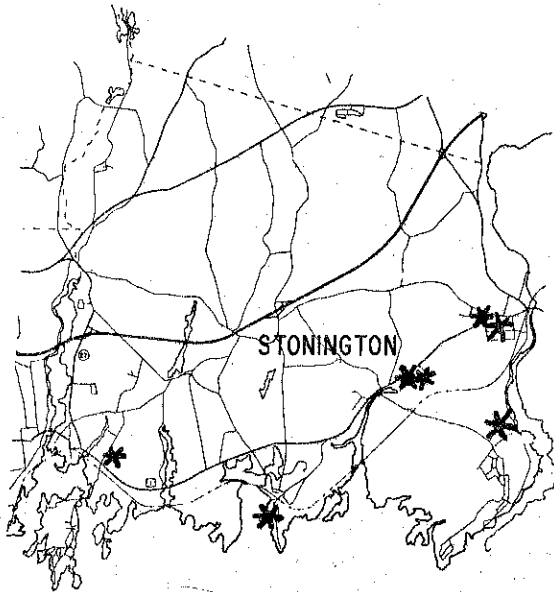


environmental review team report
ELDERLY HOUSING SITES
STONINGTON, CONNECTICUT



**EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT**

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

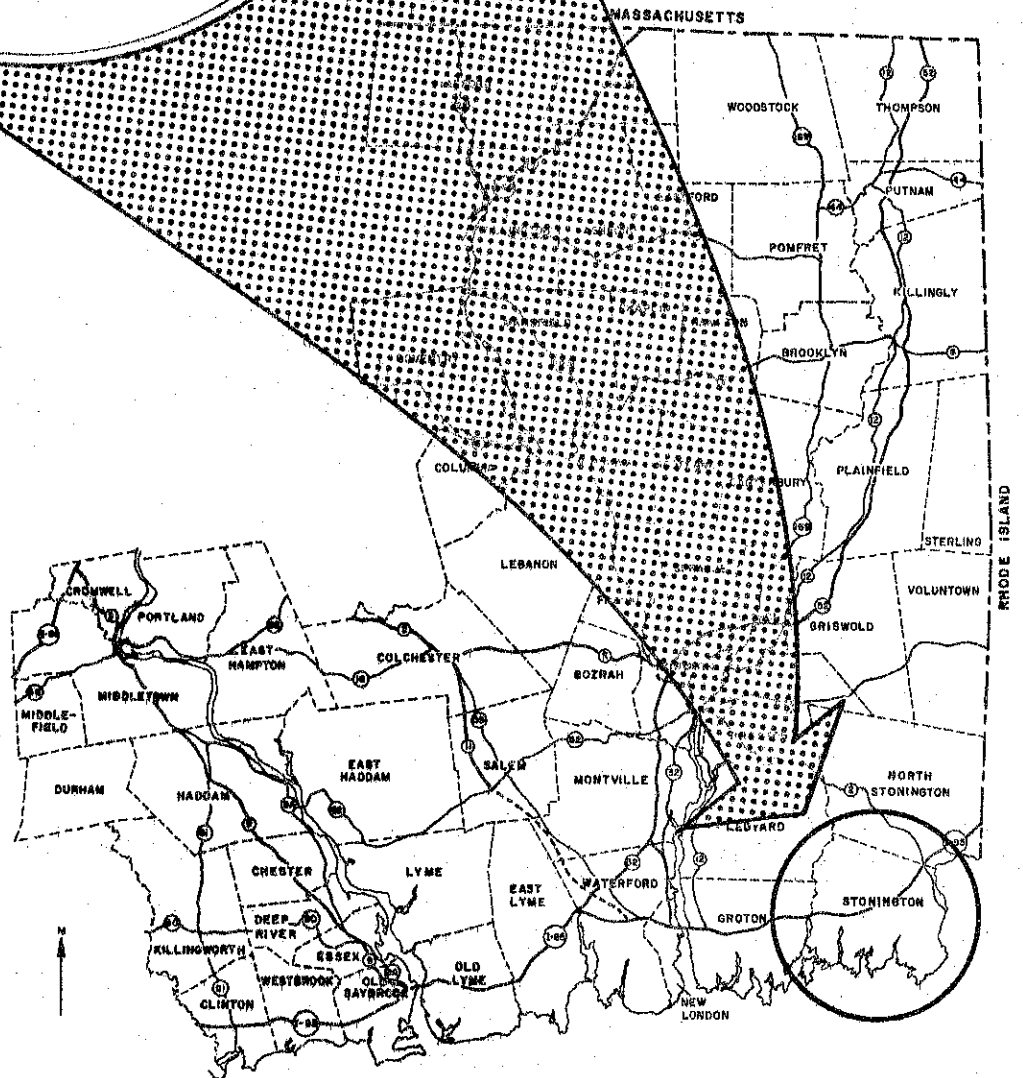
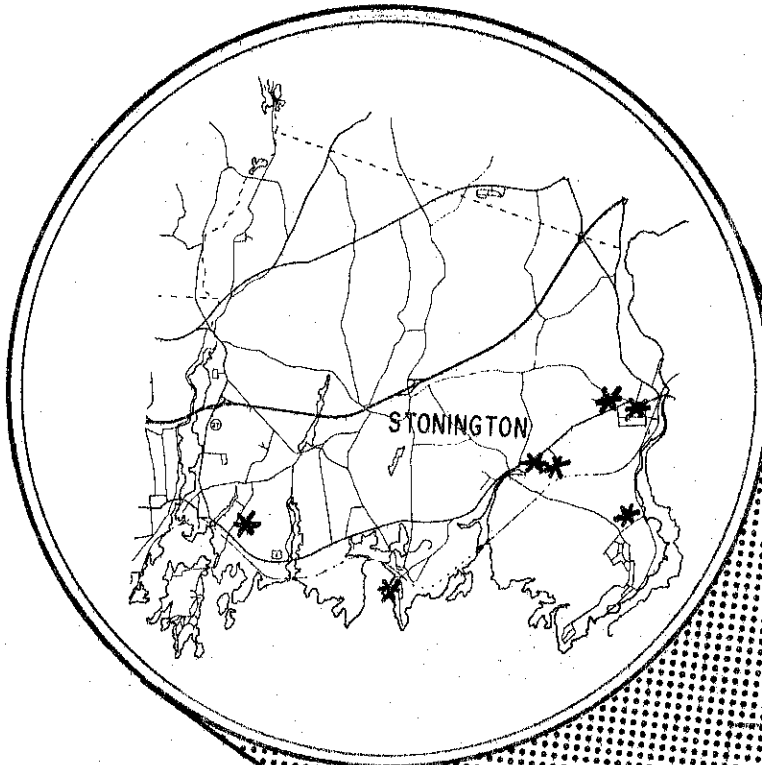
ENVIRONMENTAL REVIEW TEAM REPORT
ON
ELDERLY HOUSING SITES
STONINGTON, CONNECTICUT
NOVEMBER, 1976

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

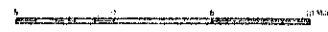
EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT PROJECT
Environmental Review Team
139 Boswell Avenue
Norwich, Connecticut 06360

LOCATION OF STUDY SITES

STONINGTON, CONNECTICUT



EASTERN CONNECTICUT
RESOURCE CONSERVATION AND DEVELOPMENT PROJECT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
ELDERLY HOUSING SITES
STONINGTON, CONNECTICUT

This report is an outgrowth of a request from the Stonington Housing Authority, with permission of the landowners, to the New London County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the Eastern Connecticut Resource Conservation and Development (RC&D) Area Executive Committee for their consideration and approval 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 sites consisted of the following personnel: Sherm Chase, District Conservationist; Richard Hyde, Geologist, Connecticut Department of Environmental Protection (DEP); David Miller, Climatologist, University of Connecticut Cooperative Extension Service; Don Capellaro, Sanitarian, Connecticut Department of Health; Thomas Seidel, Regional Planner, Southeastern Connecticut Regional Planning Agency (SCRPA); and Linda Simkanin, ERT Coordinator, Eastern Connecticut RC&D area.

The Team met and field-checked the sites on Thursday, September 23, and Thursday, September 30, 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 of each of the sites, evaluates its significance to the proposed elderly housing development, and also suggests considerations that should be of concern to any developers and the Town of Stonington. 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 these particular sites.

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 seven sites under consideration by the Stonington Housing Authority for the construction of 30 units of elderly housing. It is anticipated that one of the sites will be recommended for the project by the Housing Authority. Funding for the development is anticipated from the Connecticut Department of Community Affairs (DCA), which has final approval over the site selection as well as the site development plan.

Prior to the field inspection of the seven sites, the Team discussed the development objectives with the Housing Authority, the Town Planner, and the architect for the project. At that time, the Team was informed that these were the prime sites under consideration for the elderly housing development. The sites are located in each of the three geographic/economic centers of Stonington - Mystic, the Borough, and Pawcatuck. Two, are in Town ownership, and the other six are in private ownership. The sites are representative of the range of land forms found in Stonington. The availability of public water and sewers varies with each site.

Preliminary site plans and estimated site development costs are being prepared independently by the firm of Hermann and Joncus, architects chosen for the elderly housing development by the Housing Authority, and will not be included in this report.

Some aspects of the proposed elderly housing 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 discuss each of the seven sites separately, and will be divided according to the three geographic/economic centers. For the convenience of the Housing Authority as well as other users of this report, much of the information presented in the individual site discussions has been summarized in a chart found in the Appendix of this report.

In general, the Team felt that site selection for an elderly housing development is a process that should result in choosing an environment that satisfies many criteria such as (1) the site should be convenient to shopping and other facilities; (2) the development should be sited in order to promote the health, safety, and welfare of its occupants; and (3) the site should be one that is, or has the potential to be, aesthetically pleasing.

