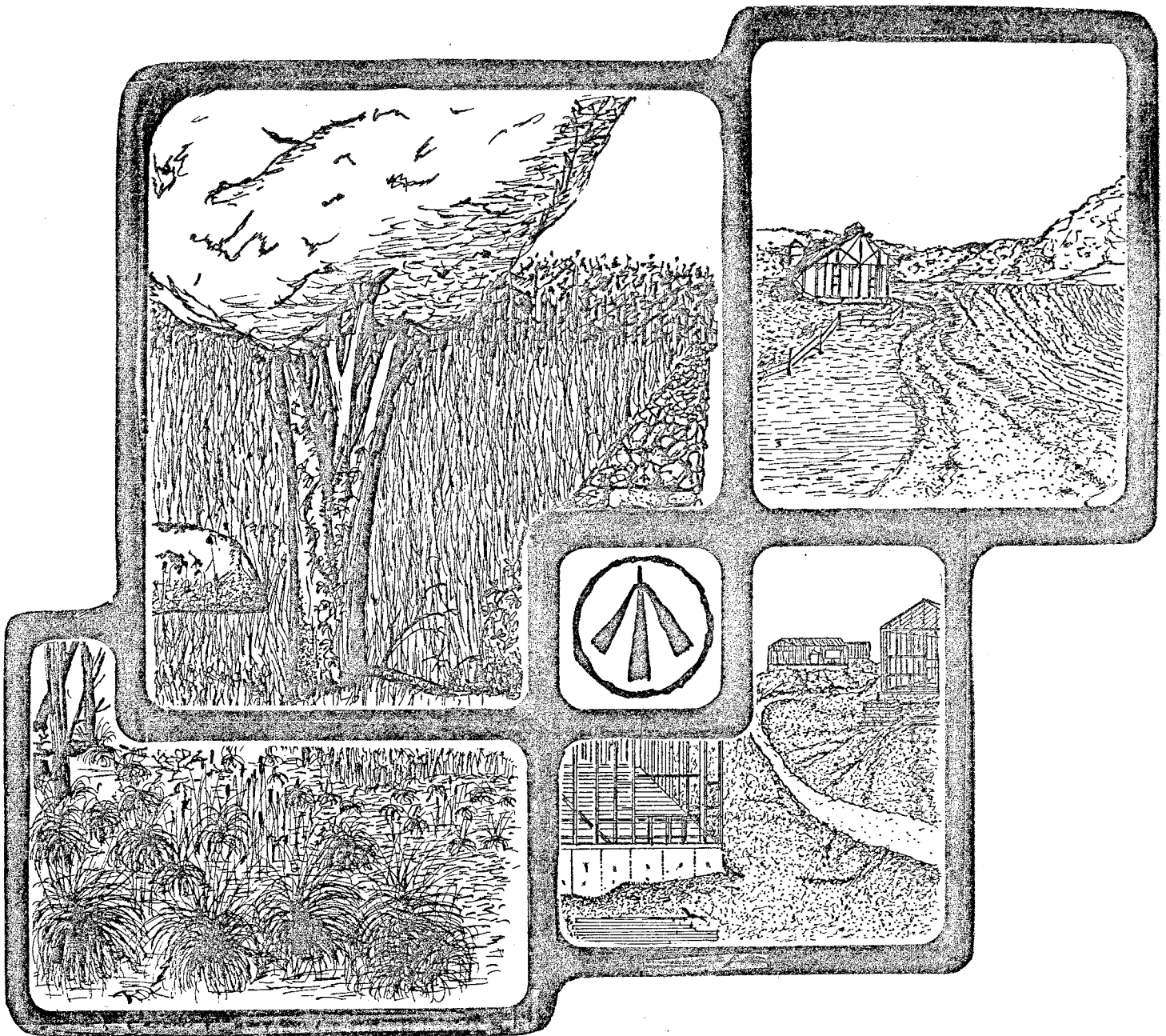


# ENVIRONMENTAL REVIEW TEAM REPORT

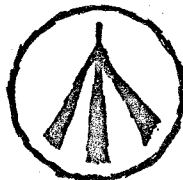


## PROPOSED BRENTWOOD APARTMENT COMPLEX THOMASTON, CONNECTICUT

KING'S MARK  
RESOURCE CONSERVATION & DEVELOPMENT AREA

**KING'S MARK  
ENVIRONMENTAL REVIEW TEAM REPORT**

**PROPOSED  
BRENTWOOD APARTMENT COMPLEX  
THOMASTON, CONNECTICUT  
SEPTEMBER, 1983**



King's Mark Resource Conservation and Development Area  
Environmental Review Team  
Sackett Hill Road  
Warren, Connecticut 06754

## ACKNOWLEDGMENTS

The King's Mark Environmental Review Team operates through the cooperative effort of a number of agencies and organizations including:

### Federal Agencies

U.S.D.A. Soil Conservation Service

### State Agencies

Department of Environmental Protection  
Department of Health  
University of Connecticut Cooperative Extension Service  
Department of Transportation

### Local Groups and Agencies

Litchfield County Soil and Water Conservation District  
New Haven County Soil and Water Conservation District  
Hartford County Soil and Water Conservation District  
Fairfield County Soil and Water Conservation District  
Northwestern Connecticut Regional Planning Agency  
Valley Regional Planning Agency  
Central Naugatuck Valley Regional Planning Agency  
Housatonic Valley Council of Elected Officials  
Southwestern Regional Planning Agency  
Greater Bridgeport Regional Planning Agency  
Regional Planning Agency of South Central Connecticut  
Central Connecticut Regional Planning Agency  
American Indian Archaeological Institute  
Housatonic Valley Association

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### FUNDING PROVIDED BY

State of Connecticut

### POLICY DETERMINED BY

King's Mark Resource Conservation and Development, Inc.  
Executive Committee Members

Victor Allan, Chairman, Bethlehem  
Harold Feldman, Treasurer, Orange  
Stephen Driver, Secretary, Redding  
Leonard Assard, Bethlehem  
Sam M. Chambliss, Ridgefield  
David Hannon, Goshen

Irving Hart, New Hartford  
Frederick Leavenworth, Woodbury  
David Brooks, North Canaan  
John Rabbe, East Hartford  
Mrs. Julia Wasserman, Newtown  
Donna Lindgren, Ansonia

### STAFF ADMINISTRATION PROVIDED BY

Northwestern Connecticut Regional Planning Agency

Dorothy Westerhoff, Chairman  
Charles A. Boster, Director  
Richard Lynn, ERT Coordinator  
Sandra Bausch, ERT Cartographer  
Jamie Whitman, Secretary

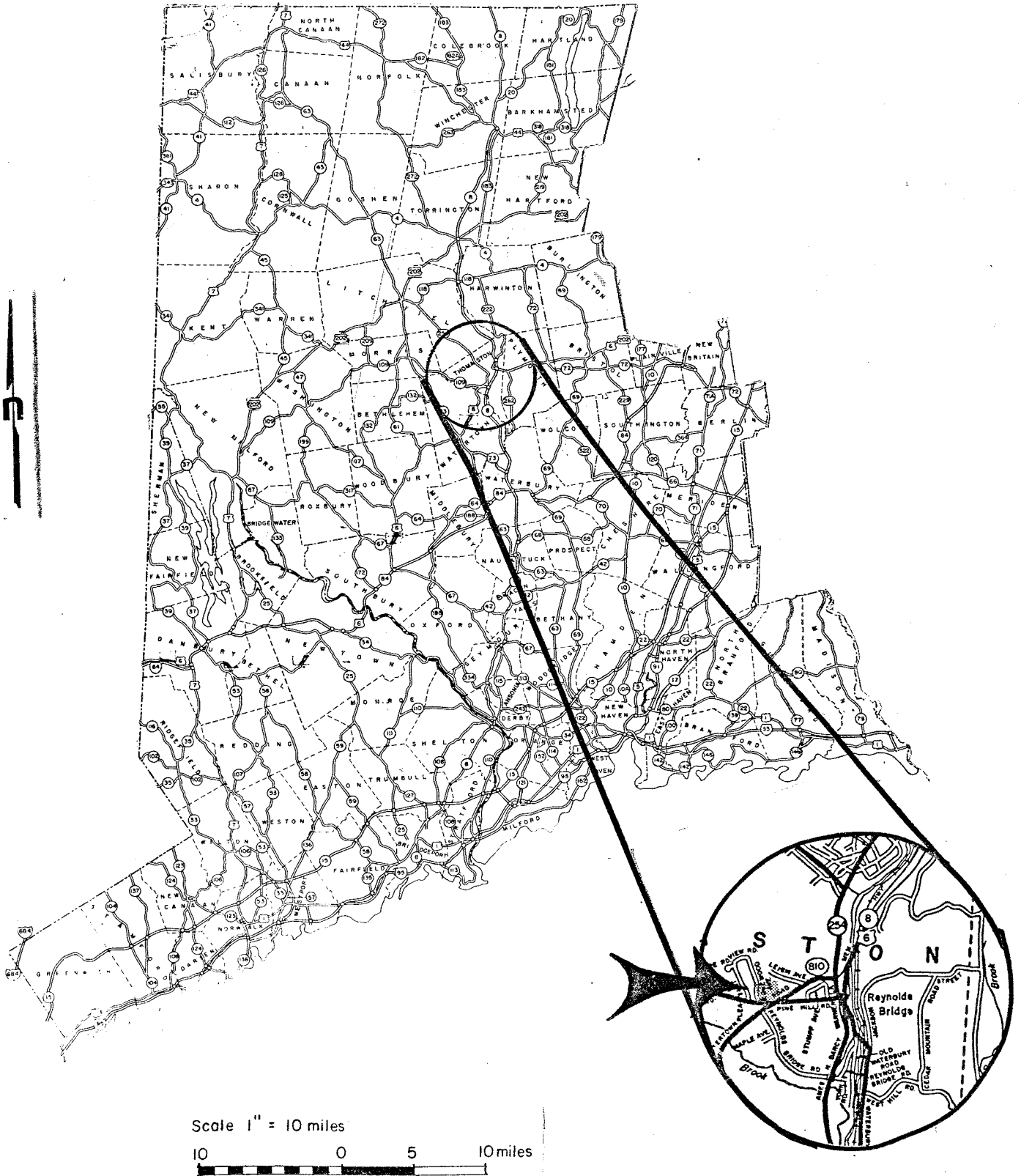
TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION.....	1
II. HIGHLIGHTS.....	5
III. TOPOGRAPHY AND GEOLOGY.....	7
IV. HYDROLOGY.....	9
V. SOILS.....	12
VI. VEGETATION AND WILDLIFE.....	15
VII. PLANNING CONSIDERATIONS.....	17
VIII. APPENDIX.....	19
A. Comments of the Connecticut Water Company	
B. General Vegetation Map	
C. Vegetation Inventory	
D. Fauna Observed	

