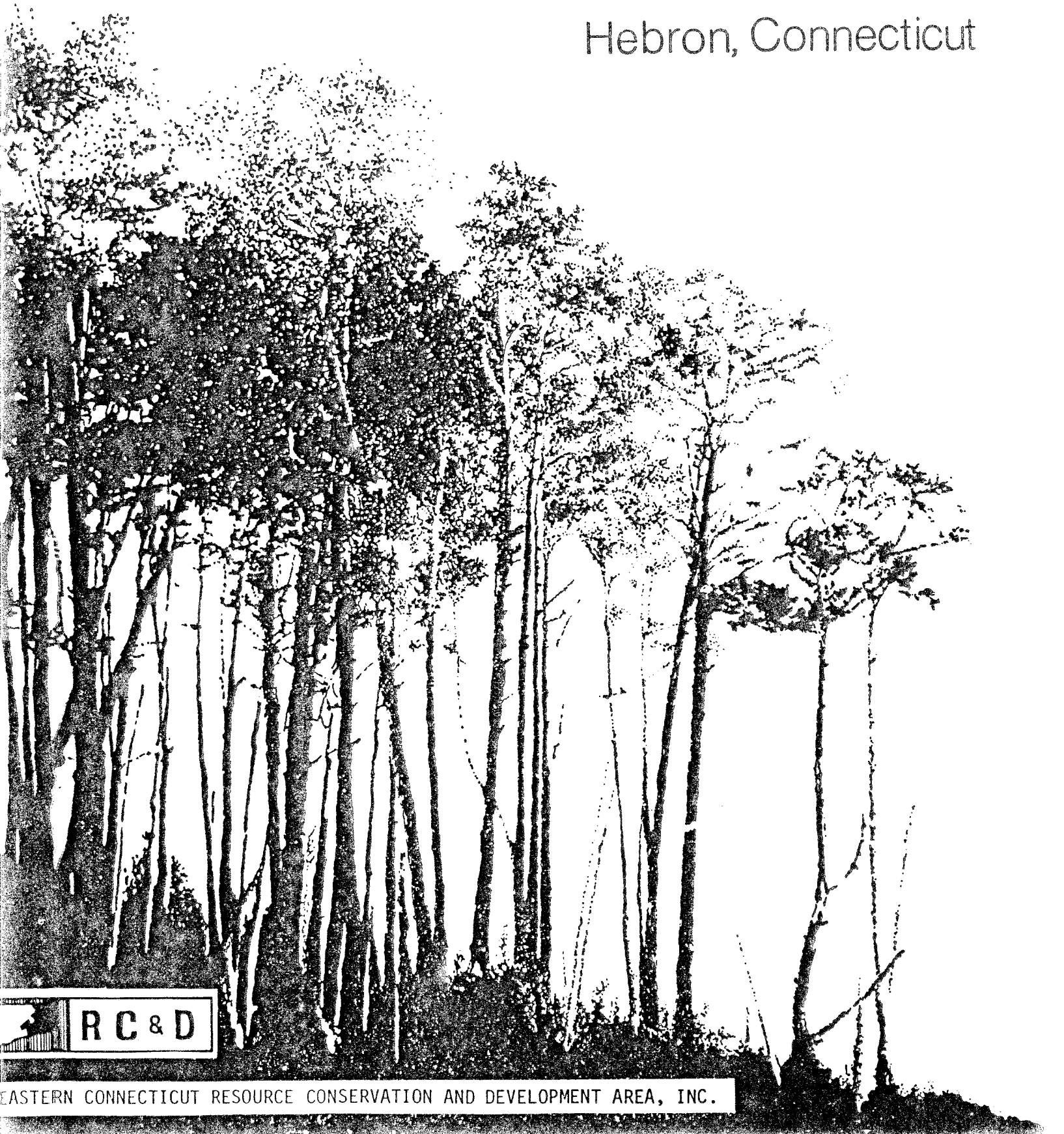
Environmental Review Team Report

Central Business District

Hebron, Connecticut



R C & D

EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

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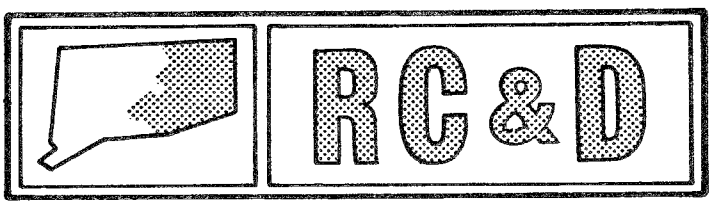
December 1984

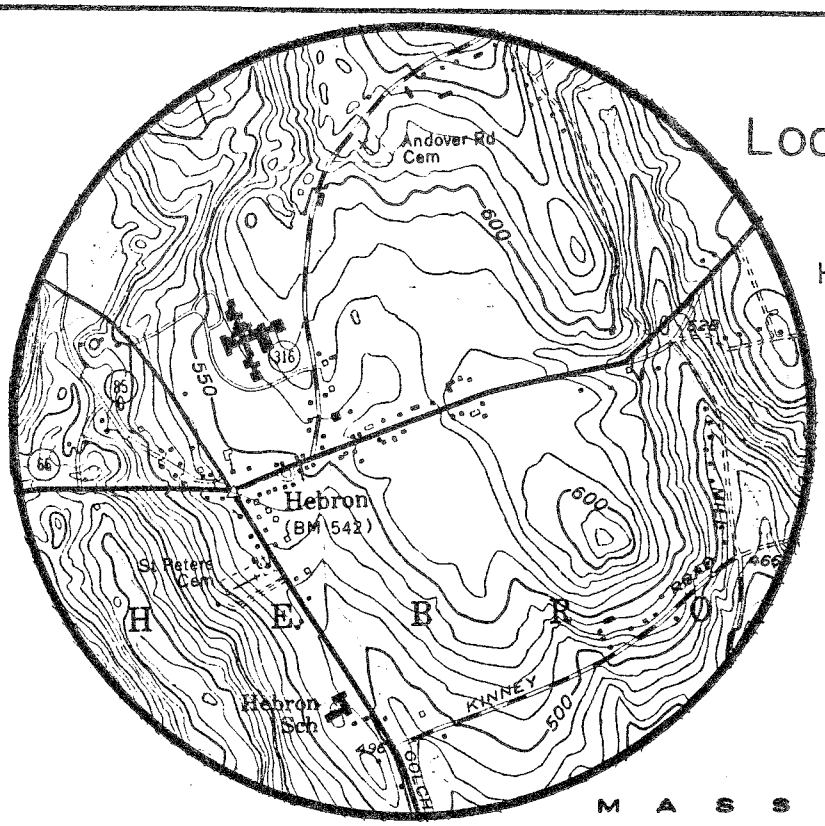


Eastern Connecticut Resource Conservation & Development Area

Environmental Review Team
PO Box 198
Brooklyn, Connecticut 06234

Location of Study Site

HEBRON CENTRAL BUSINESS DISTRICT
HEBRON, CONNECTICUT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
CENTRAL BUSINESS DISTRICT
HEBRON, CONNECTICUT

