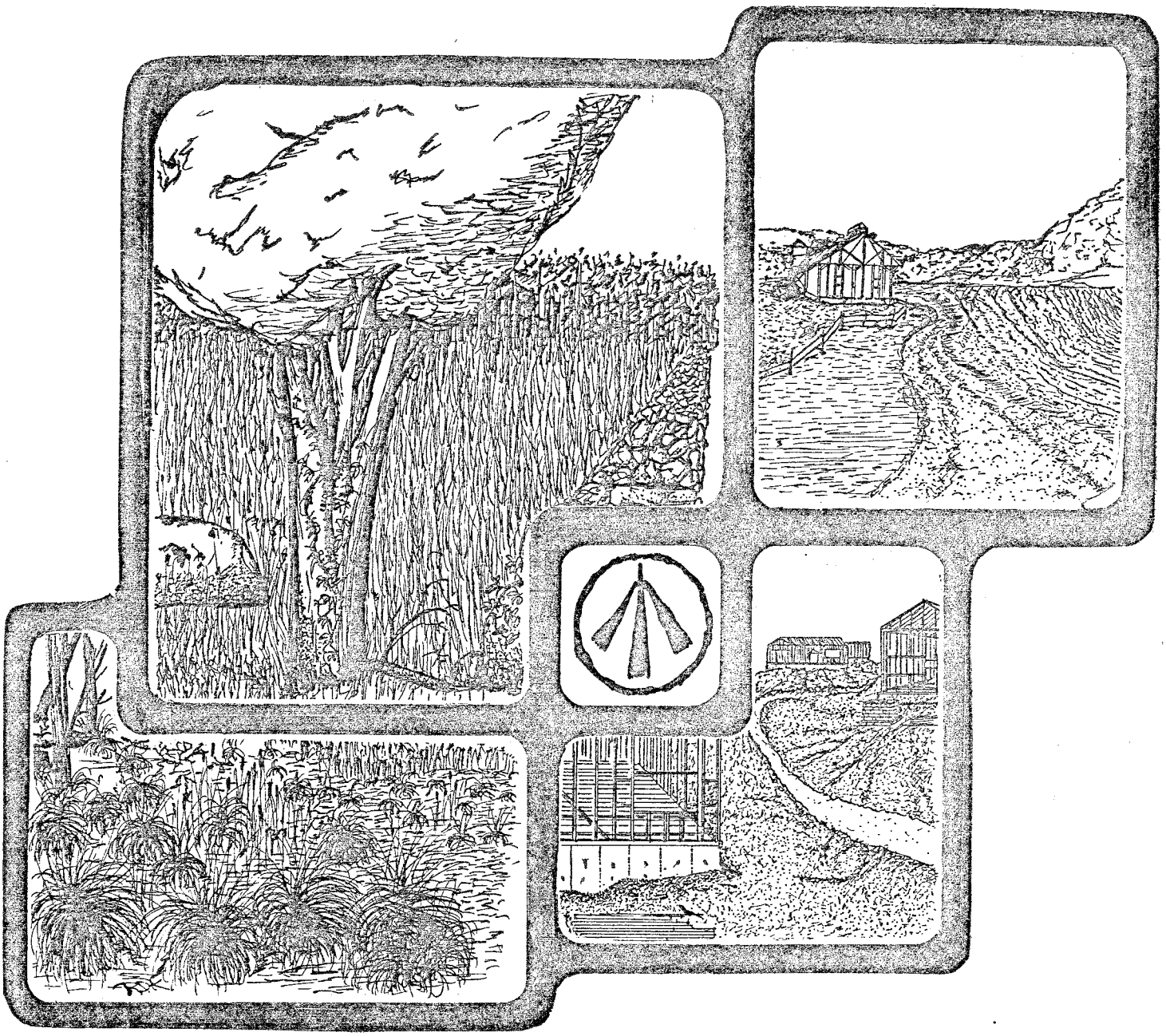
ENVIRONMENTAL REVIEW TEAM REPORT



CHURCHILL PARK EXPANSION
NEWINGTON, CONNECTICUT

KING'S MARK
RESOURCE CONSERVATION & DEVELOPMENT AREA

KING'S MARK
ENVIRONMENTAL REVIEW TEAM REPORT

CHURCHILL PARK EXPANSION
NEWINGTON, CONNECTICUT

APRIL, 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

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
Capitol Regional Council of Governments
American Indian Archaeological Institute
Housatonic Valley Association

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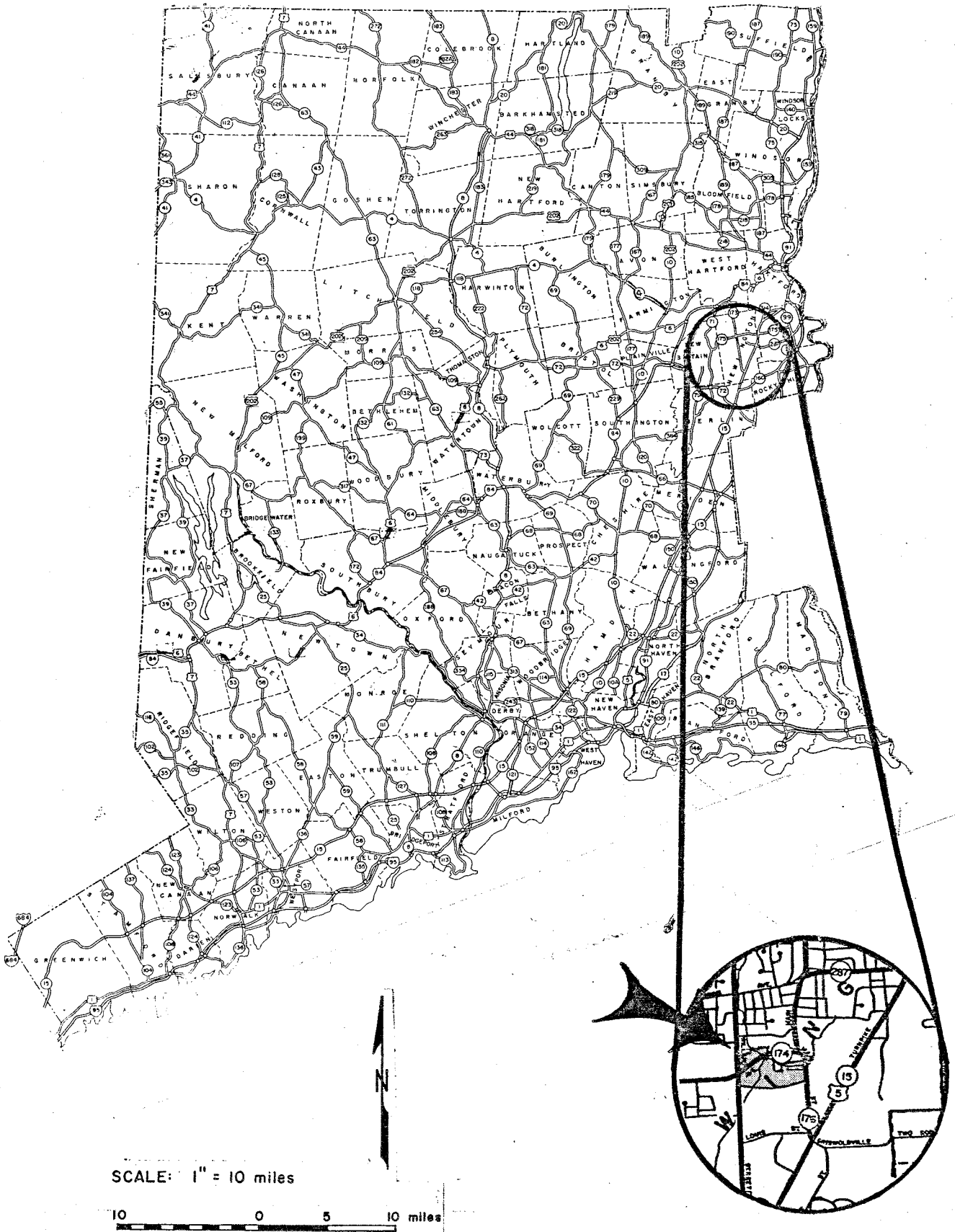
TABLE OF CONTENTS

LIST OF FIGURES

LOCATION OF STUDY SITE



ENVIRONMENTAL REVIEW TEAM REPORT
ON
CHURCHILL PARK EXPANSION
NEWINGTON, CT

I. INTRODUCTION

The Town of Newington is in the process of acquiring a ± 60 acre tract of land from the State of Connecticut adjacent to Churchill Park. The subject area is located in the central portion of town with frontage on Main Street, New Britain Avenue, and Willard Avenue. As shown in Figure 1, the land is characterized by a large wetland in the central portion and flat to rolling topography elsewhere.