MYSTIC

EVALUATION OF THE BRUSTOLON PROPERTY

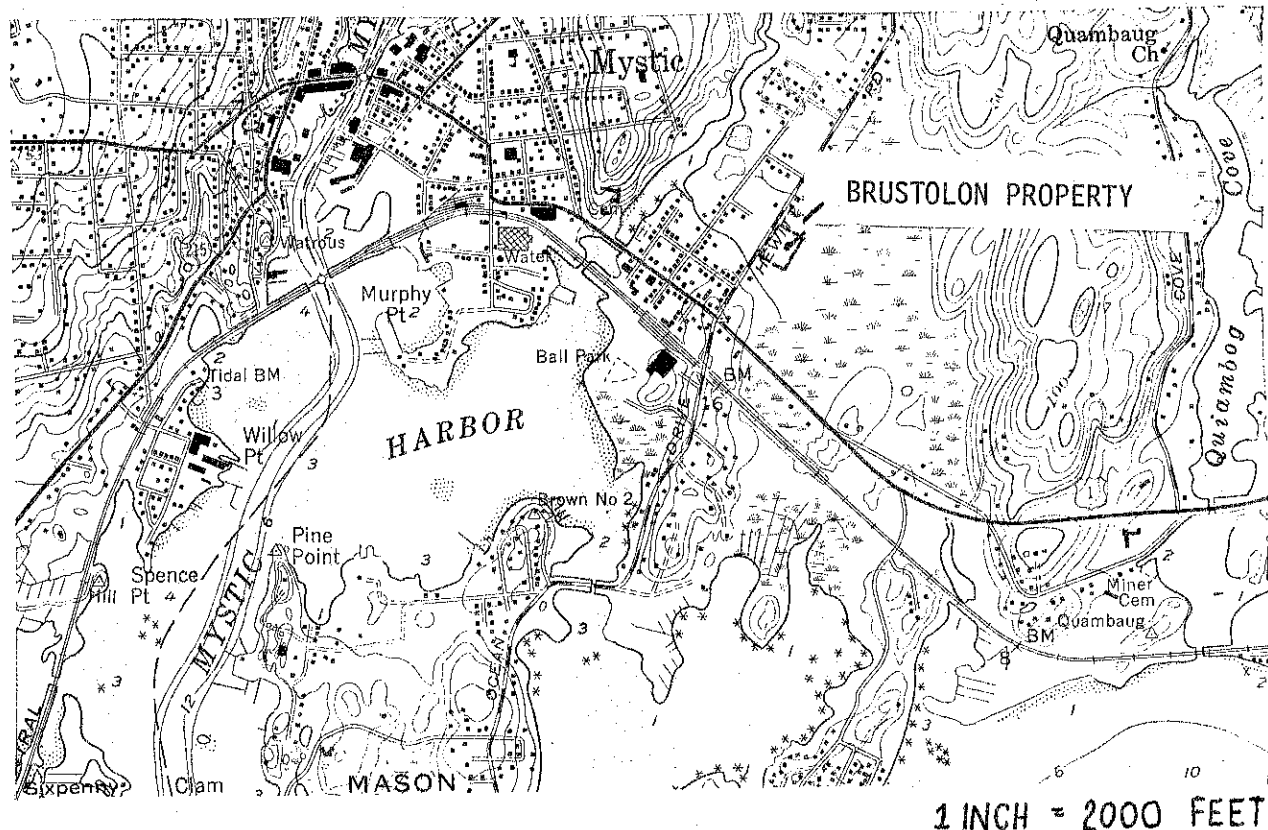
The Brustolon property is roughly 3.4 acres in size and is located in the Mystic section of Stonington. The site has frontage on Hewitt Road, just north of the junction with U.S. Route 1. (Refer to the topography map below). The property is in private ownership, and is currently zoned RA-2 (residential, 40,000 square feet lot size).

TOPOGRAPHY

The site has a nearly level to slightly undulating landscape. It is on the edge of a large wetland system which drains entirely into the immediate coastal waters. (Refer to the topography map below).

SURFICIAL GEOLOGY

The Brustolon property is overlain with outwash deposits consisting of silt, sand, and gravel deposited in front of the ice during deglaciation of the area. In many cases, such deposits are broad in areas and relatively lowlying as is the case with this property. The thickness of the deposit probably is between 15 to 30 feet deep over the bedrock.



BEDROCK GEOLOGY

The site is underlain by a granodionite gneiss. The geologist uses the general term gneiss to describe rock deformed by intense heat and pressure resulting in bands of light granular minerals alternating with darker flat and elongated minerals. The darker predominate. Major mineral constituents include hornblende biotite mica, quartz, and calcic oligoclase or andesine and orthoclase feldspars. These rocks are sufficiently sturdy to support foundations and structures.

SOILS

A detailed soils map of the property is provided here. As the 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 rather as guidelines to the distribution of soil types on the property. The soils map, along with the Special Soil Report, Southeastern Connecticut Region (USDA, SCS, 1969), can serve as an educational tool regarding the identification and interpretation of the soils.

The soil information as published in the New London County Soil survey was supplemented by a field investigation of the soil conditions on-site. 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 soil limitations chart in the Appendix of this report are supported by field observations, research investigations, engineering test data, and judgement of experienced soil scientists.

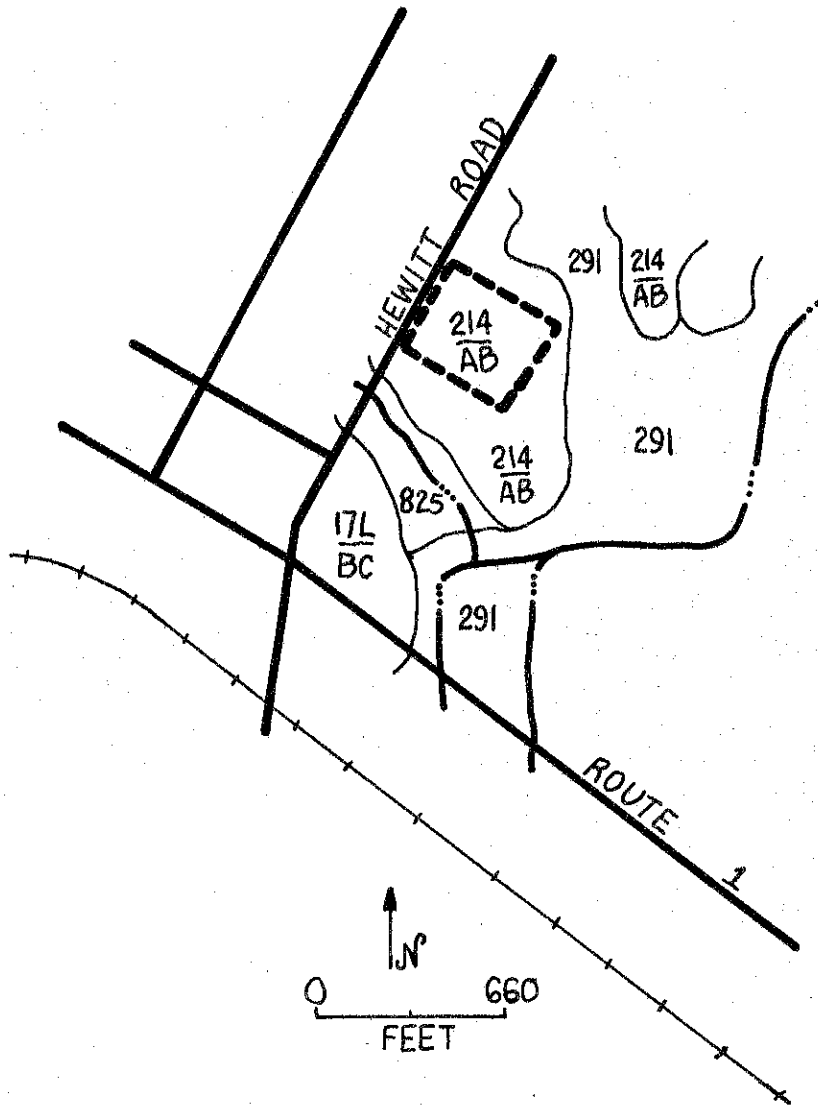
Three observation pits were dug by a backhoe and were examined by a state sanitarian and the district conservationist. Two holes were dug about 200 and 100 feet in from Hewitt Road. At the first location water was encountered at about 38 inches. The second one, which was more northerly and closer to the road, showed mottling at 2 1/2 feet below the land surface, indicating a water-logged condition, or high water table, during the wet season. Water entered the hole at about 5 feet. The soil was sandy. The last one was towards the rear of the lot near the tree line. Water was seeping in at about 45 inches. The lower soil was also sandy.

The soil on the site is primarily a Belgrade/Enfield complex, 214/AB. This soil type has a seasonably high water table in the low areas. Permeability is moderate to rapid above the water table. The water table limits successful operation of on-site sewage disposal systems unless special measures are used, such as drainage and land fill. House basements may be subject to seepage without protective measures such as curtain drains.

VEGETATIVE COVER

A thin tree and shrub border exists along the Hewitt Avenue border of the property. The remainder of the site is in a low grass, field condition, and is nearly flat. Extensive tree and ornamental flowering shrubs would be recommended to provide visual relief and vegetative variety in a site development plan. The flat terrain could provide ideal conditions for a community vegetable garden for occupants of any proposed development.

SOIL MAP
BRUSTOLON PROPERTY
STONINGTON, CONNECTICUT



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

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

Stonington is in the Connecticut coastal region and its climatic characteristics are typical of the coastal marine climate. Therefore the climate is basically mild and humid in all seasons. When low pressure weather systems bring southerly air flow (from the south) the area experiences humid maritime conditions especially in the winter and spring seasons. When high pressure systems prevail the area experiences relatively cool dry weather which are the prevailing summer and fall season conditions. Daytime offshore and nighttime onshore winds occur in this coastal area whenever there is a little synoptic wind. There is some wind almost all the time.

