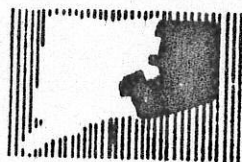


environmental review team report

Elderly Housing Sites

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**Coventry,
Connecticut**



RC & D

**EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT**

**ASSISTED BY: U.S. DEPARTMENT OF AGRICULTURE,
SOIL CONSERVATION SERVICE AND COOPERATING AGENCIES**

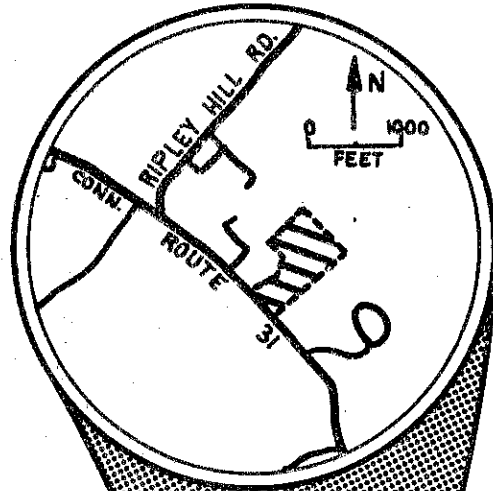
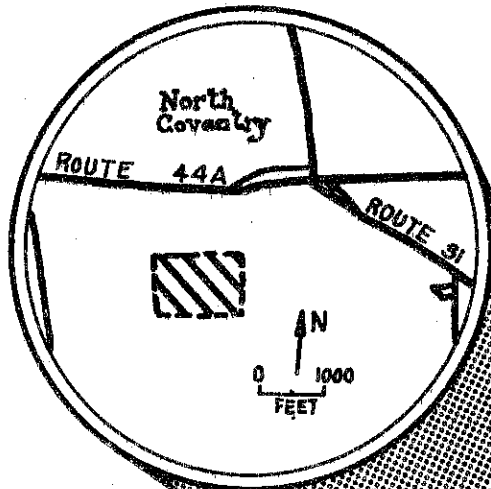
ENVIRONMENTAL REVIEW TEAM REPORT
ON
ELDERLY HOUSING SITES
COVENTRY, CONNECTICUT
OCTOBER, 1976

*The preparation of this report was assisted
by a grant under Title 1, Section 107(a)4 of
the Housing and Community Development Act
of 1974, 24 CFR, Part 570, Section 570.406.*

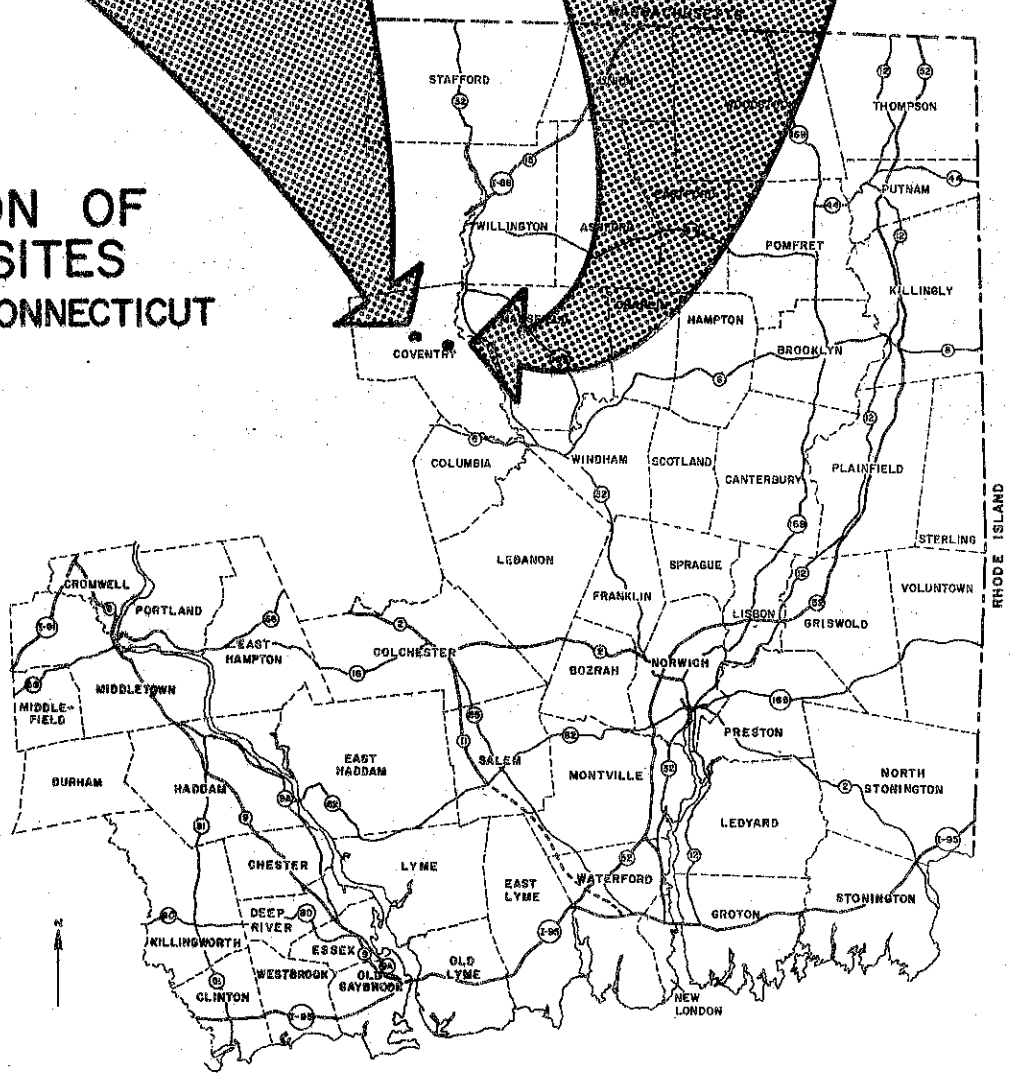
EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT PROJECT
Environmental Review Team
139 Boswell Avenue
Norwich, Connecticut 06360

ENGLAND PROPERTY

GOLDSHER PROPERTY



LOCATION OF STUDY SITES
COVENTRY, CONNECTICUT



EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT

ENVIRONMENTAL REVIEW TEAM REPORT
ON
ELDERLY HOUSING SITES
COVENTRY, CONNECTICUT

This report is an outgrowth of a request from the Coventry Housing Authority, with permission of the landowners, 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 as a project measure. The request was approved and the measure reviewed by the Eastern Connecticut Environmental Review Team (ERT).

