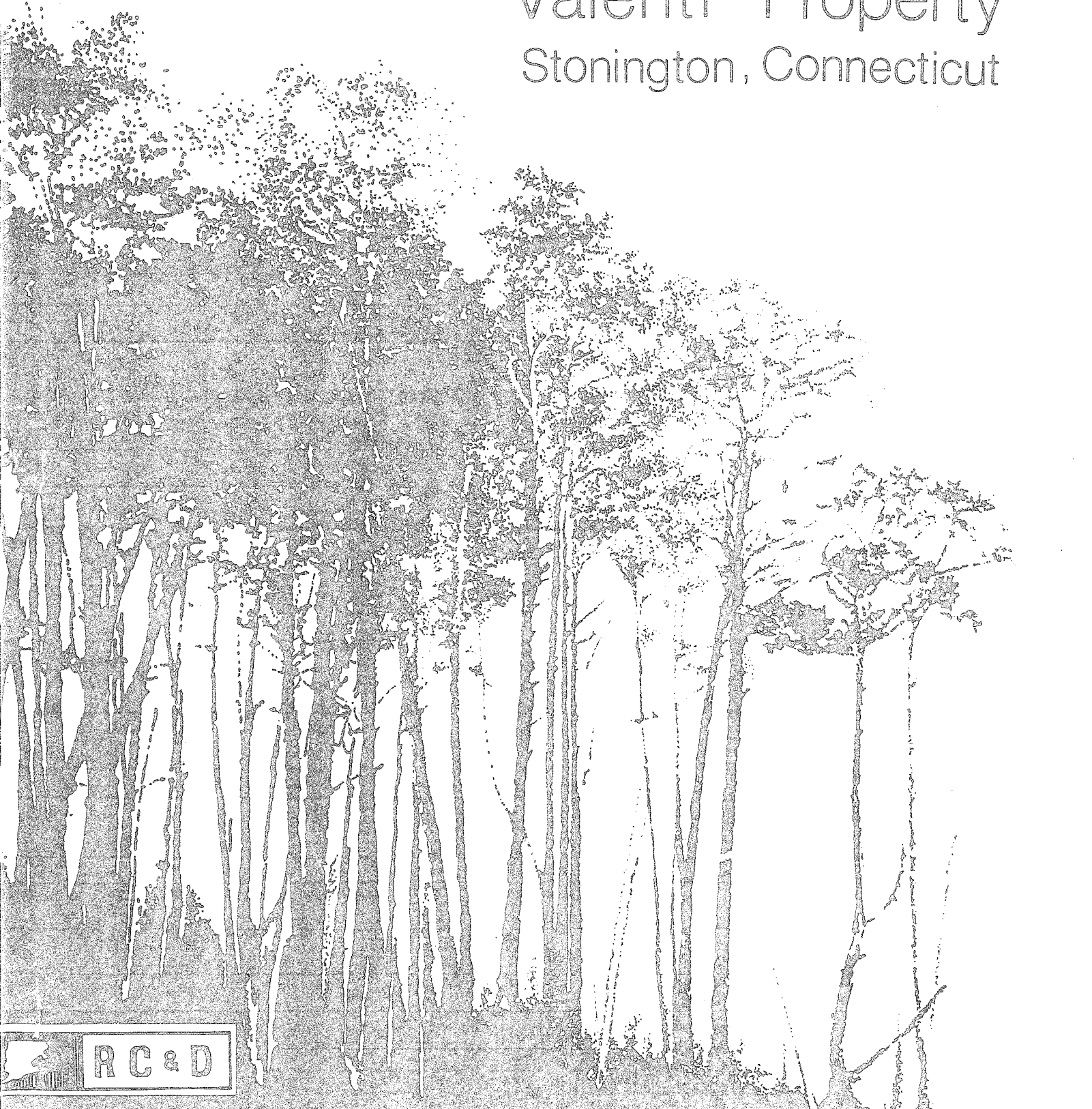


Environmental Review Team Report

Valenti Property Stonington, Connecticut

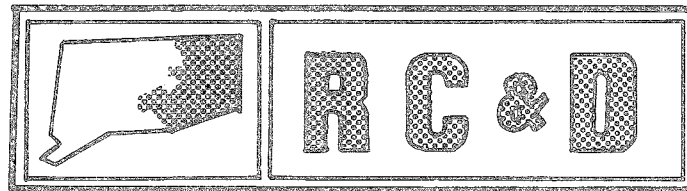


EASTERN CONNECTICUT RESOURCE CONSERVATION AND DEVELOPMENT AREA, INC.

Environmental Review Team
Report
on

Valenti Property
Stonington, Connecticut

December, 1981

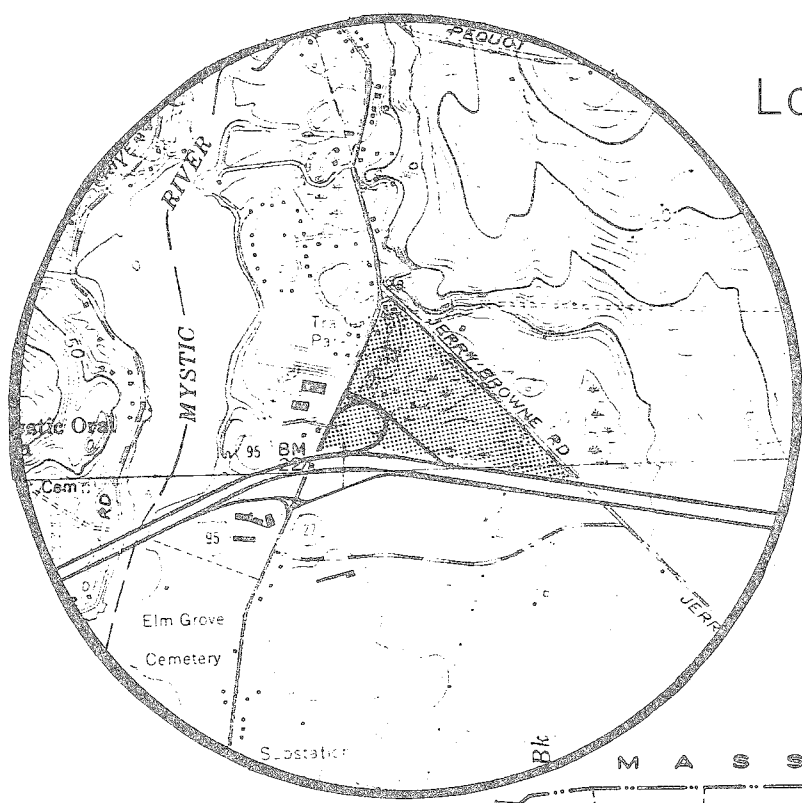


eastern connecticut resource conservation & development area

environmental review team
139 boswell avenue
norwich, connecticut 06360

Location of Study Site

VALENTI PROPERTY
STONINGTON, CONNECTICUT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
VALENTI PROPERTY
STONINGTON, CONNECTICUT

This report is an outgrowth of a request from the Stonington Inland Wetlands Commission 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 map as well as a topographic map of the site were distributed to all ERT participants prior to their field review of the site.