Presently Churchill Park is approximately 15 acres in size. The Park includes a 3/4 acre pond, a parking lot, a swimming pool, three tennis courts, an athletic field, and several recreational buildings.

A site plan has been prepared for the additional acreage which is to be acquired. The proposed plan would result in the expansion of Churchill Park from 15 acres to 75 acres in size. Additional facilities proposed include several ballfields, a pond, parking lots, a picnic area, and several natural areas. Under the new plan, New Britain Avenue would be terminated from the northeastern edge of the property westerly to Willard Avenue. A new connector road would be constructed on the southern edge of the expanded Park from Main Street to Willard Avenue. A simplified version of the site plan is presented in Figure 2.

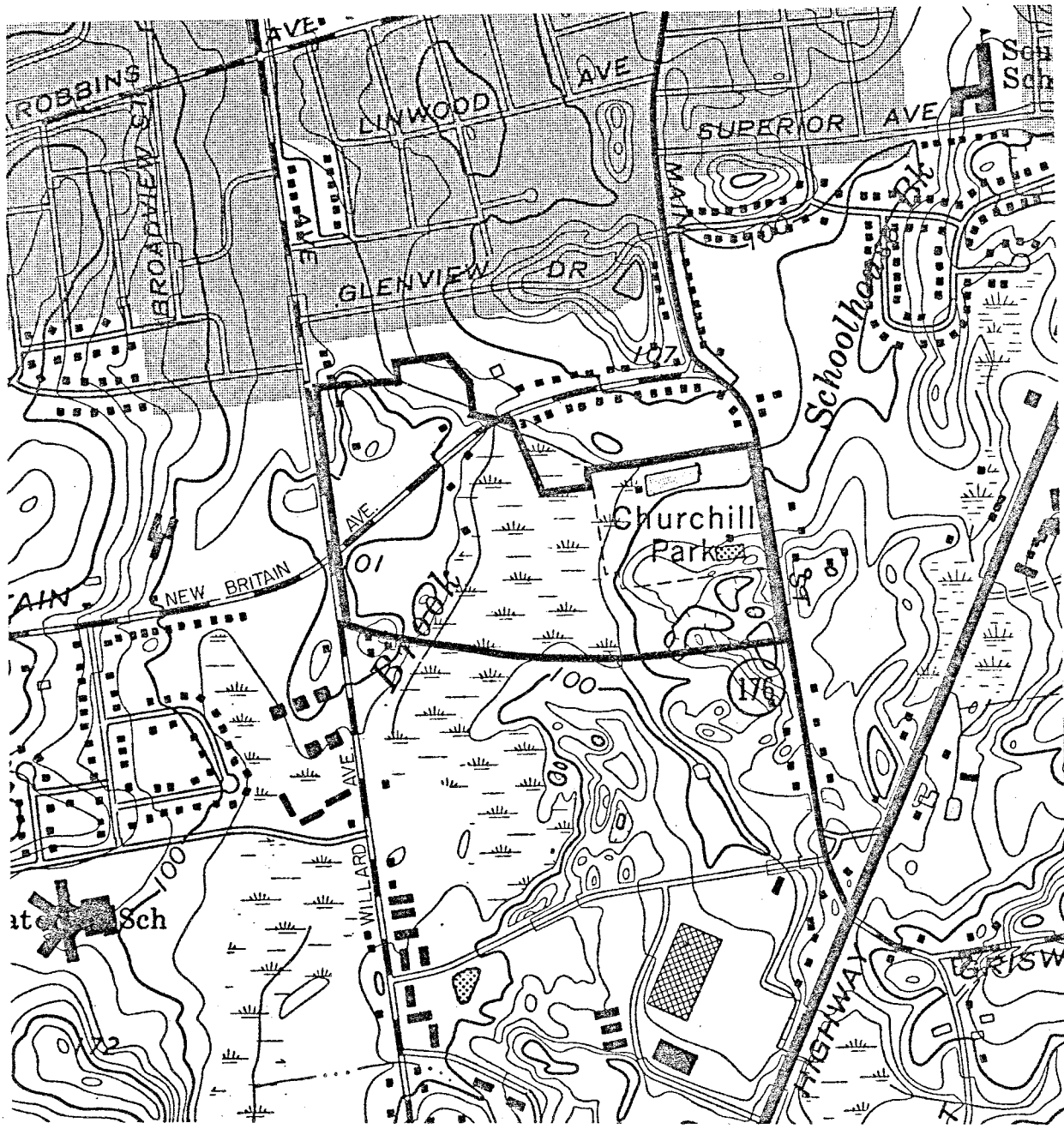
The Newington Superintendent of Parks and Recreation requested this ERT study to receive additional information on the subject property and the impact of the proposed plan. Specifically, the Team was asked to: 1) provide a natural resource inventory of the site, 2) comment on the impact of the proposed project on the natural environment, 3) discuss methods of mitigating any negative impacts, and 4) offer suggestions on how the Park plans can be improved. The Town expressed a commitment to locating the athletic fields as shown on the Plan, but remains flexible with regard to the siting and design of other facilities.

The King's Mark Executive Committee considered the Town's request for an ERT study, and approved the project for review by the Team.

The ERT met and field reviewed the site on February 16, 1983. Team members for this review included:

Brant Burz	Wildlife Biologist	CT Dept. of Environmental Protection
Rob Cochron	Soil Conservationist	USDA Soil Conservation Service
Andy Petracco	Recreation Planner	CT Dept. of Environmental Protection
Ralph Scarpino	Forester	CT Dept. of Environmental Protection
Bill Warzecha	Geohydrologist	CT Dept. of Environmental Protection

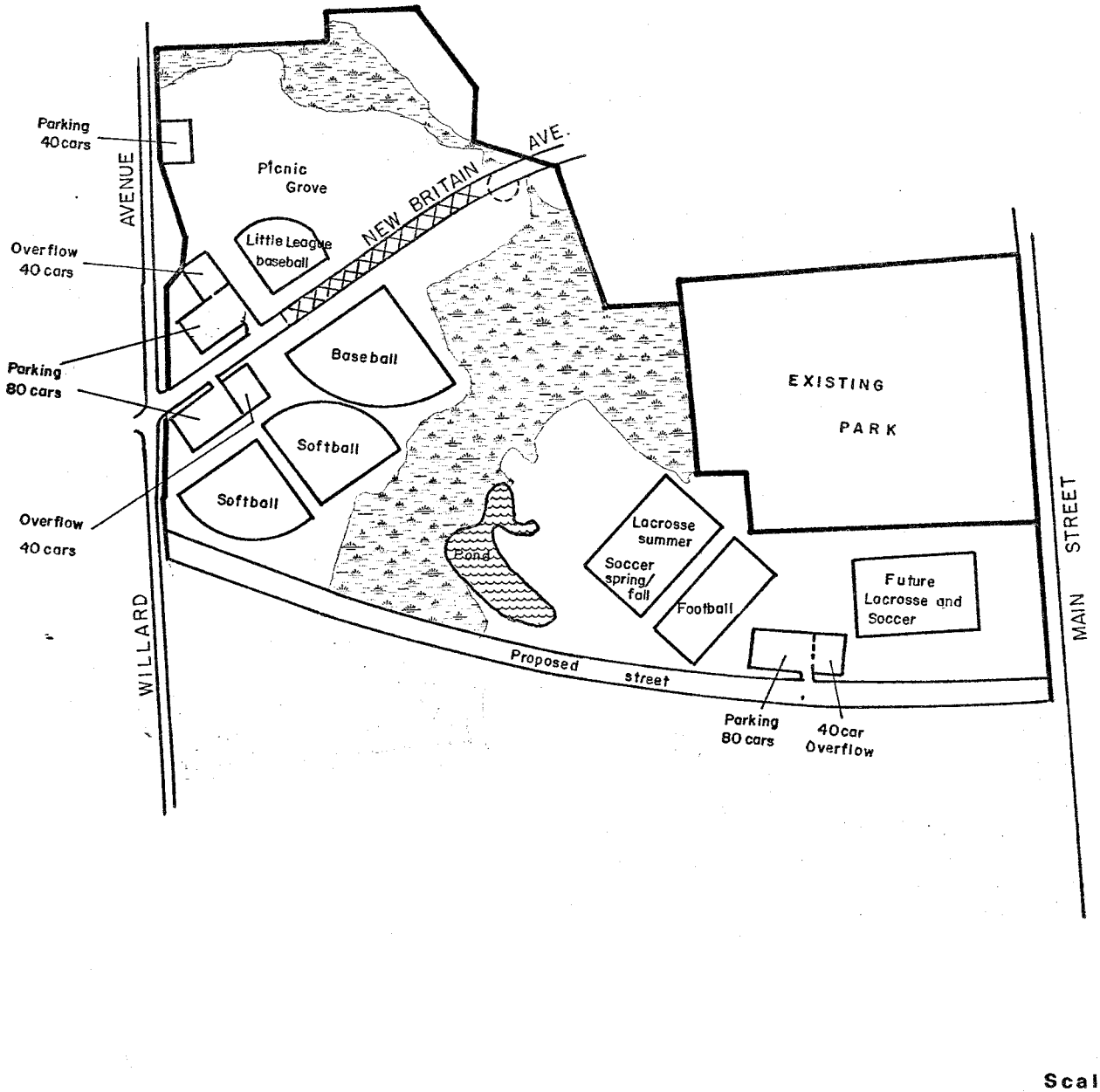
FIGURE 1
TOPOGRAPHIC MAP



Scale 1"=1000

FIGURE 2

SIMPLIFIED SITE PLAN



Scale 1" = 500'

