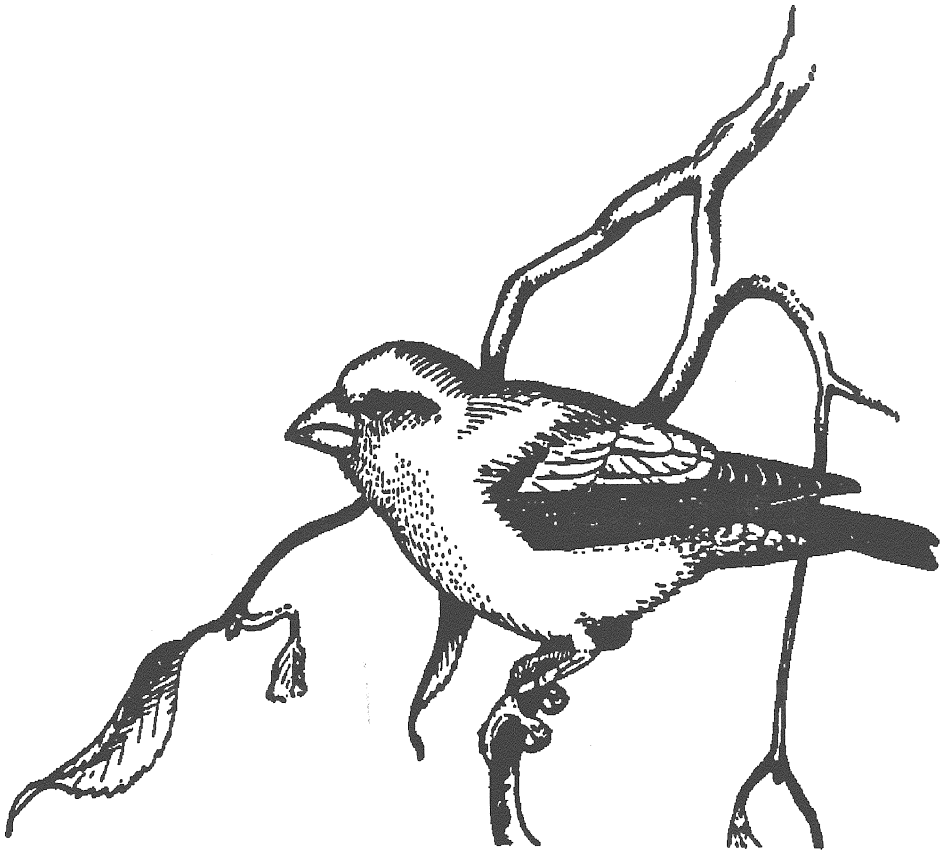
KING'S MARK ENVIRONMENTAL REVIEW TEAM



REPORT FOR

APRIL GARDENS

SEYMOUR,
CONNECTICUT

King's Mark Resource Conservation and Development Area, Inc.

APRIL GARDENS

SEYMOUR, CONNECTICUT

Environmental Review Team Report

Prepared by the King's Mark Environmental Review Team
of the King's Mark Resource Conservation
and Development Area, Inc.

Wallingford, Connecticut

for the

Seymour Planning and Zoning Commission

This report is not meant to compete with private consultants by supplying site designs or detailed solutions to development problems. This report identifies the existing resource base and evaluates its significance to the proposed development and also suggests considerations that should be of concern to the Planning and Zoning Commission and the Town. The results of the Team action are oriented toward the development of a better environmental quality and long-term economics of the land use. The opinions contained herein are those of the individual Team members and do not necessarily represent the views of any regulatory agency with which they may be employed.

AUGUST 1991

ACKNOWLEDGMENTS

The King's Mark Environmental Review Team Coordinator, Suzanne Ferrarotti, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this study:

* Dr. Norman Gray, Geologist
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  USDA - Soil Conservation Service
  269-7509

* Judy Wilson, Wildlife Biologist
  Department of Environmental Protection - Western District
  485-0226

* Nicholas Bellantoni, State Archaeologist
  Connecticut State Museum of Natural History
  486-5248

* Robert Frey, Regional Planner
  Valley Regional Planning Agency
  735-8688

I would also like to thank Susan Anderson, Secretary of the King's Mark Environmental Review Team, for assisting in the completion of this report.

