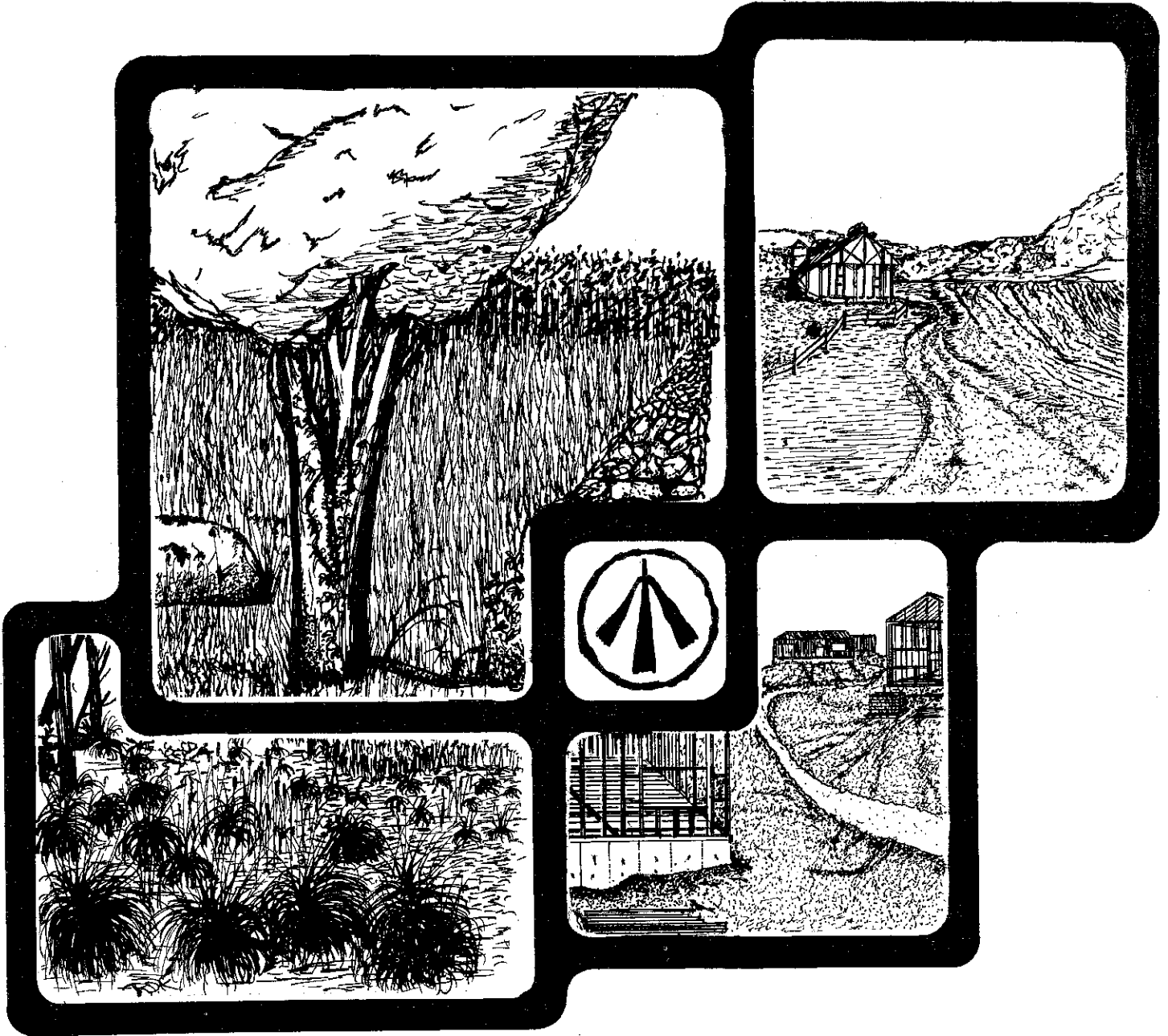


# ENVIRONMENTAL REVIEW TEAM REPORT



## PROPOSED WOODS HILL AND CONTON DRIVE SUBDIVISIONS MIDDLEBURY, CONNECTICUT

Ⓚ KINGS MARK  
RESOURCE CONSERVATION AND DEVELOPMENT AREA

# KING'S MARK ENVIRONMENTAL REVIEW TEAM REPORT

On

## PROPOSED WOODS HILL AND CONTON DRIVE SUBDIVISIONS MIDDLEBURY, CONNECTICUT



SEPTEMBER, 1978

Kings Mark Resource Conservation & Development Area

Environmental Review Team

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# 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

DEPARTMENT OF TRANSPORTATION

UNIVERSITY OF CONNECTICUT COOPERATIVE EXTENSION SERVICE

## 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

LITCHFIELD HILLS REGIONAL PLANNING AGENCY

CENTRAL NAUGATUCK VALLEY REGIONAL PLANNING AGENCY

HOUSATONIC VALLEY COUNCIL OF ELECTED OFFICIALS

AMERICAN INDIAN ARCHAEOLOGICAL INSTITUTE

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I. INTRODUCTION

The Town of Middlebury, Connecticut is presently faced with two subdivision proposals in a sensitive watershed area.

The "Woods Hill Subdivision" calls for 21 lots on 50.5 acres of land off Edward Drive and Tower Road. Proposed lot sizes vary from 41,250 square feet to 180,000 square feet (+ 1 - 4 acres). Approximately 11.8 acres (23%) of the parcel would be left in open space according to the developer's subdivision plan. These 11.8 acres are primarily wetlands which drain via an un-named brook to Hop Brook. All proposed lots are to be serviced by individual wells and sewage disposal is proposed to be handled by on-site septic systems (3 lots) or sanitary sewers (18 lots).

The "Conton Drive Subdivision" is presently in the preliminary planning stages but the developer has indicated he is considering proposing six lots on + 32 acres of land. The land proposed for development is located just west of Algin Drive. According to the developer, the six lots would include two lots off Whittemore Road, two large lots west of Algin Drive (behind present housing), and two lots just north of Algin Drive.

Both proposed development sites are located within a single watershed which has a history of flooding problems off Tower Road.

The Conservation Commission from the Town of Middlebury requested the assistance of the King's Mark Environmental Review Team (ERT) to help the Town in learning more about the capabilities of the watershed to safely support the proposed, and future, developments. The ERT was asked to identify the natural resource base of the two development sites and to estimate to what extent the development of these two sites will contribute to the flooding situation that already exists off Tower Road. The Town also requested guidance in developing a "long-term" control that will eliminate the existing flooding problem within the watershed.