LIST OF FIGURES

1	Topographic Map.....	2
2	Site Plan.....	3
3	Surficial Geology.....	8
4	Watershed Map.....	10
5	Soils Map.....	13

# LOCATION OF STUDY SITE



ENVIRONMENTAL REVIEW TEAM REPORT  
ON  
PROPOSED BRENTWOOD APARTMENT COMPLEX  
THOMASTON, CT

I. INTRODUCTION

The Thomaston Conservation Commission and Planning and Zoning Commission are presently considering a preliminary plan for a proposed apartment complex known as "Brentwood".

The subject site is + 15.3 acres in size and located about one mile south of the center of town. As shown in Figure 1, access to the site is available from the south off Routes 6 and 109. The site consists of wooded land and open land and is characterized by slight to moderate slopes. The central portion of the site consists of inland wetlands.

The proposed project calls for 95 housing units and the construction of an interior road system off Rte. 6 (see Figure 2). Public water and sewers are available to service the site. The project calls for the filling of wetlands and the diversion of an on-site stream.

The Thomaston Conservation Commission and Planning and Zoning Commission requested the ERT to 1) provide a natural resource inventory of the site, 2) discuss the suitability of the site for the proposed project, 3) discuss the probable environmental impact of the project, and 4) identify techniques which could be implemented to mitigate adverse environmental effects. Of major concern to the town is the impact of the project on inland wetland resources and stormwater drainage.

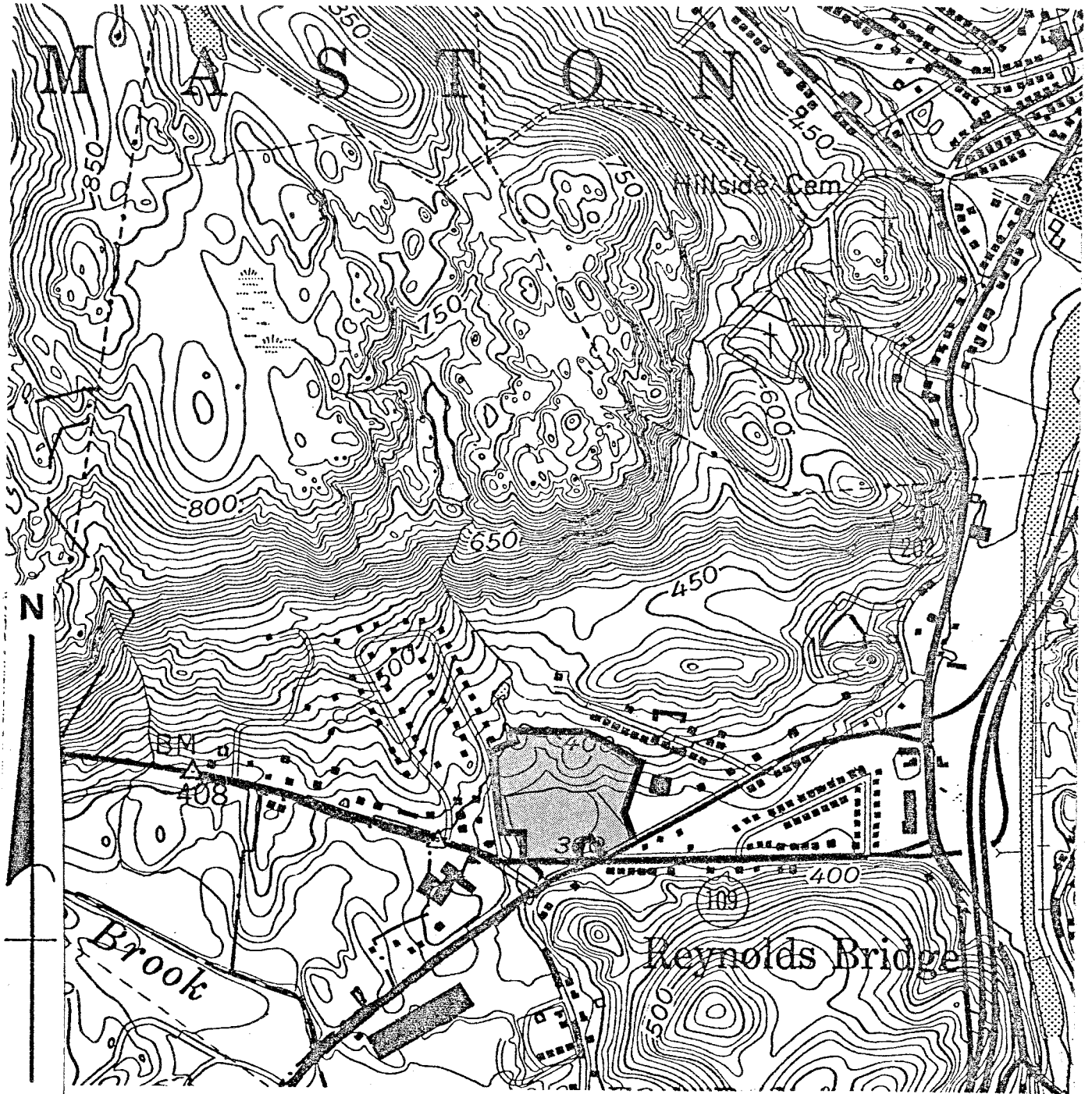
The King's Mark Executive Committee considered the town's request and approved the project for review by the Team.

The ERT met and field reviewed the area on June 8, 1983. Team members for this review included:

Kip Kolesinskas.....	Soil Scientist.....	U.S.D.A. Soil Conservation Service
Larry Johnson.....	Municipal Planner.....	Connecticut Office of Policy and Management
Art Cross.....	District Conservationist.....	U.S.D.A. Soil Conservation Service
Janet Wilscam.....	Biologist.....	Connecticut Dept. of Environmental Protection
Bill Warzecha.....	Geohydrologist.....	Connecticut Dept. of Environmental Protection
Dwight Southwick.....	Civil Engineer.....	U.S.D.A. Soil Conservation Service