Annual Mean Temperatures	51°F
Probability of Winter temperatures getting below 0°F	2 in 5
Probability of Summer temperatures getting above 90°F	2 in 5
Annual Heating Degree Days	5600
Precipitation (mean annual) (relatively evenly distributed by month)	50 inches
Snow Depth (mean annual)	35 inches

The surrounding topography is gentle for all the sites to be reviewed in this report and therefore does not influence the local climate in any limiting manner. The constant breeze disperses air pollutants over most of the sites and maintains the ambient air quality rather high. Major changes in air quality will not occur due to these proposed developments.

The Brustolon property will most likely experience serious warm weather insect problems due to the surrounding wetland area (refer again to the topography map) and somewhat wind-protected summer conditions (which prevents the wind from blowing the insects away). This may cause inconvenience and irritations for elderly people in the summer months and result in pressures for a town mosquito control program.

HAZARDS

The Brustolon property appears to be entirely below 10 feet in land elevation. Due to the close coastal proximity, the site is a potential flood hazard area according to the preliminary maps from the federal Flood Insurance Administration (FIA). As many properties in Stonington fall into this potential flood hazard category, the Town has entered into the National Flood Insurance Program which enables homeowners in these mapped areas to purchase federally-subsidized flood insurance. In order to qualify for the insurance however, first floor elevations of all new construction must meet federal standards which are reflected in the local zoning regulations. The implications for the Brustolon property are simply that any elderly housing development construction must also conform to these minimum building requirements. Special building design or the addition of fill material to the site in order to achieve the required first floor elevations appears necessary.

WATER SUPPLY

The water supply for the proposed development is to be derived from the existing public water system of the Mystic Valley Water Company which serves the general area. Although the water supply is currently adequate for the area served, the engineer should determine the necessary volume needed to serve the approximate 30 units, as well as any additional supply pipes and fire hydrants needed to support the development.

WASTE DISPOSAL

At the time of the field review, the Team was informed that public sewers would be available to serve the site within one year.

SERVICES TO SUPPORT DEVELOPMENT

The site has entrance/exit access to a secondary town road. Site lines are fairly good. Potential occupants of the proposed development would be within walking distance of a couple of small grocery stores, but all other major necessities such as banking, medical, special needs, library, etc., would probably require transportation.

COMPATIBILITY WITH SURROUNDING LAND USES

Surrounding land uses are undeveloped and residential single family. On a land use basis elderly housing would be compatible with these uses. If more property were acquired in this area then perhaps all the planned elderly units could be accommodated if this is still the long range intention of the Housing Authority.

The 1970 Census indicated that 435 of Stonington's 1,810 residents aged 65 or older resided in the greater Mystic area (this includes Masons Island).

BOROUGH

EVALUATION OF THE TOWN DOCK PROPERTY

The Town Dock property is approximately two acres in size and is located in the Borough (or Stonington Village) section of town. The site is located on the west side of the Borough with complete exposure on the west and south sides to Stonington Harbor and the fishing dock area, and to residential uses on the north and east sides. (Refer to the Topography Map below). The property is in Town ownership, and is currently zoned waterfront commercial.

TOPOGRAPHY

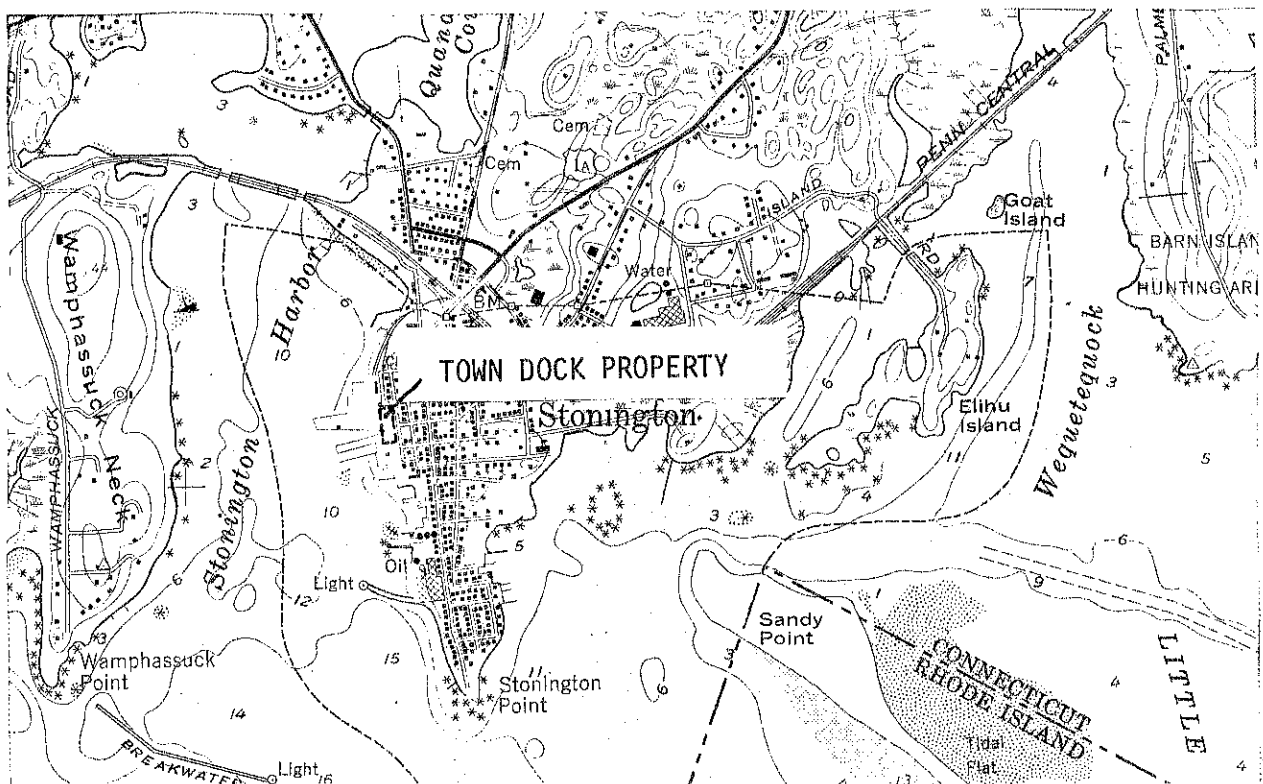
The site is completely flat, and is located on the western edge of a significant point of land extending south into Fishers Island Sound.

SURFICIAL GEOLOGY

The Town Dock property is located in an area of shore front that has been artificially filled in by man to make property usable for specific purposes.

BEDROCK GEOLOGY

Like the Brustolon site, the Town Dock property is underlain by a granodionite gneiss - the light and dark-layered heat and pressure-formed rock (see BEDROCK GEOLOGY discussion of the Brustolon site).



1 INCH = 2000 FEET

SOILS

A detailed soils map of the property is provided here. As the map is an enlargement from the original 1320'/inch scale to 1000'/inch, the soil boundary lines should not be viewed as absolute boundaries but rather as guidelines to the distribution of soil types of the property. The soils map, along with the Special Soil Report, Southeastern Connecticut Region (USDA, SCS, 1969), can serve as an educational tool regarding the identification and interpretation of the soils.

The site is composed entirely of land which was filled. The entire Borough is classified as urban land which means that more than 50% of the total land surface is covered by buildings and pavement. Made land cannot be rated according to the standard soil limitations as the other sites reviewed in the charts in the Appendix.

VEGETATIVE COVER

The site is completely flat and has a lawn grass cover. There are no trees or shrubs on the property. A paved road bisects the site. Ornamental trees or shrub plantings would be needed to offer shade, soften building lines, and especially to offer protection from winter winds on the north and west sides.

CLIMATOLOGY

As the same general climate remarks apply here, refer to the CLIMATOLOGY section under the Brustolon site discussion.

The Town Dock property offers the best location of all of the sites from a climatic point of view. The on-shore breezes make the location comfortable in the summer and artificial or natural wind breaks on the north side can be easily utilized for winter wind protection and for reduction of heating demand in the buildings.

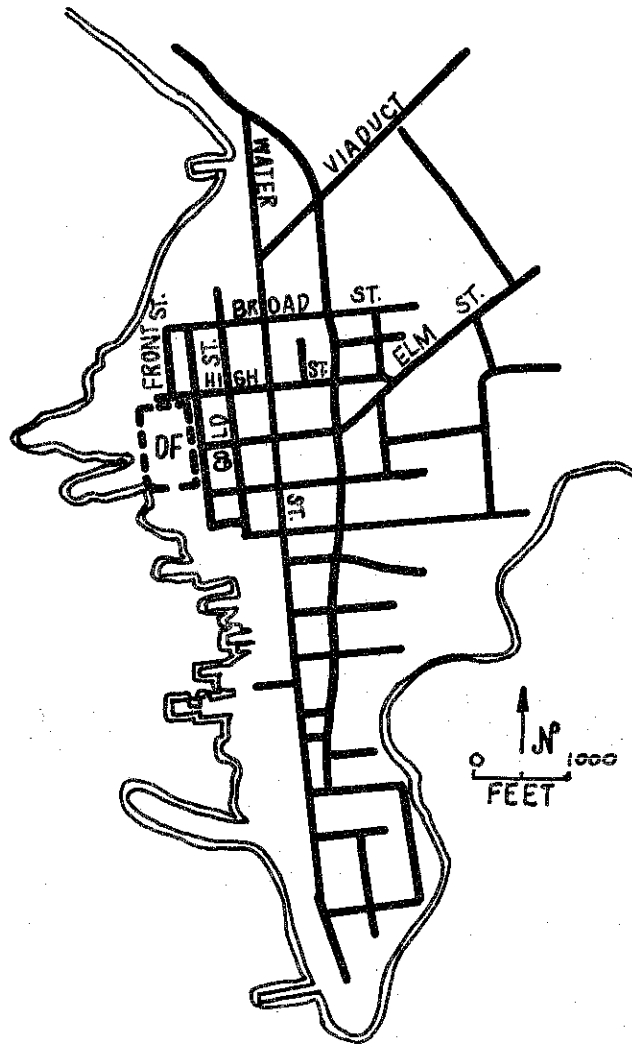
HAZARDS

Although FIA maps are not yet available for the Borough of Stonington, portions of the site are just below ten feet in elevation, so the same potential flood hazard condition exists on this property as for the Brustolon site. First floor elevations would have to meet the minimum building requirements outlined by the FIA program either with fill or with special building design. The stone work along the dock area appears to be substantial and should provide adequate protection from erosion during heavy storms and flooding.