The soils of the site were mapped by a soil scientist of the United States Department of Agriculture (USDA) Soil Conservation Service (SCS). Reproductions of the soil survey, a table of soils limitations for certain land uses, and a topographic map of the site were forwarded to all ERT participants prior to their field review of the site.

The ERT that field-checked the site consisted of the following personnel: Lester Stillson, District Conservationist, SCS; Charles Reynolds, Soil Scientist, SCS; Bill Lucas, RC&D Area Director; Tim Dodge, Wildlife Biologist, SCS; Richard Hyde, Geologist, Connecticut Department of Environmental Protection (DEP); Charles Phillips, Fisheries Biologist, DEP; Huber Hurlock, Forester, DEP; Thomas Furgalock, Sanitarian, Connecticut Department of Health; David Miller, Climatologist, University of Connecticut Cooperative Extension Service; Lester Barber, Regional Planner, Windham Regional Planning Agency; and Linda Simkanin, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field-checked the sites on Tuesday, June 22, 1976. Reports from each 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 any developers and the Town of Coventry. 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 you will find this report of value and assistance in making your decisions on this particular site.

If you require any additional information, please contact: Miss Linda M. Simkanin, 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 two sites under consideration for the construction of elderly housing. It is anticipated that one of the sites may be recommended by the Coventry Housing Authority for the construction of 30 units, with expansion room for an additional 30 units. The Housing Authority expects to receive funding for the project from the Connecticut Department of Community Affairs (DCA).

The development proposal as suggested by the Housing Authority, involves a three building complex, with 10 units per building. In total there are to be 20 single and 10 double units. The estimated population for the 30 unit complex is 40 persons. The long range plan considered by the Authority is to allow for expansion of an additional 30 units.

Both sites are approximately 10 acres each. There were no preliminary site plans available at the time of the review. Both sites are presently undeveloped. The England Property, located south of Route 44A, is presently in agricultural use (corn-growing). The Goldsher Property is partly in use as a apple orchard, and the balance is an old field. Water retrieval and sewage disposal would have to developed on-site.

Prior to the field inspection of the two sites, the Team discussed the development objectives with various town officials. At that time the Team was informed that these two sites were the prime sites under consideration for the elderly housing project.

Some aspects of the proposed development discussed by the Team involve on-site sewage disposal, and the proximity of the housing complex to services such as shopping, banks, and community facilities.

The report also describes the natural characteristics of the site including topography, geology, soils, and vegetative cover. Consideration will be given to the compatibility and suitability of the proposals relative to the natural resource base. Comments or recommendations made within the report are presented for consideration by the town and any developers in the preparation and review of the development plans, and should not be construed as mandatory or regulatory in nature. The report will be divided into two sections offering a separate discussion on each site.

EVALUATION OF THE GOLDSHER PROPERTY

The Goldsher Property is roughly 10 acres in size, and is located north of Route 31, and adjacent to the Coventry Town Hall (a site map is provided on the following page).

TOPOGRAPHY

The site is near the top of a fairly large hill system, with the southern half of the property sloping at a grade of approximately 3-5% toward Route 31. The rear or northern portion of the site is nearly flat. Surface and sub-surface drainage is entirely within the Coventry Lake system to the south.

SURFICIAL GEOLOGY

Unconsolidated materials called till lies on top of the solid bedrock at both sites. Till is formed when melting glacial ice releases the debris trapped within and that which is carried on top of the receding glacier. The Goldsher Property is completely covered with glacial till but is relatively thick as indicated by the test pits dug on the site (and discussed later in the report under SOILS and WASTE DISPOSAL). Average thickness appeared to range from 7 to 15 feet along Route 31 but may be greater in the rear of the property.