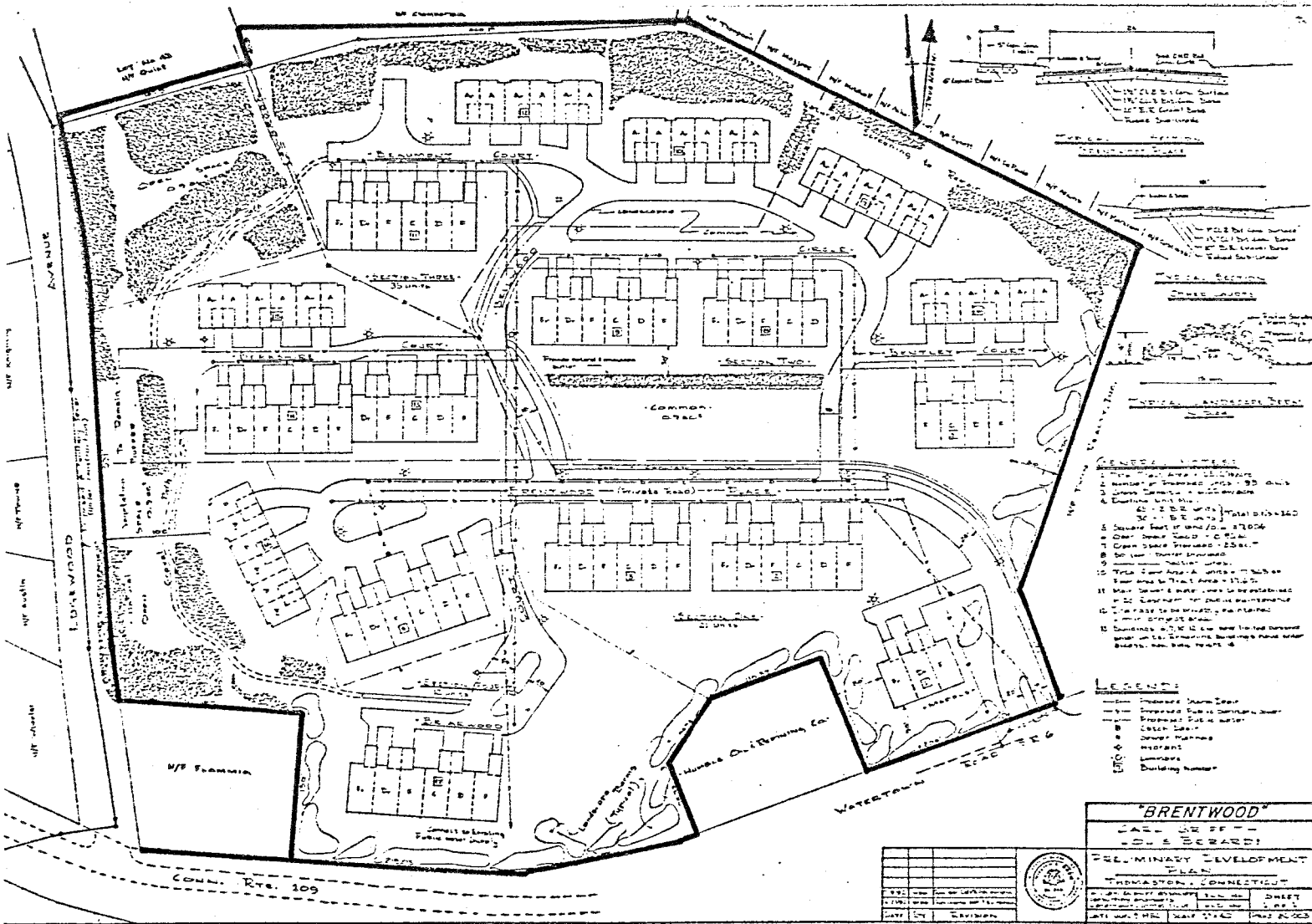
Prior to the review day, each team member was provided with a summary of the proposed project, a checklist of concerns to address, a detailed soil survey map,

# FIGURE 1 TOPOGRAPHIC MAP



Scale 1"=1000'

# FIGURE 2 SITE PLAN



Scale reduced from 1"=40' to 1"=160'





a soils limitation chart, a site plan, and a topographic map of the area. The day of the field review, the ERT met with representatives from the Town of Thomaston and the landowner /developer and investigated the study area. Following the field review, individual reports were prepared by each team member and forwarded to the ERT Coordinator for compilation and editing into this final report.

This report presents the team's findings and recommendations. It is important to understand that the ERT is not in competition with private consultants, and hence does not perform design work or provide detailed solutions to development problems. Nor does the team recommend what ultimate action should be taken on a proposed project. The ERT concept provides for the presentation of natural resources information and preliminary development considerations -- all conclusions and final decisions rest with the town. It is hoped the information contained in this report will assist the Town of Thomaston and the landowner/developer in making environmentally sound decisions.

If any additional information is required, please contact Richard Lynn, (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, Sackett Hill Road, Warren, CT 06754.

\* \* \* \* \*

## II. HIGHLIGHTS

1. Most of the site is characterized by slight to moderate slopes. Wetlands occupy most of the central portion of the parcel. One major, unnamed stream flows through the site. Most of the site has been altered extensively as a result of a sand and gravel extraction operation which took place years ago. (p. 7)
2. Development of the site will cause increases in the volume of runoff. The added runoff could cause increased overland and streamchannel erosion and it could increase the peak flood flows of the watercourse on the site. There could also be potential flooding at the culvert under Rte. 109 in the southeast portion of the site. These potential problems can be addressed by formulating and following an erosion and sediment control plan, particularly during the construction phase, and by establishing some type of runoff-control device such as a detention pond. (p. 9)
3. Serious consideration should be given to leaving open the stream channel on site and riprapping the sides and bottom to protect from erosive velocities. There would be some recharging of water to the ground if the stream was left open and not put into a pipe. (p. 11)
4. The wet soil condition which was observed throughout the central portion of the site during the ERT's field review may hamper the proper placement and functioning of building foundations and roads. Based on the layout and location of the proposed housing units, it appears that most of this area would probably require filling should development occur as planned. Disruption of these areas without careful planning may increase the potential for possible flood related problems on the site and off. (p. 11)
5. The sites major functions are at present: stabilization of stream flow, storm water retention, wildlife habitat (particularly birds), buffer zone between developments, contrast in the landscape, and more than likely, ground water recharge. It will be difficult, if not impossible, to mitigate all of the impacts of the proposed project on the site's existing natural functions. Therefore, compromises in the proposed site plan would be most beneficial. Consideration should be given to the following: 1) Retention of much of the wetland areas by concentrating development on the well and moderately well drained soil areas and filled areas; 2) Retention of as much of the native fruiting shrubs as is feasible and; 3) Provide for storm water retention. (p. 15)
6. The primary wildlife function of the site is as habitat for migratory and resident songbirds. The availability of open water for drinking and berries for food are two factors which make the site suitable for songbirds. From a biological perspective, any development pursued on-site should be designed and constructed in a way that will preserve the wetland's ability to support a songbird community. In the opinion of the Team's biologist, the Brentwood project, as currently proposed, is unsuitable for the site. By culverting the brook, the project would make drinking water unavailable. Apartment and road construction would remove the shrubs which are so productive and essential for bird feeding and nesting. The Team's biologist recommends that the site plan be revised to mitigate adverse impacts to warbler feeding and nest sites, and that the brook remain unculverted. (p. 16)
7. The site is locally important in that much of the town of Thomaston is upland; there are few places where swamps or marshes have developed. (p. 16)

8. Land use plans at the State, regional and local levels have all proposed some form of commercial and low/moderate residential development for this area. The proposed land use is consistent with State, regional and local plans for the area in the opinion of the Team's planner. (p. 17)
9. Although the proposed density is only 6 units per acre the over-all appearance of the plan appears crowded. (p. 18)
10. The project would be expected to generate about 485 trips per day. About 90-150 of these trips would occur during the morning and evening peak hour times as people traveled to work and returned. (p. 18)
11. One major problem is the lack of a second or emergency means of access for a development of this size. The ideal location for a second access would be at the western limit of the property on Route 109. If this is not feasible, a second access should be provided on Route 6 far enough from the proposed one that both would not be blocked at the same time by an accident or other occurrence. (p. 18)

### III. TOPOGRAPHY AND GEOLOGY

As shown in Figure 1, most of the site is characterized by slight to moderate slopes. The steepest slopes, ranging between ten (10) and fifteen (15) percent, are found in the northeast corner of the site. Wetlands occupy most of the central portions of the parcel. One major, unnamed stream flows through the site. Elevations, as interpreted from the published Thomaston quadrangle map, range between 360 feet above mean sea level along Rte. 109 and 400 feet above mean sea level along the northern boundary line. Most of the site has been altered extensively as a result of a sand and gravel extraction operation which took place years ago.

The proposed apartment complex is located in an area that is encompassed by the Thomaston topographic quadrangle. The bedrock geologic map for that quadrangle has not been completed to date. A surficial geologic map (GQ-984) for the quadrangle by Charles R. Warren has been published by the United States Geological Survey.

No bedrock outcrops were observed on the site during the ERT field review. However, based on bedrock exposures north and south of the site, bedrock underlying the site is probably a granite gneiss. This rock unit is metamorphic; that is it is a coarsely crystalline, banded rock which was formed under great heat and pressure. The rock was derived from either sedimentary rocks (rocks formed near the earth's surface in layers) or igneous rocks (rocks or minerals solidified from molten material) which had a granite mineralogy. "Gneisses" are characterized by thin bands of elongate or platy dark minerals, generally micas, alternating with layers of granular lighter minerals, commonly quartz and feldspar. Depth to bedrock on the site may be as deep as 10 feet below the land surface in some locations; however, it is probably much closer to ground level throughout the majority of the site. This is mainly a result of the sand and gravel extraction operations which removed most of the original soil resources.

