility for road improvement, but the town should not bend in its requirements for quality subbase, base course, wearing surface, bridge and drainage construction,

PROPOSED PLAN

In further review of this proposal, the town may want to have the developer include on the site plan, information such as proposed house location, proposed septic system location, proposed well location, proposed driveway location, significant stone walls, areas for tree removal, and erosion and sedimentation control measures.

There are no indications in the existing subdivision plan as to the future use of lots #11 and #16. Since these are parcels of almost 32 and 35 acres respectively, it seems reasonable to anticipate resubdivision at some point. The developer should indicate his plans for these parcels at this time, as this information will have a significant bearing on the planning for reconstruction of Salem Road.

Lot 35, a parcel of almost 49 acres, fronts on Haywardville Road. However, the entire frontage (to a depth of 150± feet) is classified as inland wetlands, and access may be extremely difficult, if not impossible. An Inland Wetlands Permit will be required to construct any type of access through the wetlands.

Again, the question arises as to the developer's intention with this parcel. Since it abuts lots #11 and #16, it is conceivable that access might be planned from Salem Road. This question should be resolved before approval of the subdivision plan.

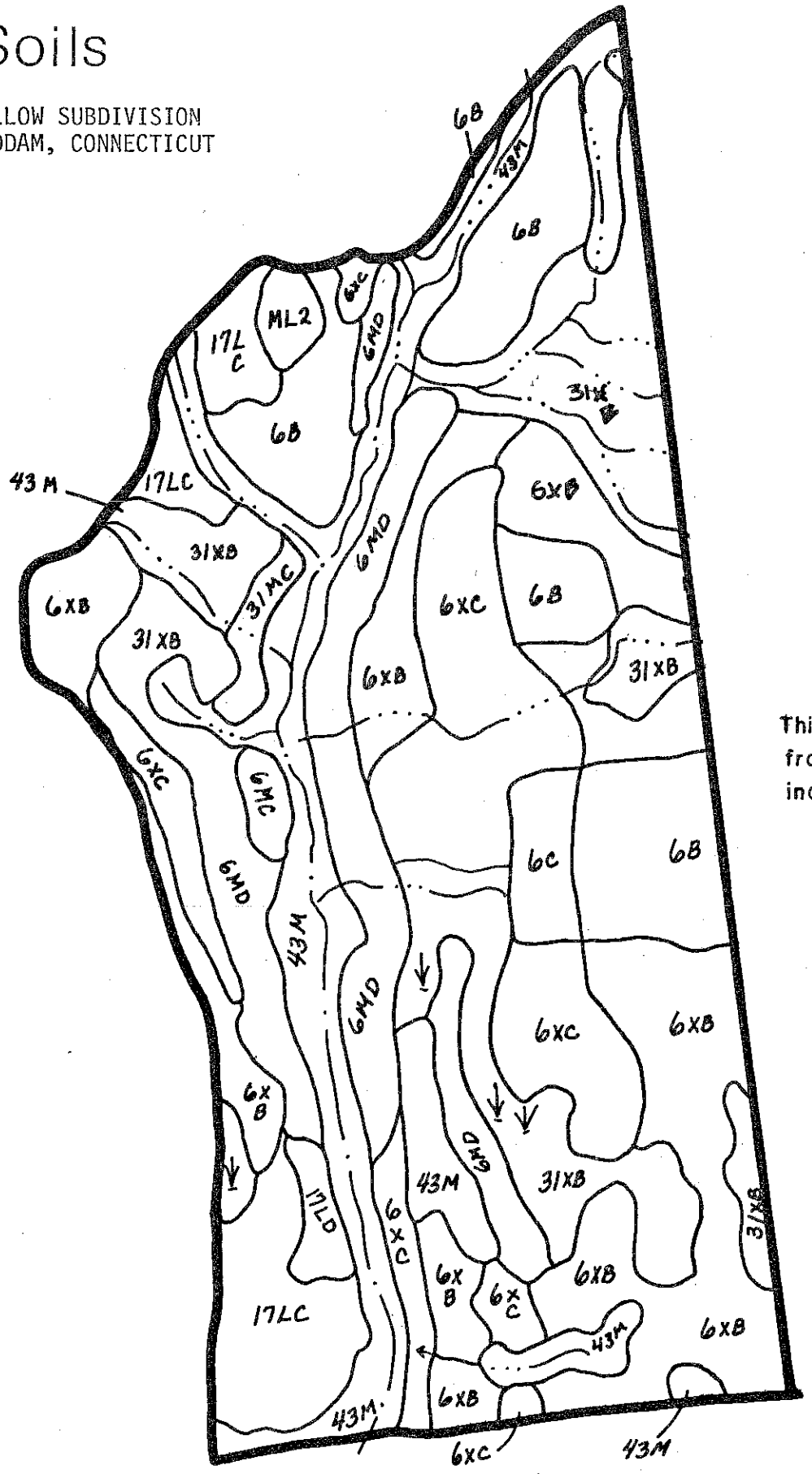
Lots #2, #4, #14, #15 and #17 show deep test holes located within distances ranging from 35 feet down to ten feet from front lot lines, and lot #17 has a test hole shown on a side line. Even though the Public Health Code allows sub-