BEDROCK GEOLOGY

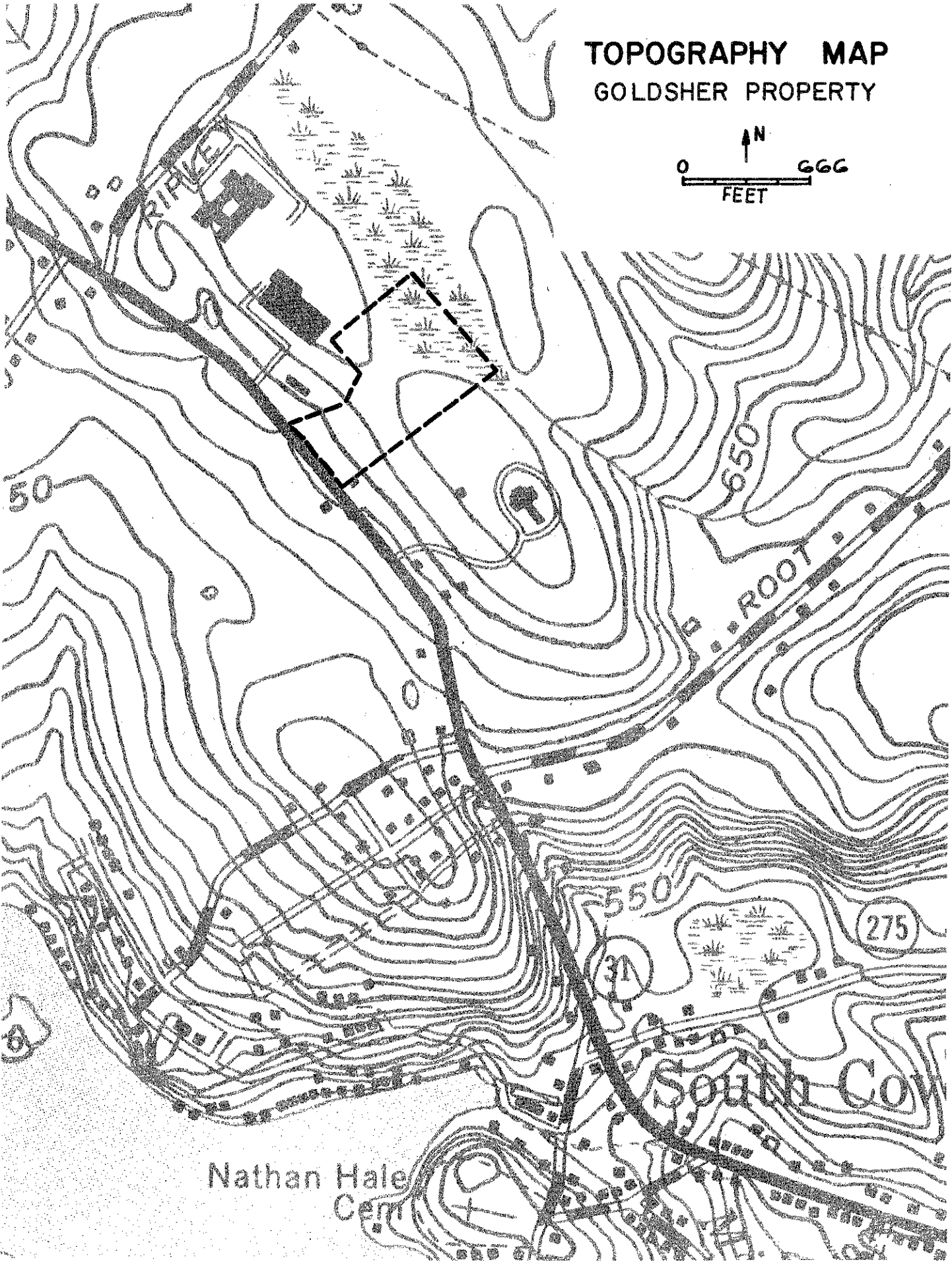
Bedrock outcrops or exposures were not visible at the Goldsher site but based on the rock trends to the west of the site, it would appear this is underlain by Hebron Gneiss, which is also the underlying rock of the England property. Typically the lithology of this rock is described as a medium-to-fine grained, greenish-gray to dark gray, banded gneiss. Gneiss is a general term for rock deformed by intense heat and pressure resulting in bands of light granular minerals alternating with darker flat and elongated minerals. Usually these bands in this area appear to be several feet in thickness.

SOILS

A detailed soils map of the property is provided here. As the map is an enlargement from the original 1320'/inch scale to 200'/inch, the soil boundary lines should not be viewed as absolute boundaries, but rather as guidelines to the distribution of soil types on the property. The soils map, along with the Soil Survey for Tolland County (USDA-SCS, 1966), can serve as an educational tool regarding the identification and interpretation of soils.

The soil information as published in the Tolland County Soil Survey was supplemented by a field investigation of the soil conditions on-site. A total of four observation pits were dug by a backhoe and examined by the soil scientist. The soils were identified and classified based upon their properties and qualities such as wetness, depth to bedrock, slope, permeability, and texture. The soil interpretations for selected uses for community and urban development presented in the limitations chart are supported by field observations, research investigations, engineering test data, and judgement of experienced soil scientists.

TOPOGRAPHY MAP GOLDSHER PROPERTY



OBSERVATION PIT DATA

Pit #1:

Depth of hole 62"

0" - 8": Topsoil
8" - 21": Yellowish-brown, fine-sandy subsoil
21" - 38": Mottled fine, sandy loam
38" - 62": Hardpan (grey, fine, sandy loam)

Ledge encountered at 62".
Mottling encountered at 21".
No groundwater encountered.

Pit #2:

Depth of hold 84"

0" - 5": Topsoil
5" - 22": Yellowish-brown, fine, sandy loam
22" - 84": Hardpan (mottled fine, sandy loam)

No ledge encountered.
Mottling encountered at 22".
No groundwater encountered.

Pit #3:

Depth of hole 84"

0" - 8": Topsoil
8" - 18": Yellowish-brown, fine sandy loam
18" - 32": Mottled, fine, sandy-loam subsoil
32" - 84": Hardpan

No ledge encountered.
Mottling encountered at 18".
No groundwater encountered.

Pit #4:

Depth of hole 84"

0" - 8": Topsoil
8" - 21": Yellowish-brown, fine-sandy loam
21" - 26": Mottled, fine-sandy loam
26" - 84": Hardpan