This report is an outgrowth of a request from the First Selectman of Hebron and the Hebron Planning Commission to the Tolland 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 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: Joseph Neafsey, District Conservationist, SCS; Al Roberts, Soil Specialist, SCS; Brian Curtis, Sanitary Engineer, DEP; Bill Warzecha, Geologist, DEP; Chris Singley, Planner, Capitol Area Council of Governments, Harry Seibert, Transportation Planner, Connecticut Department of Transportation; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Thursday, August 23, 1984. 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 Hebron. 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, Route 205, Box 198, Brooklyn, Connecticut 06234, 774-1253.

Topography

Site Boundary

0 1320' scale

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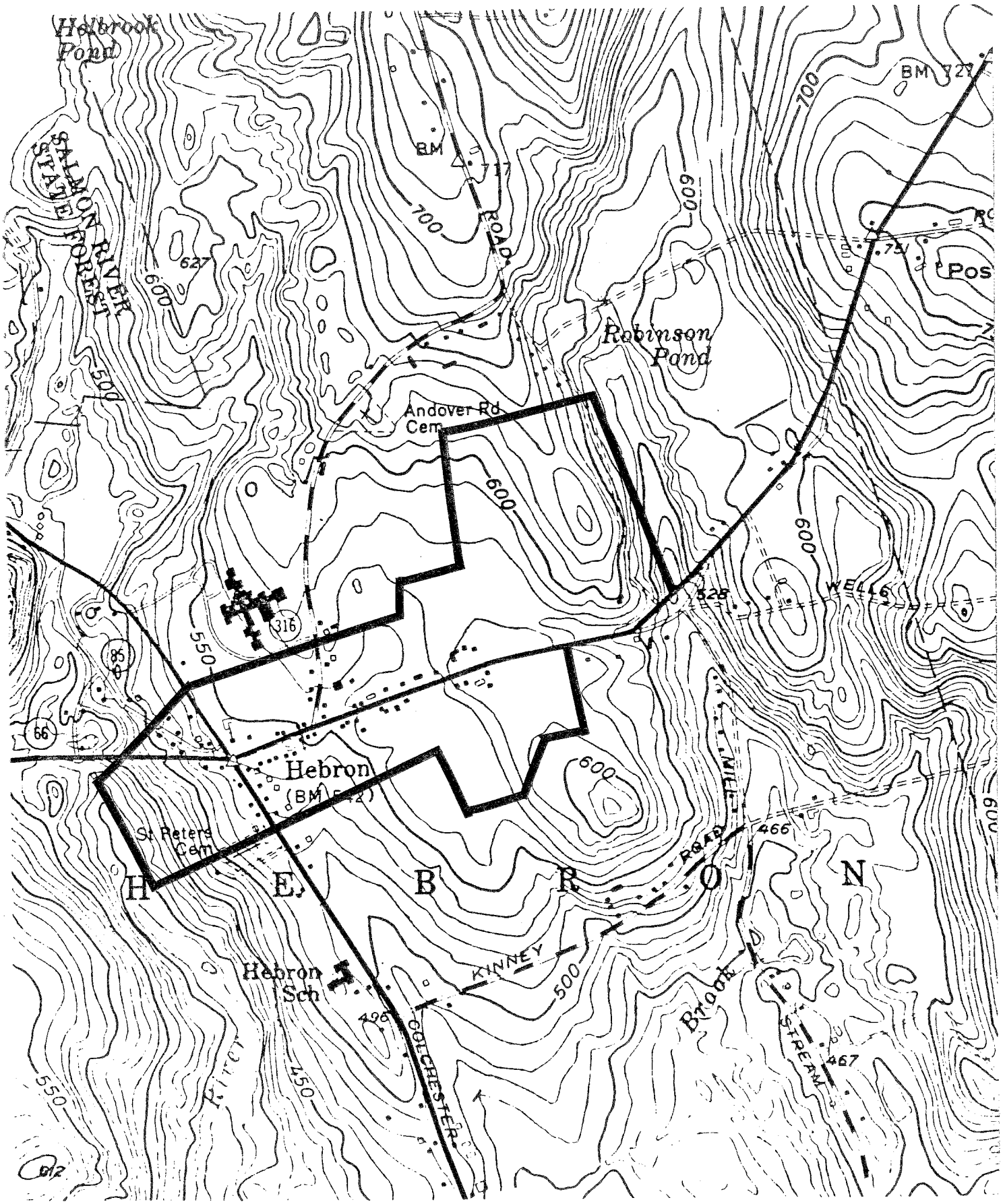