Finally, special thanks to Mr. Robert Looker, Town Planner, Michael Horbal, Land Surveyor and Manuel Synalovski, Project Manager for April Gardens, for their assistance during this environmental review.

EXECUTIVE SUMMARY

Introduction

An environmental review was requested by the Seymour Planning and Zoning Commission for the April Gardens Development Composite Plan. The proposed development site is located in Seymour near the borders of the Towns of Bethany and Beacon Falls. Access is provided by Skokorat Road.

The 113.51-acre site was originally agricultural land and forests. The southern portion of the site has already been developed as Phase 1 which consists of 81 townhouses. An additional 454 units are planned for Phases 2 and 3. Slopes on the site range from nearly level to very steep, especially in the northern portion. A total of 16.87 acres of wetlands were delineated on the site.

The purpose of this review is to inventory and assess existing natural resources, particularly wetland and water resources, and discuss the impacts of development. This environmental information will be used to assist the Town in guiding conservation and development in this area.

The ERT Process

The review process consisted of 4 phases: (1) inventory of the site's natural resources; (2) assessment of these resources; (3) identification of resource problem areas; and (4) presentation of planning and land use guidelines. Based on the review process, specific resources, areas of concern, development limitations and development opportunities were identified.

Topography

Slopes range from gentle and moderate rolling slopes to steep slopes with several cliffs. A large portion of the site, especially in the northern portion, contains slopes of 20% or greater. Deep cuts and fill will be required for several of the building sites.

Groundwater Hydrology

A small deposit of stratified drift is located along the western boundary of the site and may provide domestic water for some of the existing single-family residences. If water is supplied from the stratified drift, aquifer protection measures should be considered. No other stratified drift aquifers are located on the site. Low yield wells are expected if bedrock wells are developed.

Surficial Materials

The majority of the site is covered by glacial till of variable thickness. Large areas in the northern portion of the site have steep slopes and a thin cover of glacial till which may present construction problems. A small area in the northwestern portion of the site is underlain by stratified drift.

Bedrock Geology

Bedrock is close to the surface in most of the northern and central portions of the site. The bedrock is mapped as the Hartland Formation and consists of plagioclase gneiss. The outcrops do not warrant protection.

Aesthetic Non-Geologic Consideration

Clear-cutting of the site prior to construction could accelerate erosion and is not recommended. The scenic beauty of the site will be enhanced with careful placement of the townhouses to afford each dwelling the best possible view.

Soil Resources

The soils consist primarily of deep, moderately to steeply sloping Charlton soils intermingled with shallow, bedrock controlled Hollis soils. Small areas of moderately well-drained soils lead into the poorly drained till-based soils in the wetlands. Test pits should be made to determine depth to bedrock.

Erosion and Sediment Control

Detailed E&S plans should be included with the final site plans. The Connecticut Guidelines for Soil Erosion and Sediment Control should be used as the standard reference in preparing an E&S control plan.

Hydrology

Most of the site drains into Rimmon Brook. Development of the site will increase runoff during storm events. The 3 proposed detention basins are located in wetlands, which is not recommended or desirable because of the negative impacts posed by direct influx of urban pollutants. Stormwater management measures are required for Watershed 2. All stormwater outlets should be carefully designed and located to avoid erosion problems and Best Management Practices should be incorporated into the final plans. The proposed wetland road crossings must be properly engineered to minimize impacts.

Wildlife Considerations

Wildlife habitat at the site consists of hardwood forest, reverting fields, wetlands and 2 small watercourses. A variety of wildlife is expected to use the site, including deer, ruffed grouse, weasel, raccoon, beaver, otter, fox, coyote, hawks, owls, songbirds, reptiles and amphibians.

Forests and reverting fields are important to wildlife, providing cover, food, nesting, denning sites and roosting places. Wetlands are also very important to wildlife and should be protected because they increase the habitat diversity of an area and offer a variety of food and cover. Wetlands on the site can be classified as deciduous wooded wetlands or palustrine forested wetlands. Streams are used as travel corridors by many wildlife species. A 100-foot buffer around streams is

recommended for protection. A buffer of undisturbed vegetation around wetlands is recommended for wildlife and protection of the wetlands from siltation. Whenever possible, wetland crossings and wetland detention basins should be avoided.