WATER SUPPLY

The water supply for the proposed development is to be derived from the existing public water system of the Mystic Valley Water Company which services the general area. Although the water supply is currently adequate for the area served, the engineer should determine the necessary volume needed to serve the approximate 30 units, as well as any additional supply pipes and fire hydrants needed to support the development.

SOIL MAP
TOWN DOCK PROPERTY
STONINGTON, CONNECTICUT



The map is an enlargement from the original 1,320'/inch scale to 1,000'/inch.

Prepared by: UNITED STATES DEPARTMENT OF AGRICULTURE, Soil Conservation Service.
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WASTE DISPOSAL

Public sewers are available for this site, therefore there should be no problem with waste disposal. However, the anticipated quantity and quality of the waste emitted should be reviewed to insure that adequate treatment is available through the municipal waste disposal system.

SERVICES TO SUPPORT DEVELOPMENT

The site has easy access to the local streets of the Borough. Potential occupants of the proposed development would be within easy walking distance of a variety of commercial and social services such as groceries, drugstore, other shops, library, banking, and the Community Center.

COMPATIBILITY WITH SURROUNDING LAND USES

Waterfront commercial, the sewage treatment plant, and residential uses completely surround the Town Dock property. The area is the last large undeveloped public open space in the fully developed Borough and is used for unorganized recreation or occasional special events.

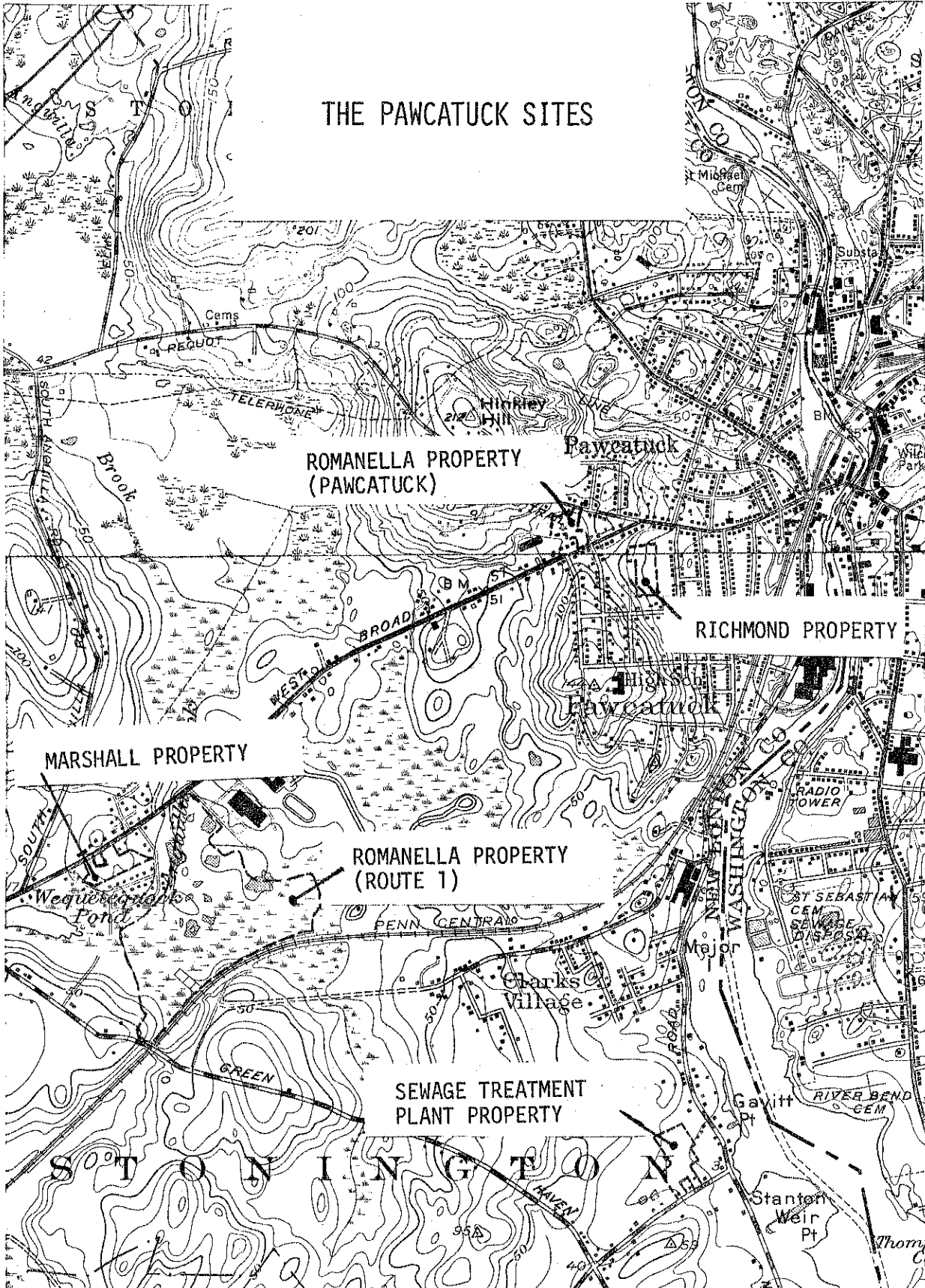
The property was purchased by the Town of Stonington in 1966. The terms of the agreement stated that the property could not be used for residential purposes for a period of ten years from the date of closing.* Since the date of closing was August 3, 1966, the property now appears to be free of its restrictive deed covenant.

If the site were to be used for elderly housing, access to the sewage treatment plant and fishing fleet would have to be maintained as well as a parking area for the fishing fleet. Since the Town owns the site, there would be no acquisition cost. The 1970 Census indicated that approximately 300 of Stonington's 1,810 elderly residents lived in or near the Borough.

* Stonington Records of Town Meetings, Volume 8, pp. 194-201, 207.
Stonington Land Records, Volume 158, pp. 127-129.

PAWCATUCK

THE PAWCATUCK SITES



1 INCH = 2000 FEET

EVALUATION OF THE MARSHALL PROPERTY

The Marshall property is approximately 5.2 acres in size, and has some frontage along U.S. Route 1. (Refer to the Topography Map on the opposite page). The property is in private ownership, and is currently zoned RA-3 (residential 20,000 square feet).

TOPOGRAPHY

The site has an undulating landscape with some slopes approaching an eight percent grade. The property sits on the edge of a significant low-lying wetland area. (Refer again to the Topography Map). This site, as well as the surrounding residential development, drains entirely into Anguilla Brook. The parcel consists of open land in an abandoned old field condition studded with large surface boulders or bedrock outcrops. The portion nearest Route 1 is flat, with the rear portion sloping locally to form a pocket depression which apparently collects water at certain times of the year.

SURFICIAL GEOLOGY

The Marshall site is completely covered with glacial till. The geologist uses the general term of till to describe a heterogeneous mixture of various amounts of clay, silt, sand, gravel, and boulder-sized particles that show little or no evidence of sorting or stratification by water action. The Marshall property has numerous rock outcrop exposures at the land surface indicating the till overburden is a thin veneer over the solid bedrock surface. Such conditions generally mean the overburden nearly never becomes thicker than 10 feet at any location on each site although there may be some scattered deep pockets of soil which can be located with a backhoe.

BEDROCK GEOLOGY

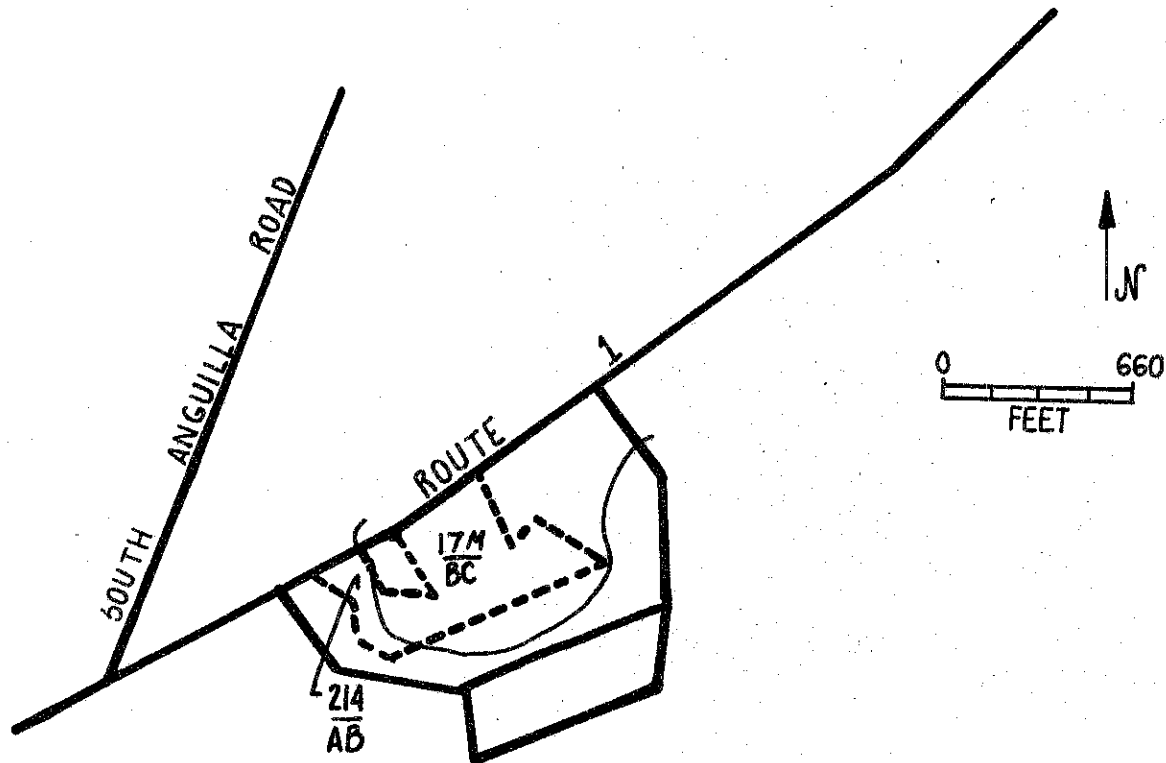
Underlying bedrock on the Marshall site has been identified as metavolcanic rocks—that is, rocks of volcanic origin that were metamorphosed, altered by intense heat and pressure, into the gray-layered gneiss we see in the outcroppings in the area. Main mineral constituents are quartz, oligoclase to andesine-labradorite feldspars, biotite mica, hornblend and microcline feldspars. The rocks are layered and fractured but sufficiently sturdy to support foundations and structures.