INTRODUCTION

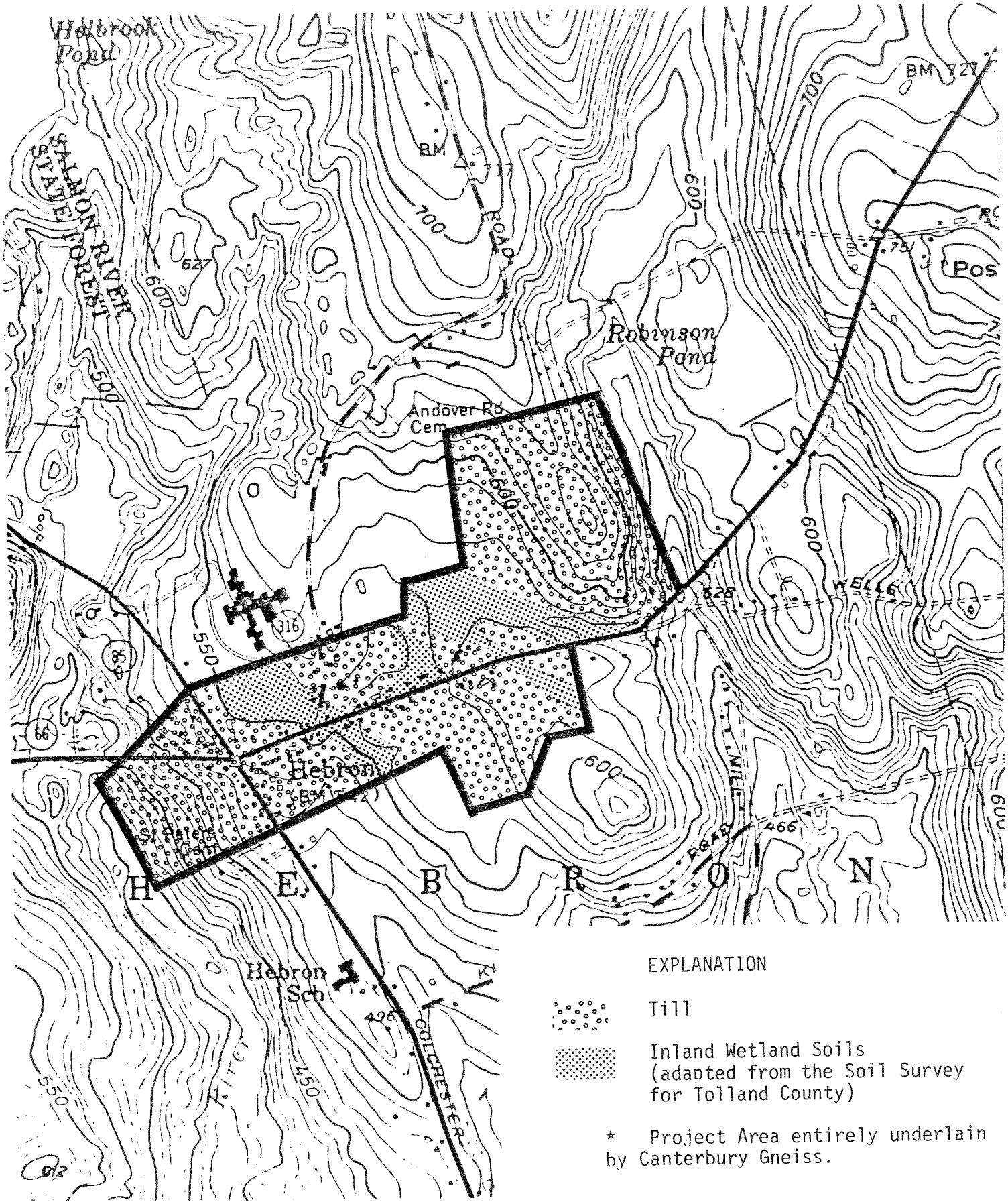
The Eastern Connecticut Environmental Review Team was asked to prepare a natural resource inventory and evaluation of the Central Business District (CBD) in the Town of Hebron. The project site is located on the northern and southern sides of Route 66, extending from its intersection with Route 85 approximately 2000± feet to the east. The properties in this area are presently owned by private individuals/businesses.

The Town is particularly concerned about the rapid growth in this area and its impact on the natural resource base. No public sewer or water service is available to development in this area. Traffic and unlimited access to Route 66 from the commercially developed areas is also a major concern.

Hebron's Central Business District has been developed on a relatively flat drumloidal hill. Soils in the area are noted for their seasonal high groundwater table, stoniness, and hardpan layer. Regulated wetland areas (P.A. 155) have also been located within the CBD. Vegetation is minimal, being restricted to wetlands and roadside areas which have not yet been paved.

Soil conditions are a major limitation to future development of the CBD. Seasonal high water tables and stoniness make proper installation and functioning of on-site septic systems difficult and costly. Numerous septic failures have been noted in this area during the past. Various alternatives and mitigation measures are discussed in detail in the following sections of this report. The Team hopes that this information will be helpful in making future planning decisions for the Central Business District.

Surficial Geology



ENVIRONMENTAL ASSESSMENT

TOPOGRAPHY

Hebron's Central Business District (CBD) is located in the east central part of Town on the northern and southern sides of Route 66. A portion of the study area extends approximately 2,000 feet east of Route 66 from its intersection with Route 85. The accompanying topographic map shows the project area which comprises approximately ±200 acres.

Hebron's CBD is located on a glacially formed feature called a drumlin. The term "drumlin" refers to a hill, which is composed of glacial sediments (till) that were deposited directly from glacial ice and which was subsequently overridden and stream-lined by the ice sheet. Drumlins are commonly oval or cigar shaped features. The long axis of the drumlin parallels the direction of flow of the former ice sheet. Other drumlin hills are located north and east of Hebron's CBD.

The topography throughout most of the project area range between relatively flat and gently sloping. Slopes begin to steepen moderately toward the watercourses at the eastern and western limits of the project area.

The major watercourse found within the study area is a tributory of Raymond Brook. It crosses the east central parts of the study area and flows in a southward direction parallel to Route 85.

Maximum and minimum elevations in the project areas are ±640 feet and ±400 feet above mean sea level, respectively.

GEOLOGY

Hebron's CBD lies within the Columbia topographic quadrangle. A map of the bedrock geology of the Columbia quadrangle by George Snyder (1967) shows the rock types that underlies the project area. This map (GQ-592) has been published by the U.S. Geological Survey. At the present time a surficial geologic map has not been published for the quadrangle.

Bedrock Geology

Bedrock is not exposed in the study area. According to Snyder's map, the rock underlying Hebron's CBD is Canterbury Gneiss. This rock unit consists of a medium-grained gray to white granodiorite gneiss composed of the minerals orthoclase, quartz, and biotite. A "gneiss" is a crystalline, metamorphic rock

(rocks altered by great heat and pressure in the earth's crust). Gneisses commonly have a banded or streaked appearance, which results from alternating layers of dark and light minerals. Logs of well completion reports for water wells drilled in the vicinity of the project area suggests that depth to bedrock ranges between 30 and 50 feet below ground surface.