The ERT that field checked the site consisted of the following personnel: Gary Domian, District Conservationist, Soil Conservation Service (SCS); Mike Zizka, Geologist, Department of Environmental Protection (DEP); Rob Rocks, Forester, (DEP); Jim Butler, Planner, Southeastern Connecticut Regional Planning Agency (SCRPA); Don Capellaro, Sanitarian, State Department of Health; and Jeanne Shelburn, ERT Coordinator, Eastern Connecticut RC&D Area.

The Team met and field checked the site on Tuesday, October 20, 1981. Reports from each Team member were sent to the ERT Coordinator for review and summarization for the final report.

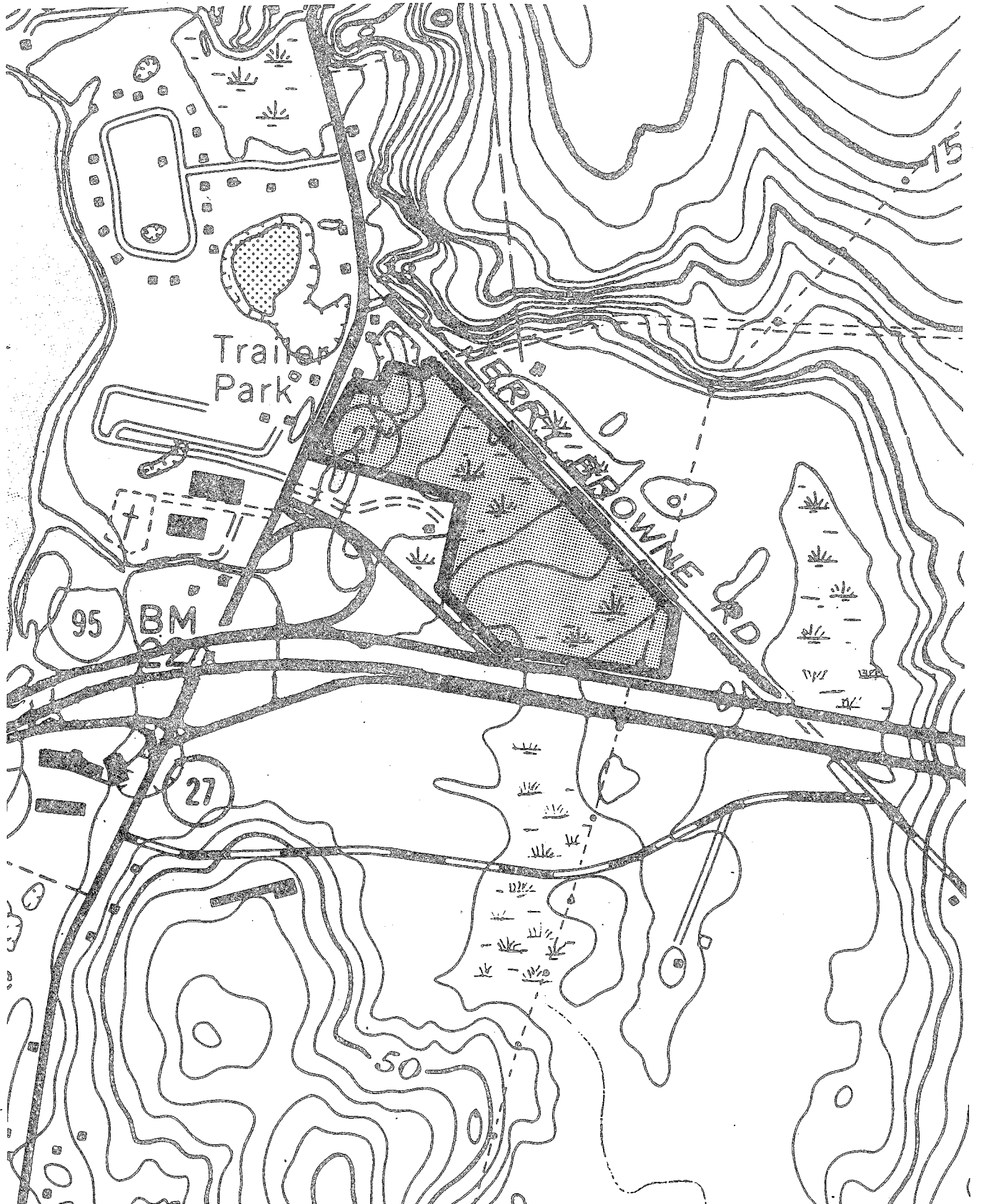
This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the developer 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 Project 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: Ms. Jeanne Shelburn, Environmental Review Team Coordinator, Eastern Connecticut RC&D Area, 139 Boswell Avenue, Norwich, Connecticut 06360, 889-2324.

Topography

— Site Boundary



INTRODUCTION

The Eastern Connecticut Environmental Review Team was asked to prepare an environmental assessment for a proposed car dealership in the town of Stonington. The Team reviewed the entire 30 acre parcel owned by Robert Valenti, however, the actual development currently being considered is restricted to a ten acre portion of the parcel. The property is located within the triangle north of Interstate Route 95, east of Route 27 and southwest of Jerry Browne Road, in the Mystic section of Stonington. Preliminary land development plans have been prepared by Hermann and Joncus, Architects.

Preliminary plans show the construction of a showroom/garage structure of approximately 18,700 square feet. Most of the surrounding acreage will be paved for car storage or display. A storm water retention pond to accommodate all drainage from the site is planned for the southern section of the site. The pond will have a maximum water depth of 6.5 feet. The site will be served by public water supply and an on-site septic system. Underground fuel storage is also planned. A landscape plan has been prepared for the project, leaving as much natural vegetation as possible to buffer the site.