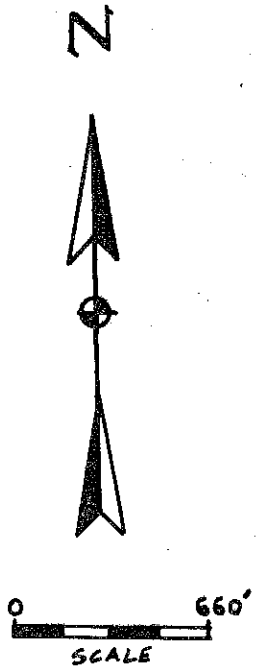
surface sewage disposal systems within ten feet of property lines, the East Haddam Zoning Regulations require a 40 foot front and side yard setback in the R-2 zone. This raises some doubt as to the usefulness of test holes located so close to lot lines.

Appendix

Soils

BROOKHOLLOW SUBDIVISION
EAST HADDAM, CONNECTICUT





This map is an enlargement from the original 1,320'/ inch scale to 660'/ inch.

Information taken from: Special Soils Report: Connecticut River Estuary Planning Region, 1975; Soil Survey Sheets No. 1627, 1626, 1749 prepared by United States Department of Agriculture, Soil Conservation Service. Advance copy, subject to change.

BROOKHOLLOW SUBDIVISION
EAST HADDAM, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Soil Symbol	Approx. Acres	Percent of Acres	Principal Limiting Factor	Urban Use Limitations*			
					On-Site Sewage	Buildings with Basements	Streets & Parking	Land-Scaping
Charlton	17LC	15	6%	Slope, Large stones	3	2	2	2
Charlton	17LD	7	2%	Slope	3	3	3	3
Canton-Charlton	6B	37	13%	Slope	1	1	1	1
Canton-Charlton	6C	4	.5%	Slope	2	2	2	2
Canton-Charlton	6MC	2	.5%	Slope, Large stones	3	3	3	3
Canton-Charlton	6MD	28	10%	Slope, Large stones	3	3	3	3
Canton-Charlton	6XB	61	21%	Slope, Large stones	2	2	2	2
Canton-Charlton	6XC	39	14%	Slope, Large stones	2	2	2	2
Ridgebury Leicester Whitman	43M	46	16%	Wetness, Frost action, Large Stones	3	3	3	3
Woodbridge	31XB	47	16%	Percs slowly, Frost action	3	3	3	2
Woodbridge	31MC	3	.5%	Large stones, Frost action	3	3	3	3
Udorthents	ML2	3	.5%		Filled Land			

Urban Use Limitations: 1 = slight; 2 = moderate; 3 = severe.

SOIL INTERPRETATIONS FOR URBAN USES

The ratings of the soils for elements of community and recreational development uses consist of three degrees of "limitations:" slight or no limitations; moderate limitations; and severe limitations. In the interpretive scheme various physical properties are weighed before judging their relative severity of limitations.

The user is cautioned that the suitability ratings, degree of limitations and other interpretations are based on the typical soil in each mapping unit. At any given point the actual conditions may differ from the information presented here because of the inclusion of other soils which were impractical to map separately at the scale of mapping used. On-site investigations are suggested where the proposed soil use involves heavy loads, deep excavations, or high cost. Limitations, even though severe, do not always preclude the use of land for development. If economics permit greater expenditures for land development and the intended land use is consistent with the objectives of local or regional development, many soils and sites with difficult problems can be used.