Surficial Geology

Those unconsolidated mineral and organic materials overlying bedrock are referred to as overburden or surficial geological materials. The predominant surficial geologic material in the project area is a glacial sediment called till. Till consists of rock particles of varied shapes and sizes. These sediments were derived from the local bedrock (e.g., gneisses and schists) and were deposited directly by glacier ice without being reworked by glacial meltwater streams. Due to irregularities in sediment sources, length of transport, and depositional processes, the texture of till may range from coarse grained and loose, to clayey and tightly compact. According to the Town Sanitarian, the till throughout most of the study area is moderately compact in the first couple of feet but it becomes siltier and very compact at about 18 to 24 inches below ground surface. Evidence of the compact till layer is visible along the eroded banks of the unnamed stream in the east central part of the site (east of Pendleton Village). These compact till layers are commonly referred to as "hard pan." Excavation with handtools in this layer is often very difficult. Connecticut Water Resources Bulletin #31 (Lower Connecticut River Basins) suggests that the thickness of till throughout most of Hebron's CBD may be at least 40 feet.

Neither the till nor the bedrock is believed to have any substantial economic value.

Overlying till in scattered areas throughout the central portions of the study area are bands of seasonally wet areas. They lie principally along watercourses and/or intermittent drainage channels and extend generally in a north-south direction. The accompanying soils map identifies these areas by the symbols Rd and Rg for Ridgebury soils and Lg for the Ridgebury, Leicester and Whitman Complex soils. These soils are regulated inland wetland soils under P.A. 155. They have severe limitations for development and/or on-site sewage disposal systems and, therefore, should be avoided where possible.

Development Concerns

The major geologic limitations which may pose constraints for future commercial development in the study area include (1) predominance of a compact till-based soil (hard pan) which has a tendency to be stony, in the upper few feet, contain a seasonally high groundwater table, and have slow percolation rates; (2) the presence of inland-wetland soils; and (3) moderate slopes at the eastern and western limits of the project areas.

It was indicated to Team members on the review day that the CBD has no municipal sewerage available to it, therefore, must rely on individual subsurface sewage disposal systems. The geologic limitations mentioned above will weigh most heavily on the ability to provide adequate subsurface sewage disposal. At least one overflowing septic system was observed at a commercial building on the day of the field review. The Town sanitarian indicated that there are several failing systems.

It seems likely that the limitations mentioned above (hard pan layers, high groundwater tables, slow percolation rates) could be surmounted with properly engineered septic systems and with good planning. Once septic systems are designed by a professional engineer, and approved by appropriate state and local authorities, it is imperative that they be installed according to the final approved plan. In this regard, consideration should be given to requiring the design engineer to supervise the installation of the septic system. In addition, septic systems should be properly maintained (i.e., pumped out) which will help the system to continue to function properly. Water conservation devices should also be installed on plumbing fixtures to reduce the volume of water being used.

Because of the geologic limitations in the CBD area mentioned earlier, future commercial development might be appropriate at a low density.

Possible alternatives for subsurface sewage disposal systems in Hebron's CBD includes the extension of Colchester's municipal sewer line to service the CBD, or the construction of large subsurface sewage disposal system(s) (community septic systems) which could serve the CBD. It was indicated to Team members at the field review day, that the Town has hired an engineering firm to conduct a study to determine whether or not the extension of Colchester's municipal sewer is feasible.

Construction of large subsurface sewage disposal systems (community septic systems) may require use of large land areas and extensive soil testing in order to determine feasibility.

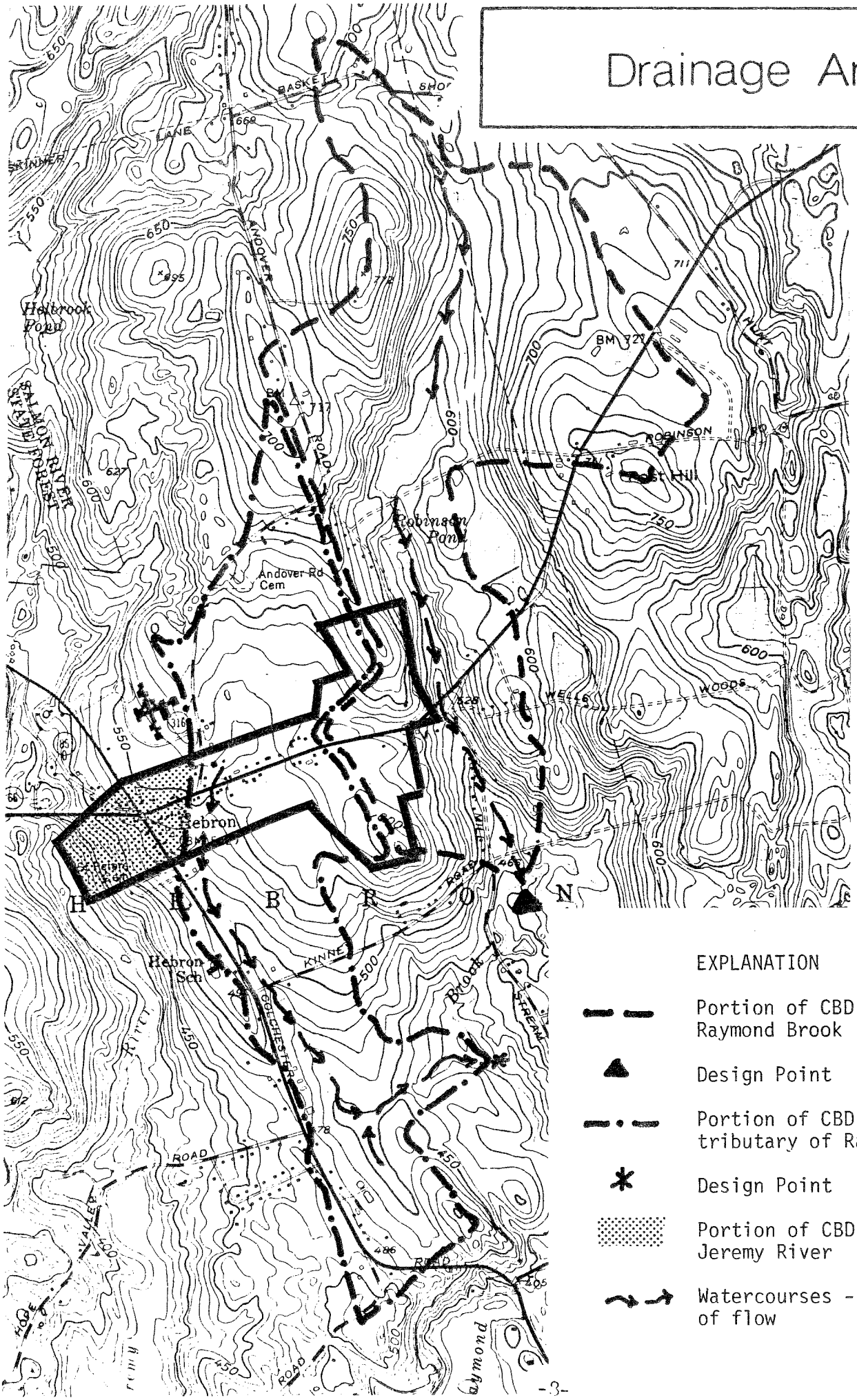
The geologic limitations previously discussed will also weigh heavily on foundation placement and road/driveway construction. Where feasible, it is recommended that building footing drains be installed around buildings. This should hopefully minimize the chance of wet basements.