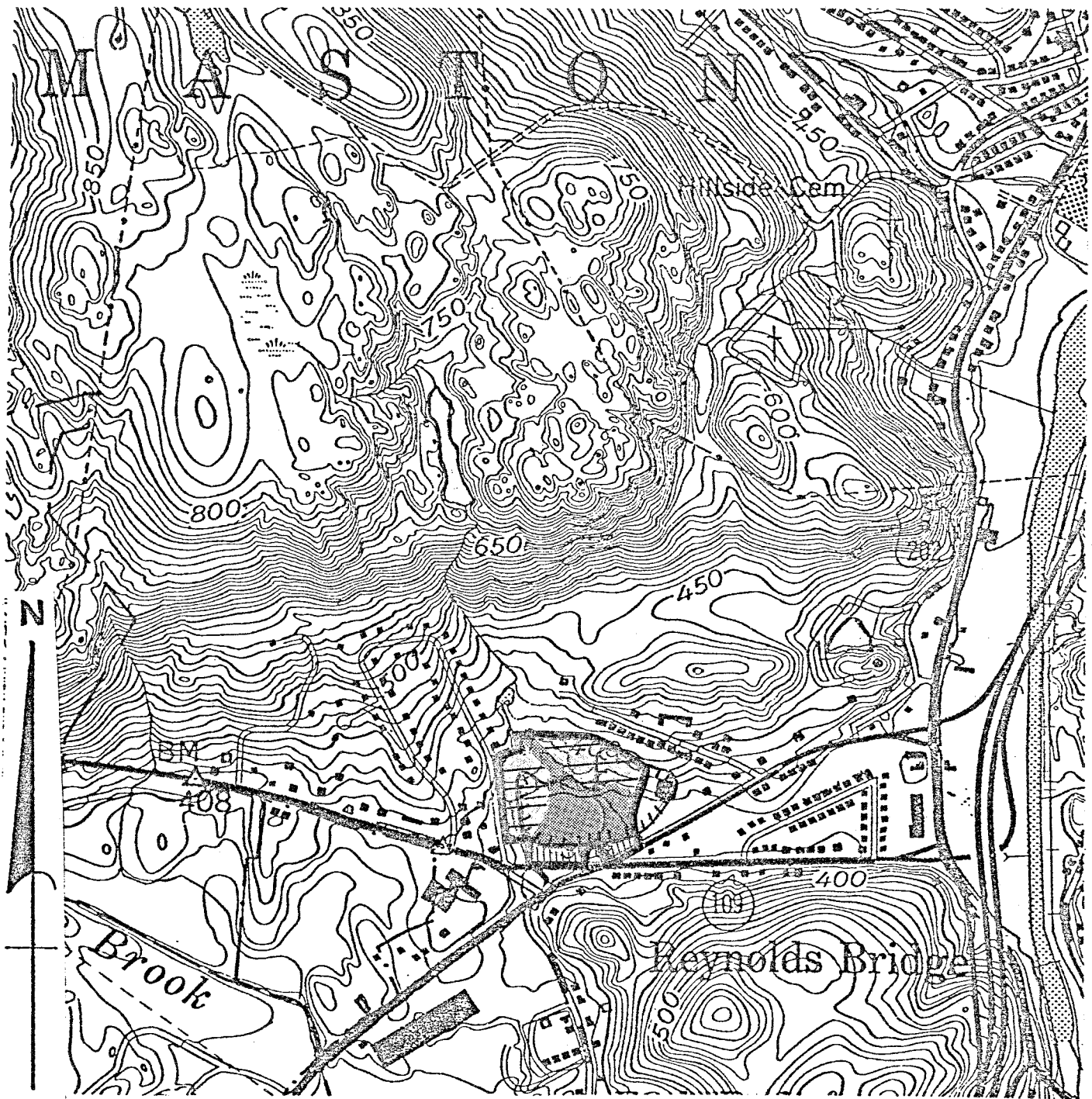
The surficial deposit which overlies bedrock within the site is predominantly stratified sand and gravel (see Figure 3). These sediments were deposited when the glacier ice began to melt sending forth streams of meltwater often with torrential flows. Because the materials were transported and deposited by water, they commonly are wellsorted and layered (stratified) by grain size. Stratified drift deposits in Connecticut are most commonly found in stream valleys.

Because most of the site has been altered by the previous sand and gravel extraction operation, the actual thicknesses of the deposits presently covering the site are unknown.




Another type of glacially deposited material, referred to as till, was encountered in the gravel excavation in the southeast section of the site. Till is a glacial sediment that was deposited directly from an ice sheet. Till consists generally of a non-sorted, structureless mixture of clay, silt, sand, gravel and boulders whose texture varies greatly from place to place. It is usually sandy, stony and loose in the upper portions and may give way to a hard, compact, slightly finer grained till with depth.


Other surficial deposits found throughout the site consist of swamp deposits and artificial fill. These deposits are post-glacial. Swamp deposits are confined primarily to the central sections of the site. They consist of partly decomposed matter generally mixed with varying amounts of clay, silt and sand. Artificial fill, which has been deposited in the southern portion of the property primarily along Rte. 109, consists of construction/demolition wastes, rubbish, earth materials, etc.

# FIGURE 3 SURFICIAL GEOLOGY MAP



Scale 1"=1000'

-  SAND AND GRAVEL
-  WETLAND
-  ARTIFICIAL FILL

- 8 -  Area in which sand and gravel extraction operation took place

The principal geologic concerns with regard to development of this property relate to the soil limitations of the site, which are discussed in detail in the soils portion of this report.

#### IV. HYDROLOGY

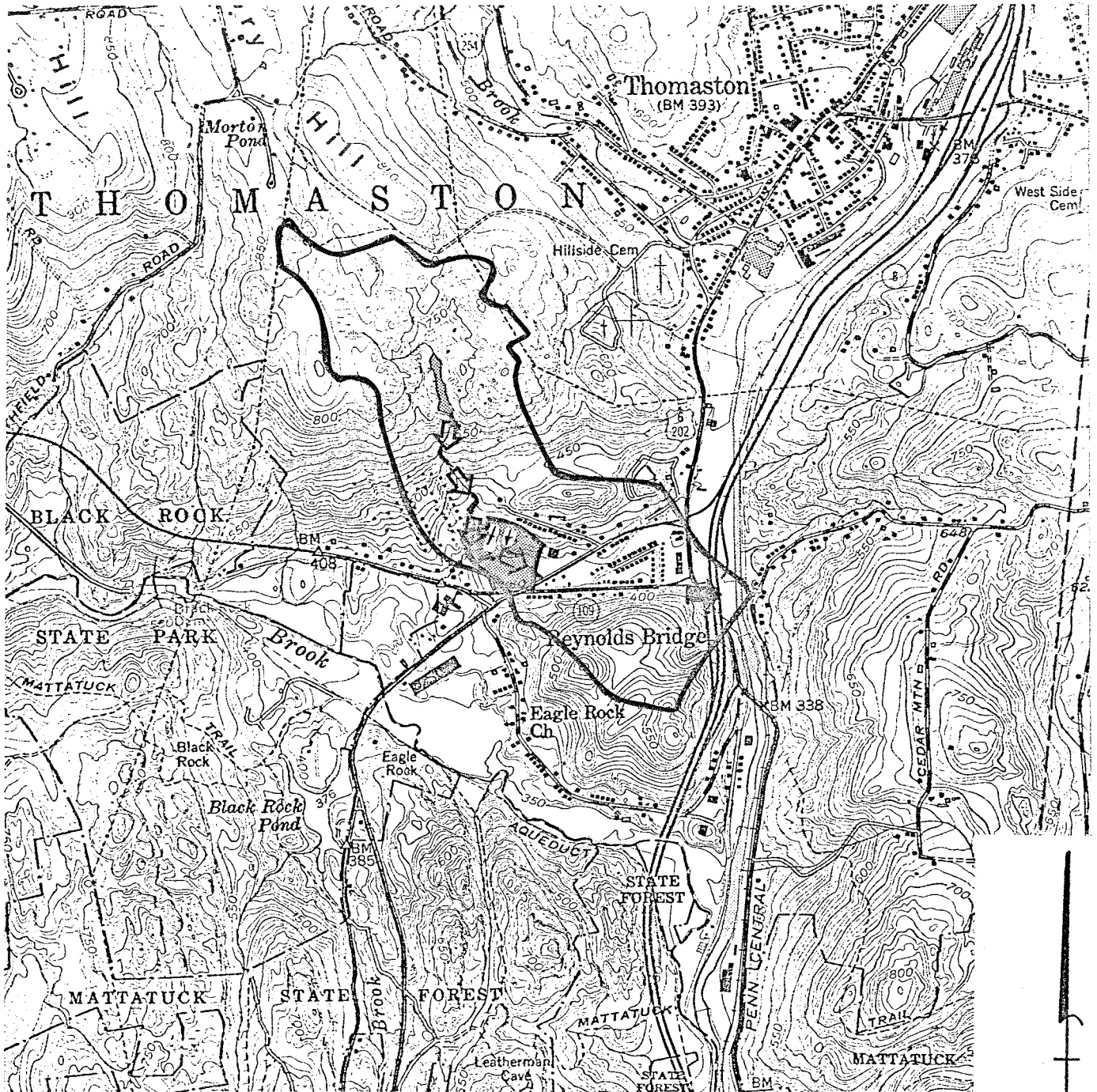
The proposed "Brentwood" apartment complex lies within the watershed of an unnamed tributary of the Naugatuck River. This unnamed tributary emanates from Leigh Pond, a small pond located approximately ½ mile northwest of the site (see Figure 4). The stream then flows diagonally from the northwest section to the southeast section of the site, where it outlets through a culvert under Rte. #109 n route to the Naugatuck River. The size of the watershed shown in Figure 4 is approximately 330 acres or .52 square miles. Present project plans are to artificially pipe the watercourse through most of the site outletting it in the southeast section of the property near Rte. 109. At least two small intermittent streams, originating in the central portions of the site, were observed to be tributaries to the main watercourse.