The ERT met and field reviewed the site on June 28, 1978. Team members for this review consisted of the following:

Frank Indorf...	District Conservationist.	U.S.D.A. Soil Conservation Service
Martin Drobney.	Hydrologist.....	U.S.D.A. Soil Conservation Service
Mike Zizka.....	Geohydrologist.....	Dept. of Environmental Protection
Tim Hawley.....	Forester.....	Dept. of Environmental Protection
Peter Dorpalen.	Planner.....	Central Naugatuck Valley Regional Planning Agency

Prior to the review day, each Team member was provided with a summary of the proposed project, a checklist of concerns to address, a soil survey map, a soils limitation chart, and a topographic map of the 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 identifies the natural resource base of the proposed development sites and discusses opportunities and limitations for development of the watershed land. It is hoped this information will assist the Town of Middlebury in making decisions regarding the future use and development of this portion of Town.

If any additional information is required, please contact Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P. O. Box 30, Warren, Connecticut.

\* \* \* \* \*

## II. SETTING, TOPOGRAPHY, LAND USE

The proposed "Woods Hill Subdivision" is located about one mile southeast of the center of Town. The property is bounded by Whittemore Road and private residences on the north, wetland and private residences on the east, Interstate 84 on the south, and undeveloped woodland on the west. The property is wooded with the exception of a 115' CL&P right of way traversing the southern portion of the property which is maintained as open land (see Figure 1). The land is characterized by a lowland wetland area in the central portion of the property which rises to rounded hilltops at both the northern and southern edge of the property. Topographic relief is slight to moderate. One stream transects the property through the wetland area en route to Hop Brook.

The proposed "Canton Drive Subdivision" is located just northwest of the proposed "Woods Hill Subdivision" (see Figure 1). This property is bounded by private residences off Algin Drive on the east, Whittemore Road on the south, private residential land to the west and privately owned woodland to the north. The land is wooded and characterized by slight to moderately steep relief. Two small intermittent streams traverse the property. These streams combine to form an un-named stream which is tributary to Hop Brook. This un-named stream is the same stream which traverses the "Woods Hill Subdivision" property.

## III. SOILS

A detailed soil survey map and soils limitation chart of the two tracts is presented in the Appendix of this report. The soils map illustrates the geographic location of all soils identified on the properties. The soils limitation chart identifies limiting factors for various land uses on individual soil types.

### CONTON DRIVE SUBDIVISION

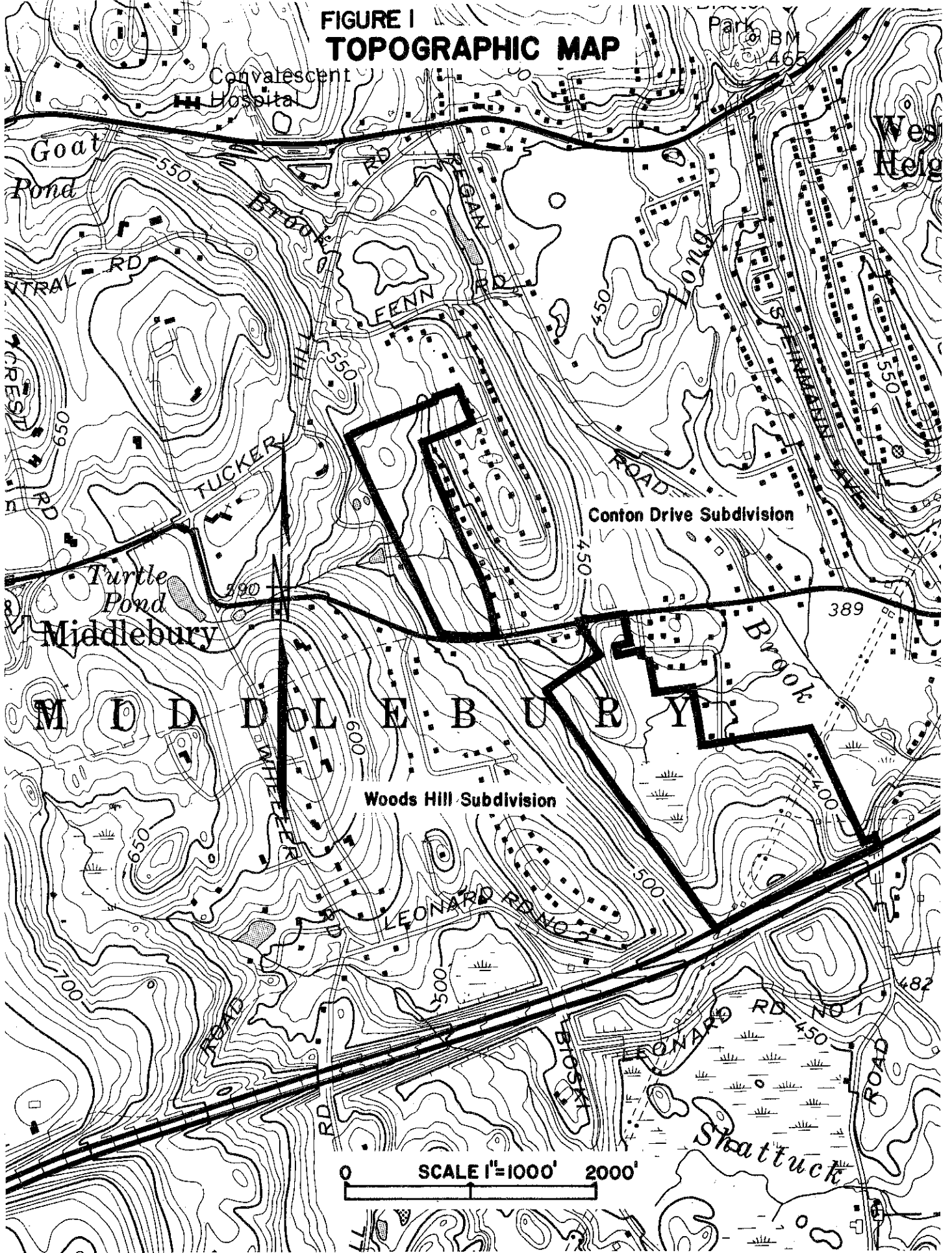
As can be seen from studying the soils map and soils limitation chart, much of the Conton Drive area is characterized by wet soils.

Over one-third of the property is underlain by soil type 43M (Ridgebury, Leicester, and Whitman extremely stony soils). These soils are very poorly drained and have water ponded on the surface for significant periods in winter and spring. The water table usually remains within 3 feet of the surface throughout the year. These soils have severe limitations for urban and most other uses. Intensive and costly drainage and land fill measures are required to overcome wetness. In addition, the stones and boulders common in these soils will add difficulty to earth moving operations. These soils are regulated by the Connecticut Inland Wetlands and Water Course Act.