The site is characterized by a gently rolling topography in most areas. Two large wetlands are located in the central and southeastern sections of the property. The site is entirely forested at this time, except for an area in the northwestern section of the site which apparently had been used as a borrow site.

The Team is concerned with the effects of the proposal on the resource base of the site. Although most severe limitations to development can be overcome with proper engineering techniques, these measures can become costly, making a project financially unfeasible for a developer. Limitations to development on the proposed car dealership site are caused primarily by regulated wetland soils. A detailed description of the site's hydrology and soil conditions, as well as the potential for proper functioning of an on-site septic system is presented in the following sections of the report.

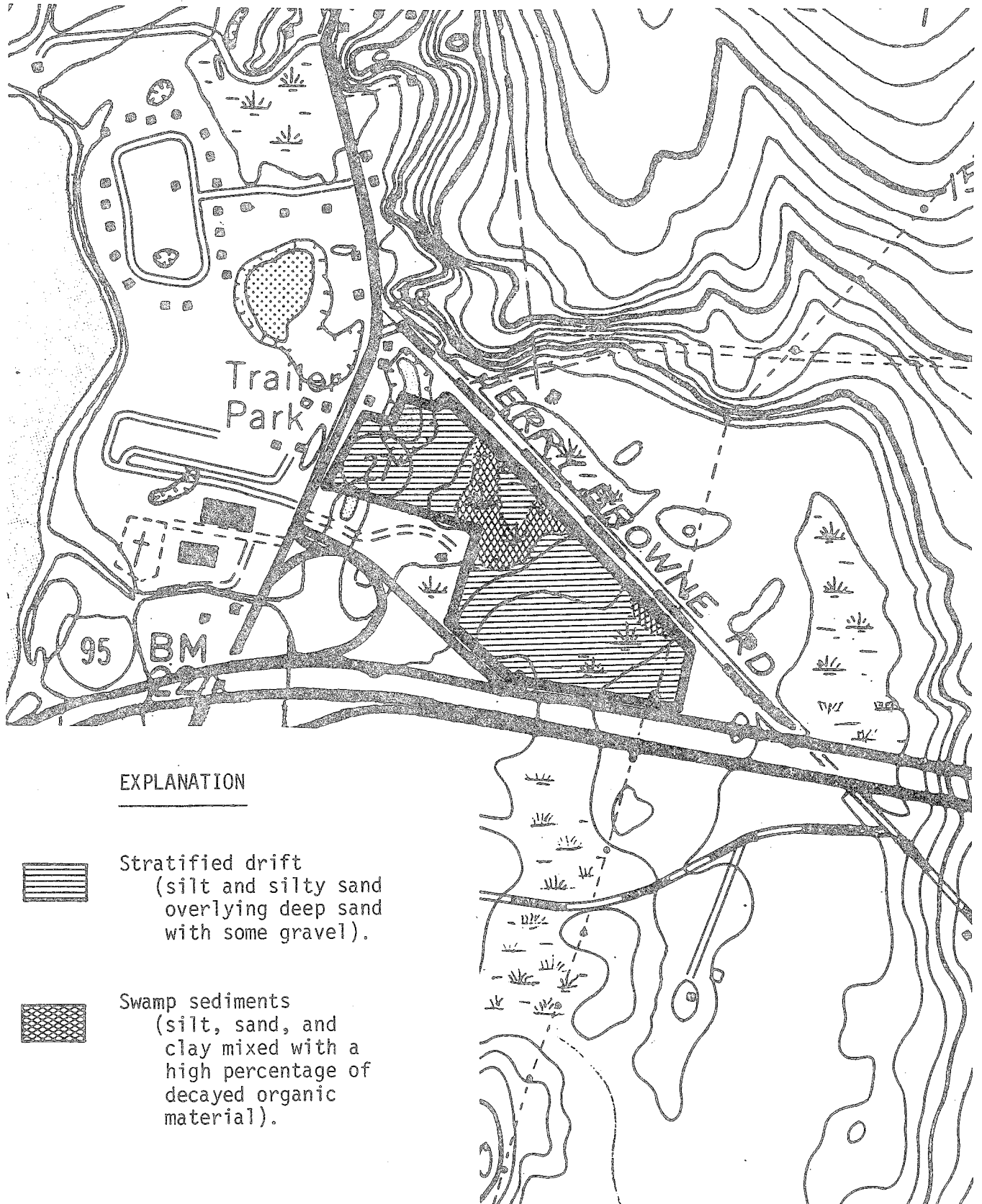
ENVIRONMENTAL ASSESSMENT

GEOLOGY

The Valenti property is located in a glacially formed plain composed largely of stratified drift deposits. Stratified drift is a relatively well-sorted sediment that was deposited by glacial meltwaters. Sand is the predominant textural component, but gravel and silt may be locally abundant. The Team dug several shallow holes to examine the nature of the soil. Silt and silty sand characterized the upper one to two feet. A gray, firm layer was found in most holes. This layer may inhibit the downward movement of water, although the deeper underlying sands would permit more rapid percolation. Two test holes drilled in the stratified drift plain just east of the site (at the intersection of Jerry Browne Road and I-95) showed silt to a depth of 8 to 14 feet, underlain by sand and some gravel to a depth of 20 to 23 feet. Gray to pink granitic gneiss was found below the stratified drift.

Surficial Geology

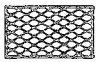
— Site Boundary



EXPLANATION



Stratified drift
(silt and silty sand
overlying deep sand
with some gravel).



Swamp sediments
(silt, sand, and
clay mixed with a
high percentage of
decayed organic
material).

A large marsh in the center of the property, northwest of the area reserved for the car dealership, contains a surface layer of organic-rich sediment. These materials consist of silt, sand and clay mixed with a high percentage of decayed plants. The marsh occupies a basin that was probably created when a buried ice block melted. Such basins are known as kettles.

HYDROLOGY

The principal hydrologic feature on the Valenti property is the horseshoe-shaped marsh occupying the center of the site. The marsh has no regular inlet or outlet stream, but during times of especially high water levels, drainage may flow through a stone culvert at the southern end of the marsh into a second marsh, which abuts a westbound exit ramp of I-95 and which lies just to the west of the southwest corner of the site. Drainage from the second marsh flows through a series of culverts under the highway interchange, Route 27, and a parking lot before entering Mystic River.