Slight Limitations

Areas rated as slight have relatively few limitations in terms of soil suitability for a particular use. The degree of suitability is such that a minimum of time or cost would be needed to overcome relatively minor soil limitations.

Moderate Limitations

In areas rated moderate, it is relatively more difficult and more costly to correct the natural limitations of the soil for certain uses than for soils rated as having slight limitations.

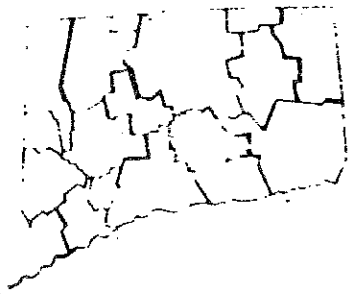
Severe Limitations

Areas designated as having severe limitations would require more extensive and more costly measures than soils rated with moderate limitations in order to overcome natural soil limitations. The soil may have more than one limiting characteristic causing it to be rated severe.

Appendix B

MIDSTATE REGIONAL PLANNING AGENCY

CROMWELL DURHAM EAST HADDAM EAST HAMPTON HADDAM MIDDLEFIELD MIDDLETOWN PORTLAND



P.O. BOX 139 MIDDLETOWN, CONNECTICUT 06457 203 347-7214

TO: Mr. Douglas Ferrary, First Selectman, Town of East Haddam

FROM: MRPA Staff

DATE: April 19, 1978

SUBJECT: Draft Policy - RE: Subdivisions on Unimproved Town Roads

(Note: Although this document has been drafted as a joint policy statement of the Board of Selectmen and the Planning and Zoning Commission, we feel that it could be incorporated into the Subdivision Regulations with minor revisions or as part of a Town Road Ordinance).

PURPOSE AND INTENT

In the Town of East Haddam, there are unimproved roads which provide little or no service to the general public. These roads are generally characterized as being unpaved (ie. lacking a surface such as bituminous concrete, concrete, macadam, bituminous surface treatment or gravel), unable to accept the free flow of two-way traffic and in some cases, impassable. Over the years these roads have provided a means of access to isolated houses, seasonal dwellings, farm lands and woodlots, and landowners have had little or no cause to improve these roads or to ask the town to do so.

However, in recent years the town has witnessed an increasing number of residential subdivisions of land located along roads in this category. Since the town contains many miles of this type of road, with substantial amounts of adjacent vacant land, there is reason to believe that development pressures will continue in those areas. Increases in vehicular traffic, as well as demands for public services generated by these subdivisions necessitate improvements in the roads, with the owners or developers of the subdivisions gaining the most from such improvements.

In many instances, full compliance with road standards and specifications contained in the East Haddam Subdivision Regulations is not necessary to serve a limited number of new homes. Short of constructing a road to these specifications, there are no standards which insure that an unimproved road will be upgraded to a level sufficient to meet the needs of new residents. The Town does have the ability to assess abutting property owners for road improvements under Section 13a - 83 of the Connecticut General Statutes, but minimum Town road specifications should be developed if assessment procedures are comtemplated.

The following policy is designed to bridge the gap between detailed road specifications and no requirements at all. It is intended to provide for basic construction of road beds and wearing surfaces which will meet immediate needs, yet which will facilitate expansion and reconstruction in the future as the Town's road program progresses.

POLICY STATEMENT

The East Haddam Board of Selectmen and the East Haddam Planning and Zoning Commission request the applicant to insure, prior to approval of any subdivision on an unimproved Town road as described above, that the portion of the road which connects the subdivision to an improved Town road provides an adequate level of service for all classes of vehicles in all seasons of the year.

In fulfilling this requirement the applicant shall demonstrate that:

1. The road width is adequate to accept unimpeded two-way traffic flow;

   * (Recommended guideline: Minimum 22' wide road surface)

2. The preparation of the subgrade and the construction of the various road courses minimize erosion potential and are suitable to withstand vehicular traffic generated by the proposed subdivision without significant increases in customary road maintenance by the Town:

   * (Recommended guideline: Preparation of subgrade - All soft and yielding material, along with loose rock and boulders and other portions of the subgrade which will not compact readily when rolled shall be removed. All holes or depressions made by the removal of unsuitable material shall be filled with suitable material and the whole surface compacted uniformly with roller. Subbase, base course and wearing surface shall be constructed in conformance with accepted engineering

practices as recommended by the Town Engineer, after taking into consideration the existing conditions of the road).