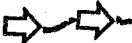


Development of the site will cause increases in the volume of runoff. These increases will be caused mainly by the creation of impervious surfaces (such as roofs, roads and parking areas) which are presently proposed to cover most of the site. Other contributing factors include the removal of vegetation, and compaction of soils on the site. The added runoff could cause increased overland and streamchannel erosion and it could increase the peak flood flows of the watercourse on the site. There could also be potential flooding at the culvert under Rte. 109 in the southeast portion of the site. These potential problems can be addressed by formulating and following an erosion and sediment control plan, particularly during the construction phase, and by establishing some type of runoff-control device such as a detention pond.

It is possible to estimate changes in peak flow that will be brought about by development. One method for doing this is outlined in Technical Release No. 55 (TR-55) of the USDA Soil Conservation Service. This method involves the estimation of runoff curve numbers for the affected watershed. The curve number relates the amount of precipitation during a certain storm event to the amount of direct runoff from the land. Criteria for determining the curve number includes soil type, slope of the land and type of vegetation cover. Estimated present and future peak flows based on this procedure are listed in the following table. Peak flows are given in cubic feet per second. It should be noted that the figures below are meant only to indicate the prospective magnitude of the increases; they are not designed to indicate absolute flow rates which may be significantly greater or less than the corresponding estimates.

	10 yr, storm	25 yr, storm	50 yr. storm	100 yr, storm
Peak flows under present conditions	141 cfs	194 cfs	233 cfs	294 cfs
Peak flows following development as planned	162 cfs	222 cfs	265 cfs	334 cfs
Peak flow increases (percent) following development	15%	15%	14%	14%

# FIGURE 4 WATERSHED MAP



-  Direction of surface flow
-  Watercourse showing direction of flow
-  Watershed boundary to outlet of Naugatuck River
-  Design point

Scale 1" = 2000'

The table presented above indicates that the overall increases in runoff from the site could have a substantial potential for peak downstream flood flows, particularly at the culvert under Rte. 109, and for erosion. In order to avoid these potential problems, it is recommended that the developer(s) consider the use of a detention basin(s) or pond(s) that would prevent or at least reduce these increases. This type of facility may also be designed to serve a sediment retention function. If sediment does accumulate in the basin, it must be removed periodically in order to assure that the runoff-storage capacity of the pond is not seriously diminished. It should be noted that the culvert under Route 6 was observed to be partly blocked with sand and debris the day of the Team's field review. This blockage restricts the capacity of the culvert to handle stormwater flows, and should be removed. As mentioned earlier, an erosion and sediment control plan should be formulated and implemented during the construction phase of the proposed project.

Serious consideration should be given to leaving open the stream channel on site and riprapping the sides and bottom to protect from erosive velocities. There would be some recharging of water to the ground if the stream was left open and not put into a pipe. Should the channel be left open, however, there would be a need to consider its proper maintenance if high density housing is approved for the site (e.g. repair of riprap, keeping trash out, etc).

The wet soil condition which was observed throughout the central portion of the site during the ERT's field review may hamper the proper placement and functioning of building foundations and roads. Based on the layout and location of the proposed housing units, it appears that most of this area would probably require filling should development occur as planned (note: the site plan is not detailed enough to determine floor elevations or road grades). No fill should be deposited in the wetland areas until approval is granted by the Town's Inland-Wetland Commission. Disruption of these areas without careful planning (e.g. proper placement of fill, installation of retention basin(s) to replace the natural storm water retention presently provided by this area, installation of foundation drains, etc) may increase the potential for possible flood related problems on the site and off.

Also, as discussed in the soils section of this report, the soils on this site are subject to "caving in" at cut banks. This could pose problems in the installation of underground utilities and storm drainage facilities and along the cut banks of the north side of the site.

A water-related concern expressed by town residents the day of the Team's field review was whether or not development of the site as planned would reduce the yields to surrounding water wells. Since most of the 15 acres would be covered by impermeable surfaces, this could have some negative effect on groundwater recharge and may cause a slight drop in the water table level below the site. With development, it seems likely much of the current natural recharge on the site would be converted to surface water and be quickly moved off-site. The general effect of this loss would be to lower the average elevation of the water table below the property and in the general vicinity of the site. The present concerns are about the existing on-site wells which are concentrated to the northeast and northwest of the site at higher elevations. Since no extensive sand and gravel deposits exist within these areas, it is likely that most of these domestic wells are probably deep and using the underlying fracture systems in the bedrock as a water source. As a result, these wells should not be noticeably affected by the loss of recharge. If



there are wells in close proximity that tap only the top ten feet or so of a saturated zone, they may be adversely affected, but the Team has no information to suggest that this type of well does exist near the site. Thus, it seems likely that the loss of recharge entailed in the development of the property should not have serious repercussions in terms of groundwater depletion of on-site wells northeast and northwest of the development.

As mentioned earlier, the proposed apartment complex would be serviced by public sewers. This should effectively eliminate the risk of substantial groundwater contamination. It is recommended that the application of road salt for roads and parking lot areas follow state guidelines, which minimizes salt use.

## V. SOILS

### A. Soil Descriptions

The subject site has been highly modified by extensive cutting and filling of the original soil resources. Thus, the original Soil Conservation Service soils map of the area is obsolete. By walking over the site and examining the soils, the Team's Soil Scientist was able to separate a number of different soil types and map units.

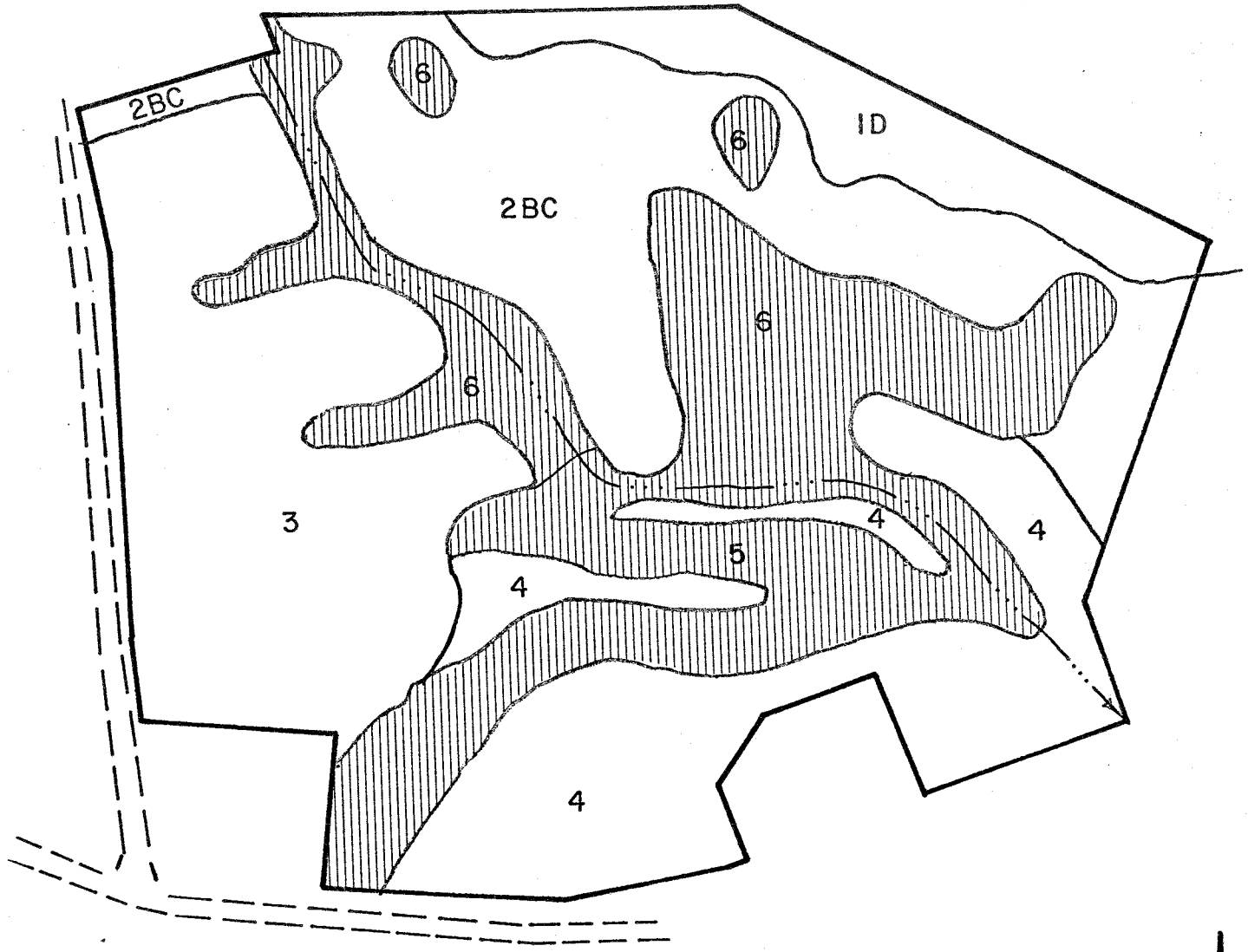
The numbers below relate to delineated map units shown on Figure 5.