Road and/or driveway crossings should be properly engineered especially if they cross wetland areas in the CBD. If wetland soils are crossed by roads and/or driveways, provisions should be made for removing unstable material beneath the road bed, backfilling with a permeable road base fill material, and installing culverts as necessary. Road and/or driveway construction through wetlands should preferably be done during the dry time of the year and should include provisions for effective erosion and sediment control. It is particularly important that culverts be properly sized and located so as not to alter the water level in the wetland.

HYDROLOGY

As shown by the accompanying Drainage Area Map, Hebron's CBD can be divided into these drainage areas. Surface runoff in the western limits of CBD drains to the Jeremy River. The central portions of the study area lie in the watershed of an unnamed tributary to Raymond Brook. Surface runoff in the eastern section of the study area drains eastward towards Raymond Brook. It should be pointed out that the watershed boundaries shown may not account for possible drainage re-routing through man-made structures.

Drainage Areas



EXPLANATION

- Portion of CBD draining into Raymond Brook
- Design Point
- Portion of CBD draining into tributary of Raymond Brook
- Design Point
- Portion of CBD draining into Jeremy River
- Watercourses - showing direction of flow

Future commercial developments within the CBD would be expected to increase the amount of runoff during periods of rainfall. These increases would result from soil compaction, removal of vegetation, and placement of impervious surfaces (roofs, driveways, etc.) over the soil. The added increases could cause increased overland and stream channel erosion, and it could increase the peak flood flows of streams within the CBD. Since commercial uses would tend to require more impervious surface area (for parking lots and bigger buildings), the runoff increases for that type of development would tend to be high. Due to these expected increases, it is strongly recommended that detailed engineering study of the pre-and post-development runoff for future development in the CBD, as well as a careful stormwater management plan, be prepared prior to any development. In this regard, consideration should be given to using of on-site detention basins for handling post-development flows.

SOILS

The fundamental resource base of any area are the soils. Hebron is located in the Eastern Highlands which consist of rolling hills, drumloidal landscapes, terraces and floodplains. The bedrock is predominantly Schist, Gneiss and Granite.

The center of Hebron is located on a broad flat top drumlin. Soils common to this landscape are loamy compact glacial tills. The substratum of these soils are firm and offers resistance to the flow of water and growth of plant roots. To the west and southwest of the Town's center are soils with friable substratums but are limited for development due to steep slopes and shallow depths to bedrock.

Scattered throughout the business district are poorly and very poorly drained soils, some of which have been filled and paved. These areas have affected and will continue to adversely affect groundwater runoff in this area.

In general, most of the soils in the immediate area of the business district have high groundwater levels. The permanent water table is at an average depth of about 24 inches below the soil surface. In some areas the water table may be closer to the surface. The soils are described in detail below. An interpretation chart also indicating the wetland prime farmland soils is included in the appendix to this report.

Areas with the symbols CaB, CaC, ChC, ChD, CrD, CrC and GeE are interpreted for the Canton and Charlton series. These gently sloping and 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. Included with these soils in mapping are small areas of well drained Paxton and Montauk soils; moderately well drained Sutton soils; and poorly drained Leicester soils.

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.

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

Areas mapped with the symbols PbB, PbC, PbD, and PeC are interpreted for the Paxton and Montauk series. These gently sloping to steep, well drained soils are on drumloidal, glacial till, upland landforms. These soils were mapped together because there are no major differences in use and management.

Included with these soils in mapping are small areas of well drained Canton and Charlton soils; moderately well drained Woodbridge soils; and poorly drained Ridgebury soils.

Permeability of the Paxton soil is moderate in the surface layer and subsoil and slow or very slow in the substratum. The available water capacity is moderate. Runoff is rapid. Paxton soils warms up and dries out rapidly in the spring.

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

The major limiting factor for development is the very slow, slow, and moderately slow permeability in the substratum. On-site septic systems need careful design and installation to prevent effluent from seeping to the surface in areas downslope from the leaching system.

Soils mapped with the symbols Le, Lg, Rg and Rd are the Leicester, Ridgebury and Whitman soils. These nearly level, poorly drained and very poorly drained soils are in drainageways and depressions of glacial till uplands.

Included with these soils in mapping are small areas of moderately well drained Sutton and Woodbridge soils and very poorly drained Adrian and Palms soils.

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.

The Leicester soils 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.

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 surface layer 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.

Most areas of these soils are wooded. A few areas are cleared and used for pasture, or they are idle. Some areas have been paved or filled and used to construct business establishments.

The major limiting factors for development are the high water table and the slow or very slow permeability in the substratum. On-site septic systems need special design and installation, and sites generally require extensive filling. Slopes of excavated areas slump when wet. Foundation drains help to prevent wet basements. Stones and boulders need to be removed for landscaping.

Soils mapped with the symbols SxA, WxA, WxB, WyB, WzA and WzC are Sutton and Woodbridge soils. These nearly level and gently sloping, moderately well drained soils are on glacial till uplands. The Woodbridge soils are more commonly associated with drumloidal landforms.

Included with these soils in mapping are small areas of well drained Montauk and Paxton soils, and poorly drained Leicester and Ridgebury soils.

The Sutton soil has a seasonal high water table at a depth of about 18 inches. Permeability is moderate or moderately rapid. The available water capacity is moderate. Runoff is medium. Sutton soil warms up and dries out slowly in the spring.

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.