The other major soil type on the property is Woodbridge (31B, 31XB, 31MC). These soils are underlain by compact glacial till and have a hardpan 16 to 36 inches below the soil surface. Permeability above the hardpan is moderate but the pan drastically reduces percolation. These soils also have a high water table during wet seasons. During the period of highest



FIGURE I  
**TOPOGRAPHIC MAP**



saturation, usually in the early spring, the water table remains within 15 to 20 inches of the soil surface.

The design and installation of on-site sewage disposal systems that function satisfactorily is very difficult on Woodbridge soils because of the hardpan and seasonal water table. In addition, the very stony soils add difficulty to installation. Extension of sewers to this area will, of course, alleviate these concerns.

The Woodbridge soils also present problems in the construction of homes with basements due to the high water table during wet periods. Measures such as land fill or drainage are needed to prevent seepage into basements. The very stony soils also add difficulty in excavation. Soil conditions are generally favorable for the establishment and maintenance of lawns, trees, and shrubs; but problems may be encountered in the design and construction of streets and driveways. The hazard of frost heaving because of water table and hardpan must be given special consideration in design and construction.

The remainder of the soils on the property (35C, 35B, 17LC) have moderate to severe limitations for urban development. Limitations include wetness, frost action, and depth to bedrock.

#### WOODS HILL SUBDIVISION

Paxton soils (35B, 35MD, 35MC, 35D) make up the majority of land proposed for development at the Woods Hill Subdivision (see Soils Map). These are well-drained upland soils formed over compact till. Paxton soils on this property consist of the following types:

35B, 35MD Non-stony and stony soils with slopes 0-15 percent.

These soils have a hardpan 16 to 36 inches below the soil surface. During wet seasons, excess water in the soil moves downslope above the pan. The till commonly contains stones and boulders which add difficulty when excavating or earth moving operations are needed.

Design and construction of on-site sewage disposal systems that function satisfactorily is very difficult because of the hardpan which drastically reduces percolation rates. The planned sewerage of the area will alleviate this concern however.

Conditions are favorable for excavation of basements for homes on soils with slopes less than 8 percent. Slopes above 8 percent are a moderate limitation, however, the steeper slopes present opportunities for a wider choice of architectural design.

Stability of footings is not a problem, but measures such as footing drains are needed to prevent seepage into basements. Soil conditions are favorable for the establishment and maintenance of lawns, trees, and shrubs. The stony soils and slopes above 8 percent add difficulty in landscaping.

Difficulty in constructing streets and driveways ranges from slight on level areas, to moderate on 3 to 8 percent slopes, to severe on slopes above 8 percent. The hazard of frost heaving because of water accumulation above the hardpan requires special consideration. Also, soil slippage on road cuts is a hazard during wet seasons.

35MC Very stony soils with slope less than 15 percent.

Costly stone removal is required on these soils for installation of on-site sewage disposal systems, homes with basements, streets and driveways, and for landscaping. Footing drains are needed to prevent seepage into basements. Soil conditions are favorable for the establishment and maintenance of lawns, trees, and shrubs, however slopes above 8 percent add difficulty in landscaping. Difficulty in constructing streets and driveways ranges from slight on level areas, to moderate on 3 to 8 percent slopes, to severe on slopes above 8 percent. The hazard of frost heaving because of water accumulation above the hardpan requires special consideration. Also soil slippage on roadcuts is a hazard during wet seasons.

35D Non-stony or stony soils with slopes above 15 percent.

The steep slopes and predominance of very stony soils limit the use of this land. These soils also have excess water above the hardpan for short periods during wet seasons.

Costly measures are required to overcome the severe limitations imposed by steep slopes, stoniness, and hardpan in developing these areas for urban uses.

\* \* \* \* \*

The other two major soil types on the property, 43M and 91, are both inland wetland soils. Due to the very severe limitations of these soils for urban uses and their hydrological importance (wetlands serve to moderate the effects of run-off, filter nutrients, and trap sediment), the developer's decision to leave these areas in their natural state is a judicious one.

#### SOILS VS. PROPOSED LAND USE

It is clear from the above discussion that the soils of these two sites present a number of limitations for urban development. These limitations are not insurmountable, however, and the proposed development can be accomplished without significant soil deterioration providing sound conservation and engineering practices are followed.

In order to protect the large wetland and streams in the watershed, it is suggested that any proposed development of this land include plans for the control of erosion and sedimentation. Erosion and sediment control practices are described in the "Erosion and Sediment Control Handbook - Connecticut" (U.S.D.A. Soil Conservation Service, 1976). This handbook, together with additional technical assistance in developing erosion and sediment control plans, is available through the New Haven County Soil and Water Conservation District.

The following suggestions should be considered in the development of an erosion and sediment control plan:

- . Keep land grading and land disturbance to a minimum.
- . Properly grade, seed, and mulch all disturbed soils.
- . Install hay bale erosion checks near streams and wetlands and around disturbed areas on steep slopes.
- . Install an energy dissipator at the outlet of the storm drain proposed for the "Woods Hill Subdivision" to reduce the energy of flowing water (see proposed subdivision plan map).
- . Finish access driveway proposed through wetland area at Woods Hill Subdivision on 3:1 side slopes and design driveway culvert to prevent road flooding during wet seasons (see proposed subdivision plan map).

#### IV. VEGETATION

The sites for both proposed subdivisions are forested, except for about 9 acres of right of ways. The forest types present show the effects of past land use and soil conditions. Abandonment of rocky pastures at widely different times and sharp differences in soil drainage have caused the development of several distinct vegetation types. The Vegetation Type Map (Figure 2) shows the locations of each of these areas.