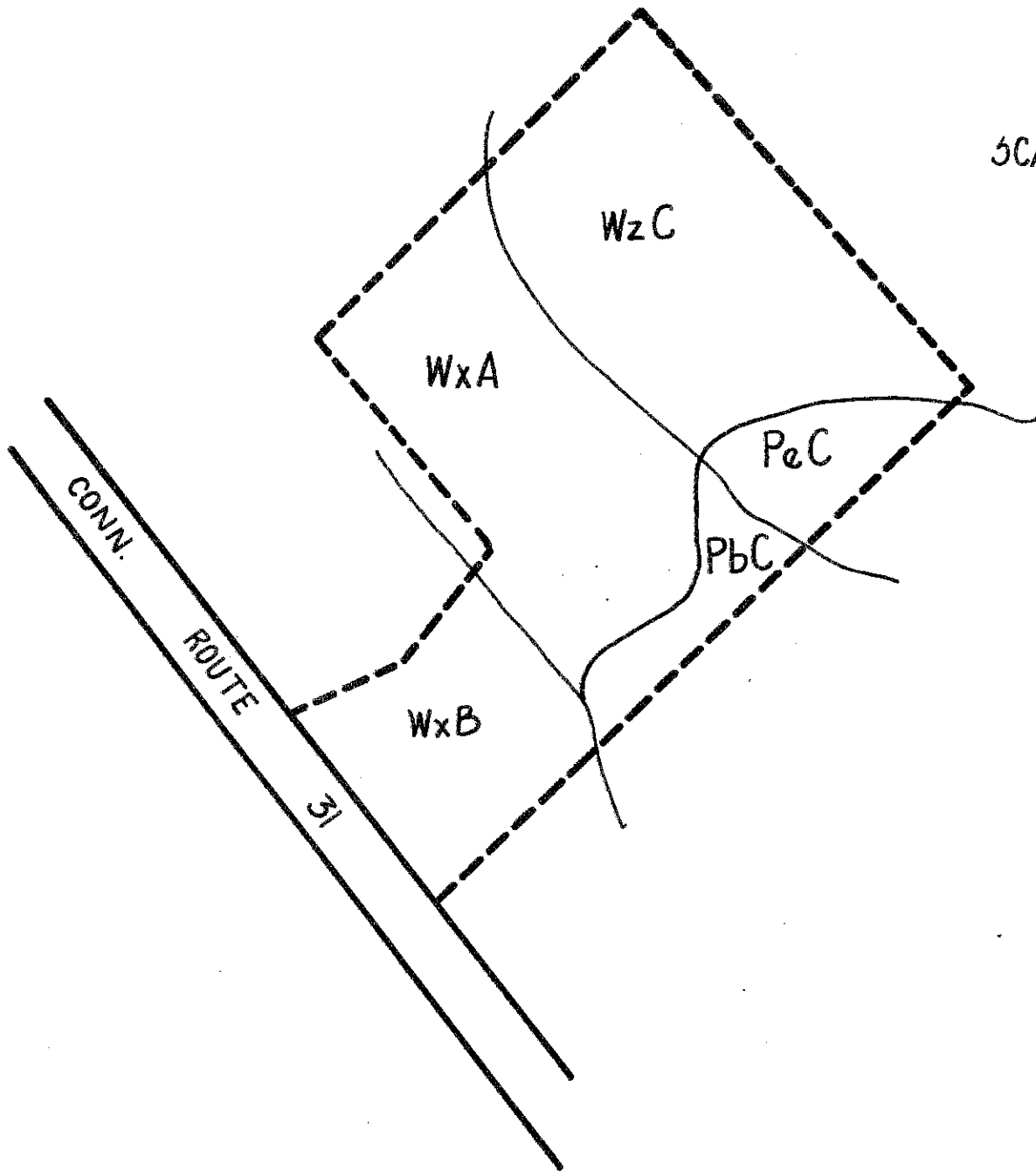
No ledge encountered.
Mottling encountered at 21".
No groundwater encountered.

With the examination of the soils map and the accompanying chart indicating general soils limitations for various land uses a correlation between the soils and the surficial geology can be seen. The soil on this site is primarily Woodbridge fine sandy loam except for a small area of Ridgebury fine sandy loam, which extends about 50 feet onto the site in the northern corner. Although the site is mostly Woodbridge fine sandy loam, a strip of about 100 yards along Highway 31 is approaching the well drained Paxton soil in characteristics. This portion of the site has a slope of 3 to 5 percent, sloping towards Route 31.

SOIL MAP
GOLDSHER PROPERTY
COVENTRY, CONNECTICUT



SCALE - 1" = 200'



The map is an enlargement from the original 1320'/inch scale to 200'/inch.

Prepared by: UNITED STATES DEPARTMENT OF AGRICULTURE, Soil Conservation Service.
ADVANCE COPY, SUBJECT TO CHANGE.

JUNE, 1976

GOLDSHER PROPERTY

COVENTRY ELDERLY HOUSING PROJECT

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
Paxton	PbB	1	10	fragipan	3	1	2	1
Paxton	PeC	1	10	slope & stoniness	3	2	3	3
Woodbridge	WxA	3	30	seasonal high water table	3	2	2	2
Woodbridge	WxB	2	20	seasonal high water table	3	2	2	2
Woodbridge	WxC	3	30	slope & stoniness	3	3	3	3
		10 Ac.	100%					

* Urban Use Limitations: 1 = slight; 2 = moderate; 3 = severe (see the last page of this report for a further explanation of limitation classifications).

The five acre open portion of this site closest to Route 31 is predominately a Woodbridge fine sandy loam on 0 to 8 percent slopes. Woodbridge soils are moderately well drained with a hardpan layer at 24 inches which usually extends below 40 inches. The slowly to very slowly permeable hardpan restricts internal drainage and a perched water table normally exists from late fall into early spring. The four observation pits observed indicated that a strip about 100 yards wide along the highway exhibits characteristics approaching the well drained Paxton soil. Even though this area has severe limitations for septic systems, these limitations can be overcome by a properly designed on-site septic system.

A Sediment and Erosion Control Plan should be developed and implemented to control excessive site damage both during and after construction. Components of effective sediment and erosion control include, but are not limited to, keeping much of the area under existing vegetative cover and keeping areas devoid of cover exposed for the shortest practical period of time. Permanent roads should be installed as early as possible. Temporary seeding and mulching may be necessary if development becomes protracted. Sediment basins and other temporary mechanical measures may be necessary to control sediment and reduce the erosive effect of runoff water. Assistance in developing such a plan is available through the Tolland County Soil and Water Conservation District. This type of development will cause an increase in runoff. Provisions should be made to accommodate the added runoff without causing harmful effects on adjacent areas.

VEGETATIVE COVER

The long axis of the site runs northeast to southwest, with the land sloping in the same direction. The site contains a number of land uses. It is primarily open-land, with an apple orchard the most dominant feature. The lower southwest portion is open and contains grasses and the the orchard. The mid-section contains weedy growth while mixed hardwood trees, shrubs, and vines dominate the uppermost portion. A shrubby border exists between the site and Route 31.

WILDLIFE HABITAT

The quality of wildlife habitat on the Goldsher site is quite high. The distribution of grasses, orchard trees, weeds and hardwood trees, shrubs and vines create food and cover to game and non-wildlife species. Animals which benefit from this interspersed vegetation include songbirds, gamebirds such as bobwhite quail, cottontail rabbit, mice, chipmunks and some woodland animals such as the ruffed grouse which utilizes the woodland edge. Weeds, shrubs, and grasses useful to wildlife and present on the site include clovers, vetch, timothy, jewelweed, elderberry, multiflora rose, silky dogwood, raspberries, blackberries, cucumbervine, smooth sumac, sassafras as well as orchard trees.