SOILS

A detailed soils map of the property is provided here. As the 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 rather as guidelines to the distribution of soil types on the property. The soils map, along with the Special Soil Report, Southeastern Connecticut Region (USDA, SCS, 1969), can serve as an educational tool regarding the identification and interpretation of the soils.

The soil information as published in the New London County Soil survey was supplemented by a field investigation of the soil conditions on site. 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 limi-

SOIL MAP
MARSHALL PROPERTY
STONINGTON, CONNECTICUT



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

Prepared by: UNITED STATES DEPARTMENT OF AGRICULTURE, Soil Conservation Service.
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tations chart (which is found in the Appendix) are supported by field observations, research investigations, engineering test data, and judgement of experienced soil scientists.

Four observation pits were dug by a backhoe and examined by a state sanitarian and the district conservationist. Two holes were dug in the flat area and were to depths of 63 and 68 inches where there was refusal. The lower soil consisted of a grayish firm till. At the third hole (off towards the east, beyond a stone wall) a depth of 86 inches was obtained. The lower soil was greyish, silty sand, stony. The fourth hole was towards the lower easterly end and was 63 inches deep (could have gone deeper). Mottling was observed at 35 inches with the soil below being a greyish silt. No water was observed at any of the holes.

Both the soil map and test holes show that for the most part the property is quite stony and in some places shallow to ledgerrock. Mottling in the soil profile indicates a rising and falling watertable.

As sewers are not presently planned to extend to this site, there would be a need for constructing on-site sewage facilities. The soil conditions (ledgerrock and a fluctuating watertable) could cause problems with the design and construction of sewage facilities. Many areas such as this have been used by bringing in fill to increase the elevation of the land surface above ledgerrock, or an underground water table. This can be costly and would need approval of the appropriate sanitarian regarding the suitability of fill for a sewage facility. Ledgerrock can also cause problems with the installation of basements, water lines, or any needed underground facilities.

The dominant soil type on the property is Hollis 17M/BC. As observed in the test pits, this soil is shallow to bedrock. The Hollis soils have developed from a thin mantle of glacial till and residuum (that which remains from the decay of rock in place) from the underlying bedrock. Surface outcrops vary from a few to numerous, and varying amounts of surface stone and boulders are present in most places.

VEGETATIVE COVER

The site is primarily in an open, old field condition of grasses. There is a thin tree and shrub borders along some boundaries of the property. A dense woody shrub thicket exists in an depression area of the site. Landscaping would be necessary to enhance any elderly housing development. A thick tree and shrub buffer along the Route 1 boundaries would be desirable from an aesthetic standpoint, and also to serve as an air and noise pollution filter. The site appears large enough to accomodate a community vegetable garden for potential occupants of the development.

CLIMATOLOGY

The same general climate remarks found in the discussion of the Brustolon site apply here.

WATER SUPPLY

The site is within the public water supply service area of the Westerly Water Company which supplies the Pawcatuck section of Stonington. Although the water supply is currently adequate for the area served, the engineer should determine the necessary volume needed to serve the approximate 30 units, as well as any additional

supply pipes and fire hydrants needed to support the development.

WASTE DISPOSAL

Since the area is beyond the initial service area of the proposed Pawcatuck sewerage system and would require a pump station, sewage would have to be disposed of on-site. As numerous bedrock outcroppings were observed on the site, test pits should be dug to determine if an on lot waste disposal system is feasible. Surface boulders and the underlying ledge rock would make various site work difficult and costly. Special consideration would be needed in order to keep the sewage leaching system(s) the required distance of four feet above the bedrock.

SERVICES TO SUPPORT DEVELOPMENT

This site is located between the Borough of Stonington and Pawcatuck. The site is far enough removed from the Borough and Pawcatuck that in most cases private automobiles or public transportation would be needed to reach supporting facilities such as shopping, banking, recreation, etc.

COMPATIBILITY WITH SURROUNDING LAND USES

Surrounding land use is a residential subdivision on three sides and Route 1 on the north side. The site has enough vegetation that some type of buffer zone could be left bordering the subdivision and Route 1. An elderly housing development would not appear incompatible with the surrounding land uses. Site lines on this portion of Route 1 in terms of access to the property are especially poor, and traffic here moves rather quickly. Access to the site via one of the roads of the subdivision might improve access somewhat. The 1970 Census indicated that about 736 of Stonington's elderly population resided in Pawcatuck.

EVALUATION OF THE ROMANELLA (ROUTE 1) PROPERTY

This site comprises approximately 100 acres. At the time of the review, the Team was informed that the Town could most likely select the number and location of acres it desired for the construction of elderly housing. Since the Housing Authority has not yet made its site selection, this 100 acre tract will be reviewed very generally. The property is currently in private ownership and is zoned for manufacturing use.

TOPOGRAPHY

The Romanella (Route 1) property is virtually a level to gently undulating tract of land. Most of the southern half of the acreage is in a swampy, wetland condition, with the north half of the property in a post-sand and gravel excavation state. Since those materials were removed to the water table, several small ponds now exist on the northern half of the site. Some grading has been completed along the Route 1 frontage of the property. The entire tract is drained by Anguilla Brook which runs through the property. (Refer to the Topography Map at the beginning of the Pawcatuck section).

SURFICIAL GEOLOGY

This Romanella parcel contains two types of overburden materials: one portion consists of swamp and marsh deposits containing peat, muck, silt, and sand particles; the balance consists of glacial stream deposits from the Anguilla Brook area.

BEDROCK GEOLOGY

This site, like the Marshall property discussed earlier, is underlain by meta-volcanic rocks. (Refer to BEDROCK GEOLOGY under the Marshall site).

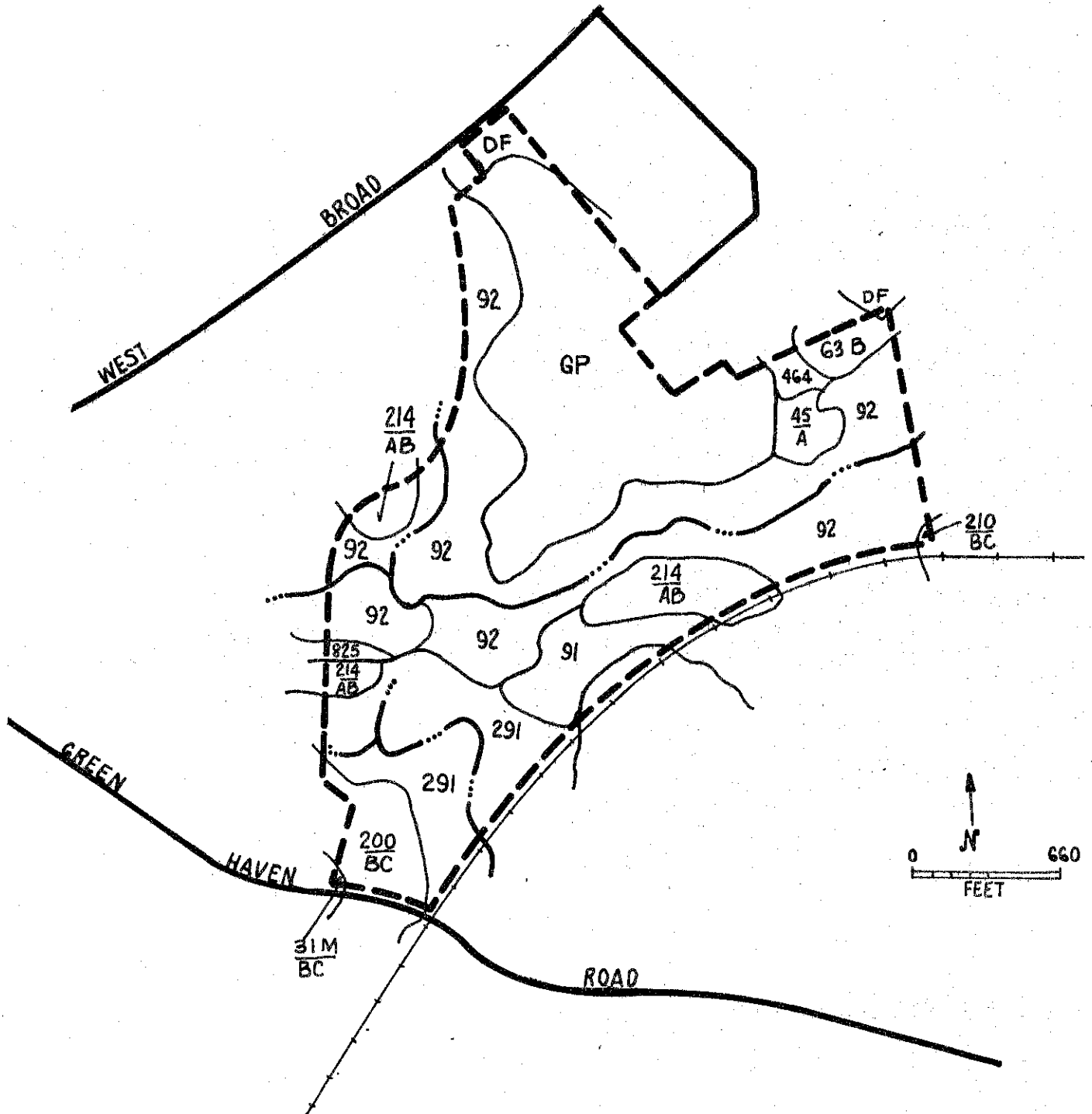
SOILS

A detailed soils map of the property is provided here. As the 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 rather as guidelines to the distribution of soil types on the property. A chart of urban use limitations can be found in the Appendix of this report.