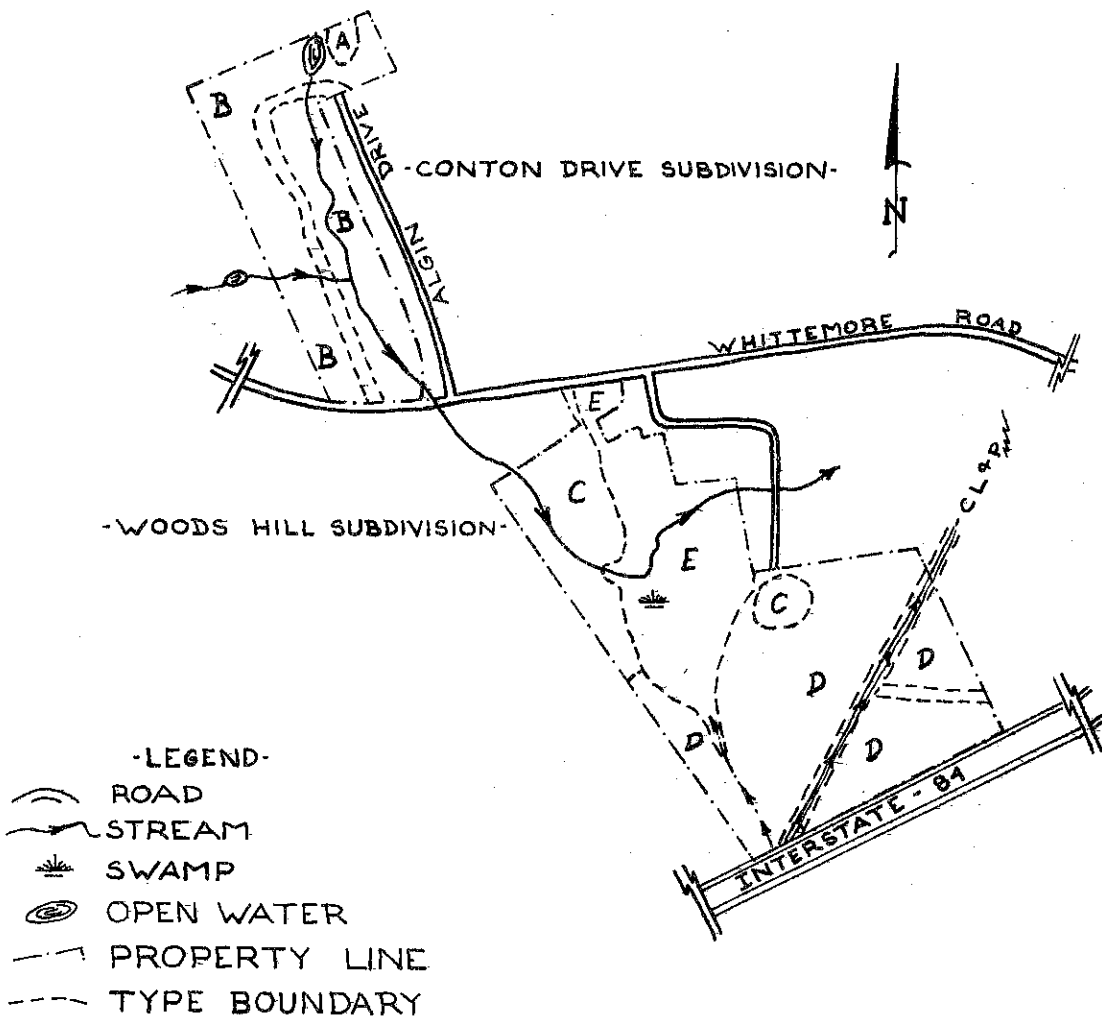
TYPE A - Oak-hemlock, 60-80 years old, 1 acre. This small patch of large conifers provides deep, cool shade and aesthetic variety. This stand is sensitive to disturbance and should be left intact.

TYPE B - Transition hardwoods, 60-80 years old, 30 acres. White oak and black birch predominate. Tulip tree, red and black oak, red and sugar maple, ash, hickory, and yellow birch are common. Witch hazel, spice-bush, barberry, and tree seedlings fill the shrub layer. Various ferns and spring wildflowers also thrive in the rich site. If development occurs, the largest trees should be retained for shade. The intermediate trees adjacent to openings will provide much less shade, and may blow over or die of sudden exposure. These intermediates should be removed and sold as firewood.

TYPE C - Pioneer hardwoods, 20-30 years old, 10 acres. Small statured gray birch and red maple, with scattered oaks and juniper, fully occupy these droughty sites.

TYPE D - Red maple, oaks, and hickory, 40-60 years old, 16 acres. Witch hazel, high-bush blueberries, and red maple seedlings are common. Ground level vegetation varies from ferns, where moisture is available, to club moss and Canada mayflower on the steeper, south facing slope. As in Type B, the trees with spreading crowns should be favored and the narrow-crowned intermediate trees adjacent to new openings should be cut and sold as fuel wood. Large trees which must be removed are merchantable as small sawlogs.

# FIGURE 2 VEGETATION MAP



-SCALE 1"=1000'-

TYPE E - Red maple swamp, 40-60 years old, 15 acres. In the shade of the red maple canopy are ferns and spicebush. Small clearings (the wettest sites) contain phragmites, touch-me-not, and wild rose. Raising the water table may kill the red maple and cause development of an open marsh with standing dead trees. The site performs an important role in removing suspended silt particles from the un-named tributary of Hop Brook.

TYPE F - Right of ways, 9 acres. These vary from sedges and grasses to upland shrubs and tree sprouts, depending on available moisture. The CL&P right of way has probably been maintained by herbicide applications. Residue levels in soil and water should be checked prior to development.

\* \* \* \* \*

Forest cover is important in modifying precipitation run-off patterns. Tree roots maintain pore spaces in the soil, making it possible for the soil to absorb and store most precipitation. Peak run-off flows are thus reduced.

Any disturbances to the soil surface in the area beneath the crown of a tree left on the site may cause the tree to die up to three years after construction. Therefore, where grading, filling or digging is necessary, all trees should be removed from the disturbed area. In order to retain the maximum number of healthy trees, it is better to concentrate disturbance in part of the site and leave the larger trees, and the ground beneath their crowns, intact on other parts of the site. A private forester could be consulted for specific help in selecting trees to retain.