If this site is selected for development, as many of the orchard trees as possible should be retained. The orchard could be managed as a project for fruit production. If possible, the patterns of vegetation should be retained to best benefit wildlife of the area. Reestablishment of vegetation including a mix of grasses and legumes and fruiting shrubs will encourage wildlife to feed on-site.

Many elderly in the area have probably have lived their lives on farms or in rural areas and so have a strong feeling for wildlife. Proper development of this site offers the opportunity of drawing many of these animals, primarily songbirds, into the open where they could be enjoyed by the residents.

FISH

As there are no waterbodies or streams on the property, fish are not a consideration on this site.

CLIMATOLOGY

The area is in the Northeast Hills section of Connecticut which is warmer in the summer and cooler in the winter than the coastal or valley regions of Connecticut. When low pressure weather systems bring southerly air flow from the south the area experiences humid maritime conditions. When high pressure systems prevail the area experiences relatively cool dry weather which is the prevailing fall season condition.

Annual mean temperature	48° F
Annual heating degree days	6400
Precipitation (mean annual)	
relatively evenly distributed	
by month	46 inches
Snow fall (mean annual)	50 inches

Climate would not be limiting in either of the two sites reviewed. Air pollution levels are relatively low at both sites and are likely to stay that way. In terms of microclimatic comfort the Goldsher site will probably be more comfortable, due to its SW facing slope which will allow exposure to summer winds and have about a 10% higher solar radiation load in the winter. The summer radiation loads will be about the same. The row of trees on the north side of the property should be left intact to protect the area from winter winds. The trees on the south side should probably be removed and replaced with shade trees near the building, to increase outdoor comfort in the summer. Utilization of solar energy through the use of solar collectors should also be investigated.

WATER SUPPLY

As no public water is available to the site, on-site water supply would have to be derived from the bedrock aquifer within the host rock identified as the Hebron Gneiss. As is typical with highly metamorphosed crystalline formations the rock is relatively hard and dense, composed of tightly interlocking mineral grains which do not contain a high percentage of interconnected pore spaces between the grains. Consequently, little water may be derived from the rock itself, however, most rocks have been fractured near the land surface through time and ground water seeps into these cracks, joints and openings. If a well shaft is drilled and it happens to intersect any cracks, ground water will flow into the well and can be extracted by pumping. Obviously if a well is located in an area where large numerous cracks occur below the ground water table, the water yield will tend to be high. But if few cracks exist then the chances are little and in some cases no water may be derived. Except in places where fault zones exist, which are highly fractured areas that may extend deep in to the earth, the greatest number of rock openings are found between the bedrock surface and generally 200 to 250 feet down. Below this point the weight of the overlying rock tends to decrease the potential for cracks to remain open and contain water. As a general rule, then, the capacity for rock to yield water to a well decreases with depth. Statistically crystalline bedrock wells yield, in this area of Connecticut, an average of 13 gallons per minute with 90 percent of those studied

yielding at least 3 gallons per minute. Only a few instances are reported where a hole drilled in bedrock produced no water.

To get an idea of possible well yields for both sites a cursory review of filed well driller reports was undertaken. From well drilling reports in this vicinity, the average yield falls in the area of 10 gallons per minute but the Town should review data from those wells drilled to supply the town hall and the school to obtain more accurate information. The water supply wells must be approved by the State Department of Health, Water Supply Section, as a public water supply. A minimum of 75 gal./person/day must be provided.

WASTE DISPOSAL

As no public sewer system is available to the site, sewage disposal will have to be on-site. Soil mapping data as well as soil profiles made on-site by observation pit analysis showed some soils as having a relatively shallow depth to a limiting soil layer-fragipan, and others having mottling indicative of a high water table observed at approximately 20" from the land surface. Both of these conditions place severe limitations on subsurface sewage disposal. It should be noted, here, that although this land area is defined in the category of severe restrictions, this does not preclude the use of this land for this purpose. However, it does point to the fact that extensive work in the area of planning, site preparation, and installation is required and this translates into the economic aspect involved.

SERVICES TO SUPPORT DEVELOPMENT

The Golsher site is convenient to community services provided at the Town Hall and adjacent schools. South Coventry lies less than a mile away and would provide a wide array of commercial services.

The steepness of and traffic volume on the highway would likely necessitate the use of private or public vehicular transportation to reach the commercial facilities. Its relative closeness should make arrangements for such transportation possible.

EVALUATION OF THE ENGLAND PROPERTY

The approximate 10 acre portion of the England Property reviewed by the Team is located south of Route 44A, and behind the Meadowbrook Shopping Center.

TOPOGRAPHY

The England Property occupies an eastfacing slope and has a slope ranging from 5 to 8% in grade. The site occupies the southeastern margin near the top of the major drainage area of a large till hill complex. The hill complex to the north and northwest is formed by several relatively large, smooth, well-rounded and elongated land surface features. The property is at the top of the drainage area for the easterly flowing Olsen Brook tributary to the Skungamaug River.

SURFICIAL GEOLOGY

At the England site till deposits are very thin on top of the bedrock surface probably because only small amounts of material were deposited originally and this coupled with the natural drainage and erosional forces since deposition have resulted in only 2 to 4 feet of deposits. The geologist uses the term till to represent rock and soil particles remaining after glacial melting that exhibit a heterogeneous composition of mixtures of boulders, gravel, sand, silt, and clay, none of which show any or significant sorting, stratification, or layering according to grain sizes.

BEDROCK GEOLOGY

Bedrock underlying the England Property is discussed in Quadrangle Report #6, The Bedrock Geology of the Rockville Quadrangle, by Janet M. Aitken, 1955, and is classified as falling into the Hebron Gneiss Formation. Numerous bedrock outcrops were observed on the England Property. As is discussed in the SOILS and WASTE DISPOSAL sections of this report, bedrock or refusal was encountered at very shallow depths by the backhoe used for the deep hole tests performed on-site on the day of the review.