Site plan from map "CHURCHILL PARK EXPANSION" by Robert W. Donald / Brown, Donald & Donald, INC., October, 198

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, a soils limitation chart and a topographic map of the area. The day of the field review, the ERT met with representatives from the Town of Newington and walked the property. 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 Newington in making environmentally sound decisions.

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

* * * * *

II. HIGHLIGHTS

1) The 60 acre site consists of a central wetland and two upland areas. The site is underlain by sedimentary bedrock with sand and gravel deposits 50-150 feet deep atop the bedrock.

2) The soils on this site are generally well suited to the proposed recreational uses. Due to the droughtiness of the sand and gravel soils, however, irrigation may be necessary to ensure good turf growth at the proposed ballfields. Use of a drought tolerant grass mixture is recommended.

3) A comprehensive erosion and sediment control plan should be prepared for the project. This is particularly important in the area of the proposed road crossing of the wetland.

4) According to published information, the site is underlain by an aquifer with the potential for producing high yields of groundwater. Wells tapping this aquifer may yield 50-500 gallons per minute. Construction of an on-site well should therefore be considered if the ballfields are to be irrigated. Public water is available to service the site through the Metropolitan District Commission.

5) In constructing the proposed new road through the wetland area, it will be important to a) control runoff velocities, b) implement appropriate erosion and sediment control measures, and c) ensure that the water level of the wetland is not altered. Such measures will help mitigate adverse impacts to the wetland system.

6) Five distinct vegetation areas are present on the site. These include two old fields, two wetlands, and a mixed hardwood forest. The value of the wood on this site is not high in a commercial sense but existing trees do play an important role in aesthetics and wildlife habitat. The dead and dying trees in the proposed picnic area should be removed.

7) The quality of wildlife habitat on the site is good. The proposed project will have a negative impact on wildlife throughout the property. As discussed in the text, a number of measures can be implemented to minimize the adverse impact of the project on wildlife.

8) In the opinion of the Team Planner, the proposed site plan makes good (non-disruptive) use of the terrain features and is a practicable plan for development of the property. Treed areas are offered via the picnic grove and wetland areas while the basically open field areas, which are comparatively level, are proposed for ball field construction thereby minimizing site alteration via tree cutting and earth moving. Some cutting and filling is proposed to accommodate the playing fields but not on a scale which, if properly done, would have a markedly negative impact on the nearby wetland situated in the middle of the new park.

9) Discontinued vehicular use of New Britain Avenue at the point where it cuts through the park would have a very positive impact on the options for developing the park and on its usability. Continued vehicular use of New Britain Avenue would, in effect, result in the new park being made up of two adjacent but separate parks rather than one having a continuous boundary which provides convenient pedestrian traverse. An enhanced range of opportunities for design of facilities, improved aesthetics and safety, and a better recreational experience are some of the benefits to be derived from road closure.

10) A connector path crossing the narrow part of the wetland would make all parts of the park accessible by foot. A footpath crossing the wetland might best be accomplished by a slightly elevated boardwalk on pylons. Pathways over ground will afford a good range of uses (e.g. walking, jogging, bicycling) if constructed of stone dust on top of a good gravel or crushed stone base. In designing the footpaths, an eye should be kept toward motor vehicle exclusion and minimized erosion potential. A path width of 5' to 6' will virtually exclude cars but still enable wheelchair use and comfortable, simultaneous two-way use by joggers. A trail system through the new park should connect the various areas of use and expose the visitor to the natural features of the park.

11) If adequately patrolled at night, the expanded park should not have a marked negative impact on the surrounding neighborhood which is largely residential. Gate closure of parking lots at night may reduce unwanted night time activity but cannot eliminate it without some patrol. The new park should be an asset to the surrounding neighborhood providing its residents recreational opportunities and an aesthetically pleasing piece of open space land in their midst.

12) The picnic grove proposed for the northwest part of the park is appropriately sited. Some consideration should be given to providing drive to access to some of the picnic tables. The elderly and others with diminished mobility would be better accommodated thereby. A grouping of tables adjacent to a small parking lot (say 10-20 cars) would accomplish this.

13) A toilet building is recommened by the Team Planner to meet the needs of picnickers and users of ball fields in the northwestern portion of the Park. Siting it near the proposed little league ball field should be adequately convenient to both picnickers and ball players.

14) To conclude, the ERT found the proposed project to be well planned. The expanded Park should greatly enhance recreational opportunities in the Town of Newington.

III. TOPOGRAPHY AND GEOLOGY

The topography of the study area can be divided into two upland areas and a central wetland area (see Figure 1). The upland area to the east occupies the land south of the present Churchill Park. This area, which is approximately 20 acres in size consists of a small rounded knoll in the northern section and a relatively flat area to the south. The central wetland area on the site is nearly level and approximately 30 acres in size. The western upland area is approximately 10 acres in size. This zone is relatively flat to the south and rises to a small knoll to the north. It should be noted that portions of the knolls in both upland areas have been excavated for the purpose of extracting deposits of sand and gravel.

The surficial geologic materials (material overlying bedrock) found in the upland areas consists of reddish brown sand and gravel which is underlain by clay deposits. The sand and gravel was deposited on the site as a result of glaciofluvial action. "Glaciofluvial" deposits are defined as material which has been sorted and layered by meltwater streams flowing from the glacier. Thickness of the sand and gravel deposits ranges from 10' in the western portion of the site to 40' elsewhere.

The sand and gravel deposits on this site are underlain by clays which are referred to as the Berlin Clays. The Berlin Clays are glaciolacustrine sediments consisting of mostly clay and silt. "Glaciolacustrine" deposits are defined as those sediments deposited by meltwater streams flowing into lakes bordering a glacier.

The central wetland area on this site is composed of swamp deposits which include dark, decomposed organic material intermixed with varying amounts of sand, silt and clays. The thickness of the swamp deposits is not known. The material underlying the swamp deposits is similar to the surficial deposits on the surrounding upland areas (i.e. sand and gravel).

The foregoing information regarding the surficial geology of this site is based upon on-site inspection and data collected from the Surficial Geology Map of the Hartford South quadrangle (QR-20, 1954 and 1962 by R.E. Deane) and the Unconsolidated Materials Map (MF-487F, 1976 by W. H. Langer, C. J. Recny and D. M. Kozp). These maps are available at the Natural Resources Center, Department of Environmental Protection in Hartford.

Although there were no bedrock exposures observed on the site, bedrock underlying the site is undoubtedly sedimentary rock. "Sedimentary" rocks consist of rocks mechanically formed by fragments of older rocks transported from their source and deposited in layers in water and later cemented to form consolidated bedrock. The rocks are probably sandstone and shale 'redbeds' which are typical of the Connecticut Valley.

Based upon information compiled in a Depth to Bedrock Map (MF-4870 by E. H. Handman and J. B. Byrnes, 1974), the depth to bedrock on this site ranges from 100-150' below the land surface throughout the eastern zone to 50-100' below land surface throughout the central and western zone.

It appears that bedrock underlying the site will present little or no impact to the proposed expansion.

A preliminary bedrock geology map of this area is available for study at the Natural Resources Center, Department of Environmental Protection.

IV. SOILS AND EROSION CONTROL

Soil Description

A Soils Map of the subject area is presented in the Appendix of this report together with a Soils Limitation Chart. The Soils Map identifies the geographic distribution of soil types on this site. The Soils Limitation Chart discusses the suitability of the various on-site soils for alternate land uses. By comparing the Soils Map with the Soils Limitation Chart, one can gain an appreciation of the suitability of the various soils for different land use.