- 1D - This unit consists of well drained to excessively drained soils on 15 to 30 percent slopes. The area has been mined for sand and gravel, thus there are few areas of original soil material. The soil is variable in texture, but generally is gravelly to very gravelly loamy sand to stratified sand and gravel below the surface. Some areas of finer textured glacial till soils are also included in this unit. The main limitations to development are the potential for cutbank cave-ins and droughtiness for landscaping.
- 2BC - This unit consists of well drained to moderately well drained soils on 5 to 15 percent slopes. Soil materials are variable in texture but generally are gravelly to very gravelly loamy sand or stratified sand and gravel below the surface. Some areas have a thin, finer textured surface layer. Small areas of finer textured glacial till soils are also included in this unit. The main limitations to development are the seasonal high water table in the moderately well drained areas, droughtiness for landscaping, and the potential for cutbank cave-ins.
- 3 - This unit consists of moderately well drained soils on 0 to 5 percent slopes. Areas of undisturbed Sudbury soils make up a part of this unit\*. Disturbed areas are variable in texture, but generally are gravelly to very gravelly loamy sand below the surface. Many areas have a thin, finer textured surface. The main limitations to

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\* The physical properties and additional limitations for Sudbury, Raynham, and Birdsall soils can be found in Soil Survey of Litchfield County, CT issued Nov. 1970.

# FIGURE 5 SOILS MAP



-  Approximate soil boundary line
-  On-site stream
-  Poorly drained to very poorly drained soils

NOTE: See text for soil descriptions

Prepared by: Kip Kolesinskas, USDA Soil Conservation Service, 1983.

development are the seasonal high water table and the potential for cutbank cave-ins and droughtiness for landscaping. Sudbury soils have the additional limitation of the potential for frost heaving in the spring.

- 4 - This unit consists of well drained and moderately well drained soils on 0 to 3 percent slopes. Soil materials are variable in texture, but are generally very gravelly loamy sand and gravel fill material over wetland soils. These areas have been sufficiently filled so that they are no longer wetlands. Also included in the fill material is asphalt, concrete, wood, etc. Areas along the major drainageway are generally finer in texture. The main limitations to development are a seasonal high water table in the moderately well drained areas, the potential for cutbank cave-ins, and droughtiness for landscaping.
- 5 - This unit consists of poorly drained and very poorly drained soils on 0 to 2 percent slopes. Areas of undisturbed Raynham soils and Birdsall soils\* make up a large part of this unit. Small areas of alluvial soils are also included in this unit. Disturbed areas are variable in texture but generally have a thin, dark surface layer over gravelly to very gravelly loamy sand or are gravelly materials over silty Raynham or Birdsall soils. Major limitations to development are the seasonal high water table and the high potential for frost heaving in the spring.
- 6 - This unit consists of poorly drained soils on 0 to 5 percent slopes. Soil materials are variable in texture but generally have a thin dark surface layer over gravelly to very gravelly loamy sand and stratified sand and gravel. Major limitations to development are the seasonal high water table and the potential for cutbank cave-ins.

Figure 5 shows the approximate boundaries of various soil units. If a more detailed map is desired by the developer, a private soils consultant should be hired. The designated units are not homogeneous in nature; they contain inclusions of wetter and drier soils, and other similar and dissimilar soils.

The subject site has been modified by extensive cuts and fills, with two areas dominated by poorly drained or very poorly drained soils. Area 5 (see Soils Map) is depressional and collects and stores water from the property. The significant area of Raynham and Birdsall soils present\*, and the slow permeability of these soils, indicate this area allows little ground water recharge. This however, may not be the case along the stream corridor itself. Area 6 has been cut and filled as well. The large area of unit 6 south of units 2 BC and 1 D is slightly depressional and appears to be accumulating water from various springs at the base of the steeper 2 BC and 1 D units. To retain the layout and location of the proposed housing units, both areas 5 and 6 would need to be filled in. This would remove the natural storm water retention function of these areas. This negative impact could probably be overcome, however, by the installation of artificial retention basins on the site.

The area designated as "open space" bordering Edgewood Avenue, is dominantly moderately well drained, and is thus more suitable to residential units than areas 5 or 6. Leveling, spot drainage and the addition of topsoil would be necessary for lawns, landscaping and playing fields on the open space areas.

## B. Soils vs. the Proposed Land Use

The site, at present, is a wetland-upland "oasis", surrounded by urban development. A tributary stream of the Naugatuck River bisects the property. The sites major functions are at present: stabilization of stream flow, storm water retention, wildlife habitat (particularly birds), buffer zone between developments, contrast in the landscape, and more than likely, ground water recharge.

It will be difficult, if not impossible, to mitigate all of the impacts of the proposed project on the site's existing natural functions. Therefore, compromises in the proposed site plan would be most beneficial. Consideration should be given to the following:

1. Retention of much of the wetland areas by concentrating development on the well and moderately well drained soil areas and filled areas.
2. Retention of as much of the native fruiting shrubs as is feasible. (e.g. dogwoods, arrow-wood viburnum, autumn olive, etc.)
3. Provide for storm water retention by such means as parking lot storage, rooftop storage, grassed waterways between buildings, pond with built in storm water retention capacity. As a general rule, any upstream, future development should manage storm water to prevent flooding and minimize erosion and sedimentation.

## C. Erosion and Sediment Controls

The site is surrounded on all downhill sides by either road banks or fill.

There is only one apparent water flow outlet from the site (i.e. the culvert under Route 6). Applicable erosion and sediment controls are listed in suggested sequence:

1. Erection and maintenance of a silt fence, above culvert outlet. (Refer to Erosion and Sediment Control Handbook, SCS 1976 for details).
2. Excavation of a sediment basin (Dredge when 2/3 full).
3. Construction in stages or areas with each stage or area stabilized by adequately grading and revegetating.

## VI. VEGETATION AND WILDLIFE

Wetland vegetation covers an estimated eighty percent of the site's 15.3 acres. Vegetation distribution on-site is determined by a combination of elevation, soil characteristics, water level, and past land use. There are only two areas on site which do not support wetland species. One is an open meadow with shade-intolerant red cedars which is located in the northwest quadrant immediately east of the brook. Red cedars typically invade land which has been abandoned from agricultural use. The other is labelled as an open field area on the enclosed Vegetation Map (see Appendix B). It has apparently been filled and supports a variety of shrubs and herbaceous plants which are typical of well-drained, disturbed sites.

The higher elevation areas along Edgewood Avenue and in the northwest corner of the site are crossed by a brook and support moisture-tolerant trees which are typical of the mid-slopes of hills. The dominant trees in this portion of the parcel are red maple and white ash. Shagbark hickory, which grows well in moist but well-drained soils, also occurs.

A wetland area with bayberry and sedges is located in the southwest portion of the parcel. White pine, highbush blueberry, ferns and other herbaceous species also occur here.

The shrub wetlands in the center of the parcel and along the streambeds are dominated by alders, willows, cottonwoods, poplars, and red maples. Highbush blueberry and smooth sumac are also prevalent. Viburnums occur less frequently. The streams are vegetated with a variety of attractive wildflowers, including slender blue flag iris, touch-me-nots, bunchberry, and wild geranium. A number of ferns, particularly sensitive fern, are found throughout the site.

Nestled between the red cedar meadow, wooded wetland and shrub wetland is a transitional area which supports an assortment of moisture-intolerant and wetland shrubs. These include highbush blueberry, mountain laurel, maleberry, chokeberry, and silky dogwood. Appendix C gives a detailed vegetation listing of species observed at the site.

The primary wildlife function of the site is as habitat for migratory and resident songbirds. Red-wing Blackbirds are the dominant birds. Numerous warblers were observed, including the Common Yellowthroat, Canada Warbler, Blue-winged Warbler, and Yellow Warbler. Several pairs of Yellow Warbler nest in the Russian olive, and alders near the bowling alley parking lot. A more detailed, but by no means exhaustive, list of observed birds, insects and amphibians appears in Appendix D.

Although no small mammals were seen, a ground nest was observed. The site is a suitable habitat for raccoons, skunks, white-footed mice, opossums, squirrels and shrews.

The availability of open water for drinking and berries for food are two factors which make the site suitable for songbirds. Elderberry, smooth sumac, Russian olive, dewberry, blackberry, bayberry, wild black cherry, chokeberry, red maple, shagbark hickory, highbush blueberry, silky dogwood, viburnums and red cedar provide the birds with edible seeds and fruits. Important for the warblers are the willows and poplars which provide necessary nest material. The Red-wing Blackbirds build their nests by weaving them directly into the reeds (Phragmites and cattails).

The site is locally important in that much of the town of Thomaston is upland; there are few places where swamps or marshes have developed. In reviewing the inland wetlands map of Thomaston, it appears that only approximately fifteen percent of the town is wetlands. Much of these are streambed watercourses, such as the Naugatuck River, as opposed to swamps or marshes. The size of the parcel, 15.3 acres, is in itself significant.