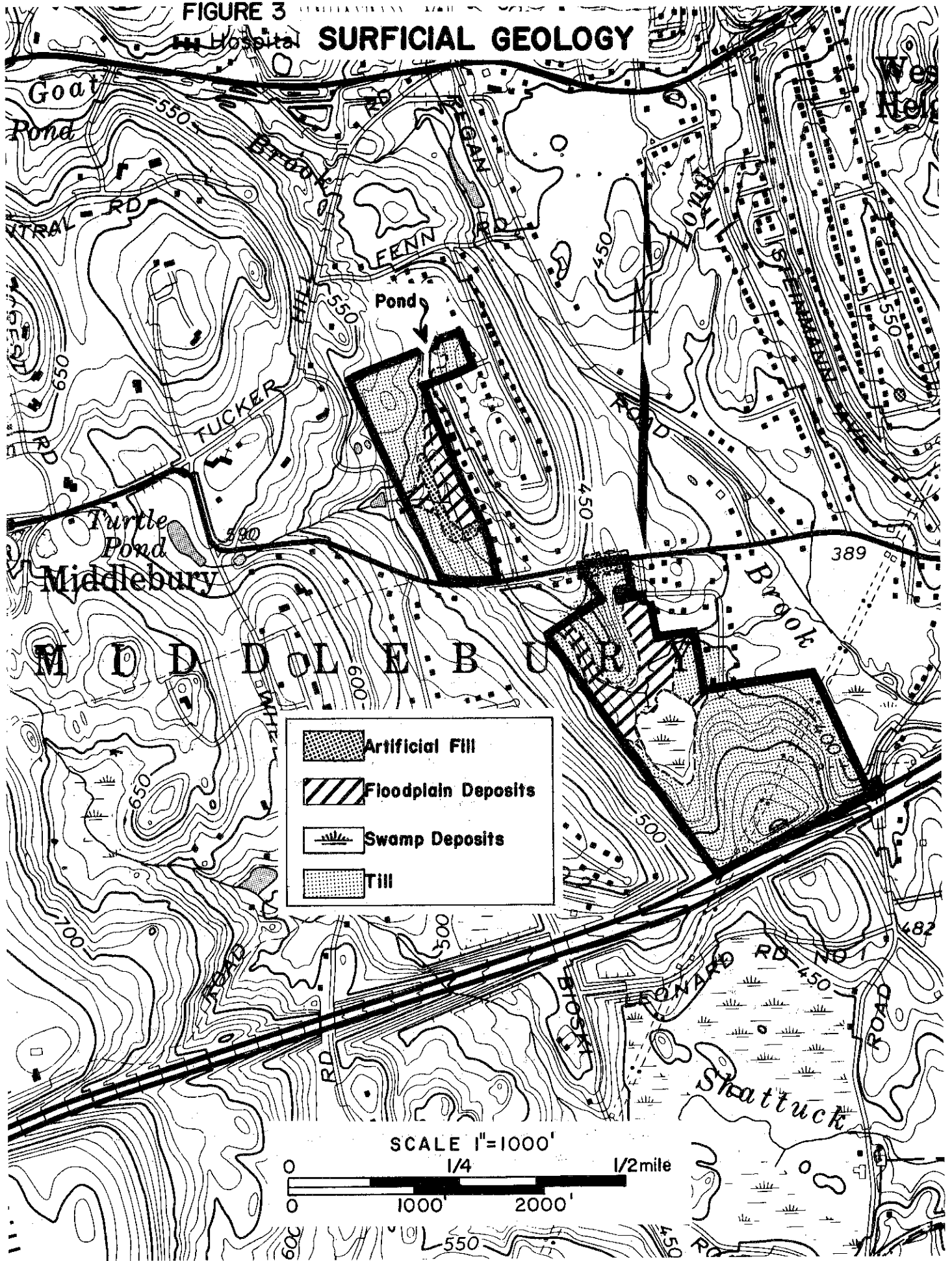
The forests on these two development sites are important in maintaining the quality of life in this section of Middlebury. In addition to their aesthetic, recreational and run-off control value trees also intercept air pollutants and noise, thus improving air quality. This is particularly significant in the Woods Hill Subdivision area because of the proximity of Interstate 84. Trees also function to keep the air cooler through transpiration and shading; moderate the effects of wind and storms; and stabilize and enrich the soil. Care should be taken in the development of these lands to ensure that these important functions of trees are not lost.

## V. GEOLOGY

Both the Conton Drive and the Woods Hill Subdivisions are underlain by rocks of the Waterbury Formation. This formation consists primarily of granular metamorphic rocks that are, in places, layered or streaked. Principal minerals are quartz, plagioclase, biotite, muscovite, and microcline. Kyanite and garnet are locally present in small amounts (less than 10 percent). No economically important concentrations of minerals are thought to be present. More detailed information is contained in The Bedrock Geology of the Waterbury Quadrangle, Connecticut Geological and Natural History Survey Quadrangle Report No. 22, by R. M. Gates and C. W. Martin.

Glacial till overlies bedrock on almost all areas of the two subdivisions. Till is an unconsolidated mixture of rock particles, which were plucked or abraded from preexisting overburden or rock outcrops by glacier

FIGURE 3 SURFICIAL GEOLOGY



ice. Because the ice moved the particles without regard to their sizes or shapes, till textures may be locally quite variable. In the two subdivisions, the till seems to be stony, silty, and compact. In some areas, the till is overlain by sandy and silty materials that were deposited more recently by the flood waters of the small un-named brook and its tributaries. Decayed organic matter has mixed with fine sediments in the small swamp in the Woods Hill Subdivision. The distribution of the various surficial geologic materials is shown in Figure 3.

## VI. HYDROLOGY

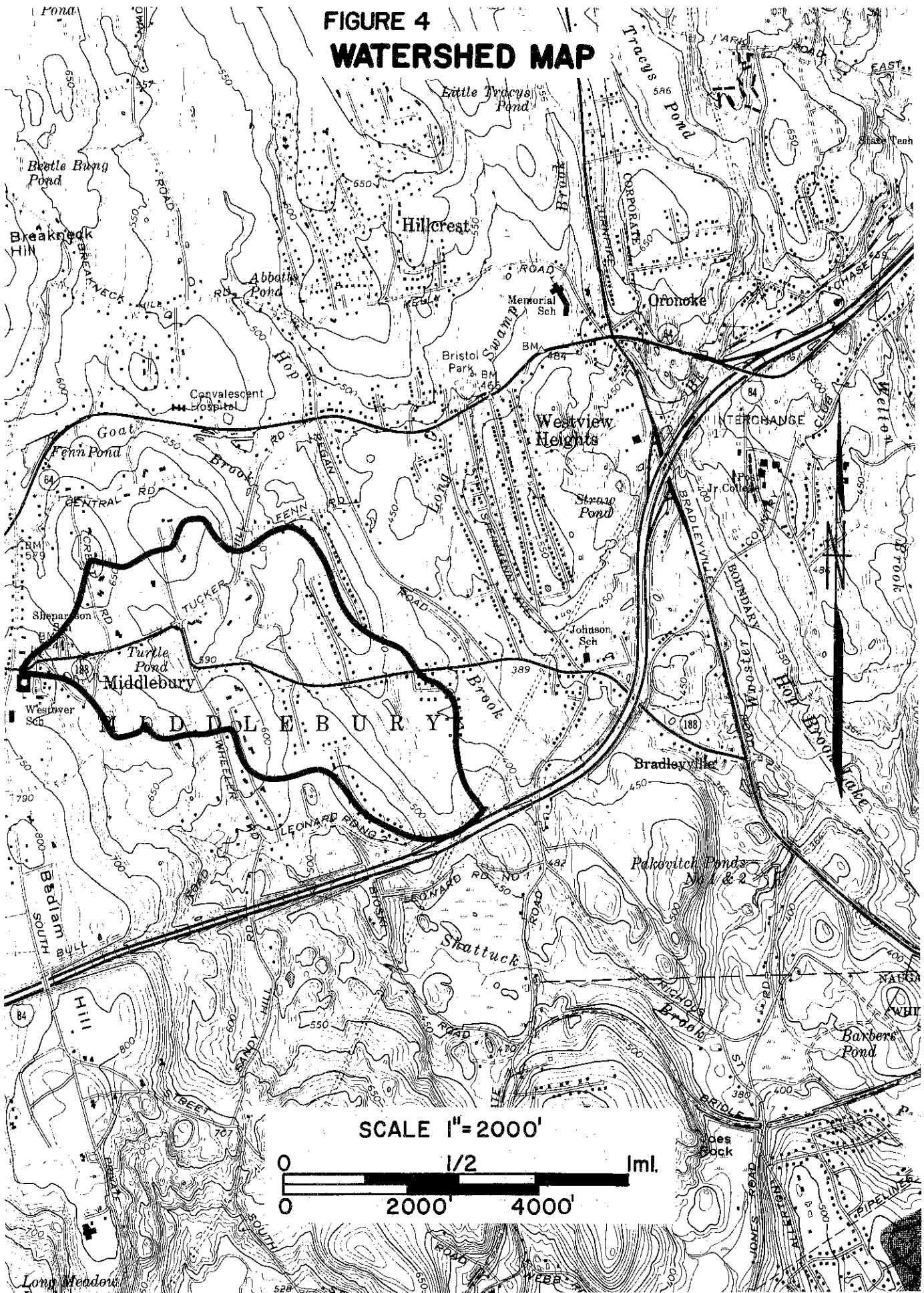
The entire Conton Drive parcel and part of the Woods Hill parcel contribute run-off to a small brook that passes through a culvert under Tower Road and ultimately joins Hop Brook. The total watershed area that drains through the culvert is shown in Figure 4; the amount of land involved is approximately 406 acres. Run-off from the remainder of the Woods Hill parcel flows into a wetland that is located east-southeast of Tower Road. This wetland normally drains through a culvert near a pumping station on Shaddock Road. Near the station, the small stream that emerges from the wetland is separated from Hop Brook's main channel by a gravel-and-fill ridge up to 5 feet high. Because of heavy vegetative cover, the ridge could not be followed to its end on foot; however, aerial photos of the wetland suggest that the ridge may be continuous with an irregular sand-and-gravel deposit that extends eastward from Tower Road about 100 feet north of the cul-de-sac.