Basically the area consists of a central wetland area and two upland areas. The central wetland area is underlain by Scarboro loam soils of 0-3% slopes. This very poorly drained soil has a high water table at or near the surface most of the year. The high water table and ponding limits the use of this soil for recreational development. Typically this soil has a surface layer of black mucky sandy loam 9 inches thick. The subsoil is dark gray sand 5 inches thick. The substratum is gray sand and gravelly sand to a depth of 60 inches or more.

The soils in the eastern upland consist primarily of terrace escarpment (Tg) and Manchester gravelly sandy loams (MgC). Much of this eastern area has been excavated as a gravel bank as shown on the soils map. Although these soils are easy to excavate, they are very permeable and have low to moderate moisture holding capacity. Due to this droughtiness, the soils present limitations for landscaping, and irrigation may be required for turf maintenance.

The soils in the western upland consist primarily of Manchester gravelly sandy loams (MgC) and Hartford fine sandy loams (HdB). These soils developed on stratified sand and gravel and are both easy to work. Both of these soils are droughty, however the Hartford soil has a moderate to high moisture-holding capacity in the surface layer. The Hartford soil is thus somewhat more suitable for landscaping and ballfield use than the Manchester soils. Both may require irrigation however to ensure suitable use.

A detailed description of each soil type is presented in the Hartford County Soil Survey, available at 688-4945.

Land Use and Erosion Control

For the purposes of this section of the report, the site may be divided into three areas. These areas include:

Area A: the northwest corner of the site from New Britain Avenue north

Area B: the area south of New Britain Avenue to the Central wetland

Area C: the area east of the central wetland

The facilities proposed in each of these areas are shown in Figure 2.

Prior to discussing each of these areas in some detail, an overall recommendation would be to develop the Park in phases to minimize erosion and sedimentation from wind and water. This is needed because of the proximity of private single family homes, condominium complexes and wetlands.

AREA A (north of New Britain Avenue)

There are two general activities proposed in this area: 1) constructing the ball field and parking lots, and 2) the development of a picnic grove. As discussed previously, the major soil types are Manchester gravelly sandy loam 3 to 15 percent slopes and Hartford fine sandy loam 3 to 8 percent slopes. The proposed picnic grove is mostly in the Manchester soil area and is presently forested. It would be desirable to construct an access lane up to the proposed picnic grove for park maintenance. Also a small parking area should be considered in this area which will allow cars to drop off elderly or handicapped persons who are unable to walk up the steep slopes to the picnic area from the lower parking lot. Any access lanes and/or parking areas should be constructed to minimize erosion from these steep slopes. Construction of a pavilion and/or picnic shelter may necessitate excavating into the steep slope. Since the manchester soils are gravelly, there is a tendency for cut banks to cave in. A suggestion is to stabilize all disturbed areas as soon as possible using a drought tolerant grass mixture such as 25 lbs. Kentucky 31 Tall Fescue and 25 lbs. Creeping Red Fescue per acre. Mulch with straw or hay and on steep slopes anchor the mulch with erosion control netting. The information sheets presented in the Appendix of this report provide additional seeding information.

The Hartford and Manchester soils do not present any major limitations for the proposed parking lots and athletic field in Area A. Both soils are droughty, however, and irrigation of the ballfield may be necessary in the summer. The same grass mixture should be used on the ball field as recommended for the disturbed areas of the picnic grove. To reduce runoff and since the drainage in this area is excellent, the proposed parking lot could be gravelled and not paved.

To conclude, the soils in this area generally will provide excellent sites for the proposed uses. Establishing temporary and permanent vegetative cover as recommended will assist in providing a functional and aesthetically pleasing area.

AREA B (New Britain Avenue south to the central wetland)

The dominant soils in this area are excessively well drained. There is a small area of moderately well drained soil in the proposed parking area. Fill material may be needed there to provide a suitable base for either a gravel or paved parking lot. The soils in this area are well suited to the softball and baseball fields. Since the soils are excessively drained, however, irrigation may be necessary in the summer.

Grading work will be needed in this area to provide a level surface for the ball fields. Topsoil should be stripped, stockpiled and either temporarily seeded or surrounded by hay bales at the base of the stockpiles. These measures will reduce any potential of the topsoil eroding. Following final grading, this topsoil should be spread on the surface of the disturbed area and properly seeded, limed, fertilized, and mulched. Hay bales placed along the boundary of the wetland soil will help to trap sediment emanating from construction of the ballfields. Should these fields be constructed during unfavorable seeding periods, temporary cover should be used to stabilize the site from the effects of wind and water erosion.

AREA C (land east of central wetland)

This area contains an old gravel bank with a steep unvegetated slope. The slope should be vegetated and surface water runoff directed away from the proposed athletic fields. The construction activities should be carried out as suggested for Area B to minimize erosion and sedimentation. Fill material may be needed to construct the lacrosse field. The pond area is a suitable site for a dugout pond and will be fed primarily by groundwater and springs. The water level may fluctuate during long dry periods because of the fluctuating groundwater table. The pond should be sized and designed to satisfy any future irrigation needs of the athletic fields, unless groundwater wells are to be drilled for such purposes.

The soils in this area generally are suited to the planned uses. As mentioned above, fill material may be needed to construct the lacrosse field. This should be quality fill material to avoid any future drainage and/or settling problems. The use of tree stumps, leaves or other organic materials is not considered suitable fill. While it may appear initially to satisfy the needs for fill, after a period of say 3 - 5 years, this material will start to decay and cause settling. This will be very difficult to correct without complete reconstruction of the field. Consideration should therefore be given to not utilizing this area for brush disposal prior to field construction as was suggested the day of the Team's field review by town representatives.

PROPOSED STREET

As shown in Figure 2, a new street is being proposed along the southern edge of the property. Storm water runoff outlets with plunge pools would assist in dissipating flow from the road. The soils directly to the east of Willard Avenue may serve as excellent fill material for the road base. Proper measures such as haybales, culverts and vegetative stabilization of the area of the proposed road will reduce any sediment flowing into the wetland.

Technical assistance in erosion and sedimentation control is available from the U.S.D.A. Soil Conservation Service Office in Windsor (688-4945).

V. WASTE DISPOSAL

At the present time there are no proposed facilities which will require the disposal of sewage effluent. However, it should be noted that there is a public sewer line (Metropolitan District Commission) available to service the site.

VI. WATER RESOURCES

The site lies within the watershed of Schoolhouse Brook which drains an area of approximately 1.66 square miles. Schoolhouse Brook flows in a westerly direction along the northern border of Churchill Park until it converges with Rockhole Brook just south of New Britain Avenue (see Figure 3). Schoolhouse Brook then continues to flow in a northerly direction until it joins Mill Brook. Runoff from this site ultimately discharges into the Connecticut River.