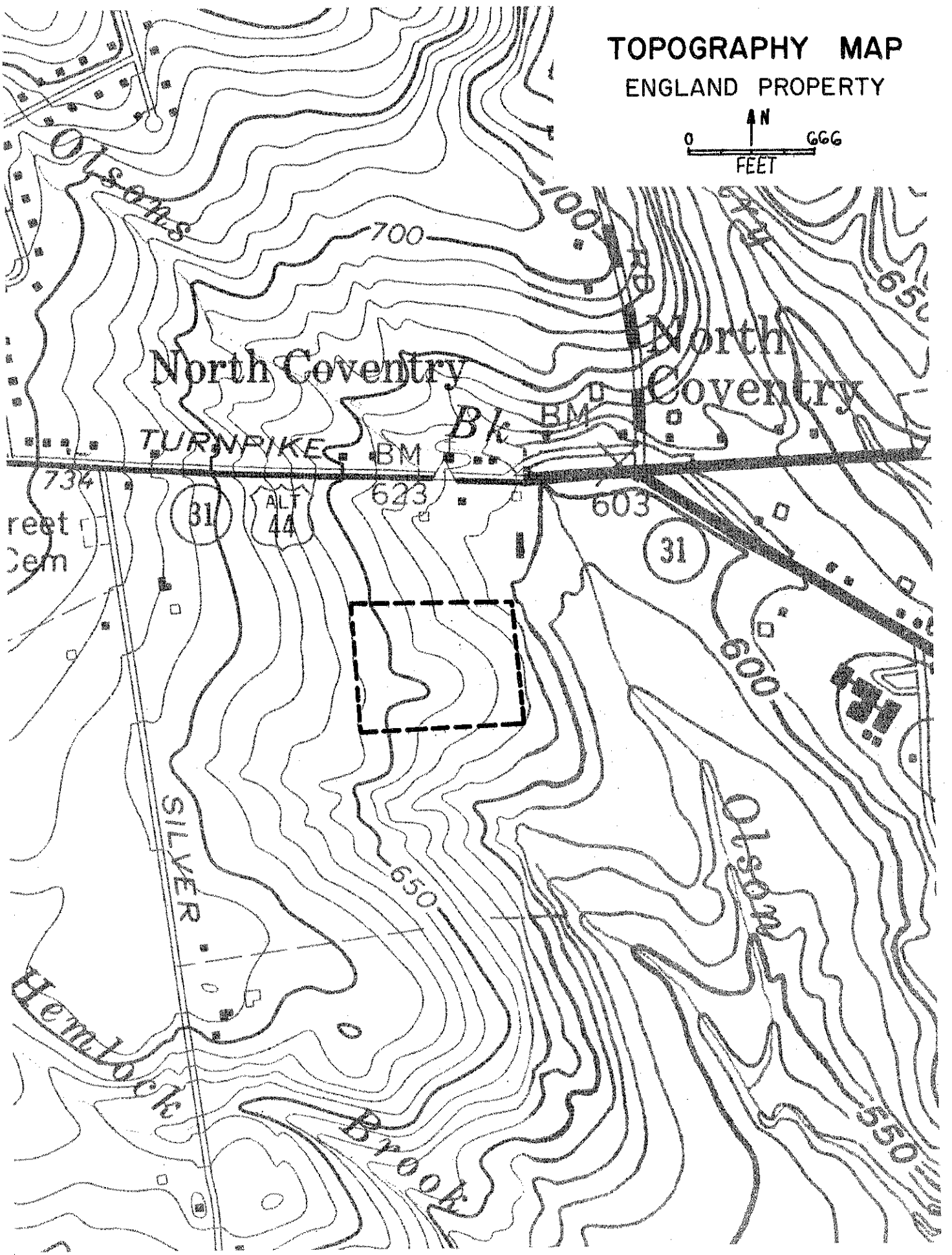
SOILS

A detailed soils map of the England Property is provided here. The same caution as mentioned with the Goldsher Property map applies here. As the map is enlarged from the original 1320'/inch scale to 200'/inch, the soil delineation lines should be regarded as guidelines rather than exact boundaries.

A total of three backhoe deep holes, and one hand auger hole were dug at the site. The soils were identified and discussed by the soil scientist.

The soils on this site are about 50% Hollis fine sandy loam, 25% Charlton fine sandy loam, and the remainder is similar to Charlton, but it has bedrock at a depth of 20 to 40 inches. These soils are in such a complex and intricate pattern that they could not be separated in mapping. The three backhoe pits dug ranged from 3 to 54 inches deep to bedrock.

TOPOGRAPHY MAP
ENGLAND PROPERTY



OBSERVATION PIT DATA

Pit #1:

Depth of hole 54"

0" - 8": Topsoil
8" - 32": Yellowish-brown, fine, sandy loam
32" - 39": Mottled, fine, sandy loam
39" - 54": Hardpan (grey, fine, sandy loam)

Ledge encountered at 54".

Mottling encountered at 32".

No groundwater encountered.

Pit #2:

Depth of hole 50"

0" - 9": Fine, sandy loam topsoil
9" - 30": Mottled fine, sandy loam subsoil
30" - 50": Grey, mottled fine, sandy loam
(hardpan)

Ledge encountered at 50".

Mottling observed at 15".

Groundwater encountered at 46".

Pit #3:

Refusal at 30".

Ledge at surface adjacent to pit.

Hand Auger Hole:

Bedrock at 24".