Flooding problems have been severe on Tower Road. Three major problems occur during heavy precipitation and/or snow-melt: 1) water overtops the culvert on Tower Road; 2) water from a wetland located west-southwest of Tower Road discharges across a local-resident's property into the cul-de-sac, and from there flows northward along the road toward the brook; 3) water in the wetland located east-southeast of Tower Road rises to a level of near-encroachment on the lawns of some residents living on the east side of the road. All three problems should be fully addressed before further development on Tower Road proceeds. Some initial considerations of each problem are given below.

With problem 1, the crucial point seems to be not so much the amount of run-off that development of the two subdivisions would add to peak flows at the Tower Road culvert, but the advisability of placing more homes along an extended Tower Road before the flooding situation is proved to be corrected. The amount of land that would be developed within the watershed of the Tower Road culvert would be approximately 18 acres, or 4.4 percent of the total area. It is unlikely that this limited amount of development would add more than 1 or 2 percent to peak flows at the culvert. The Conton Drive subdivision alone would have a negligible effect, The Woods Hill subdivision should cause only a small increase as well, but this proposal differs in that it would place an additional 18 homes along a road on which serious flooding is already a problem. If access to these homes is cut off because of flooding on Tower Road, along with the inconvenience to residents, grave consequences could result if police and fire vehicles and ambulances cannot get through. Hence, before development of Woods Hill proceeds, it would seem imperative that the watershed of the Tower Road culvert, as it would exist following development, be completely



**FIGURE 4  
WATERSHED MAP**



analyzed and peak flows following major storm events (such as the 50-year or 100-year storm) determined. The culvert should then be improved enough to handle these peak flows. Such detailed engineering determinations are outside the scope of the ERT.

On the second and third points, it was suggested that the wetland on the west side of Tower Road be drained into the wetland on the east side via the proposed Woods Hill storm drainage system. This would effectively convey some of the increase in storm run-off resulting from the change in land use down-stream of Tower Road and hence mitigate the flooding problem on Tower Road. What is not considered in this proposal, however, is that the eastern wetland itself reportedly is submerged during the flooding episodes and therefore would not be a suitable outlet for storm drainage. The system could fail or the flood-encroachment problem on the east side of the road could be aggravated. If the ridges of sand, gravel, and fill that were mentioned above completely enclose the wetland, then development of the eastern section of the Woods Hill Parcel would mean that approximately 28 percent of the watershed of the wetland would be changed. This could result in a higher level of water in the wetland depending upon the exact topographic details therein. The limited size of the culvert under Shad-duck Road may be the major reason for the storm-related ponding in the wetland. In light of these considerations, it would be very desirable to do a detailed topographic survey (1 foot contours) of the eastern wetland to determine the true shape of the surrounding ridges and their relationship to surface-water conditions. It may be necessary to open a channel in the ridge to allow the wetland to drain more readily into Hop Brook during large storm events. Of course, this would reduce the storage capacity of the wetland and increase peak flows in Hop Brook. It does not seem likely that these flows would be increased greatly, as the watershed of Hop Brook is so large, but the consequences should nevertheless be studied.

\* \* \* \* \*

Although the Conton Drive subdivision probably would not be significant in relation to the problems on Tower Road, the subdivision would have to be planned very carefully to avoid problems of its own. Because such a large percentage of the parcel lies within wetlands, it would be prudent to restrict development to a few well-chosen areas to reduce the risks of flooding and drainage problems. Six carefully chosen lots probably can be obtained. The most suitable land for building lies at the northern end of the property.

Local residents have indicated an interest in draining the small pond at the northern end of the Conton Drive subdivision primarily for the purpose of eliminating a local mosquito breeding area. It is doubtful, however, that draining this small water impoundment would result in a noticeable reduction in the mosquito population of the area as the entire surrounding area provides good mosquito habitat even without the small pond. Consideration should be given to retaining the small pond for its aesthetic value and its usefulness in reducing immediate storm run-off. In its present state, it is an excellent wildlife and nature study area and may prove useful as a

waterhole for fire fighting purposes. In addition during the winter, it can be used for ice skating, although density of usage is limited by its size. It should be pointed out that any water body presents a potential hazard to small children. An abrupt drop in grade along the perimeter of a water body where one could slip and fall is dangerous and such areas should be eliminated along with other potential hazards.

\* \* \* \* \*

As to the possibility of future development in the watershed of the Tower Road culvert, it is clear that continued development in the watershed could ultimately have a severe impact on peak flows at the culvert. It is important to remember that any small development would not, in itself result in a major runoff change, but a series of small developments over a period of time could have a significant combined impact. It would be unfortunate to have the Tower Road problem corrected only to find it recurring later as a result of other developments. Effective control of the watershed would involve estimating the present peak flow conditions and using these conditions as a base for evaluating future development proposals. It may be prudent for the town to adopt regulations requiring each developer to provide engineering measures that would maintain the base peak flow regimen. Under the concept of "environmental performance standards", the town could require developers to provide controls that will ensure that run-off from any specific development does not exceed that which would occur under natural conditions. As it is possible to estimate run-off from any specific site under natural conditions, it is possible to establish exact standards of performance for any specific area subject to development. The performance standard approach places emphasis on the control of run-off at the site. Developers would be free to use a variety of methods (roof retention, porous pavement) to assure that run-off from proposed development does not exceed the natural, specified limit. Assistance in developing run-off control ordinances is available from the Central Naugatuck Valley Regional Planning Agency.