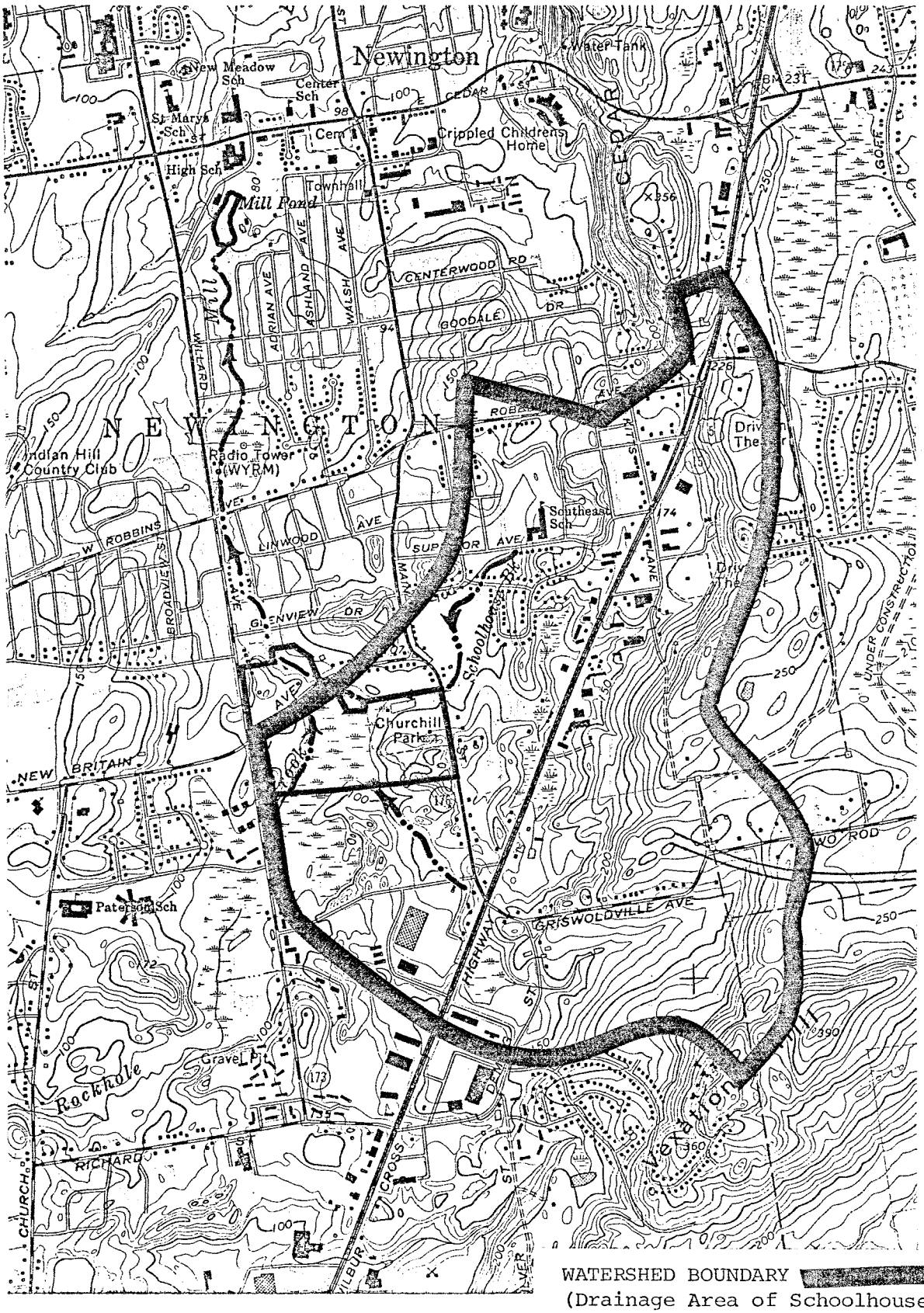
As stated previously in the Geology section of this report, the central wetland on this site is about 30 acres in size. This wetland serves as a natural storage area for stormwater runoff from the surrounding areas. As a result, peak flood flows are lessened down stream. The proposed Park plan which leaves most of this wetland undisturbed will help to protect this valuable flood control function.

The proposed recreational facilities and parking lots will not result in noticeable increases in stormwater runoff if they are constructed entirely of previous surfaces as planned (e.g. gravel packed trails and parking areas,and vegetative cover). As discussed previously, provisions should nonetheless be taken for effective erosion and sedimentation control during project construction.

Increases in runoff can be expected from construction of the proposed road at the southern border of the property. This increase in runoff results from the creation of an impermeable surface on the site(i.e. the paved road). It is anticipated that most of this runoff will be discharged to the central wetland area on the site. The increased runoff should not have a significant effect on the hydrology of the wetland provided: 1) stormwater runoff outlets with plunge pools are appropriately placed to dissipate the flow from the road, and 2) proper erosion and sedimentation controls are implemented to minimize sediment flow to the wetlands. Erosion and sediment controls will be particularly important in the construction of the road through the wetlands. It will also be important to place culverts properly (if a bridge is not built) so that the hydrologic flow through the wetland is not interrupted. Alterations of the water level in a wetland can significantly impact the existing flora and fauna.

Public water is available to service the site through the Metropolitan District Commission. During the Team's field review, Town officials questioned whether or not water for irrigation purposes could be obtained by the installation of on-site well(s) in order to supplement the public water supply and/or water supply from the proposed pond. In reviewing the "Geohydrologic Map of the Lower Connecticut River Basin" (Water Resources Bulletin No. 31 Plate B, published by the Department of Environmental Protection) the site lies within a potential ground water aquifer capable of producing high yields. This is due to the presence of water bearing, coarse grained stratified drift deposits

FIGURE 3
WATERSHED MAP



which are capable of producing large yields of water to individual wells. Wells tapping the upper part of the stratified drift unit may yield 50-500 gallons per minute . The lower fine grained part of the unit is generally unproductive. Therefore, if an on-site well is considered for irrigation purposes, the upper coarse-grained portions of the stratified drift unit should be tapped. This will enhance the potential for obtaining an adequate yield of good quality water.

VIII. VEGETATION

As shown in Figure 4, five distinct vegetation areas are present in the area proposed for park expansion. The vegetative characteristics of each of these areas is discussed below.

In a commercial sense, the value of the wood found on this parcel is not particularly high. The wooded land nevertheless plays an important role in the aesthetics and water storage capacity of the landscape, and provides a diversified wildlife habitat. Protection or improvement of these amenities should be considered whether the land stays as is or is developed as planned.

VEGETATIVE TYPE DESCRIPTIONS: (refer to Figure 4)

AREA #1 - lies south of the existing Churchill Park and contains the future lacrosse and football fields. This area was at one time a combination of gravel bank and wetland soils. At present the wetter soils are covered by fill brought in for what once was to be the I-291 by-pass. Present soil conditions are poor due to fill characteristics. Vegetation varies from impoverished grasses and pioneer tree species such as red cedar, aspen and locust to pockets of wet areas containing cattails, weeping and pussy willow and speckled alder.

AREA #2 - is identified on the proposed plan as a wetland-marsh natural area. This area is either open water or has the water table very close to the surface of the ground. Hummocks of grass exist along with cattails, bull rush, speckled alder and scattered red maple.

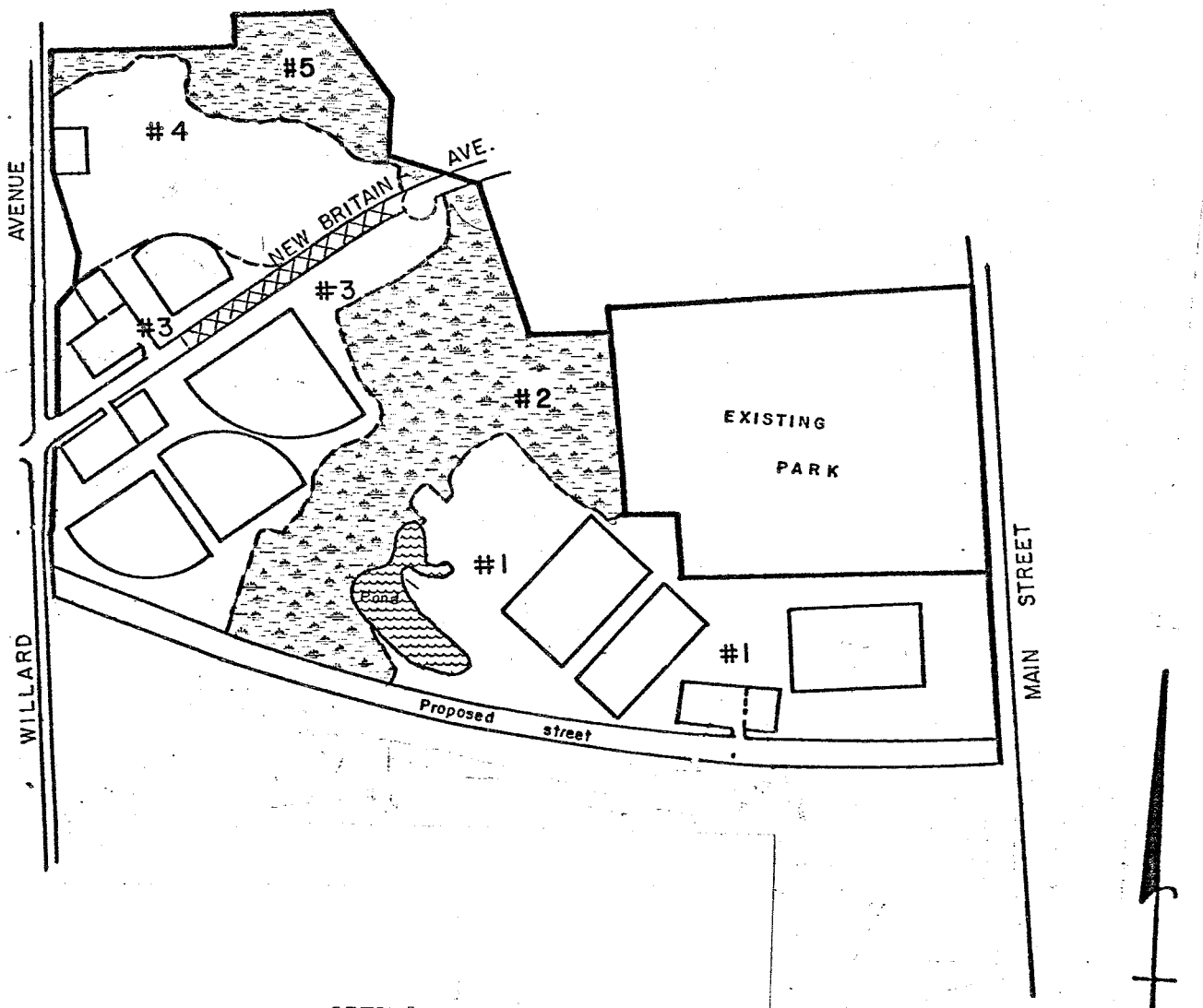
AREA #3 - straddles New Britain Avenue and is a typical old field. A portion of this area was at one time a nursery. Natural vegetation present includes a variety of grasses and weeds, sapling and pole sized red maple, red cedar, locust, sumac, aspen, bayberry, red osier dogwood, multiflora rose and crab apple. Remnants of the old nursery stock include pin oak, white spruce and Norway maple.