The designated wetland area that underlies the proposed car dealership (hereafter "the designated wetland") consists of a series of small, dry hummocks and small, relatively wet basins and swales. Shallow test holes dug in the area suggest that the depth to high water-table levels varies with the microtopography. None of the area was truly wet on the day of the field review, but town residents reported that surface water becomes ponded on the site during heavy rains. A firm, gray-colored layer that was found in the upper soil horizons may prevent rapid infiltration of surface water during periods of rainfall and thereby cause the reported ponding.

The designated wetland was formerly connected to another shallow wetland at the head of Pequotsepos Brook. Much of the latter wetland was filled when Olde Mistick Village was created. Following the construction of I-95, the designated wetland became hydrologically isolated from its natural drainage system. This may be a second reason for ponding that occurs on the site.

At the present time, the designated wetland has little practical hydrologic value (this is not to say that it has no ecological value). Since the wetland is physically isolated, it would be necessary only to assure adequate provisions for drainage from the car dealership in order to completely offset the loss of storage that would occur as a result of filling the wetland. The proposed retention pond may be technically difficult to achieve because of the drainage characteristics of the subsoil, but a dry detention basin may be a reasonable alternative.

There was some question at the time of the field review whether the proposed drainage easement would be allowed by the state Department of Transportation. An alternative proposal would direct runoff from the car dealership directly to the horseshoe-shaped marsh on the site. The Team hydrologist believes that this would be an unfortunate choice. Although the marsh may not have the vegetation characteristics of a true bog, it is still an unusual, self-contained natural hydrological system. Diverting stormwater into this system may cause irreversible deterioration of the water quality and significantly change the vegetation. The paved-swale alternative is more attractive since it would not affect this marsh. In addition, the southern marsh, into which the swale would drain, appears to have a substantial natural capacity for retaining the excess runoff that might flow from the car dealership during peak flow periods.

SOILS

A detailed soils map of this site and detailed soils descriptions are included in the Appendix to this report, accompanied by a chart which indicates soil limitations for various urban uses. As the soil map is an enlargement from the original 1,320'/inch scale to 660'/inch, the soil boundary lines should not be viewed as absolute boundaries, but as guidelines to the distribution of soil types on the site. The soil limitations chart indicates the probable limitations of each of the soils for on-site sewage disposal, buildings with basements, streets and parking, and landscaping. However, limitations, even though severe, do not preclude the use of the land for development. If economics permit large expenditures for land development and the intended objective is consistent with the objectives of local and regional development, many soils and sites with difficult problems can be used. The soils map, with the publication, New London County Interim Soil Survey Report, can aid in the identification and interpretation of soils and their uses on this site. "Know Your Land: Natural Soil Groups for Connecticut" can also give insight to the development potentials of the soils and their relationship to the surficial geology of the site.

The nearly level, very poorly drained bogs and other depressional areas within lake plains, outwash plains, till plains and moraines are occupied by Carlisle muck. This soil is designated by soil mapping unit symbol 92. Carlisle soil formed in muck deposits greater than 51 inches thick. Permeability is slow to rapid and a high water table exists at or near the surface 9 to 10 months of the year. Surface runoff is very slow. Carlisle muck is designated as a regulated wetland soil under Public Act 155.

The gently sloping stream terraces and outwash plains are occupied by Haven silt loam. The soils are designated by soil mapping unit symbol 63B. The symbol "B" denotes a 3-8 percent slopes. Haven soils formed in water sorted loamy material over stratified outwash. The soils are well drained and have moderate permeability in the surface layer and subsoil, and very rapid permeability in the substratum. Surface runoff is medium. This soil qualifies as a Prime Farmland soil in Connecticut.

The nearly level poorly drained stream terraces and outwash plains are occupied by Raypol silt loam. Raypol silt loam is designated by soil mapping unit symbol 464. They formed in silty deposits, less than 40 inches thick over sand and gravel. Raypol soils have moderate permeability in the surface layer and subsoil, rapid or very rapid permeability in the substratum, and a high water table at or near the surface 7 to 9 months of the year. Surface runoff is slow. Raypol is designated as a regulated wetland soil under P.A. 155.

Areas that have been disturbed to an extent that the natural layers are no longer distinguishable as occupied by Udorthents, smoothed. Udorthents, smoothed are designated by the soil mapping ML2. Udorthents occur when soil material has been removed, or filling has occurred and the soil profile is buried and no longer is a major factor in interpreting an area for land use.

The gently sloping, moderately well drained areas on uplands are occupied by Sutton fine sandy loam. Sutton fine sandy loam is designated by soil mapping unit symbol 41B. The letter "B" denotes slopes as being 3 to 8 percent. Sutton

soils formed in friable glacial till. Permeability is moderate or moderately rapid. A seasonal high water table exists at 18 to 24 inches. Surface runoff is slow to medium. Sutton fine sandy loam, 3-8% slopes, qualifies as Prime Farmland in the State of Connecticut.

The proposed development will generate an increased rate of runoff because of the size of building roof tops and parking lots. The proposed site is more desirable than having the site closer to the wetlands found on the west side of the property. The retention pond will serve as a sediment basin and settling basin for materials being washed from the parking lots. The proposed paved swale and check dams will further filter out debris flowing towards the wetlands. The proposed retention pond and outlet should be developed and stabilized prior to other construction.

The leaching field will be located on Haven silt loam soils. The Haven soils have very rapid permeability in the substratum which is where the leaching field will be located. The very rapid permeability also indicates that this soil is a poor filter medium for sewage effluent, and, therefore, has a severe rating for septic tank absorption fields. This type of situation can lead to pollution of shallow groundwater supplies.