The chart indicates that the majority of the soils on-site are inland wetland soil types as defined and regulated by Public Act 155, as amended. In order to avoid possible high development costs in terms of excavation of organic material, addition of fill, and special engineering for building design and septic systems which are required as sewers are not presently planned to serve this area, the Town may wish to select acreage which is free from P.A.155 soil types (which are marked on the limitations chart in the Appendix). It should be noted, however, that since the time of the soil mapping, gravel has been excavated for the most part to the water table. Although the undisturbed muck soils and pond would be considered inland wetlands, the Stonington Inland Wetland Commission would have to determine if portions of the excavated area is now a wetland.

In general it appears that the site would need approval of the Inland Wetlands Commission and the appropriate sanitarian. Also an engineer would be needed to

SOIL MAP
ROMANELLA PROPERTY (RTE. 1)
STONINGTON, CONNECTICUT



The map is an enlargement from the original 1,320'/inch scale to 660'/inch.
Prepared by: UNITED STATES DEPARTMENT OF AGRICULTURE, Soil Conservation Service.
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design the measures to make this site useable, and to develop cost estimates.

VEGETATIVE COVER

The northern half of the property comprising the gravel pit area was devoid of any vegetation in many areas. Common wetland as well as aquatic species characterized the dominant wetland areas.

CLIMATOLOGY

The general climate remarks found in the evaluation of the Brustolon site apply to this Romanella site.

HAZARDS

The site will most likely experience serious warm weather insect problems due to the swamp habitat and somewhat protected summer wind condition (which prevents the wind from carrying the insects away). According to the FIA maps for Stonington, the southern half of this site is mapped a potential flood hazard area. Any new construction within the mapped portion of the site would have to conform to FIA standards.

WATER SUPPLY

The water supply for the proposed development is to be derived from the existing public water system of the Westerly Water Company which serves the general area. Although the water supply is currently adequate for the area served, the engineer should determine the necessary volume needed to serve the approximate 30 units, as well as any additional supply pipes and fire hydrants needed to support the development.

WASTE DISPOSAL

As this site is outside the presently scheduled service area for public sewers, on-site sewage disposal would be required. In general, the site is poorly suited to on-site sewage disposal due to the severe limitations of the wetland soil types. Costly measures such as drainage, excavation, fill, and special engineering would be essential to develop the site. Coupled with the site purchase price, this could amount to an extremely high site development cost.

SERVICES TO SUPPORT DEVELOPMENT

Like the Marshall site, residents would need to travel by automobile or public transportation to supporting services such as shopping, medical, banking, etc. Site lines on Route 1 at this Romanella site are better than those at the Marshall site, however.

COMPATIBILITY WITH SURROUNDING LAND USES

This site is located about 1,000 feet east of the Marshall site along Route 1. Surrounding land uses are the Davis Standard Plant and undeveloped. The site is a former gravel pit adjacent to Anguilla Brook which is currently being graded. The proposed elderly housing development would be fairly isolated from any other residential uses or shopping facilities.

EVALUATION OF THE ROMANELLA (PAWCATUCK) PROPERTY

This site comprises approximately 3.8 acres, and has frontage along U.S. Route 1. The property is in private ownership and is zoned RA-4 (residential 15,000 square feet).

TOPOGRAPHY

The site has a flat to undulating topography. The variations in grade are caused primarily by the variety of fill which was dumped on the site at some earlier date. From the topography map, it appears that the site constituted a local, wet, depression area before the addition of fill altered its natural catch basin function.

SURFICIAL GEOLOGY

The Romanella property is covered with the over-burden material called glacial till. Till is a heterogeneous mixture of various amounts of clay, silt, sand, gravel, and boulder-sized particles that show little or no evidence of sorting or stratification by water action. In addition, there are numerous outcrop exposures at the land surface indicating the till overburden is a thin veneer over the solid bedrock surface. Such conditions generally mean the overburden nearly never becomes thicker than 10 feet at any location on the site although there may be some scattered deep pockets of soil.

BEDROCK GEOLOGY

The underlying bedrock at this site, has been identified as metavolcanic rocks; rocks of volcanic origin that were metamorphosed, altered by intense heat and pressure, into the gray-layered gneiss we see in the outcroppings in the area. Main mineral constituents are quartz, oligoclase to andesine-labradorite feldspars, biotite mica, hornblende but sufficiently sturdy to support foundations and structures.

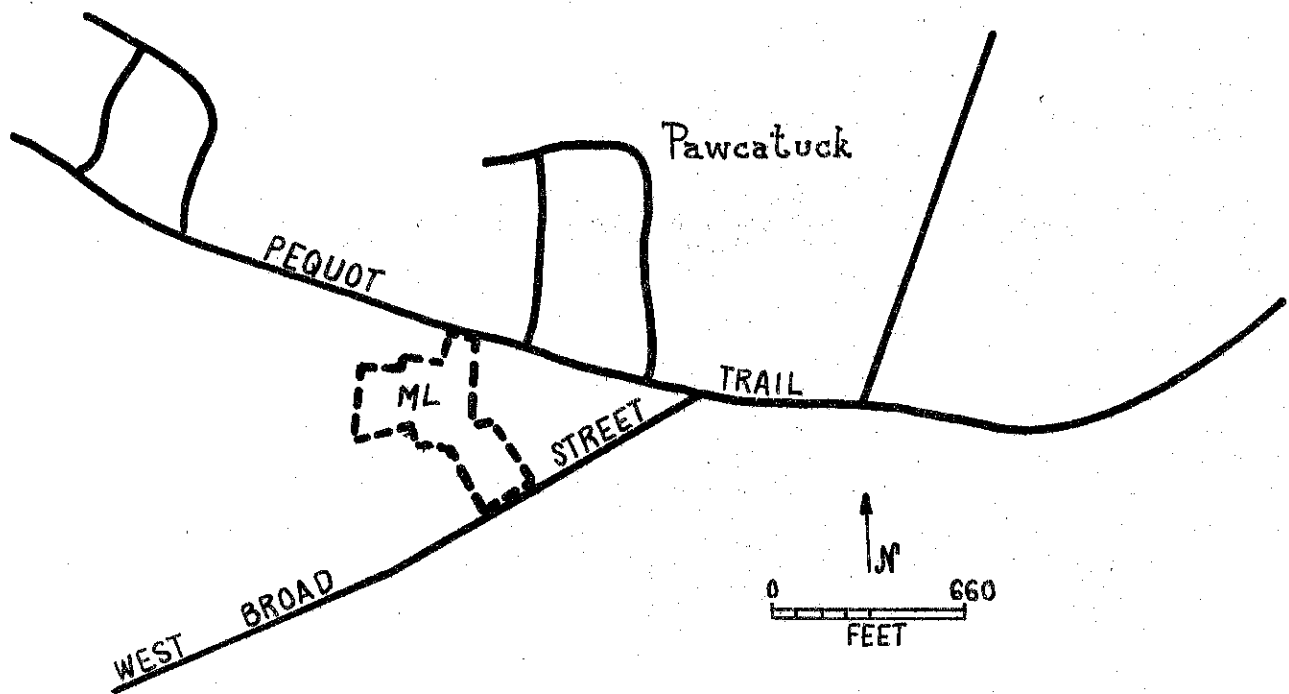
SOILS

A detailed soils map of the property is provided here. As the 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 rather as guidelines to the distribution of soil types on the property.

The soil information as published in the New London County Soil survey was supplemented by a field investigation of the soil conditions on site. A series of three observation pits were dug by a backhoe and examined by a state sanitarian and the district conservationist. The major portion of this land is low and fill has been deposited over it. The test holes dug indicated hardpan mottling at a shallow depth (less than 1 1/2 feet). The hole which was dug to the rear of the property showed the original top soil layer to be about 3 feet down. Below this was grey silt.

From the observation pits it is apparent that the property has varying amounts of fill over a wet soil. As it is made land (mapped ML) it cannot be rated according to the standard soil limitations.

SOIL MAP
ROMANELLA PROPERTY (PAWCATUCK)
STONINGTON, CONNECTICUT



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

Prepared by: UNITED STATES DEPARTMENT OF AGRICULTURE, Soil Conservation Service.
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VEGETATIVE COVER

Brush and shrub species characteristic of disturbed or filled areas dominate the central portion of this Romanella site. A tree border exists on the east, west, and north borders of the property, separating it from the surrounding residential uses. There is currently no vegetative buffer from Route 1.

CLIMATOLOGY

The general climate conditions for Stonington discussed under CLIMATOLOGY for the Brustolon site apply to the site.