It would also be very desirable to discourage future development or filling of any of the floodprone areas of the watershed. Tower Road's present problem has occurred at least partly because the road, together with several homes, encroaches on the normal floodplain of the brook. By encouraging vegetative buffer zones along streambanks adjacent developments are protected from streams, and conversely, streams are protected from adjacent developments.

\* \* \* \* \*

The developer of the Woods Hill subdivision has suggested an alternative to his present plan: curving the end of the proposed Tower Road extension westward over a small wetland area. This alternative would permit the road to loop around to the hillside west of the proposed open space area, facilitating future development of that hillside. Some filling of the wetland would be required for this alternative. The location of the suggested crossing is near the head of the wetland; hence, only a very small drainage area would be located behind the crossing. Both the topographic position and the small size of the affected part of the wetland

imply that adverse hydrologic effects from such a crossing would be minimal, as long as an adequate culvert were provided and a careful sediment-and-erosion-control plan were followed. The town, however, should also consider this alternative in relation to its intended objective of future development.

## VII. WATER SUPPLY AND SEPTIC SYSTEMS

### WATER SUPPLY

Domestic water supplies on all lots probably would be provided by wells tapping the underlying bedrock. Yields from such wells depend upon the number and size of water-bearing fractures encountered by the wells. Although yields can vary tremendously within short distances, records of wells in the vicinity of the two subdivisions suggest that groundwater supply will be adequate.

### SEPTIC SYSTEMS

Only three lots in the Woods Hill subdivision were suggested for on-site sewage disposal. The section reserved for these lots is a relatively narrow ridge with steep flanks. Because of the nature of the overburden and the steepness of the slopes, it is probable that the septic systems would require careful engineering. The till is compact and has a seasonally high water table. Water could therefore flood the tile lines, causing backups in the systems. Moreover, flooding of the tiles could ultimately plug the perforations with sediment, producing failure. If curtain drains are proposed to lower the water table, their effectiveness should be proved before construction of homes takes place. Another potential problem is that the compactness of the till may force septic system effluent to the surface downslope from the disposal field. This last type of situation would be extremely difficult to control, even with engineered systems. It is clear, then, that considerable care should go into the design and construction of septic systems in this area.

In the Conton Drive subdivision, only two lots (out of a possible six) were suggested for on-site septic systems. Problems similar to those described for the Woods Hill Subdivision would be expected, with the exception of those hazards caused by steep slopes.

## VIII. ADDITIONAL PLANNING CONSIDERATIONS

### CONTON DRIVE SUBDIVISION

The proposed subdivision is in conformance with Middlebury's zoning ordinances. However, the subdivision, along with the zoning ordinance, is not consistent with the town's 1973 adopted Plan of Development and the Central Naugatuck Valley Regional Planning Agency's (CNVRPA) adopted Regional Land Use Plan. According to the developer the property will be subdivided into 4 lots. Middlebury's zoning for this area went from 20,000 square foot minimums to 40,000 square foot minimums in 1977. Middlebury's

Plan of Development suggests lot sizes of 20,000 square feet, and the Regional Plan recommends lot sizes of 1/4 to 1/2 acre because of the proximity of sewer lines. In sewered areas the CNVRPA land use plan encourages development at higher densities in order to reduce the per house cost of roads and utilities and to enable clustering on land most suitable for development. The above plans, however, apparently do not take into consideration the wetland soils of the site nor the sensitive condition of the watershed. It is suggested by the ERT that such high density development (1/4 to 1/2 acre lots) is not prudent here.

With the current proposal of 6 lots, the impact of the subdivision should be minimal in terms of traffic generated and additional load on municipal services including schools. In addition, there are no known historical sites on or near the property. The nearest historical sites are located around the Town Green.

#### WOODS HILL SUBDIVISION

The proposed subdivision is consistent with Middlebury's zoning ordinances. The proposal as well as the zoning ordinance, however, are not consistent with the town's 1973 adopted Plan of Development and the CNVRPA's 1975 adopted Regional Land Use Plan. The property is zoned for 40,000 square foot minimums. The local plan recommends lot sizes of 20,000 square feet, and the Regional Plan recommends lot sizes of 10,000 to 20,000 square feet (because of the availability of sewers) with the exception of the wetland area in the western portion. This wetland area is designated as a Natural Area -- land which should remain essentially undeveloped. The proposed subdivision lots generally avoid this Natural Area.

According to the proposal, all lots to be sewered will be a minimum of 40,000 square feet in keeping with the local zoning. The CNVRPA plan, on the other hand, encourages development in sewered areas at higher densities in order to reduce the per house cost of roads and utilities and to enable clustering on land most suitable for development.

The proposed subdivision is generally compatible with surrounding uses. To the south of the property, however, is I-84. In developing the subdivision, as much of the wooded area as possible in the southern part should be retained in order to have a natural buffer and noise barrier. Also, a 115 foot CL&P right-of-way traverses the southeast portion of the subdivision, which is intersected by another CL&P right-of-way of 150 feet. To assure "free and unimpeded" access by CL&P, development should not be permitted within the right-of-way.

There are no known federal, state, or local historical sites on or near the property. The nearest historical sites are located around the Town Green.

The proposed subdivision should not create any traffic problem. Based on data from the U.S. Department of Transportation, each house will generate 11.5 trips daily and 1.2 trips during a peak hour. Thus the 21 houses will produce 242 trips a day and 25 trips during a peak hour.

The Regional School District should be able to handle the additional students resulting from the development. Based on data from the Connecticut Public Expenditures Council, the average dwelling unit can be expected to generate about 0.6 school age children per potentially available bedroom. Assuming at a maximum the houses will have 4 bedrooms (of which 3 would be for children), the 21 lot subdivision would generate 38 children.