The major limiting factors for development are the seasonal high water table and slow or very slow permeability in the substratum. On-site septic systems need special design and installation to prevent effluent from seeping to the surface in areas downslope from the leaching system. Slopes of excavated areas slump when wet. Foundation drains help to prevent wet basements. Lawns are wet and soggy in the fall and spring,

Groundwater Control

The soils in the business district are either poorly drained, moderately well drained or fill material with a shallow depth to groundwater. Many of the problems in the area are caused directly or indirectly by high groundwater levels (failed septic systems, pavement breakup, standing water). Providing adequate drainage for both surface and goundwater is a priority item. A detailed plan should be developed to address the problem areas. Road drainage along Route 66 has to be addressed as this system will act as the main outlet for any drainage installed, especially on the south side of Route 66.

Stormwater Runoff

Uncontrolled runoff from development in the business district has resulted in minor streambank erosion and flooding in both tributaries of Raymond Brook. These are small streams that flow south. They are located along the east and west boundaries of the site.

The western tributary has been altered by construction of a commercial subdivision (Pendleton Village). About 200 feet of altered streambank is experiencing severe erosion. Sedimentation is evident downstream. This problem if left uncontrolled will continue to cause damage.

The eastern tributary has been channelized in its upper and lower reaches. The upper reach is stable. The lower reach, south of Route 66, is carried through a bermed channel as it passes a multifamily complex. Residents reported that minor flooding occurs every year when heavy rains cause the channel to overtop. Flooding of the parking area was reported.

Downstream of the junction of this tributary and Raymond Brook, residents of Mill Road have reported flooding and minor streambank erosion. These problems make the need for stormwater detention facilities in the business district obvious. A central stormwater detention facility integrated into the storm drainage system is preferable.

Natural wetlands on the site are presently functioning as a stormwater detention site. These natural areas should be utilized. A detailed hydrologic study would reveal whether the natural areas could be enhanced and whether these would be sufficient to treat anticipated stormwater from the site.

WATER SUPPLY

Unless public water facilities become available to the CBD, bedrock underlying the area will continue to be the only practical source of water. Bedrock is commonly capable of supplying small but reliable yields of groundwater to individual wells.

Groundwater moves through bedrock by way of an interconnected fracture system. Most wells that penetrate 150 to 200 feet of bedrock will intersect enough fractures to supply at least 2 or 3 gallons per minute (gpm). Some wells, however, fail to intersect any water bearing fractures. A survey of bedrock wells in the lower Connecticut River basin (see Connecticut Water Resources Bulletin #31) indicates that more than 80 percent of those wells that were drilled into a rock type similar to that found throughout the CBD yielded 3 gpm or more, and 90 percent yielded just under 2 gpm or more. If a particular commercial development 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.

Connecticut Water Resources Bulletin #31 suggests that wells tapping the underlying bedrock may have elevated iron and/or manganese levels. If well water proves to be high in mineral content, there are several types of filters available to overcome such problems.

WASTE DISPOSAL

At the present time all residences and commercial establishments in the central business district of the Town of Hebron rely upon on-site water supply wells and subsurface sewage disposal systems for water supply and sewage disposal needs. A number of existing septic systems in this area, especially those receiving larger flow rates such as commercial establishments, are experiencing difficulties in operation. The primary reasons for these existing problems are the soil types, groundwater conditions and surrounding topography of the area. These are the same reasons that the future development potential of the central business district is severely limited in terms of on-site sewage disposal systems for moderate to large volume wastewater producing establishments. Many of the areas would also be quite limited even for single family home development on one acre lots due to restrictive soils.

The most prevalent soil types classified in the central business district are Woodbridge, Ridgebury, and Leicester with the latter two of these being wetland soils. The area can also be characterized as having relatively flat slopes. These slowly permeable soils combined with the falt slopes result in groundwater being at or near the ground surface for extended periods during the spring months. Historically, these conditions did not present a great problem since low water use and the lack of inside plumbing fixtures lead to very small quantities of wastewater being produced. The high groundwater conditions also aided in the construction of shallow dug wells for water supply purposes. Today, however, with single family homes producing several hundred gallons of sewage per day and commercial establishments such as restaurants or supermarkets producing several thousand gallons of wastewater per day, it is quite different.

On-Site Sewage Disposal

The three basic engineering principles involved with properly operating leachfield systems are first to provide an adequate amount of leaching trench to allow the sewage to seep out of the trench and into the ground; second and of major importance in this area, is to not add more water to the ground than the soils can transmit away from the leachfield system; and third is to allow the sewage to flow through an adequate distance of soil for renovation of pollutants before encountering any stream, wetland or well. The hydraulic capacity of soils to transmit water is the major limitation for most of the central business district. The soils classified as Ridgebury and Leicester types are unsuitable for sewage disposal since groundwater is at or very near the ground surface for several months each year. Even with sandy fill brought into a site to construct a mounded leachfield system, the sewage added to this setting is likely to discharge out the toe of fill which would require a State Discharge Permit from the Department of Environmental Protection pursuant to Section 22a-430 of the Connecticut General Statutes. The Woodbridge soil types would have a limited capacity for small sewage flows followed by the Paxton soils found at the eastern end of the shady area that would have a somewhat moderate capacity. The Woodbridge and Paxton soils would likely require engineered designs due to high groundwater and/or a compact substratum. The Canton-Charlton soils at the western end of the study area are more permeable than the other soils mentioned and may have capacity for moderate to large sized sewage systems.

Off-Site Sewage Disposal Alternatives

If the Town goals call for developing much of the central business district, including the marginal soil areas, than an off-site sewage disposal option would be needed. The two apparent alternatives for off-site disposal would be either a tie-in with the Colchester-East Hampton water pollution control plan or a community leachfield system(s). Previous rough estimates of construction costs for tie-in with the East Hampton system have been placed at 6-8 million dollars. There would also be the proportional assessment for the initial treatment plan cost which was paid for by the other towns already connected to the system. It should be pointed out that this is a very rough estimate and is likely to be higher at the present time due to increased construction costs. It does not appear that the cost for such a system is economically feasible when considering the limited service area capable of generating revenues.

The use of one or more community leachfield systems that would serve the central business district is an alternative. This option has been pursued in the towns of Chester, Glasgow, Somers, and Glastonbury. As a starting point suitable land areas containing favorable soils such as the Charlton and Gloucester groups must be identified. A review of soils maps show a number of these soil types to the south, west, north of the center of town within a one mile radius. Next, the capacities of these areas could be determined to calculate a sewer service area potential, or with a predetermined sewage flow in mind it could be determined if enough suitable areas are available to serve the growth needs of the Town. The design and approval of any such large scale system would be subject to the requirements of the Department of Environmental Protection. In the past, federal or state funds have been used for such projects and, although more limited availability of funds is generally the case at present, certain monies in the form of low interest loans or grants may be available.