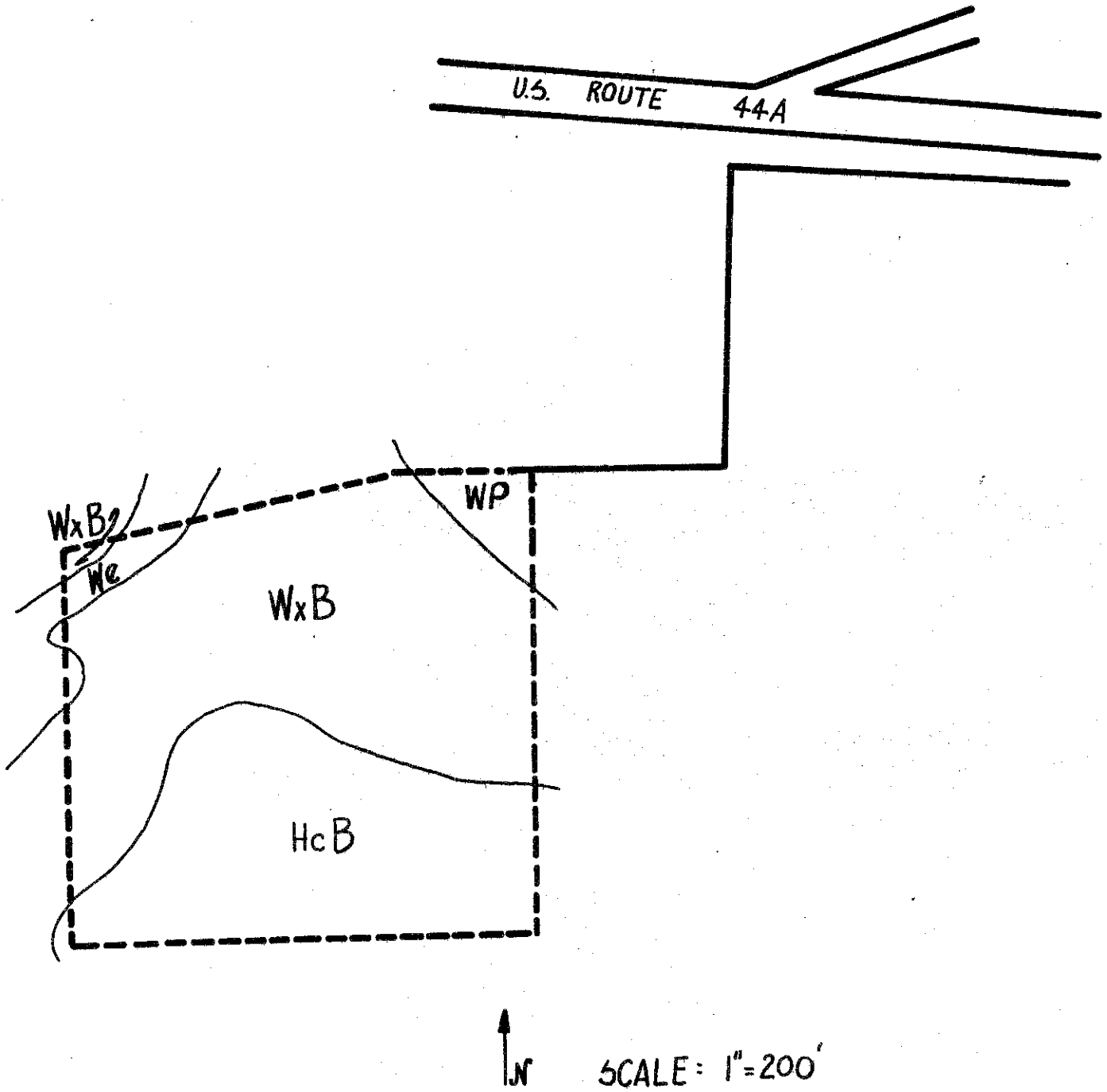
With the examination of the soils map and the accompanying limitations chart a correlation between soils and surficial geology can be seen.

The four acre cornfield west of the drainage ditch and just north of the wooded area was the most intensively studied area. This area (Symbol HcB) was mapped as a Hollis-Charlton Complex with 3 to 15% slopes. About 50% of this mapping unit is Hollis soils; somewhat excessively well drained soils developed in sandy material underlain by bedrock within 20 inches. Charlton soils, comprising 30% of the complex, are well drained soils developed in upland till normally deeper than four feet and have slight limitation ratings for the uses listed in the Appendix. The remaining soils are similar to Charlton but bedrock is encountered between 20 to 40 inches.

Bedrock depth in the four observation pits ranged from 24 to 54 inches, and several surface outcrops of bedrock were observed. It appears highly improbable that an area of Charlton soils extensive enough to support the septic system required by this project exists. However, if such factors as location, economics, or social considerations outweigh soil use problems, more intensive site investigation may locate a suitable area.

A narrow strip of very poorly drained Whitman soil (Wp) borders the drainage ditch. This soil is defined as an Inland Wetland by Public Act 155 as amended. The remaining area is Woodbridge fine sandy loam on a 3 to 8% slope.

SOIL MAP
ENGLAND PROPERTY
COVENTRY, CONNECTICUT



The map is an enlargement from the original 1320'/inch scale to 200'/inch.

Prepared by: UNITED STATES DEPARTMENT OF AGRICULTURE, Soil Conservation Service.
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ENGLAND PROPERTY

COVENTRY ELDERLY HOUSING PROJECT

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
Hollis-Charlton	HcB	4	40	Depth to Bedrock	3	3	3	3
Whitman	Wp**	1	10	High Water Table	3	3	3	3
Woodbridge	WxB	5	50	Seasonal High Water Table	3	2	2	2
		<u>10 Ac.</u>	<u>100%</u>					

* Urban Use Limitations: 1 = slight; 2 = moderate; 3 = severe (see the last page of this report for a further explanation of limitation classifications).
 ** Inland Wetland Soils as defined by Public Act 155, as amended.

VEGETATIVE COVER

The site is primarily openland used for agricultural purposes. Specifically, it contains a series of small fields (two to five acres) used for production of corn silage, unimproved pasture, and a naturally wet meadow area. The fields are bounded by stonewalls covered with dense shrubby vegetation. The site is bounded by woodland on the west side and south side. There is a natural drainage way running through the meadow that has been deepened by about five feet. This drainage way collects runoff water from the site and carries it via Olson Brook to the Skungamaug River approximately 6,000 feet downstream from the site.

WILDLIFE HABITAT

The quality of the wildlife habitat on the England Property is high. The pattern of small agricultural fields bounded by shrubby hedge rows creates a diversity of plant species which supply elements of food and cover to both game and non-game wildlife. Hedgerows contain silky dogwood, apple, grape vine, arrowwood, black cherry, numerous hardwoods sprouts, and poison ivy, as well as annual and perennial weeds. The unimproved pasture in addition to grasses contains multiflora rose, blueberries, grape vine, bayberry, spirea and apple. These plants are useful to wildlife and enhance the values of the site.

Development of the site would reduce its value to wildlife, however, proper re-establishment of vegetation including a mix of legumes and grasses, and clump plantings of fruiting shrubs could reduce the impact on wildlife.