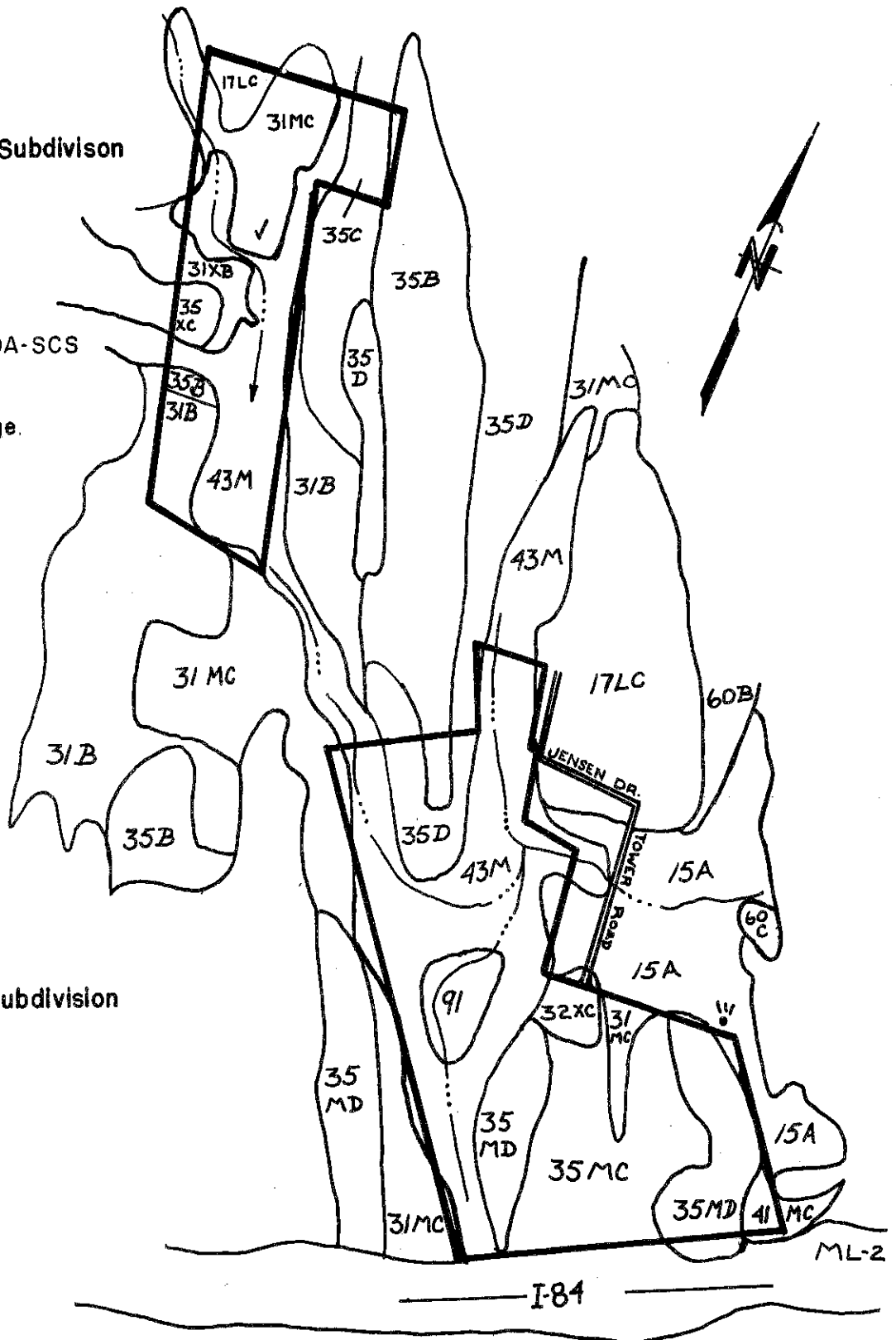
APPENDIX

# SOILS MAP

Canton Drive Subdivision

Prepared by USDA-SCS  
1978  
Advance copy  
Subject to change.

Woods Hill Subdivision



0 1/4 mile  
Scale = 1" = 600'

Soils Limitation Chart  
WOODS HILL SUBDIVISION

Limitations For:\*

Map Symbol	Soil Name	On-site Sewage	Building With Basement	Land-scaping	Streets		Reason for Limitation
					Parking	and	
15A	Ninigret, fine sandy loam, 0-3% slope	3	3	1	2	2	Seasonal water table
91	Adrian & Palms Mucks, 0-3% slope	3	3	3	3	3	Wet, floods, frost action
32XC	Charlton, very stony fine sandy loam, 8-15% slope	3	2	2	2	2	Large stones, slope
4LMC	Sutton, extremely stony fine sandy loam, 3-15% slope	3	3	2	2	2	Large stones, wetness, slope
43M	Leichester, Ridgebury & Whiteman, extremely stony fine sandy loam, 0-3% slope	3	3	3	3	3	Wet, floods
35B	Paxton fine sandy loam 3-8% slope	3	2	2	2	2	Percs slowly, wet, small stones, frost action
35MD	Paxton, extremely stony fine sandy loam, 15-35% slope	3	3	3	3	3	Slope
35MC	Paxton, extremely stony fine sandy loam, 8-15% slope	3	3	3	2	2	Wet, large stones, frost action
35D	Paxton, fine sandy loam, 15-25% slope	3	3	3	3	3	Slope
31MC	Woodbridge, extremely stony fine sandy loam, 3-15% slope	3	3	3	3	3	Slow perc, frost action, wet

1. SLIGHT LIMITATION: indicates that any property of the soil affecting use of the soil is relatively unimportant and can be overcome at little expense.
2. MODERATE LIMITATION: indicates that any property of the soil affecting use can be overcome at a somewhat higher expense.
3. SEVERE LIMITATION: indicates that the use of the soil is seriously limited by hazards or restrictions that require extensive and costly measures to overcome.

\*EXPLANATION OF RATING SYSTEM



Soils Limitation Chart  
 CONTON DRIVE SUBDIVISION

Limitations For: \*

Map Symbol	Soil Name	On-site Sewage	Building With Basement	Land-scaping	Streets and Parking	Reason for Limitation
17LC	Charlton-Hollis, fine sandy loam, 3-15% slope	3	3	3	3	Depth to rock
31B	Woodbridge, fine sandy loam, 3-8% slope	3	3	1	3	Wetness, frost action
31MC	Woodbridge, extremely stony fine sandy loam, 3-8% slope	3	3	2	3	Wet, percs slowly, frost action, large stones
31XB	Woodbridge, very stony fine sandy loam, 3-8% slope	3	2	2	2	Seasonal water table, stoniness
35B	Paxton, fine sandy loam, 3-8% slope	3	2	2	2	Percs slowly, wet, small stones, frost action
35C	Paxton, fine sandy loam, 8-15% slope	3	2	2	2	Wet, Percs slowly, frost action
43M	Ridgebury, Leicester & Whitman, extremely stony fine sandy loam, 0-3% slope	3	3	3	3	Wet, stony

1. SLIGHT LIMITATION: indicates that any property of the soil affecting use of the soil is relatively unimportant and can be overcome at little expense.
2. MODERATE LIMITATION: indicates that any property of the soil affecting use can be overcome at a somewhat higher expense.
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\*EXPLANATION OF RATING SYSTEM

# 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.