AREA #4 This parcel has been designated as a future picnic area under the plan. This forested piece contains a variety of tree species. On the top of the knoll common species include large stems of beech, red and white oak, sugar maple, and black birch. Side slopes contain the same species but also include black cherry and tulip poplar. The understory is primarily made up of seedlings of sugar maple. beech, and black birch.

AREA #5 - is a red maple swamp. A high water table limits the growth of species to those well adapted to wet conditions. Besides red maple one can find elm as well as nanny berry, alder and dogwood.

FIGURE 4

VEGETATION TYPE MAP



AREA 1: OLD FIELD

AREA 2: WETLAND

AREA 3: OLD FIELD

AREA 4: MIXED HARDWOOD

AREA 5: WETLAND

Scale 1"= 500'

LIMITING CONDITIONS

There are several conditions present which will influence the potential for design and maintenance of vegetative cover. Wetland soil types (primarily cover types 2 & 5) have a water table very close to the surface of the ground. This allows for shallow root penetration and as a result, windthrow is a potential hazard. Openings and clearings in and along side wetland areas should be avoided if possible.

Alterations in or near wetlands which permanently raise or lower the water table and/or restrict natural drainage may have a negative impact on the vegetation in the immediate area. Raising the water table may drown root systems and excessive drainage may result in intolerably dry soil conditions. Both practices can result in widespread mortality in the plant community.

On the other side of the spectrum are areas of fill (e.g. cover type #1). The coarse material used on this site for fill is generally excessively drained and lacks any valuable topsoil. Such areas naturally must rely on the hardiest of vegetation to get established. Future landscaping of such fill areas should either: 1) include provisions for properly preparing the site (topsoil, liming, fertilizing, etc.) or 2) rely on naturally rugged species of vegetation.

MANAGEMENT CONSIDERATIONS

The present proposal calls for the addition of seven new athletic fields and four new parking lots. Landscaping within these areas should be done to enhance the entire park as much as possible. Many native tree and shrub species combine adaptability to the climate with aromatic and aesthetic appeal. Thought should be given to the use of such species. In designing a landscape plan, consideration should be given to the flowering and foliage season as well as the need for shade.

The present natural vegetation will probably only be recognizable in cover types 2, 4, and 5 after implementation of the plan. Of these, 2 and 5, due to their inherent wetness, are slated for natural areas. These wetland areas will be important in helping to add natural color and beauty to the park, as well as in providing a unique habitat for wildlife. Protection of these areas is an important component of the Plan.

A maintenance Plan for the proposed picnic area should be developed. Of concern here are the beech trees, many of which are decadent. Obvious signs of rot exist along with many dead limbs in the live crown. These are considered hazardous and do not belong in a heavily used recreation area. A mixture of tree and shrub species should be encouraged at the picnic area. Different stems offer a variety of color, foliage, wildlife habitat and to some extent protection from potentially devastating insect and disease infestations.

Any cutting of trees, whether it is done for the clearing of parking lots and athletic fields or the enhancement of the picnic area, should be done to take advantage of the high demand for wood products. Firewood will be the main product and is highly sought after. The proper marketing of this material should be considered in the planning process.

A public service forester from the Connecticut Department of Environmental Protection (379-0771) may be of assistance in planning the marketing of any wood products.

VIII. WILDLIFE

The quality of wildlife habitat presently existing on the site is good. There are three major habitat types: openland, forestland, and wetland (see Figure 4).

If the Park expansion takes place as planned, there will be an immediate negative impact on wildlife throughout the property. The primary impact will be a direct loss of habitat due to roads, additional buildings, parking areas, and other development. Another less direct but more significant impact will be the increased human presence and vehicular traffic in the area. These disturbances will most likely drive the less tolerant (shy) wildlife species from the site even in those areas where the land has not been physically changed.

A number of measures can be implemented to minimize the adverse impact of the project on wildlife. These include:

1) Preserve den and roosting trees whenever possible. Cavity nesting wildlife require 5 to 7 den trees per acre.

2) Leave buffer strips of natural vegetation around wetland areas to help protect and maintain water qualities. These buffer strips should be at least 75 feet wide. The natural vegetation will help filter and trap silt and sediments which might otherwise reach the wetland area.

3) Plant perennial vegetation beneficial to wildlife for food and cover.

4) Along recreational fields, leave a 15' wide unmowed strip for wildlife to utilize for nesting areas. These areas of "edge" should be mowed every 5 to 7 years.

5) "Mast Trees" (those producing nuts) such as oak, beech, and hickory could be encouraged in the proposed natural areas.

6) Construct a couple of winter bird feeding stations that are easily accessible (e.g. along winter and cross country ski routes).

7) Erect one wood duck box at the existing pond; two additional boxes could be erected at the future pond site.

8) Bluebird boxes could be erected at openings throughout the park.

9) In the areas that will be kept as "natural areas" encourage existing food and cover species such as vines, snag (den) trees, blueberry bushes and apple trees.

It should be noted that when building the proposed road, every effort should be taken to keep erosion (silt) down to a minimum. In addition, wherever culverts are installed in wetland areas, devices should be included to discourage beaver from creating future dams.

During the ERT's field review, several squirrel nests were located, and a variety of tracks including cottontail rabbits, white footed deer mice, squirrels, raccoons, and an opposum were seen. Woodpeckers were observed gleaning insects from a few of the cavity or partially dead trees.

To conclude, the proposed project will negatively impact existing wildlife populations. However, the project can be expected to attract more "urban" adapted wildlife forms to the property (i.e. songbirds, raccoons, skunks, opposums, squirrels, etc.). A number of measures can be implemented to minimize adverse impacts to the existing wildlife populations.

IX. RECREATION POTENTIAL

As previously discussed, the subject site is made up of an existing (developed) park approximately 15 acres in size and an abutting 60 acres to be acquired and developed into an expanded recreational facility. The existing park contains a swimming pool, 3/4 acre pond, parking lot, picnic area and support structures including a toilet and swim wear change building near the swimming pool, a picnic shelter and a gazebo.

The proposed site plan reviewed by the Team makes good (non-disruptive) use of the terrain features and is a practicable plan for development of the property. Treed areas are offered via the picnic grove and wetland areas while the basically open field areas, which are comparatively level, are proposed for ball field construction thereby minimizing site alteration via tree cutting and earth moving. Some cutting and filling is proposed to accommodate the playing fields but not on a scale which, if properly done, would have a markedly negative impact on the nearby wetland situated in the middle of the new park.

Discontinued vehicular use of New Britain Avenue at the point where it cuts through the park would have a very positive impact on the options for developing the park and on its usability. Continued vehicular use of New Britain Avenue would, in effect, result in the new park being made up of two adjacent but separated parks rather than one having a continuous boundary which provides convenient pedestrian traverse. An enhanced range of opportunities for design of facilities, improved aesthetics and safety, and a better recreational experience are some of the benefits to be derived from road closure.

It is hoped that the new road proposed for the south portion of the park and crossing the wetland, would be constructed with an eye to either screening from or softening its starkness from park users by the use of trees and shrubs. A landscaped boulevard here would give the road the appearance of being a part of rather than something apart from the rest of the park. Through proper landscaping, the visual and noise impact of the new road would be somewhat softened. Bridging over the wetland would, of course, preclude plantings at the point of crossing but such plantings would be possible on the approaches where the roadsides consist of soil. If, on the other hand, the wetland roadbed is to be made of fill rather than a bridge, the full length of the embankments could be planted.