HAZARDS

A potential problem facing a development on the Romanella property in Pawcatuck is the location between two major roads. Because the daily air pollution level in this vicinity is quite high, it may not be suitable for elderly people with respiratory or allergy problems. If the buildings are air conditioned this problem can be alleviated in part because the pollutants would not have a chance to collect inside the living units. High volumes of highway noise constitutes another problem with this location.

WATER SUPPLY

The water supply for the proposed development is to be derived from the existing public water system of the Westerly Water Company which services the general area. Although the water supply is currently adequate for the area served, the engineer should determine the necessary volume needed to serve the 30 units, as well as any additional supply pipes and fire hydrants needed to support the development.

WASTE DISPOSAL

As it may be a minimum of two years before public sewers are available to the site, on-site sewage disposal would be needed for a time. The artificially created soil (ML) could pose problems for on-site sewage disposal. As made land cannot be rated according to the standard soil limitations, it is suggested that further test pits on-site investigation be conducted, and that the septic system be carefully designed by a competent engineer or sanitarian.

SERVICES TO SUPPORT DEVELOPMENT

The site is within walking distance of a limited shopping center located on Route 1 where groceries are available. A sidewalk could be constructed to connect with the shopping center on Route 1 making it easier for residents to walk to this area. Transportation is needed to reach any other services or opportunities such as banking, drugstore, recreation, library, etc. As mentioned earlier, approximately 40% of Stonington's elderly population resides in Pawcatuck.

COMPATIBILITY WITH SURROUNDING LAND USES

Surrounding land uses are residential, and commercial along Route 1. Site lines onto Route 1 from the property are especially poor in the easterly direction due to a rise in the road.

EVALUATION OF THE RICHMOND PROPERTY

The site is approximately 7.3 acres, is currently in private ownership, and is zoned RA-6 (7,500 square feet). The site does not have frontage on any road at this particular time.

TOPOGRAPHY

The parcel changes from a low-lying flat wetland, to a sloped condition approaching 8% on the north and west portions of the site. There is a defined drainage course towards the north side of the land. (Refer to the Topography Map at the beginning of the Pawcatuck section).

SURFICIAL GEOLOGY

The Richmond site is covered with the overburden material called glacial till. Till is a heterogenous mixture of various amounts of clay, silt, sand, gravel, and boulder-sized particle that show little or no evidence of sorting or stratification by water action.

BEDROCK GEOLOGY

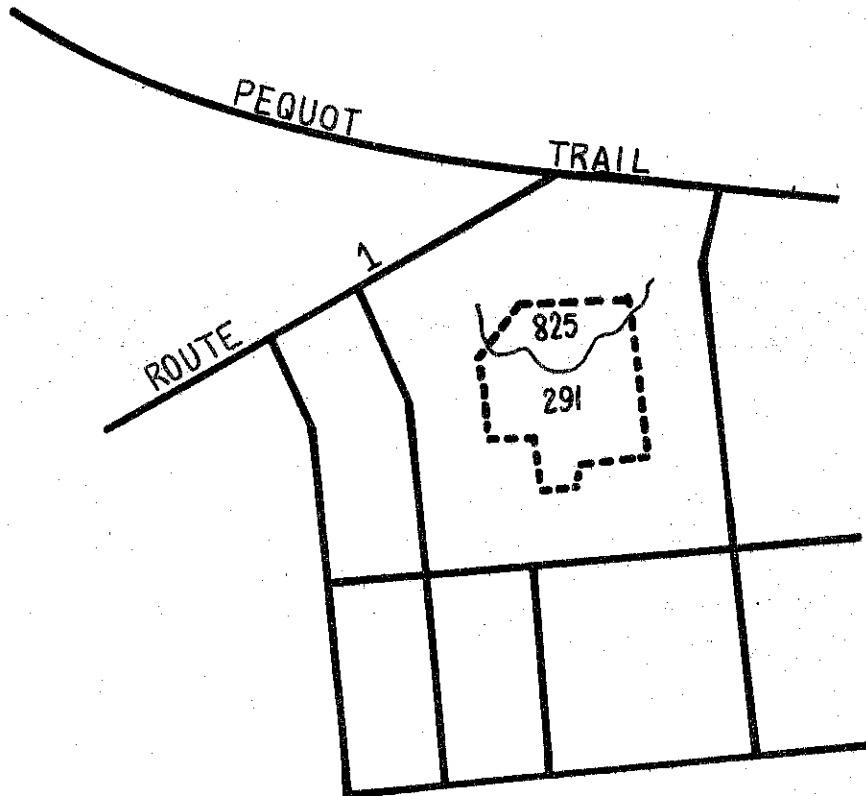
The Richmond site is in an area where the underlying bedrock has been identified as metavolcanic rocks; rocks of volcanic origin that were metamorphosed, altered by intense heat and pressure, into the gray-layered gneiss we see in the outcroppings in the area. The main mineral constituents are quartz, orthoclase to andesine-labradorite feldspars, biotite mica, hornblende and microcline feldspars. The rocks are layered and fractured but sufficiently sturdy to support foundations and structures.

SOILS

A detailed soils map of the property is provided here. As the 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 rather as guidelines to the distribution of soil types on the property. The soil information as published in the New London County Soil survey was supplemented by a field investigation of the soil conditions on site. One observation pit was dug by a backhoe and examined by the soil conservationist and a state sanitarian. The observation hole showed mottling (indicating a seasonally water logged condition) just under the layer of top soil (about one foot). Below this, the soil consisted of a greyish silt and silty sand. At approximately 3 1/2 feet the soil was a dirty, firm gravel. The total depth was 70 inches. No water was encountered at the time.

The soils on this site are about 69% peat and muck and about 31% birdsall. Peat and muck 291 are deep silty soils on flood plains. These dark colored alluvial sediments have high water tables that correspond closely to the water level of the adjacent streams. Birdsall 825 is a poorly drained soil consisting of shallow muck underlain by silty deposits. The overlying muck is generally less than 20 inches deep. The fluctuating water table is at or near the surface during the period from late fall to early spring.

SOIL MAP
RICHMOND PROPERTY
STONINGTON, CONNECTICUT



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

Prepared by: UNITED STATES DEPARTMENT OF AGRICULTURE, Soil Conservation Service,
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The soil map shows that this property is very poorly drained and therefore classified as a regulated Inland Wetland under Public Act 155. The very wet soil has severe limitations for the following; on-site sewage, land-scaping and roads, parking, and basements. Extensive remedial measures would be needed to develop this site. The area would need prior approval of the Inland Wetland Commission and the appropriate sanitarian. Also an engineer would be needed to design the measures to make the site useable, and develop cost estimates.

VEGETATIVE COVER

Shrubs and other typical wetland plants cover much of the low-lying area of the site. Some tree cover exists on the higher ground.

CLIMATOLOGY

The general climatic conditions of the Stonington area apply. There are no serious climatic problems that will prevent the elderly housing project to be developed on this site.

HAZARDS

The site will have a summertime insect problem due to the surrounding wetlands and somewhat wind protected area (which prevents the wind from carrying the insects away).

WATER SUPPLY

The water supply for the proposed development is to be derived from the existing public water system of the Westerly Water Company which services the general area. Although the water supply is currently adequate for the area served, the engineer should determine the necessary volume needed to serve the approximate 30 units, as well as any additional supply pipes and fire hydrants needed to support the development.

WASTE DISPOSAL

Possible consideration of this site for on-site sewage disposal due to the fact that public sewers will not be available for a minimum of two years, would require a more detailed investigation on possible means for controlling surface drainage and lowering seasonal ground water. In conjunction with this there would also appear to be a need for filling. Impervious or relatively impervious layers would have to be removed before fill material is placed. Overall it appears that considerable site work would be involved.

SERVICES TO SUPPORT DEVELOPMENT

Similar to the Romanella Site between Route 1 and Pequot Trail it would be near some supporting facilities such as the grocery store in the shopping center on Route 1. Transportation would be needed to get to all other services.

COMPATIBILITY WITH SURROUNDING LAND USES

This site is located south of Route 1 in Pawcatuck and is surrounded on all sides by single family homes. The site is large enough that a buffer could probably remain along the perimeter. Improved road access is needed. Its most negative aspect is that the site is composed entirely of regulated inland wetland soils which would have

to be filled for construction to occur. The cost of acquisition and site development will have to be weighed against the other sites to determine if this is a feasible site for the elderly housing development.

EVALUATION OF THE SEWAGE TREATMENT PLANT SITE

The site comprises approximately 10.5 acres, is currently in town ownership, and at least part of the site will house the Pawcatuck sewage treatment plant in the near future.

TOPOGRAPHY

The site is nearly flat, with all topsoil removed. The site had been excavated for sand and gravel, and many low cut banks are now exposed.

SURFICIAL GEOLOGY

The site is covered by glacial stream deposits formed as part of the Pawcatuck River area. Most of these gravel and sands have been excavated above the water table but additional quantities may exist at deeper levels.

BEDROCK GEOLOGY

Like the Romanella, Marshall, and Richmond parcels, this site is underlain by a bedrock characterized by metavolcanic rocks.

SOILS

A detailed soils map of the property is provided here. As the 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 rather as guidelines to the distribution of soil types on the property. Since the time of the soil mapping, this site has been excavated for gravel and is no longer a soil, there is no way of rating it for basements, on-site sewage facilities, parking, landscaping, and roads. The following observations have been made:

- 1) The low areas in the gravel band appear fairly close to a water table. This could be easily determined, and should be if the property is to be considered for the development.
- 2) Also a grid type survey should be made of the property to determine the elevations, especially in relation to the water table.
- 3) When the above has been completed an engineer and a sanitarian could decide if the property needed additional fill, could provide adequate on-site sewage during the time public sewers are not available, and also develop cost estimates.