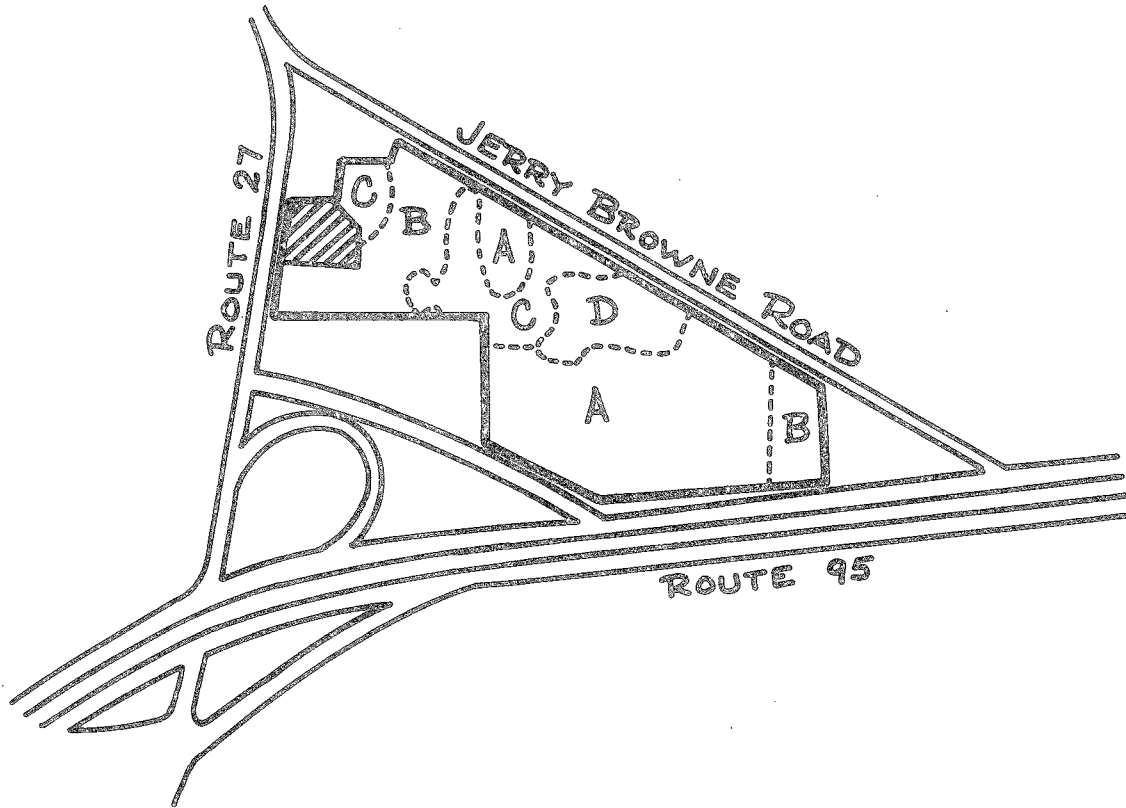
VEGETATION

The property proposed for development may be divided into three vegetation types. These include two mixed hardwood stands which total 14[±] acres; old field/disturbed/R.O.W. areas which total 6[±] acres; and open swamp/marsh areas which total 4[±] acres. (See Vegetation Type Map and Vegetation Type Descriptions.)

Many of the trees which are present in Vegetation Type A have high aesthetic value and should be retained to the greatest extent possible. An underplanting of conifers in the proposed buffer zone along Jerry Browne Road would greatly improve this area's effectiveness as a visual barrier. Thinnings in the undeveloped portion of the mixed hardwood stands will improve the health and vigor of residual trees. Removal of the vegetation from the 8[±] acre area to be developed will have little or no negative impact on air quality. Redirecting runoff into the open swamp areas may alter their vegetation significantly.

Vegetation Type Descriptions:

Type A. (Mixed Hardwoods) This 12[±] acre fully-stocked stand is characterized by a complex pattern of vegetation which reflects variable soil moisture conditions. Small patches of pole size red maple with a dense understory of sweet pepperbush, highbush blueberry and spice bush are intermixed with pole and sawtimber-size upland tree species which include scarlet oak, red oak, white oak, black birch, shagbark hickory, black cherry and occasional black locust. The understory which is present throughout the drier portions of this stand consists of hardwood tree seedlings, sassafras, shadbush, arrowwood, maple-leaved viburnum and witch-hazel. Ground cover is made up of club moss, dewberry, hayscented fern, evergreen wood fern, royal fern, and low bush blueberry. Green brier and poison ivy are present throughout. Several large sawtimber-size scarlet oak and white oak, which vary widely in quality and health, are scattered throughout this stand.



LEGEND

VEGETATION TYPE DESCRIPTIONS*

- Roads
- Property Boundary
- Vegetation Type Boundary
- Developed Area 1 \pm acre

- TYPE A. Mixed Hardwoods, 12 \pm acres, fully-stocked, pole and sawtimber-size.
- TYPE B. Old field/disturbed/utility row, 6 \pm acres.
- TYPE C. Open swamp/marsh, 4 \pm acres.
- TYPE D. Mixed hardwoods, 2 \pm acres, fully-stocked, sapling to pole-size.

* Seedling-size = Trees less than 1 inch in diameter at 4 1/2 feet above the ground (d.b.h.)
 Sapling-size = Trees 1 to 5 inches in d.b.h.
 Pole-size = Trees 5 to 11 inches in d.b.h.
 Sawtimber-size = Trees 11 inches and greater in d.b.h.

Type B. (Old Field) Included within this vegetation type are old field areas, disturbed areas where topsoil has been removed and the utility right-of-way where tree growth has been controlled. These areas when combined total approximately 6 acres and are vegetated with low numbers of seedling size red maple, white ash, eastern red cedar, red oak and white pine. The shrub species which are dominant within these areas include autumn olive, highbush blueberry, azalea, multiflora rose, sweet pepperbush, staghorn sumac, winged sumac, bayberry, and barberry. Herbaceous and ground cover vegetation is made up of grasses, Pennsylvania sedge, goldenrod, deer tongue, hairy-capped moss, poison ivy, oriental bittersweet, Japanese honeysuckle, steeplebush, raspberry, black-eyed-Susan, Joe-pye-weed, hyssop leaved boneset and daisy fleabane.

Type C. (Open Swamp/Marsh) The two open swamp areas which are present within this tract total approximately 4 acres. These areas are vegetated with several species of sedges, swamp honeysuckle, swamp loosestrife, button bush, highbush cranberry, swamp rose, sphagnum moss and phragmites. Pole-size red maple and black gum are present around the perimeter of these marshes, along with steeplebush, marsh fern, sensitive fern, skunk cabbage, and silky willow. These marshes are seasonally inundated.