In like manner, the proposed natural area on the east side of the wetland could be planted with trees and shrubs suitable to the soil conditions. Attractively landscaped, this area would invite park users to walk through on the pathway planned. Depending on soil conditions, shrubs such as Mountain Laurel and Rhododendron scattered amongst deciduous and coniferous trees (e.g. hemlock) could become the focal point and showpiece for the center of the park. Native (Rhododendron considered as "native") trees and shrubs should be used rather than speciumen types and planted in a random manner to give a natural rather than formal garden appearance.

A connector path crossing the narrow part of the wetland would make all parts of the park accessible by foot (assuming the aforementioned discontinuance of vehicle use on the short stretch of New Britain Avenue). A footpath crossing the wetland might best be accomplished by a slightly elevated boardwalk on pylons. Pathways over ground will afford a good range of uses (e.g. walking, jogging, bicycling) if constructed of stone dust on top of a good gravel or crushed stone base. In designing the footpaths, an eye should be kept toward motor vehicle exclusion and minimized erosion potential. A path width of 5' to 6' will virtually exclude cars but still enable wheelchair use and comfortable, simultaneous two-way use by joggers. A trail system through the new park should connect the various areas of use and expose the visitor to the natural features of the park.

If adequately patrolled at night, the expanded park should not have a marked negative impact on the surrounding neighborhood which is largely residential. Gate closure of parking lots at night may reduce unwanted night time activity but can not eliminate it without some patrol. The new park should be an asset to the surrounding neighborhood providing its residents recreational opportunities and an aesthetically pleasing piece of open space land in their midst.

The picnic grove proposed for the northwest part of the park is appropriately sited. Some consideration should be given to providing drive to access to some of the picnic tables. The elderly and others with diminished mobility would be better accommodated thereby. A grouping of tables adjacent to a small parking lot (say 10-20 cars) would accomplish this. A small number of parking spaces reserved for these users should suffice. Closure of New Britain Avenue should enhance the possibilities for development of picnic areas here. Park roads providing through access to the town roads are specifically not recommended for the reasons stated for New Britain Avenue. The undergrounding or elimination of utility lines along the stretch of New Britain Avenue to be closed off would greatly enhance the appearance of the park and the opportunities for snag-free kite flying would also be somewhat enhanced.

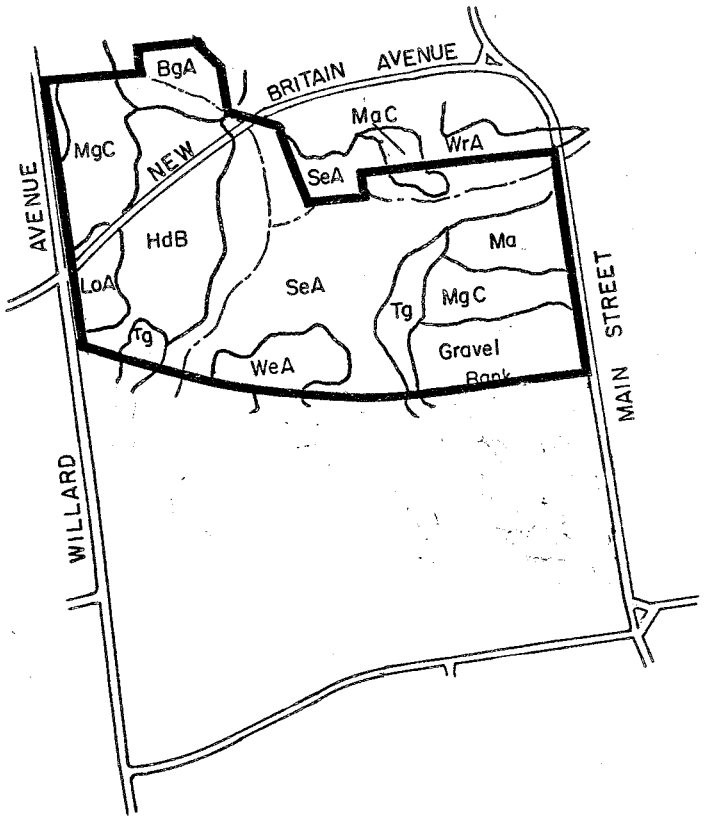
A toilet building is recommended by the Team Planner to meet the needs of picnickers and users of the nearby ball fields. Siting it near the little league ball field should be adequately convenient to both picnickers and ball players. The alternative is two buildings which may be cost prohibitive.

In sum, the development plan offered is a workable one and should greatly enhance recreational opportunities by its implementation.

* * * * *

APPENDIX

SOILS MAP



Scale 1"=1000'

Soil boundary lines derived from smaller scale map (1"=1320') and should not be viewed as precise boundaries but rather as a guide to the distribution of soils on the property.

Adapted from Hartford County Soil Survey, U.S.D.A. - S.C.S.

SOILS LIMITATION CHART

CHURCHILL PARK, NEWINGTON, CT

MAP SYMBOL	SOIL NAME	Limitation Rating For: LAWNS/ LANDSCAPING	PICNIC AREAS	PLAYGROUNDS	PATHS & TRAILS
MgC	Manchester gravelly sandy loam, 3 to 15% slopes	Severe; Small stones, droughty	Moderate; Small stones, slope	Severe; Small stones, slope	Moderate; Small stones, slope
BgA	Biddeford silt loam, reddish variant, 0 to 3% slopes	Severe; Wetness, excess humus	Severe; Wetness	Severe; Wetness	Severe; Wetness
SdA	Scantic silt loam, reddish variant, 0 to 3% slopes	Severe; Wet frost action	Severe; Wet	Severe; Wet percs slowly	Severe; Wet
HdB	Hartford fine sandy loam, 3 5 to 8% slopes	Moderate; Droughty	Slight	Slight	Slight
LoA	Ludlow loam, 0 to 3% slopes	Slight	Slight	Moderate; Percs slowly	Slight
Tg	Terrace escarpments, sand & gravel	Severe; Droughty, slopes	Severe; Droughty, slopes	Severe; Droughty, slopes	Severe; Droughty, slopes
SeA	Scarboro loam, 0 to 3% slopes	Severe; Wetness	Severe; Wetness	Severe; Wetness	Severe; Wetness
WcA	Walpole loam, 0 to 3% slopes	Severe; Wetness	Severe; Wetness	Severe; Wetness	Severe; Wetness

SOILS LIMITATION CHART (Cont'd)

MAP SYMBOL	SOIL NAME	Limitation Rating For: LAWNS/ LANDSCAPING	PICNIC AREAS	PLAYGROUNDS	PATHS & TRAILS
HfB	Hartford sandy loam, 3 to 8% slopes	Moderate; Droughty	Slight	Slight	Slight
Ma	Made land	----------	On-Site Investigation Required	----------	

EXPLANATION OF RATING SYSTEM:

SLIGHT LIMITATION: indicates that any property of the soil affecting use of the soil is relatively unimportant and can be overcome at little expense.

MODERATE LIMITATION: indicates that any property of the soil affecting use can be overcome at a somewhat higher expense.

SEVERE LIMITATION: indicates that the use of the soil is seriously limited by hazards or restrictions that require extensive and costly measures to overcome.

TEMPORARY VEGETATIVE COVER

Definition

Stabilize potential sediment producing areas and severely eroded areas by establishing temporary annual grasses or small grains.

Purpose

To provide short-term rapid vegetative cover for the control of soil erosion and reduce sediment damages, protect environmental quality, and improve the appearance of the landscape until permanent vegetation or other stabilization practices can be established.

Conditions Where Measure Applies

On all unprotected areas that produce sediment, areas where final grading has not been completed, and the estimated period of exposure less than 12 months. Examples are construction sites, actively eroding areas within urban and industrial areas, topsoil stock piles, and certain cut and fill slopes.

Application and Materials

1. Site Preparation --

a. Install needed surface water control measures such as diversions, berms, and waterways.

b. Remove loose rock, stone, and construction debris from area to be seeded.

c. Apply lime according to soil test or at a rate of one ton of ground dolomitic limestone per acre (50 lbs. per 100 square feet).

d. Apply fertilizer according to soil test or at the rate of 300 lbs. of 10-10-10 per acre (7 lbs. per 1,000 square feet) and second application at 200 lbs. of 10-10-10 (5 lbs. per 1,000 square feet) when grass is four to six inches high. Apply only when grass is dry.

e. Unless hydroseeded, work in lime and fertilizer to a depth of four inches using a disk or any suitable equipment.

f. Tillage should achieve a reasonably uniform, loose seedbed, work on contour if site is sloping.