3. Road drainage measures and/or structures are sufficient to carry runoff from the road surface and divert water beneath or around road without causing significant increases in erosion or sedimentation.

   * (Recommended guideline: Drainage design based on the 25 year storm for structures which accommodate watercourses.

   * (The recommended guidelines have been included as options. We feel that they give the Board and the Commission a basis to evaluate proposals without getting over technical).

Respectfully submitted,

Stephen J. Holmes

Stephen J. Holmes
Assistant Director

SJH:mlm

Appendix C

SPECIFICATIONS FOR ROAD AND STREET CONSTRUCTION - TOWN OF HADDAM

Section VI. Construction of Roads

601 Preparation of subgrade: All soft and yielding material, along with loose rock and boulders and other portions of the subgrade which will not compact readily when rolled shall be removed. All holes or depression made by the removal of unsuitable material shall be filled with suitable material and the whole surface compacted uniformly with roller. If the surface of an existing road is one foot or less below the proposed subgrade surface, it shall be scarified for the full width of the roadbed. All rock shall be removed 12 inches below subgrade.

602 Gravel Base: The subbase shall consist of at least 8" of Bank Run Gravel constructed in accord with Section 2.12, Form 811. Where ledgerock (bedrock) is encountered, it shall be excavated as above and the gravel subbase shall be 12" minimum.

603 Base Course: The base course shall consist of one 4 inch course of Processed Gravel constructed in accordance with Section 3.04 of Form 811 for roads under 6.0%. For paved roads over 6.0%, crushed stone shall be substituted for processed gravel and shall be placed in accordance with Section 3.02 of Form 811.

604 Wearing Surface:

a. The wearing surface will be three inches of bituminous concrete pavement, constructed in two courses and in accordance with Section 4.02 and 4.05 of Form 811.

b. As an alternative to the above, the Board of Selectmen may permit, after statutory referral to the Planning and Zoning Commission, the following specification for the wearing surface:

605 On the prepared and approved base course there shall be spread fine, finished gravel in a layer 1 1/2 inches thick. It shall be rolled with a ten ton roller. When the surface is in proper condition, it shall be treated with three applications of bituminous material in compliance with Section 4.14, Bituminous Surface Treatment, Form 811, "Standard Specification for Roads, Bridges and Incidental Construction", Department of Transportation, State of Connecticut. The third application of bituminous material shall be made within seven days of the second application and shall consist of the same material. All bituminous material shall be approved by the Board of Selectmen as satisfactory for weather conditions.

606 The specifications for the gravel base and base course shall be the same for both types of wearing surface.

About the Team

The Eastern Connecticut Environmental Review Team (ERT) is a group of professionals in environmental fields drawn together from a variety of federal, state, and regional agencies. Specialists on the Team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, archeologists, recreation specialists, engineers and planners. The ERT operates with state funding under the supervision of the Eastern Connecticut Resource Conservation and Development (RC&D) Area.

The Team is available as a public service at no cost to Connecticut towns.

PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in reviewing a wide range of projects including subdivisions, sanitary landfills, commercial and industrial developments, sand and gravel operations, elderly housing, recreation/open space projects, watershed studies and resource inventories.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the project site and highlighting opportunities and limitations for the proposed land use.

REQUESTING A REVIEW

Environmental reviews may be requested by the chief elected officials of a municipality or the chairman of town commissions such as planning and zoning, conservation, inland wetlands, parks and recreation or economic development. Requests should be directed to the Chairman of your local Soil and Water Conservation District. This request letter should include a summary of the proposed project, a location map of the project site, written permission from the landowner allowing the Team to enter the property for purposes of review, and a statement identifying the specific areas of concern the Team should address. When this request is approved by the local Soil and Water Conservation District and the Eastern Connecticut RC&D Executive Council, the Team will undertake the review on a priority basis.

For additional information regarding the Environmental Review Team, please contact Jeanne Shelburn (889-2324), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360.