PLANNING CONCERNS

The history of septic system failure, and the widespread presence of wetland soils, tightly compacted till and high groundwater along Route 66, between Route 85 and Wells Wood Road, severely limits the development potential of this area. The two streams draining the area are severely eroded to the extent that future development will probably require on-site stormwater detention, adding another deterrent to development.

Traffic conditions along Route 66 are dangerous, due primarily to multiple driveway cuts for a number of establishments, no sidewalks and high vehicle speeds. Installation of a light at the entrance to Ted's supermarket would better manage the heavy traffic flow off of and on to Route 66 as well as help reduce vehicle speed through town.

As an alternative to restricting future commercial development in Town to this area, the Town may wish to consider providing limited commercial growth opportunities in one or several other location(s) through rezoning. Any rezoning for commercial development will undoubtedly be opposed by some residents. On the other hand, it might be possible to find one or several location(s) with good

vehicular access and fewer natural constraints to development, without significantly impinging upon existing residential development. The most appropriate locations for commercial development are along Routes 66 and 85.

TRAFFIC CONCERNS

Route 66 - Drainage

The Department of Transportation (DOT) does not have any projects scheduled to improve drainage along Route 66 east of Route 85. It is suggested that a review of existing conditions be made with ConnDOT District 2 staff to determine the feasibility of a project at this location and the availability of funds.

Signalization at Route 85 and Route 66

The existing signal will be upgraded in the near future. Advances will be included in the signal revision to facilitate turning movements which should improve traffic operations at the intersection.

In conjunction with this improvement, the First Selectman, Raymond Burt inquired about a reduction of the speed limit on Route 66 east of Route 85. It is suggested that Mr. Burt write to the State Traffic Commission relative to the suggested reduction. The letter should clearly define the roadway segment, proposed reduction not to exceed 10 m.p.h., and reasons for the change. The Department reviews speed limits every three years on the state system.

Traffic Signal Installation - Route 66

ConnDOT feels that consideration for the installation of a traffic signal at the intersection of a driveway serving a convenience center and grocery store is not warranted at this time or in the near future. A traffic signal at this location could increase the frequency of certain types of traffic accidents.

Traffic operations between the proposed signal and Route 85 and Route 66 intersection would be impacted with start-stop delays, adding friction to normal movements and causing delays to left turn movements. Traffic volumes are not excessive and delays for vehicles to exit to Route 66 from the driveway are not excessive. Increasing the driveway width to facilitate vehicles would be preferable to a signal.

With the appropriate delineation, turning movements would be improved by separating the traffic operations.

Local traffic management techniques should be developed for review of planned land use changes in the review process. The following could be considered to minimize conflicts with mainline traffic operations:

1) Midblock driveways appropriately designed and identified

2) Elimination of curbside parking

3) Location of offstreet parking

4) Driveway length and width, and mainline widening to minimize sightline problems