VEGETATIVE COVER

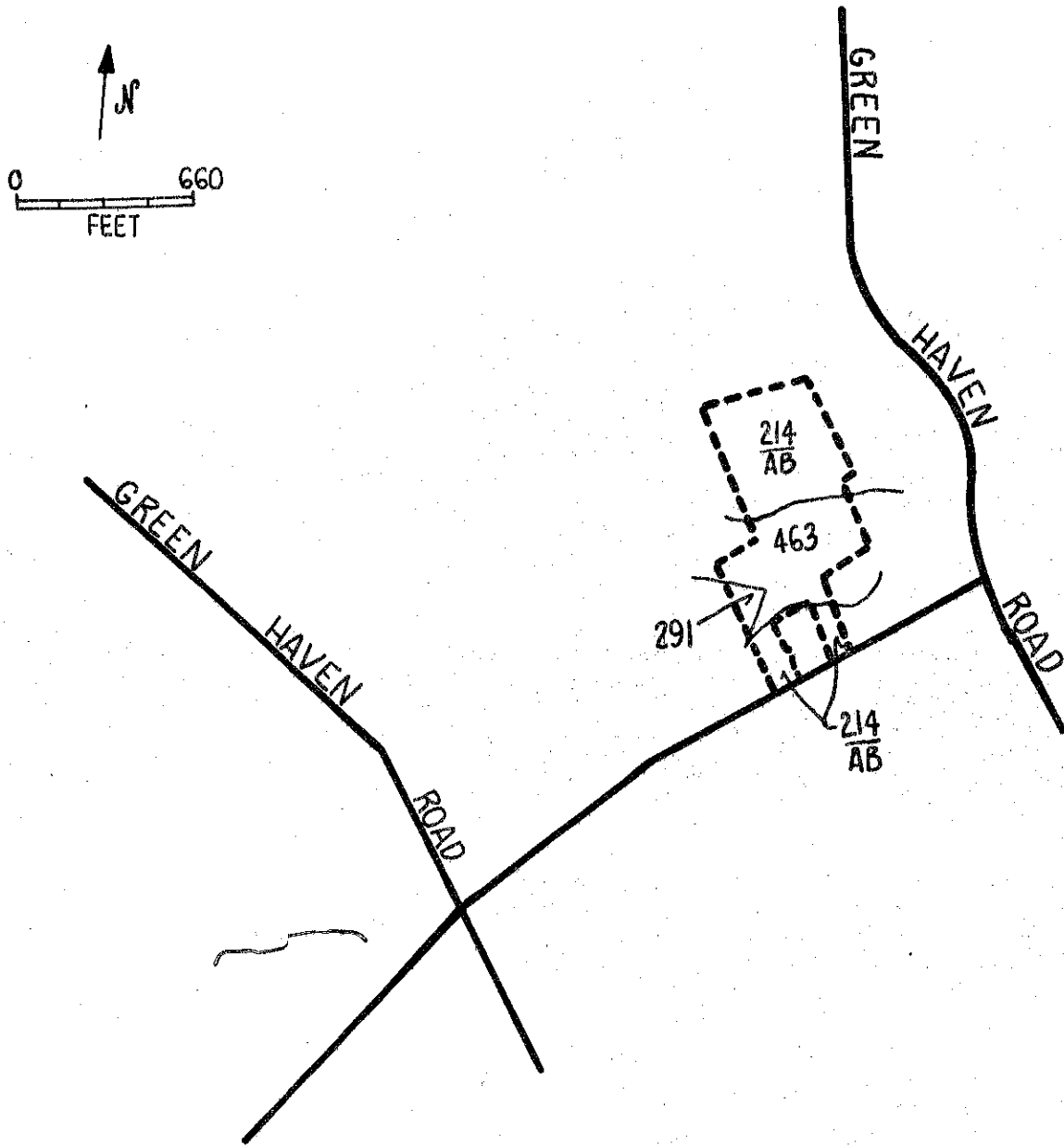
As the area has been thoroughly excavated for sand and gravel, at present there is virtually no vegetation on the site. A complete landscaping program is needed to restore the site to at least minimum aesthetic, and erosion retarding conditions.

CLIMATOLOGY

The same general remarks on Stonington climate apply to this site.

SOIL MAP

PAWCATUCK SEWAGE TREATMENT PLANT SITE
STONINGTON, CONNECTICUT



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

Prepared by: UNITED STATES DEPARTMENT OF AGRICULTURE, Soil Conservation Service.
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WATER SUPPLY

The water supply for the proposed development is to be derived from the existing public water system of the Mystic Valley Water Company which services the general area. Although the water supply is currently adequate for the area served, the engineer should determine the necessary volume needed to serve the approximate 30 units, as well as any additional supply pipes and fire hydrants needed to support the development.

WASTE DISPOSAL

Public sewers are scheduled to service the area in approximately two years. On-site sewage disposal needed in the interim period should follow the suggestions made in SOILS section.

SERVICES TO SUPPORT DEVELOPMENT

Transportation would be needed to reach any and all services located in Pawcatuck.

COMPATIBILITY WITH SURROUNDING LAND USES

This site would be located adjacent to the Pawcatuck sewage treatment plant on town land not needed for the plant. Surrounding land uses are residential along the roads and undeveloped to the north of the site. The project would probably have to be designed so that by use of vegetative buffers or placement of buildings the elderly housing section is visually separated from the treatment plant. Since the site is town owned there would be no acquisition costs.

APPENDIX

SUMMARY OF SITE DISCUSSIONS

	<u>Town Dock</u>	<u>Brustolon</u>	<u>Romanella (Pawcatuck)</u>	<u>Richmond</u>	<u>Romanella (Route 1)</u>	<u>Marshall</u>	<u>Treatment Plant</u>
Acreage	2	3.4	3.8	7.3	Select 3	5.2	Select 3
Ownership	Town	Private	Private	Private (Possible gift)	Private	Private	Town
Public Water	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Public Sewer	Yes	Yes-in 8-9 months	Yes-in 2 yrs.	Yes-in 2 yrs.	No	No	Yes-in 2 yrs.
Flood Hazard Area	Yes	Yes	No	No	Partially	No	No
Public Act 155 Inland Soils	No	No	No	Yes	Yes	No	Yes
Additional Problems	Parking	Mosquitoes	Air&noise pollution	High water table, need to fill wetlands, mosquitoes	High water table, need to fill wetlands, mosquitoes	Shallow soil	Aesthetic
Facilities	Walking	Small store within walking	Walking	Walking	Vehicle	Vehicle	Vehicle
a. Shopping	Walking	Vehicle	Vehicle	Vehicle	Vehicle	Vehicle	Vehicle
b. Bank	Walking	Vehicle	Vehicle	Vehicle	Vehicle	Vehicle	Vehicle
c. Medical	Walking	Vehicle	Vehicle	Vehicle	Vehicle	Vehicle	Vehicle
Relation to Regional Development Plan	Open Space Reservation	Low Density Use	Medium Den-sity Mixed Urban Use	Medium Den-sity Mixed Urban Use	Medium Den-sity Mixed Urban Use	Medium Den-sity Mixed Urban Use	Open Space Reservation

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Natural Soil Group	Soil Symbol	Approx. Acres	Percent of Acres	Principal Limiting Factor	Urban Use Limitations*			
						On-Site Sewage	Buildings with Basements	Streets & Parking	Land-Scaping
<u>MYSTIC</u>									
<u>BRUSTOLON PROPERTY</u>									
Belgrade/Enfield complex		214AB	3.4	100%	Seasonal high water table	2	2	2	2
TOTAL			3.4	100%					
<u>BOROUGH</u>									
<u>TOWN DOCK</u>									
Urban Land		DF	2	100%	-			variable	
<u>PAWCATUCK</u>									
<u>ROMANELLA (PAWCATUCK)</u>									
Made Land		ML	3.8					variable	
TOTAL			3.8	100%					

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

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
<u>ROMANELLA (Rt. 1)</u>								
Tisbury	45A	1.9	1.9	Seasonal high water table	2	2	2	2
Enfield	63B	2.1	2.1	-	1	1	2	1
Adrian & Palms Muck	91 **	4.3	4.3	High water table, organic material	3	3	3	3
Carlisle Muck	92 **	36.8	36.8	"	3	3	3	3
Narragansett/Hollis complex	200BC	4.0	4.0	Shallow to bed-rock, slope	3	3	3	3
Belgrade/Enfield complex	214AB	6.4	6.4	Seasonal high water table	2	2	2	2
Peat & Muck	291 **	13.0	13.0	High water table, organic material	3	3	3	3
Raypoi	464 **	1.0	1.0	High water table, stony	3	3	3	3
Birdsall	825 **	0.8	0.8	Wetness	3	3	3	3
Urban Land	DF	1.2	1.2	-	-	-	-	-
Gravel Pit	GP	28.5	28.5	(has been excavated)	-	-	-	-
TOTAL		100.0	100%					

* Urban Use Limitations: 1 = slight, 2 = moderate, 3 = severe.
 ** Inland Wetland soils as regulated by Public Act 155, as amended.

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
<u>MARSHALL PROPERTY</u>								
Hollis	17M/BC	4.0	77	Shallow to bedrock	3	3	3	3
Belgrade/Enfield complex	214/AB	1.2	23	Seasonal high water table	2	2	2	2
TOTAL		5.2	100%					
<u>PAWCATUCK SEWAGE TREATMENT PLANT SITE</u>								
Belgrade/Enfield complex	214/BC	6.3	60	Seasonal high water table	2	2	2	2
Peat & Muck	291**	0.5	4.7	High water table, organic material	3	3	3	3
Raynham	463**	3.7	35.3	High water table	3	3	3	3
TOTAL		10.5	100%					
<u>RICHMOND PROPERTY</u>								
Peat & Muck	291**	5.0	68.5	High water table, organic material	3	3	3	3
Birdsall	825**	2.3	31.5	Wetness	3	3	3	3
TOTAL		7.3	100%					

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

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.