2. Establishment --

a. Select adapted species from following table. Note rates and seeding dates.

b. Apply seed uniformly according to the rate indicated in the table by broadcasting, drilling, or hydraulic application.

c. Unless hydroseeded, cover ryegrass seeds with not more than 1/4 inch of soil with suitable equipment. Cover sudangrass and small grains with 1/2 inch of soil.

d. Mulch will be applied immediately after seeding on unfavorable soil sites. Refer to the mulch measures.

Seedings For Temporary Cover

Species	Seeding Rates in lbs.		Recommended Seeding Dates
	1000 Sq. Ft.	Acre	
Annual Ryegrass or Perennial Ryegrass	1 1/2	60	Mar. 15 to June 15 Aug. 15 to Oct. 15
Sudangrass 1/ or Millet	1	40	May 15 to Aug. 15
Winter Rye or Oats	3	120	Aug. 15 to Oct. 15

1/ This is a tall grass and may be undesirable in some locations.

USDA SCS HYATTSVILLE MD 197

PERMANENT VEGETATIVE COVER

Definition

Stabilizing sediment producing areas and severely eroded areas by establishing permanent grass and legume cover.

Purpose

To stabilize the soil; to reduce downstream damages from sediment and runoff; improve wildlife habitat; and enhance natural beauty.

Conditions Where Measure Applies

On all urban construction areas subject to erosion where final grading has been completed and where a permanent vegetative cover is needed.

Application and Materials

1. Site Preparation --

a. Install needed surface water control measures, such as diversion, berms, and waterways.

b. Remove loose rock, stone, and construction debris (approximate four-inch size) from area.

c. Perform all cultural operations parallel to the contours of the slope.

d. At least four inches of topsoil may be required over extremely adverse soil conditions. Surface compacted by construction machinery should be disced or chisled before topsoil is added.

e. Apply lime according to soil test or at the rate of two tons ground limestone per acre (100 lbs. per 1,000 square feet).

f. Apply fertilizer according to soil test --

- Spring seeding. Work deeply in soil, before seeding, 300 lbs. of 10-10-10 fertilizer per acre (seven lbs. per 1,000 square feet); then six to eight weeks later apply on the surface an additional 300 lbs. of 10-10-10 fertilizer per acre. 1/

- Fall seeding. Work deeply in soil, before seeding, 600 lbs. of 10-10-10 fertilizer per acre (14 lbs. per 1,000 square feet).

1/ May use alternate single application of 600 lbs. at seeding time if split application is not feasible.

REPRINT
Erosion and Sediment Control Handbook
Connecticut, USDA-SCS
Revised 1976

2. Establishment --

a. Smooth and firm seedbed with cultipacker or other similar equipment prior to seeding (except when hydroseeding).

b. Select adapted seed mixture from the following table. Note seeding dates.

c. Apply seed uniformly according to rate indicated in the table by broadcasting, drilling, or hydraulic application.

d. Cover grass and legume seeds with not more than 1/4 inch of soil with suitable equipment (except when hydroseeding).

e. Mulch immediately after seeding according to guidelines.

f. Use proper inoculant on all legume seedings, use four times normal rate when hydroseeding.

g. Use sod where there is a heavy concentration of water and in critical areas where it is important to get a quick vegetative cover to prevent erosion.

3. Maintenance --

a. Test for soil acidity every three years and lime as required.

b. On sites where grasses predominate, broadcast annually 500 pounds of 10-10-10 fertilizer per acre (12 lbs. per 1,000 square feet) or as needed according to annual soil tests.

c. On sites where legumes predominate broadcast every three years or as indicated by soil test 300 pounds of 0-20-20 or equivalent per acre (eight lbs. per 1,000 square feet).

GUIDE TO MULCH MATERIAL

Table 1

Mulch Material	Quality	Application Rates		Remarks
		Per 1000 Sq. Ft.	Per Acre	
Hay or Straw	Air dried, free from undesirable seeds	75-100 lbs. or 2-3 bales	1.5-2 tons 90-110 bales	Use straw where mulch effect is to be maintained for more than 3 months. Subject to wind blowing unless kept moist or tied down. Good for critical area erosion control. Spread uniformly, leave 10-20% of ground exposed. Excellent for seedbed protection until vegetation is established. Salt marsh hay where available is usually free of weed seeds.
Wood Fiber Cellulose (partly digested wood fibers)	Air dried, non-toxic, and no growth inhibiting factors	25-40 lbs.	0.5 up to 1.0 ton	Apply with hydromulcher. No tie down required. Addition of plastic emulsion to wood fiber mulches makes them adhere better and increase their longevity. Use higher rates on critical erosion areas. Excellent for seedbed protection until vegetation is established.
Gravel or Crushed Stone	Washed Size 1" 60 2 1/2"	9 cu. yds.		Excellent permanent mulch after used alone for short slopes or around wood plants and ornamentals. Use 1/4" to 3/4" size where subject to foot traffic.
Wood Chips	Free from coarse material	500 lbs. dry; to 900 lbs. wet	10 tons dry; to 20 tons wet	Spread uniformly about 4 inches deep; often used alone. Protect from washing on steep slopes. Excellent permanent mulch around trees and shrubs; add small amounts of 10-10-10 fertilizer to stimulate growth. Potential termite problem adjacent to wood structures.

1/ All mulches will provide some degree of (1) erosion control, (2) moisture conservation, (3) weed control, and (4) reduction of soil crusting.

USDA-SCS HYATTSVILLE, MD 1977

USDA Soil Conservation Service
Storrs, Connecticut

MULCHING

Definition

Apply plant residues or other suitable materials, not produced on the site, to the surface of the soil.

Purpose

To protect exposed soil surfaces from excessive soil erosion, reduce offsite compaction or crusting, conserve moisture, aid in establishing plant cover, and control weeds.

Conditions Where Measure Applies

On graded or cleared areas which are subject to erosion, specific mulches (1) may be used in conjunction with permanent or temporary vegetative seeding or (2) may be used alone either as a permanent mulch or as a temporary mulch until permanent vegetation or other protection can be properly implemented.

Application and Materials

1. Application --

a. For areas subject to critical erosion install temporary erosion control devices such as furrows, diversions,etc. within or adjacent to area to be mulched.

b. Select the type of mulch and application rate from Table 1 which will best meet the use and performance requirements.

c. Determine anchoring requirements if needed and select a method of anchoring from Table 2 which will best meet the specific job requirements.

2. Maintenance -- Mulched areas should be checked periodically and immediately after severe storms for damage, until the desired purpose of the mulching is achieved. Damaged portions of the mulch or tie down material should be repaired as soon as discovered.

3. Erosion and Pollution Control -- Construction operations should be carried out in such a manner so that erosion and air and water pollution will be minimized.

REPRINT
Erosion and Sediment Control Handbook
Connecticut, USDA-SCS
Revised 1976

PERMANENT GRASS AND LEGUME SEEDING

SEED MIXTURES, RATES, AND DATES

Seed Mixture 5/	Percent by Wt.	Seeding Rates in lbs. 1/		Seeding Dates	Special Adaptation
		1000 Sq. Ft.	Acre		
Ky 31 Tall Fescue Red Fescue	50 50	1 1/2	50	April 1 - June 15 Aug. 15 - Sept. 30	Droughty Areas
Ky 31 Tall Fescue 2/ Annual Ryegrass	80 20	1 1/2	50	April 1 - June 15 Aug. 15 - Sept.	Heavy Use Areas
Red Fescue 4/ Crownvetch	60 40	1	40	April 1 - June 15	No Mow Areas Droughty Areas
Crownvetch Perennial Ryegrass	60 40	1/2	25	April 1 - June 15	No Mow Areas Droughty Areas
Reed Canary Grass Redtop	80 20	1	50	April 1 - June 15 Aug. 15 - Sept. 15	Wildlife or Wet Areas
Red Fescue 3/ Kentucky Blue grass Perennial Ryegrass	70 20 10	2	80	April 1 - June 15 Aug. 15 - Oct. 15	High Maintenanc Areas
Ky 31 Tall Fescue Birdsfoot Trefoil	70 30	1	40	April 1 - June 1	No Mow Areas Wet Areas

1/ These are minimum seeding rates and should be increased if adverse conditions exist.

2/ Straight Ky 31 tall fescue may be used for soccer or football fields (minimum 150 # up to 250# per acre.

3/ 10 lbs. of birdsfoot trefoil may be added to this mixture.

4/ Ky 31 tall fescue may be used in place of red fescue.

5/ May add 5 lbs. of perennial ryegrass for quick fall cover.

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 industrical 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.