5) Channelization

6) Pedestrian interference

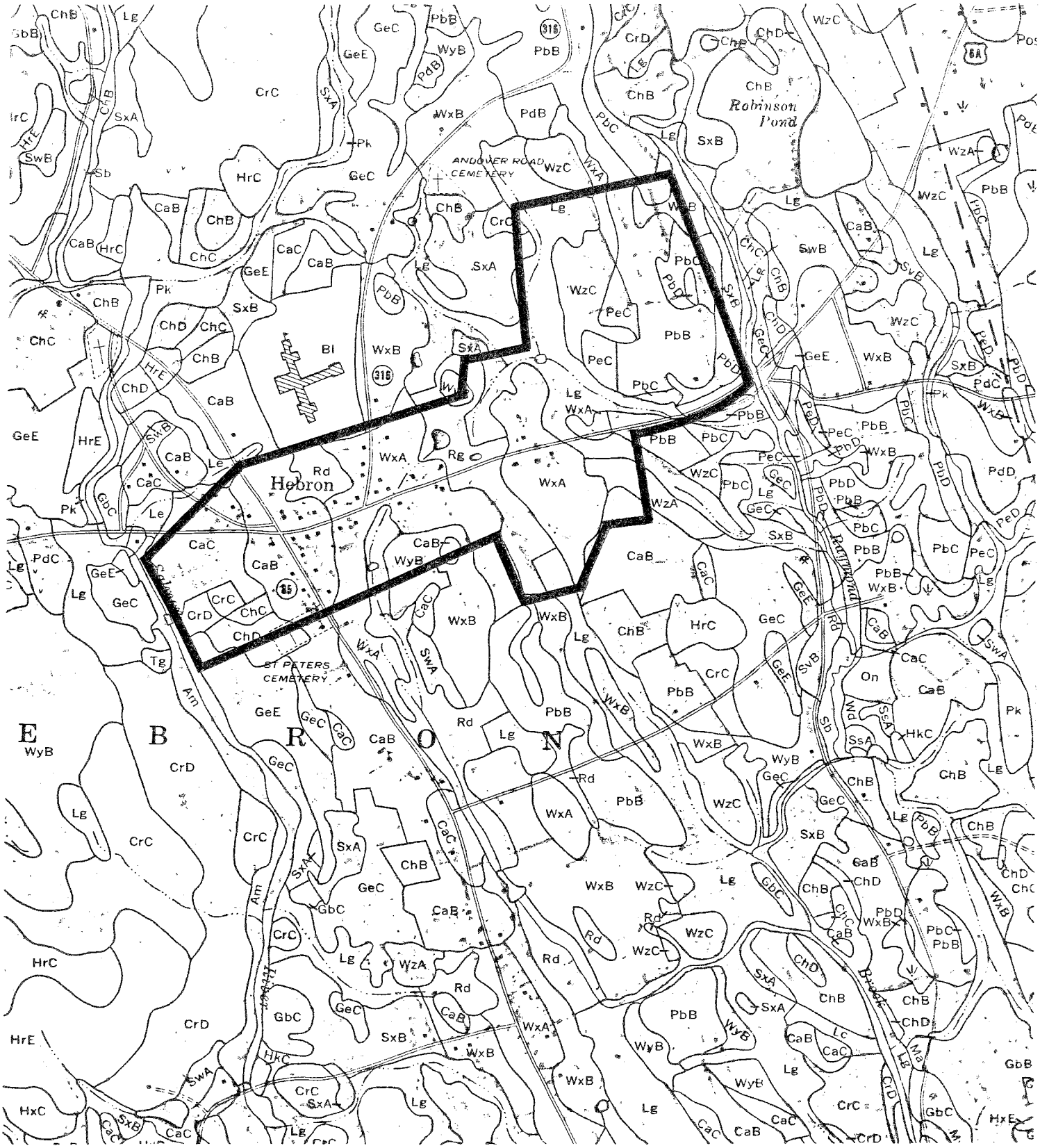
7) Non-enforcement of regulations

8) Inadequate signs and markings

An example of local traffic problems is the semi-circular driveway of the leased Post Office facility. Inadequate parking is affected by a midblock driveway, inadequate signing and marking, and lack of offstreet parking. When additional parking is provided, it would be worthwhile to consider offstreet parking on the west side of the structure. Placement of additional parking in front of the structure could force turning and backing movements to encroach onto Route 66, interfering with the normal traffic flow.

Appendix

Soils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PeC
PbC
PeD
PdD
SvB
On
SsA
HkC
Lc
Ma
HxC
HxE
GbC
SwA
Brook

INTERPRETATIONS FOR DEVELOPMENT
CENTRAL BUSINESS DISTRICT
HEBRON, CONNECTICUT

SOIL MAP SYMBOL AND SOIL NAME	SEPTIC TANK ABSORPTION FIELDS	DWELLINGS WITH/ WITHOUT BASEMENTS	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS AND STREETS	LAWNS AND LANDSCAPING
#CaB - 3 to 8%					
Canton	Severe-poor filter	Slight	Moderate-slope	Slight	Slight
Charlton	Slight	Slight	Moderate-slope	Slight	Slight
CaC - 8 to 15%					
Canton	Severe-poor filter	Moderate-slope	Severe-slope	Moderate-slope	Moderate-slope
Charlton	Moderate-slope	Moderate-slope	Severe-slope	Moderate-slope	Moderate-slope
ChC - 8 to 15%, stony					
Canton	Severe-poor filter	Moderate-slope	Severe-slope	Moderate-slope	Moderate-large stones, slope
Charlton	Moderate-slope	Moderate-slope	Severe-slope	Moderate-slope	Moderate-large stones, slope
ChD, CrD, GeE - 15 to 25%, stony					
Canton	Severe-slope, large stones	Severe-slope	Severe-slope	Severe-slope	Severe-slope
Charlton	Severe-slope	Severe-slope	Severe-slope	Severe-slope	Severe-slope
CrC - 3 to 15%, stony					
Canton	Severe-poor filter	Moderate-slope	Severe-slope	Moderate-slope	Moderate-large stones, slope
Charlton	Moderate-slope	Moderate-slope	Severe-slope	Moderate-slope	Moderate-large stones, slope

INTERPRETATIONS FOR DEVELOPMENT
CENTRAL BUSINESS DISTRICT
HEBRON, CONNECTICUT

SOIL MAP SYMBOL AND SOIL NAME	SEPTIC TANK ABSORPTION FIELDS	DWELLINGS WITH/ WITHOUT BASEMENTS	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS AND STREETS	LAWNS AND LANDSCAPING
*Le, Lg, Rg - 0 to 5%, stony Ridgebury	Severe-wetness, percs slowly	Severe-wetness	Severe-wetness	Severe-wetness, frost action	Severe-wetness
Leicester	Severe-wetness	Severe-wetness	Severe-wetness	Severe-wetness, frost action	Severe-wetness
Whitman	Severe-ponding, percs slowly	Severe-ponding	Severe-ponding	Severe-large stones, ponding	Severe-ponding
#PbB - 3 to 8% Paxton	Severe-percs slowly	Moderate-wetness	Moderate-wetness, slope	Moderate-wetness, frost action	Slight
Montauk	Severe-percs slowly, wetness	Moderate-wetness	Moderate-wetness, slope	Moderate-wetness, frost action	Slight
PbC - 8 to 15% Paxton	Severe-percs slowly	Moderate-wetness, slope	Severe-slope	Moderate-wetness, slope, frost action	Moderate-slope
Montauk	Severe-percs slowly, wetness	Moderate-wetness, slope	Severe-slope	Moderate-wetness, slope, frost action	Moderate-slope
PbD - 15 to 25% Paxton	Severe-percs slowly, slope	Severe-slope	Severe-slope	Severe-slope	Severe-slope
Montauk	Severe-slope, percs slowly, wetness	Severe-slope	Severe-slope	Severe-slope	Severe-slope

INTERPRETATIONS FOR DEVELOPMENT
CENTRAL BUSINESS DISTRICT
HEBRON, CONNECTICUT

SOIL MAP SYMBOL AND SOIL NAME	SEPTIC TANK ABSORPTION FIELDS	DWELLINGS WITH/ WITHOUT BASEMENTS	SMALL COMMERCIAL BUILDINGS	LOCAL ROADS AND STREETS	LAWNS AND LANDSCAPING
PeC - 3 to 15%, stony Paxton	Severe-percs slowly	Moderate-wetness, slope	Severe-slope	Moderate-wetness, slope, frost action	Moderate-large stones, slope
Montauk	Severe-percs slowly, wetness	Moderate-wetness, slope	Severe-slope	Moderate-wetness, slope, frost action	Moderate-small stones, large stones, slope
*Rd Ridgebury	Severe-percs slowly, wetness	Severe-wetness	Severe-wetness	Severe-wetness, frost action	Severe-wetness
SxA - 0 to 3%, stony Sutton	Severe-wetness	Severe-wetness	Moderate-wetness	Severe-frost action	Moderate-large stones, wetness
#WxA, WxB - 0 to 8% Woodbridge	Severe-wetness, percs slowly	Severe-wetness	Moderate-wetness, slope	Severe-frost action	Moderate-wetness
WyB - 3 to 8%, stony Woodbridge	Severe-wetness, percs slowly	Severe-wetness	Moderate-wetness, slope	Severe-frost action	Moderate-large stones, wetness
WzA, WzC - 2 to 15%, stony Woodbridge	Severe-wetness, percs slowly	Severe-wetness, slope	Severe-slope	Severe-frost action	Moderate-large stones, wetness, slope

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 devel opment. 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 o 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.

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 activitis. 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 (774-1253), Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, P.O. Box 198, Brooklyn, Connecticut 06234.