Type D. (Mixed Hardwoods) Sapling to pole size eastern red cedar, red maple, scarlet oak, white oak, black cherry, bigtooth aspen, black locust and black birch are present in this fully-stocked 2 $\frac{1}{2}$ acre stand. Understory vegetation in this stand is made up of hardwood tree seedlings, highbush blueberry, bayberry and winged sumac. Poison ivy, green brier, dewberry, club moss, hayscented fern, Pennsylvania sedge, aster, partridge berry and striped pipsissewa form the ground cover within this stand.

Many of the larger trees which are present in Vegetation Type A have high value from an aesthetic standpoint. When feasible, these large, healthy trees should be retained for their aesthetic appeal. The incorporation of these trees into the site plan of this development will help to improve its overall appearance. Several of these trees, especially the scarlet oak, although healthy, have dead branches which represent a potential hazard. These branches should be properly removed prior to construction completion. Tree species with deep root systems such as the oaks will be more desirable for retention than shallow rooted tree species such as red maple which are not extremely stable. It should be noted that trees are very sensitive to the condition of the soil within the entire area under their crowns. Development practices near trees such as filling, excavating and grading for the construction of the building and parking lots may disturb the balance between soil aeration, soil moisture level and soil composition. These disturbances may cause a decline in tree health and vigor, potentially resulting in tree mortality within three to five years. Mechanical injury to trees may cause the same results. Dead trees reduce the aesthetic quality of an area and may become hazardous and also expensive to remove.

Care should be taken during the construction period not to disturb the trees that are to be retained. In general, healthy, high vigor trees should be favored over unhealthy trees because they are usually more resistant to the environmental stresses brought about by development.

Where feasible, trees should be saved in small groups or "islands." This practice lowers the possibility of soil disturbance and mechanical injury. Individual trees and "islands" of trees should be temporarily, but clearly,

marked so they may be avoided during construction.

The preliminary plans propose leaving a 40-foot wide buffer strip along Jerry Browne Road to act as a vision barrier between the proposed complex and the residences north of Jerry Browne Road. To improve the effectiveness of this buffer strip, it would be advisable to underplant this area with eastern hemlock and perhaps white pine. These seedlings should be planted between ten and fifteen feet apart. Once established these evergreen trees will provide a more complete barrier which will be effective throughout the entire year. Prior to underplanting this area, it would be desirable to remove approximately one-third of the trees in all size classes which are present in the overstory. This will allow increased sunlight to reach the forest floor and stimulate the growth of the seedlings, once planted. Ideally, only poor quality and damaged trees should be removed from this area. Any high quality trees in the overstory should be retained.

Many of the trees which are present in both mixed hardwood stands, (Vegetation Type A and D), are beginning to decline in health and vigor. A fuelwood thinning in the portion of these stands which is not to be developed, following the "crop tree selection method," would reduce the competition between residual trees for space, sunlight, nutrients and water and would result in a healthier more stable forest over time.

Under the "crop tree selection method," 100 of the highest quality trees in each acre should be identified (trees spaced about 20' x 20' will equal 100 trees per acre), and one, two, or three trees that are in direct competition with each of those identified should be removed. The 100 trees per acre that are selected as crop trees should be healthy, large crowned and show little or no signs of damage. Trees which are not competing with the 100 selected trees should not be removed, unless they are severely damaged. This thinning, if implemented, will produce approximately five cords of fuelwood per acre. Although this type of thinning could be used in the proposed buffer zone, a thinning somewhat heavier than that described above would provide the needed sunlight to the underplanted seedlings.

A public service forester or private forester could be contacted to select the trees which should be retained as crop trees, and mark the trees that are to be removed.

Development of the car dealership as proposed will necessitate almost total clearing of the vegetation from approximately eight acres. This clearing will take place in the mixed hardwood vegetation types. It will provide room for the showroom/garage structure, parking/display lots and the proposed storm water retention pond. The trees which will be removed if this development takes place should be utilized as sawtimber or fuelwood.

Although trees are noted to have the capacity to improve air quality by trapping and removing particulate and gaseous air pollutants (Smith, 1978), removal of the vegetation necessary to develop this complex will have little or no impact on the air quality of the surrounding area. The forested character of the surrounding land area causes this 8± acre area to play an insignificant role in air pollution reduction. Research has shown that in most situations single trees, small groups of trees and even small forests (up to ten acres in size) are relatively ineffective in improving air quality (Smith, 1978). Only when taken collectively will these trees and groups of trees have a significant impact on air quality.

The redirecting of storm water runoff into the open swamp and marsh areas may have considerable impact on the vegetation which is present within these areas. The extent of this impact will depend on the rate in which standing water is drained from the area. The longer standing water is present, the greater will be the impact on vegetation. Many of the plant species which have recently become established in these areas cannot tolerate a prolonged flooded situation. If flooded conditions are prolonged, many of these species will disappear. Over time, species which can tolerate standing water for a prolonged time will become established. These changes may significantly alter the appearance and character of these wetlands.

Smith, W. H., Urban Vegetation and Air Quality. In proceedings of the National Urban Forestry Conference, 1978. USDA Forestry Service, S.U.N.Y. pp. 284-305.

WILDLIFE

The proposed project lies north of Interstate 95 and is bordered on the west by a very poorly drained muck soil area, on the east by a powerline right-of-way, and on the north by Jerry Browne Road. The parcel of land has natural barriers that would reduce its potential for prime upland wildlife habitat and wetland wildlife habitat. The Carlisle muck soils do offer wetland wildlife habitat, particularly where there are small pockets of open water, however, this area would have to be improved to provide maximum benefit to wetland wildlife. The inland wetland soil found within the parcel to be developed is mapped as Raypol silt loam, which is a poorly drained soil. This soil has a seasonal high water table at or near the surface 7 to 9 months of the year and may have small pockets of water on the surface for short periods of time in the early spring. There is adequate cover for wetland wildlife, but there is not a wide variety of food or water for long enough duration to promote a steady influx and wide variety of wetland birds and animals. The upland wildlife habitat would need improvement to promote a variety of wildlife foods in the area. The proposed development would not encourage upland wildlife habitat except for song birds, rabbits and squirrels. The planned storm water retention ponds will not provide increased value for waterfowl primarily because of low water levels, lack of food and cover. Other soils on site provide marginal benefit to wetland wildlife habitat, and these are Sutton fine sandy loams, shown as 41B on the soil survey.

WATER SUPPLY

Water supply for the project would be from the public system of the Mystic Valley District (Connecticut American Water Company). No problems with the adequacy or potability would be anticipated.