FISH

The drainage way does not contain water sufficient to support fish. However, it is important that soil material eroded from the site will collect in the drainage way and may be transported downstream via Olson Brook to the Skungamaug River which does support a trout fishery. Development of the site should require erosion and sediment control measures which would retain soil material on the site, thereby, protecting water quality, fish and other aquatic life.

CLIMATOLOGY

The climate characteristics discussed for the Goldsher site apply to the England Property also. As the England Property is unforested, more consideration would have to be to landscaping for aesthetic as well as other reasons such as for windscreens or shading purposes. Again solar energy should be investigated for the buildings.

WATER SUPPLY

As drilled on-site wells would constitute the water supply on the England site also, drilling records were examined for the closest well which was drilled to supply the Meadowbrook Shopping Center along Route 44A. That particular well is a standard six inch type drilled 480 feet into rock and is reported to yield 15 gallons per minute.

If the yield value is accurate, then a total daily figure may be around 21,600 gallons of water potentially available. Unfortunately, demands vary throughout the day with peak periods occurring in the morning and evening and with little or no water used late at night. Water use fluctuation, however, can be controlled if a land surface water storage supply or tank is put into the water supply system provided the well is capable of supplying the total daily requirements.

WASTE DISPOSAL

As no public sewer system is available to the site, sewage disposal will have to be developed on-site. Soil mapping data as well as on-site investigation of the deep hole pits dug on-site on the day of the review revealed bedrock outcroppings as well as a bedrock to within 24" of the land surface. The soil scientist pointed out areas of the cornfield where mounds 8 - 10" across existed due to repeated plowing in this area, and the layer of bedrock would be approximately 10" from the surface.

Based on the mapping data provided, field observations which indicated bedrock to be in close proximity to the surface, it was mutually decided by the Team, health officials, the Housing Authority, and the architect for the project, that further testing, i.e. percolation tests, was unnecessary as the site was generally unsuitable for subsurface sewage disposal. (The test holes were dug along the border. No test holes were dug in the cornfield so as not to disturb the crop. As this was a preliminary investigation, it was felt that this work provided some basic information, but it was pointed out by the Team that further tests would be necessary if construction plans were to be pursued.)

Due to the extensive occurrence of bedrock within close proximity to the ground surface, this site is not suitable for purposes of subsurface sewage disposal. As the observation pit data indicates, the most favorable location tested shows bedrock at 54", and the soil scientist indicated that, at best, the depth to bedrock would probably be 60". The installation of a sewage disposal system to serve an individual residence might be feasible on certain sections of the site (but would require extensive planning and site preparation). The proposal here would involve the installation of a system of a large area and this appears not feasible without further extensive deep hole tests. The subsurface sewage disposal system must be designed by a professional engineer certified by the State of Connecticut. Consideration must be given to the presence of a perched water table as indicated by a mottled layer at the subsoil-hardpan layer interface. As indicated in the Appendix section of this report, the percolation rate to be used for this design falls in the 11 - 20 min./inch range. The design capacity for the septic tank is based on a 24 hr. flow rate of 250 gal./bedroom. Those units which will accommodate only one individual could be sized at 125 gal./unit.

SERVICES TO SUPPORT DEVELOPMENT

The England site is quite convenient to a variety of commercial and social services which could be reached with a relatively short walk, or given the likely steep grade of access roads to the housing, a very short automobile ride. Special care should be taken to insure a safe entrance onto the site if circulation facilities are shared with the shopping center. The England Property is located in an area of town where numerous services and conveniences exist that would make elderly housing

truly within walking distance of these necessary facilities most attractive. However, if this site is not chosen for such a complex due to the imposing soil limitations it may be worth the town's time and effort to explore the possibility of utilizing another piece of property in that general location.

APPENDIX

PERCOLATION TEST DATA

GOLDSHER PROPERTY

Percolation Test A:

Depth of hole 17"

<u>Time</u>	<u>Reading (inches)</u>	<u>Drop</u>	<u>Rate of Drop (min./inch)</u>
1:30	4 7/8	-	-
1:35	5 7/8	1	5.0 min./inch
1:40	6 7/8	1	5.0 " "
1:45	8	1 1/8	4.4 " "
1:50	8 3/4	3/4	6.6 " "
1:55	9 1/2	3/4	6.6 " "
2:00	10 1/4	3/4	6.6 " "
2:05	10 3/4	1/2	10.0 " "
2:10	11 1/2	3/4	6.6 " "

Percolation Test B:

42" test hole - hardpan at 36"

2:20	30	-	-
2:25	30 3/4	3/4	6.6 min./inch
2:30	31 1/2	3/4	6.6 " "
2:35	31 7/8	3/8	13.3 " "
2:40	32 1/4	3/8	13.3 " "
2:45	32 3/4	1/2	10.0 " "
2:50	33 1/8	3/8	13.3 " "
2:55	33 1/4	1/8	40.0 " "
3:00	33 3/4	1/2	10.0 " "
3:05	34 3/8	5/8	8.0 " "
3:10	34 1/2	1/8	40.0 " "
3:15	34 3/4	1/4	20.0 " "
3:20	35 1/8	3/8	13.3 " "
3:25	35 3/8	1/4	20.0 " "
3:30	35 3/4	3/8	13.3 " "
3:35	36 1/8	3/8	13.3 " "

Percolation Test C:

Depth of hole 30"

<u>Time</u>	<u>Reading (inches)</u>	<u>Drop</u>	<u>Rate of Drop (min./inch)</u>
2:53	19 3/4	-	-
2:58	20 1/2	3/4	6.6 min./inch
3:03	21	1/2	10.0 " "
3:08	21 3/8	3/8	13.3 " "
3:13	21 7/8	1/2	10.0 " "
3:18	22 1/8	1/4	20.0 " "
3:23	22 1/2	3/8	13.3 " "
3:28	22 3/4	1/4	20.0 " "
3:33	23 1/8	3/8	13.3 " "
3:38	23 3/8	1/4	20.0 " "

ENGLAND PROPERTY

No percolation test data. (By mutual consent as indicated in the section of this report on WASTE DISPOSAL for the England Property, the tests were not performed).

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.