Housing developments border the site on the west and northeast boundaries. Aside from being a productive and diverse wetland, the parcel provides open space and passive recreational activities for its neighbors. The streams are part of a watershed system that originates as a wetland about one half mile north of the

Brentwood site at elevation 820. The wetland is drained by a stream which feeds a pond located at elevation 710. The pond, in turn, is drained by the brook which runs through the project site. Rock ledges and wooded hills characterize the watershed area.

A Red-tailed Hawk was observed flying over the woods to the northeast of site. These birds have extensive home ranges, and it is possible that they obtain some of their food from the Brentwood site.

From a biological perspective, any development pursued on-site should be designed and constructed in a way that will preserve the wetland's ability to support a songbird community. In the opinion of the Team's biologist, the Brentwood project, as currently proposed, is unsuitable for the site. By culverting the brook, the project would make drinking water unavailable. Apartment and road construction would remove the shrubs which are so productive and essential for bird feeding and nesting. Although warblers are tolerant of some human activity, it is unlikely that they would remain if 95 apartment units were constructed and occupied. At any rate, the current proposal allows for insufficient shrubs and open water to sustain the warbler population.

It is recommended that the developer consider redesigning the project to reflect the following:

1. Allow the brook to remain open and undisturbed;
2. Avoid construction in the shrub wetlands located at the center of the parcel;
3. Retain habitat diversity by preserving some of the existing trees and shrubs; and
4. In selecting shrubs for landscaping, incorporate some of the berry-producing species which are presently found on the site, i.e., high-bush blueberry, bayberry, silky dogwood, viburnums and red cedar. Flowering dogwoods and Siebold's viburnum would also be good choices for providing bird food and nesting sites.

In summary, the project site is significant in its size and because it is one of Thomaston's few swamp wetlands. It has aesthetic value as open space in a residential neighborhood and supports a diversity of migratory and resident songbirds. Most notable are the site's warbler populations. The Team's biologist recommends that the site plan be revised to mitigate adverse impacts to warbler feeding and nest sites, and that the brook remain unculverted.

## VII. PLANNING CONSIDERATIONS

### A. Consistency With Existing Plans

The proposed multi-family project is located on a 15.3 acre parcel on the north side of the junction of Routes 109 and 6. Public sewer and water are available to the site. Both roads have a scattering of commercial development, and a school is located to the west of the intersection. Residential development is found on the easterly and westerly sides on Leigh and Edgewood Avenues, while the land to the north is steep and undeveloped. The site had previously been zoned commercial.

Land use plans at the State, regional and local levels have all proposed

some form of commercial and low/moderate residential development for this area. The State Plan of Conservation and Development shows the site as an Urban Conservation Area, suitable for urban development consistent with neighborhood stability and urban services. Both the Central Naugatuck Valley Regional Planning Agency's land use plan and Thomaston's plan of development propose commercial and low/moderate residential uses for the area. Since the site abuts two state highways and has adjacent commercial uses and sewer and water services, the proposed land use is consistent with State, regional and local plans for the area in the opinion of the Team's planner. It is also consistent with surrounding land uses.

Because of the availability of sewer and water services, the major constraints on density will be the maximum number of units allowed by the zoning regulations, traffic and circulation problems and the natural characteristics of the site itself. Natural areas and other factors limiting development and/or requiring conservation are discussed in other sections of this report. No permits have been granted for sewer service or access to the highway. Preliminary plans have been seen by these agencies, but no permits will be granted until the final plans are submitted.

## B. Proposed Site Plan

The developers have made use of a special permit provision of the zoning regulation which allows three or more units per dwelling in an RA-15 district at densities of 7000 square feet of site area per unit. This would allow a maximum of 95 units on the site. They are seeking approval of Phase 1, with a maximum of 21 units. The Planning and Zoning Commission has set conditions for approval of this and later phases.

Although the proposed density is only 6 units per acre the over-all appearance of the plan appears crowded. There also seems to be an excessive amount of roadway, much of which has units on one side only. The areas abutting the highways are level and open, and the homes on Leigh Ave. were visible from most areas of the site, producing a sense of constraint and crowding. The PZC has required visual buffering in these areas.

The Commission has also required that the buildings be south-facing, and that there be 2 parking spaces per unit, plus 1 guest space for each 6 units. This may be adequate for most times, but the internal roadways should be wide enough for the inevitable onstreet parking that will occur when someone invites a lot of company. The State Department of Transportation estimates traffic generation using standards of 10.0 trips per day for single family units, 6.1 trips for apartments and 5.1 trips for condominiums. In this system, leaving for a destination counts as one trip, and the later return is a second trip. The project would therefore be expected to generate about 485 trips per day. About 90-150 of these trips would occur during the morning and evening peak hour times as people traveled to work and returned. Since work places are located both to the north and south of the site, a traffic engineer would have to estimate the actual expected traffic flow on surrounding streets.

One major problem is the lack of a second or emergency means of access for a development of this size. The State Department of Transportation sets the requirements for access to land from State roads. The State cannot deny access to property, but can set requirements, including redesign and reconstruction of state roads and intersections at the developer's expense. The ideal location for a second access would be at the western limit of the property on Route 109.

If this is not feasible, a second access should be provided on Route 6 far enough from the proposed one that both would not be blocked at the same time by an accident or other occurrence.

### C. Solar Considerations

The proposed buildings are energy efficient by virtue of being semi-attached and on level or south-facing land. The Zoning Regulations establish requirements for building orientation and prevention of building shading during winter months. Additional suggestions might be found in Passive Solar Subdivision Design: A Planner's Guidebook, published jointly by the Central Naugatuck Valley Regional Planning Agency and the Energy Division of the Connecticut Office of Policy and Management.

\* \* \* \* \*



## THE CONNECTICUT WATER COMPANY

A SUBSIDIARY OF CONNECTICUT WATER SERVICE, INC.

GENERAL OFFICES: 93 WEST MAIN STREET  
CLINTON, CONNECTICUT 06413, TEL. 203-669-8636

August 26, 1983

Mr. Richard Lynn, Director  
Kingsmark Environmental Review Team  
Sackett Hill Road  
Warren, CT. 06754

Dear Mr. Lynn:

We have reviewed the preliminary plans for the 95 unit "Brentwood" apartment complex in Thomaston. As you are aware, the Innes Well of the Connecticut Water Company is located in close proximity to the proposed apartment site which lies on the direct recharge area of both the Innes Well and the Reynolds Bridge Wells. Together these wells are capable of producing over 1,000 gpm and are an important source of supply for the Thomaston System of the Connecticut Water Company.

The Connecticut 208 Program for Groundwater Protection recommends that wastewater discharge from on site sewage disposal systems be limited to 350 gallons per acre per day in aquifer recharge areas. We concur with these recommendations which would correspond to approximately one single family home per acre. Since 95 apartment units are planned for this 15.3 acre site, the on site disposal of wastewaters would greatly exceed the recommended limit and would present a serious threat to the groundwater quality of this aquifer. In addition, certain soils on this site have severe limitations in accepting septic tank effluent and are susceptible to erosion.

In order to safeguard the water quality of our drinking water wells, it is absolutely essential that wastewater discharges of this magnitude and concentration be prohibited from the direct recharge area of this aquifer. Since public sewers are available for this complex, we ask that their use be required. Because of the type of soils found on the site and the work that is planned in wetland areas, we also ask that proper erosion control measures be planned, implemented and maintained in strict compliance with The Erosion and Sediment Handbook of the Soil Conservation Service.

Source Protection is a major concern of the Connecticut Water Company, and we appreciate having the opportunity to review and comment on proposed activities which may adversely affect the water quality of one of our sources of drinking water supply. Please contact us if you should receive any additional details about this apartment complex.