WASTE DISPOSAL

It is indicated that sewage disposal is to be by means of an on site sub-surface sewage disposal system. Soil mapping data and a test hole made in the areas for a possible leaching system indicates well drained soils with slight or few limitations. However, one limiting factor could be the ground water

table. The test pit was dug during July at which time the water table was recorded at seven feet. The pit is located outside the wetlands area near the higher portion of the site. No doubt, during the wetter season of the year, the ground water table will be at a higher elevation. In accordance with code requirements, the bottom of the leaching area is to be at least 1 1/2 feet above the maximum water table. While the installation of a leaching system in this area should be possible, additional test pits should be dug during the spring of the year to more accurately determine the high ground water level. Also a factor in keeping the system elevated (without pumping) is the elevation at which the building sewer can be maintained. Plans should indicate the basis for design as well as give pertinent elevations for various system components.

In addition to the installation of a possible sewage disposal system, a separate waste water disposal system would be installed to handle floor drainage and car wash water. This drainage would (or could) contain, gasoline, grease, oil, antifreeze as well as detergents. In some respects, these types of chemicals are more difficult to successfully treat than ordinary sewage wastes. Again, due to the ground water table and the indication that a deeper type of waste disposal system (deep galleries) is proposed for this facility, there is concern this system could potentially have more influence on the immediate area. The Department of Environmental Protection (Water Compliance Unit) is responsible for the review and approval of plans for this type of waste discharge.

At the present time, public sewers have been installed along Route 27 and are being utilized by businesses and homes within the immediate area. It is understood it would be possible for the car dealership to discharge to the sewer although it would involve the installation of a sewage ejector and approximately 1,200 feet of connecting line. However, considering the terrain, prime site location, projected future commercial use of other land, the use of the public sewerage system appears to be the most advisable method of waste disposal. It is recommended that a detailed engineering study and evaluation be made for this possible aspect.

TRAFFIC/AIR QUALITY CONCERNS

Two planning concerns for this site involve the adequacy of the existing road system to handle the increased amount of traffic which would be generated by the proposed automotive dealership and the resultant impact on air quality. Ingress/egress to the site is planned for Jerry Browne Road, which has adequate sight lines in either direction at this location. Interstate Route 95 (I-95) is located to the south and Route 27 to the west of the site. Coogan Boulevard parallels I-95 south of the site, and provides access to Olde Mistick Village and the Mystic Aquarium, as well as functioning as a connector between Route 27 and Jerry Browne Road.

Connecticut Department of Transportation (CONNDOT) figures indicate that I-95 carried 26,200 cars per day between Route 27 and Taugwank Road in 1978. Figures for Route 27 between I-95 and Pequot Trail were 6,000 cars per day in 1979. Coogan Boulevard, at its intersection with Route 27, carried 5,600 cars per day in 1977. No traffic counts were available for Jerry Browne Road, but it is safe to assume that it carries considerably less daily traffic than either

Route 27 or Coogan Boulevard. It should be noted that Route 27, from Coogan Boulevard to the I-95 ramp, has been defined as a high frequency accident location by CONNDOT, based on the rate of accidents per daily traffic. Between 1977 and 1979, there were twenty-four accidents at this location. Due to the number of accidents, volume of traffic, and turning movements involved, intersection improvements on Route 27 at Coogan Boulevard were indicated as a critical local need in SCRPA's F.Y. 1981 Regional Transportation Plan Update. This project is presently under design by CONNDOT.

It is difficult to estimate the number of trips per day that would be generated by the auto dealership. Present plans call for thirty-eight employees. It is expected that each employee would make two trips per day (to and from work). Without any carpooling, this would be seventy-six trips per day, mostly during peak commuter hours. Other trips would be generated by new and used car sales, and by people bringing their cars in to be serviced. General Motors estimates that a dealership at this location has the potential for 300 sales per year (using a six-day week, approximately one per day), while Mr. Valenti feels they may actually sell 550 to 600 cars per year (one to two cars per day). While the exact number of trips per day, to and from the site, cannot be quantified based on sales figures, it is known that there will be more trips by prospective buyers than the number of cars actually sold. The site plan indicates that twenty-two parking spaces will be reserved for sale customers. Trips to the auto dealership for the purchasing of vehicles will probably be spread out during the course of the day, with the majority occurring during non-peak commuter hours such as evenings and Saturdays. Customers dropping their cars off for service will most likely do so just before and after the morning and afternoon peaks, in order to accommodate the arrangement they have made to get to and from work. The site plan shows twenty-two spaces reserved for service customers. Again, it is difficult to determine how many service trips will be made on a daily basis. It is probable that total trips per day generated by the car dealership will be a small percentage of the existing traffic on adjacent roads.

Emissions from motor vehicles are largely responsible for certain types of air pollution in Connecticut. Two of these auto-related pollutants are ozone, for which Southeastern Connecticut has been categorized as non-attainment of the National Ambient Air Quality Standard, and carbon monoxide, for which the Region is unclassifiable. Ozone, commonly known as smog, is a secondary pollutant, formed principally through the action of sunlight on hydrocarbons and nitrogen oxides. Carbon monoxide (CO) is a colorless, odorless, tasteless gas produced primarily by the incomplete combustion of fuel in motor vehicles. While both the result of motor vehicle travel, these two pollutants differ in that ozone is an area-wide problem, while carbon monoxide is a localized problem. Ozone, unlike carbon monoxide, cannot be said to be caused by a specific source, nor do peak concentrations invariably occur in the vicinity of the emission's source.

The purpose of the very general discussion above is to clarify the differences between the two pollutants, which determines the examination of each in light of the proposed automobile dealership. Since the best way to lessen the pollutant ozone is to reduce the amount of vehicle miles traveled and to improve vehicular travel flow, the number of trips produced per day and their frequency are important considerations. As stated above, these conditions cannot be quantified here. However, the presence of I-95 with its existing large volumes of traffic, minimizes proportionately the impact of the car dealership on ozone levels in the area. Because large amounts of carbon monoxide

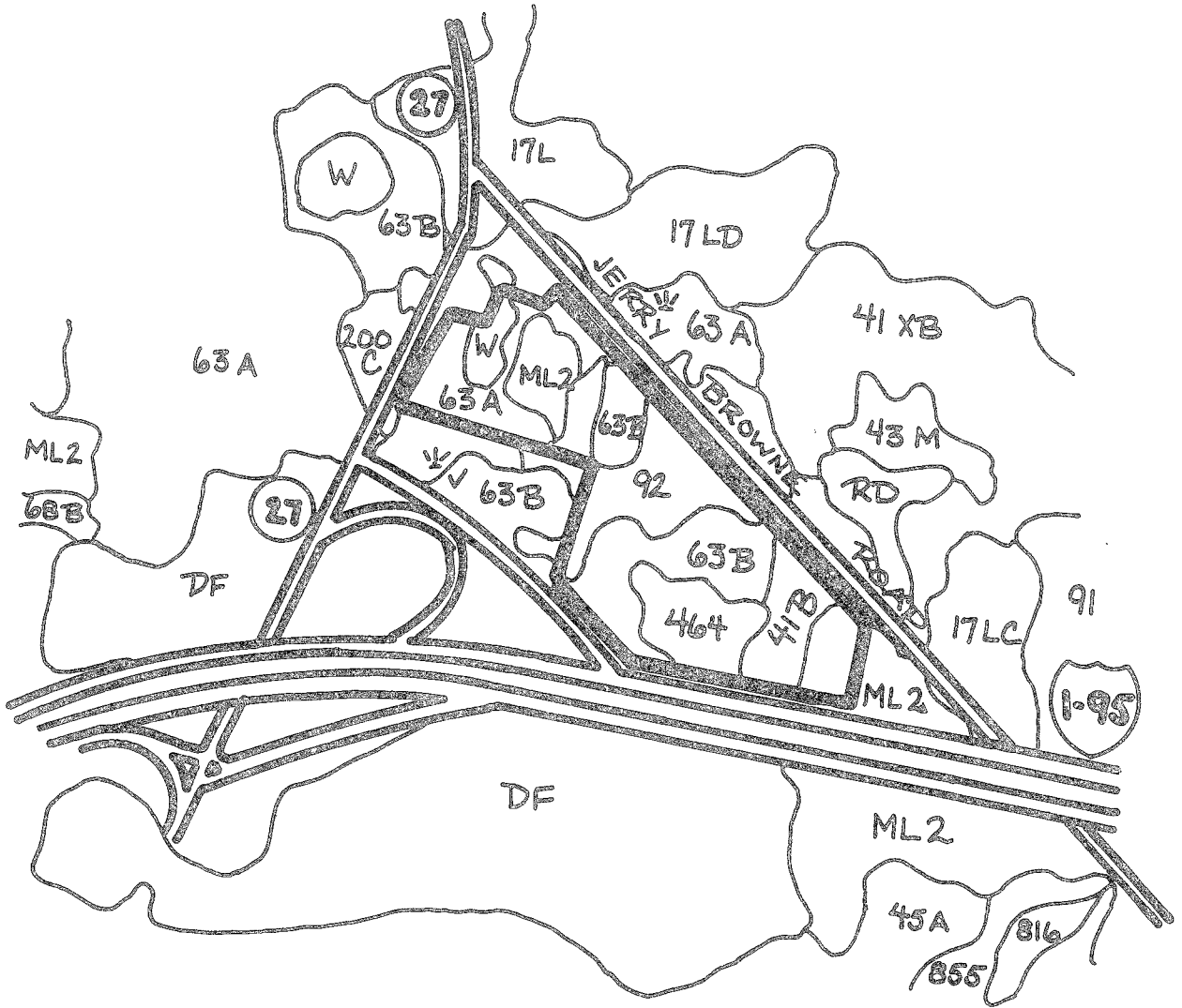
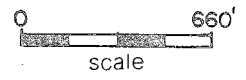
are emitted by idling motor vehicles, this pollutant presents a problem associated with traffic at intersections and other points of congestion, called "hot spots." A hot spot exists when traffic congestion, in combination with geographical and meteorological conditions, results in a build-up of CO levels which exceed national standards. While the amount of traffic generated by the site is not known, it is not expected that it would be of the amount to create a hot spot at the intersection of Jerry Browne Road and Route 27. There presently is a hot spot located in the vicinity of the site, at the intersection of Route 27 and Coogan Boulevard.* It is possible that some additional traffic attracted to the car dealership would pass through this location and aggravate conditions. However, as noted previously, this intersection has been scheduled for traffic operation improvements.

While it is difficult to measure the specific traffic and air quality impact of the proposed development, the cumulative impact of other future development in this area should remain a valid planning concern. Such factors as the capacity of the existing roadways, the number and frequency of trips expected to be generated, the location and design of access points, and the impact of a development proposal on safety, travel convenience and the environment, should be monitored.

* Based on SCRPA's Carbon Monoxide Hot Spot Analysis, January, 1980, which ranked hot spot intersections in the Region using the GCA model.

Appendix

Soils



VALENTI PROPERTY
STONINGTON, CONNECTICUT

PROPORTIONAL EXTENT OF SOILS AND THEIR LIMITATIONS FOR CERTAIN LAND USES

Soil Series	Soil Symbol	Approx. Acres	Percent of Acres	Principal Limiting Factor	Urban Use Limitations*			
					On-Site Sewage	Buildings with Basements	Streets & Parking	Land-Scaping
Bridgehampton	163A	4	16	Frost action	1	1	3	1
**Carlisle	92	8	32	Floods, wetness	3	3	3	3
Haven	63B	5	20	Frost action	1	1	2	1
**Raypo1	464	3	12	Wetness	3	3	3	3
Sutton	41B	1	4	Wetness, frost action	3	3	2	1
Udorthents	ML2	3	12	LIMITATIONS DETERMINED ON SITE.				
Water	W	1	4	Wetness	3	3	3	3
		25	100%					
**Carlisle	92	1	11	Wetness	3	3	3	3
Haven	63B	3	34	Frost action	1	1	2	1
**Raypo1	464	3	33	Wetness	3	3	3	3
Sutton	41B	1	11	Wetness, frost action	3	3	2	1
Udorthents	ML2	1	11	LIMITATIONS DETERMINED ON SITE.				
		9	100%					

TOTAL PARCEL

CAR DEALERSHIP PARCEL

* LIMITATIONS: 1=Slight; 2=Moderate; 3=Severe.
** Inland Wetland soil regulated under P.A. 155.

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.

About the Team

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

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

PURPOSE OF THE TEAM

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

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

REQUESTING A REVIEW

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

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