Sincerely,

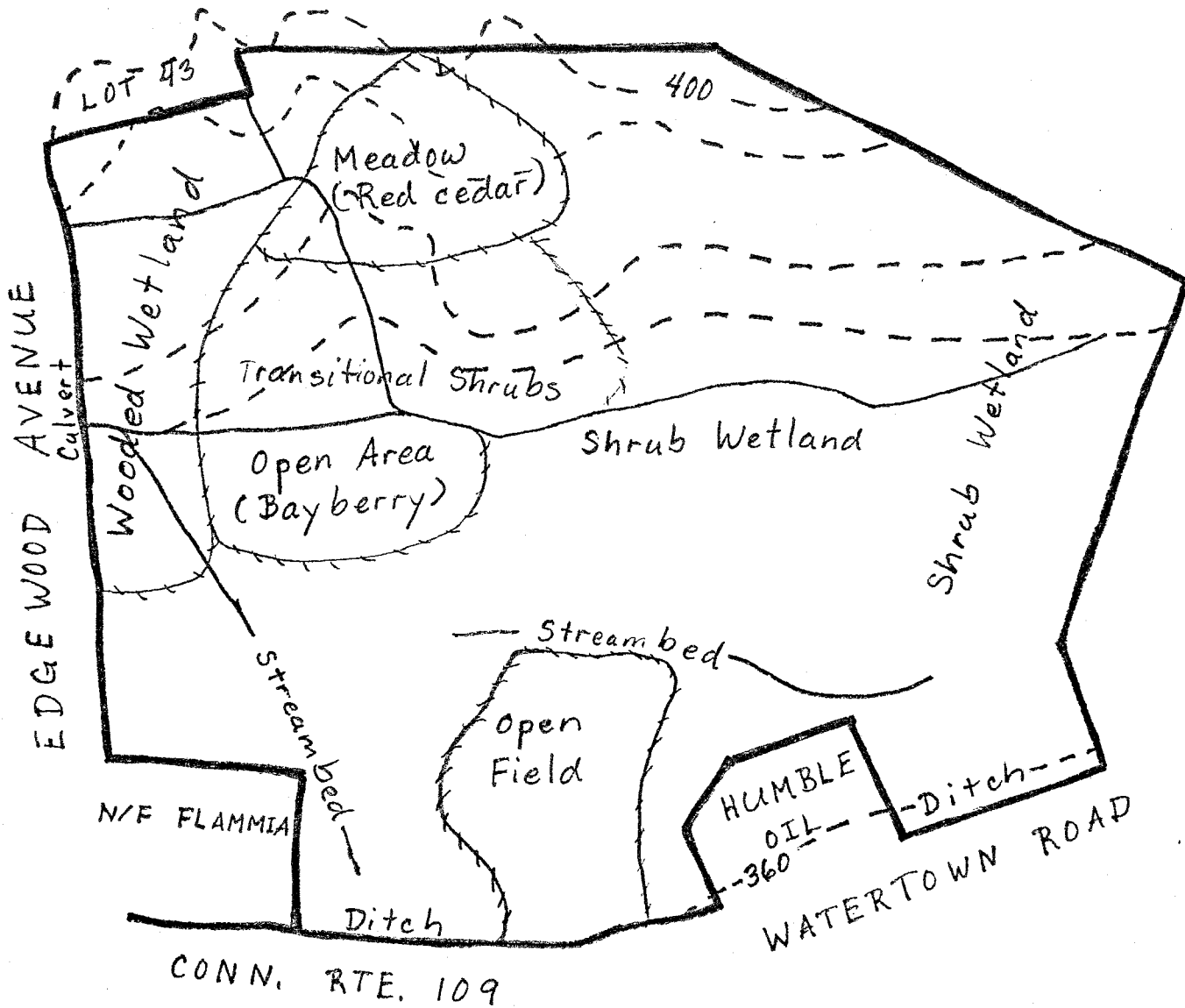
Christopher J. Bogucki  
Assistant Engineer

CJB/be

cc: W. C. Stewart  
W. F. Guillaume  
W. T. Dunn  
W. L. Dunn  
J. R. McQueen  
Thomaston Cons. Comm.  
Thomaston P&Z Comm.

# Brentwood Site Plan

## Vegetation Map



### Notes

1. Map traced from reduced preliminary development plan, 1" = 160', by Louis Berardi.
2. Streams and elevation lines drawn from USGS quad map.
3. Details shown on this map are not to scale.
4. Site inspection conducted 6/8/83.

### KEY

- Property line
- Watercourses
- - - Elevation line
- Border between vegetation types

by: Janet M. Wilcom  
 June 20, 1983

APPENDIX C  
Vegetation Inventory

1. Ditches Along Watertown Road and Conn. Rte. 109:

a. Grasses:

Deer's tail grass (Panicum clandestinum)

b. Herbaceous species:

Slender blue flag iris (Iris prismatica)

Cattails (Typha latifolia)

Sedges (Carex spp.)

Touch-me-not (Impatiens capensis)

Dock (Rumex sp.)

St. Johnswort (Hypericum sp.)

Meadowsweet (Spiraea sp.)

Yarrow (Achillea millefolium)

c. Ferns:

Sensitive fern (Onoclea sensibilis)

Lady fern (Athyrium Filix-femina)

d. Shrubs:

Elderberry (Sambucus canadensis)

Smooth sumac (Rhus glabra)

Russian olive (Eleagnus angustifolius)

Alder (Alnus sp.)

Dewberry (Rubus flagellaris)

2. Open Field:

a. Grasses:

Love grass (Eragrostis sp.)

Orchard grass (Dactylis glomerata)

Little bluestem (Andropogon scoparius)

b. Herbaceous species:

Goldenrod (Solidago spp.)

Sedges

Cinquefoil (Potentilla sp.)

English plantain (Plantago lanceolata)

Curled dock (Rumex crispus)

White campion (Lychnis alba)

Climbing false buckwheat (Polygonum scandens)

Field sorrel (Rumex acetosella)

Daisy fleabane (Erigeron annuus)

Yellow wood sorrel (Oxalis sp.)  
Lady's smock (Cardamine pratensis)  
Wild indigo (Baptisia tinctoria)  
Evening primrose (Oenothera biennis)  
Bittersweet nightshade (Solanum dulcamara)  
Yellow hawkweed (Hieracium vulgatum)  
Penny cress (Thlapsi arvense)  
Bergamot (Monarda sp.)  
Clovers (Trifolium spp.)  
Spiked lobelia (Lobelia spicata)  
Small-flowered gerardia (Gerardia paupercula)  
Milkweed (Asclepias sp.)  
Cypress spurge (Euphorbia cyparissias)  
Vetch (Vicia sp.)

c. Shrubs:

Bayberry (Myrica pensylvanica)  
Japanese knotweed (Polygonum cuspidatum)

d. Trees:

Wild black cherry (Prunus serotina)  
Red maple (Acer rubrum)

3. Streambed by Field and Gas Station:

a. Herbaceous species:

Iris  
Ground pine (Lycopodium obscurum)  
Forget-me-not (Impatiens capensis)  
Cleavers (Galium aparine)

b. Ferns:

Sensitive fern  
New York fern (Thelypteris noveboracensis)

c. Shrubs:

Alders  
Virginia creeper (Parthenocissus quinquefolia)  
Common blackberry (Rubus allegheniensis)  
Dewberry  
Smooth sumac  
Willows (Salix spp.)  
Silky dogwood (Cornus amomum)  
Russian olive  
Sheep laurel (Kalmia angustifolia)

d. Trees:

Cottonwood (Populus deltoides)  
Red maple

Wild black cherry  
Quaking aspen (Populus tremuloides)  
White ash (Fraxinus americana)  
White birch (Betula papyrifera)

4. Shrub Wetland Along Eastern Boundary:

a. Grasses:

Reed grass (Phragmites australis)

b. Shrubs:

Alders  
Russian olive

5. Open Area:

a. Herbaceous species:

Sedges  
Goldenrod  
Forget-me-not (Myosotis scorpioides)

b. Ferns:

Sensitive fern

c. Shrubs:

Bayberry  
Highbush blueberry (Vaccinium corymbosum)

d. Trees:

White pine (Pinus strobus)

6. Wooded Wetland:

a. Herbaceous species:

Rushes  
Bunchberry (Cornus canadensis)  
False hellebore (Veratrum viride)  
Touch-me-not  
Milkweed  
Wild geranium (Geranium maculatum)

b. Ferns:

Cinnamon fern (Osmunda cinnamomea)  
New York fern

c. Shrubs:

Japanese barberry (Berberis thunbergi)  
Spicebush (Lindera benzoin)

d. Trees:

Red maple  
Wild black cherry  
Shagbark hickory (Carya ovata)  
White ash

7. Meadow:

Grassy slope with red cedar (Juniperus virginiana)

8. Transitional Shrubs:

Highbush blueberry  
Mountain laurel (Kalmia latifolia)  
Maleberry (Lyonia ligustrina)  
Chokeberry (Aronia arbutifolia)  
Silky dogwood

9. Shrub Wetland:

Pussy willows (Salix discolor)  
Weeping willow (Salix babylonica)  
Populus spp.  
Alders  
Red maple  
Viburnum spp.

APPENDIX D  
Fauna Observed

Mosquitos  
Ants  
Spiders  
Monarch butterflies  
Bees  
Houseflies  
Crickets  
Ladybugs  
Moths  
Spring peepers  
Frogs

Northern Oriole  
Red-winged Blackbird  
American Crow  
Common Yellowthroat  
Canada Warbler  
Blue-winged Warbler  
Yellow Warbler  
Woodpecker  
House Finch  
Song Sparrow

## ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state, and regional agencies. Specialists on the team include geologists, biologists, foresters, climatologists, soil scientists, landscape architects, recreation specialists, engineers, and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - a 47 town area in western Connecticut.

As a public service activity, the team is available to serve towns and developers within the King's Mark Area --- free of charge.

### 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 the review of a wide range of significant activities including subdivisions, sanitary landfills, commercial and industrial developments, and recreation/open space projects.

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 official of a municipality or the chairman of an administration agency such as planning and zoning, conservation, or inland wetlands. Requests for reviews should be directed to the Chairman of your local Soil and Water Conservation District. This request letter must include a summary of the proposed project, a location map of the project site, written permission from the landowner/developer 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 King's Mark RC&D Executive Committee, the team will undertake the review. At present, the ERT can undertake two reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil Conservation District Office or Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P.O. Box 30, Warren, Connecticut 06754.