As with any development, the impact on wildlife will be negative and long-lasting. The area will be broken-up and lost to roads, driveways, lawns and condominiums. Increased numbers of humans, dogs, cats and cars will also affect wildlife. Certain species which adapt well can become a nuisance. Alternative designs which can protect wildlife habitat include large lots and cluster development. Setting aside a combination of habitats for open space is desirable. Open space areas should be connected to provide travel paths. Steps can be taken to minimize the effects of development on wildlife, including buffer strips, natural landscaping techniques, maintaining field borders and early successional stage vegetation and maintaining wildlife requirements.

Threatened and Endangered Plant and Animal Species

According to the Natural Diversity Data Base, there are no Threatened or Endangered Species or Connecticut "Species of Special Concern" at the site.

Archaeological Considerations

No known archaeological sites are recorded on the site. However, environmental and topographic features strongly suggest that undiscovered sites may exist there. An archaeological survey is recommended to survey and locate all prehistoric and historic sites.

Planning Considerations

The site is surrounded mostly by vacant land and some single-family residences. The proposed development is compatible with surrounding land uses and Seymour's Plan of Development. However, because of the magnitude of the development, impacts should be closely examined. Surrounding zoning includes R-15 and R-40.

Some segments of the proposed road network may be unnecessary, especially those running parallel to the access drives for a small number of structures. The orchards and fields should be preserved to create usable, recreational open space. Development of the site in phases is commendable because it allows greater ability to handle problems and lessens initial environmental impacts.

The traffic impact study indicates that the volume of traffic on Skokorat Road will increase by approximately 592 cars daily. This will result in an LOS C or better, while the intersection of Skokorat and Route 67 will operate at LOS D. An average delay of 25 to 40 seconds per vehicle will occur at this intersection. The improvements of Skokorat Road required by Phase 1 and the recommendations of the State and Wilbur Smith Associates should provide acceptable levels of service and accommodate future traffic increases.

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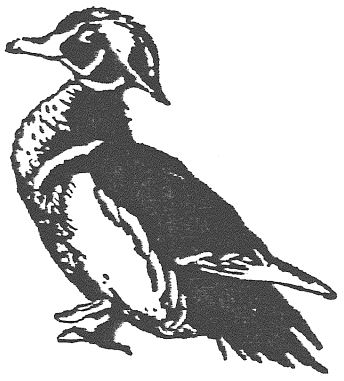

INTRODUCTION

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The 113.51-acre site was originally agricultural land and forests. The southern portion of the site has already been developed as Phase 1 which consists of 81 townhouses. An additional 454 units are planned for Phases 2 and 3. Slopes on the site range from nearly level to very steep, especially in the northern portion. A total of 16.87 acres of wetlands were delineated on the site.

The purpose of this review is to inventory and assess existing natural resources and discuss development opportunities, erosion and sediment (E&S) controls and the maintenance and regulatory activities necessary to assist the Town in guiding conservation and development in the area. Specific objectives include:

1) Assessing the hydrological and geological characteristics of the site, including geological development limitations and opportunities;

2) Determining the suitability of existing soils to support planned development;

3) Discussing soil erosion and sedimentation concerns;

4) Assessing the impact of development on the wetlands and watercourses;

5) Assessing the impact of development on wildlife; and

6) Assessing planning and land use issues.

THE ENVIRONMENTAL REVIEW TEAM PROCESS

Through the efforts of the Seymour Planning and Zoning Commission and the King's Mark Environmental Review Team (ERT), this environmental review and report was prepared for the Town. This report primarily provides a description of on-site natural resources and presents planning and land use guidelines. The review process consisted of 4 phases:

1) Inventory of the site's natural resources (collection of data);
2) Assessment of these resources (analysis of data);
3) Identification of resource problem areas; and
4) Presentation of planning and land use guidelines.

The data collection phase involved both literature and field research. The ERT field review took place on June 12, 1991. Field review and inspection of the site proved to be a most valuable component of this phase. The emphasis of the field review was on the exchange of ideas, concerns or alternatives. Mapped data or technical reports were also perused, and specific information concerning the site was collected. Being on-site also allowed Team members to check and confirm mapped information and identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Results of this analysis enabled Team members to arrive at an informed assessment of the site's natural resource opportunities and limitations. Individual Team members then prepared and submitted their reports to the ERT Coordinator for compilation into the final ERT report.

Figure 1

LOCATION OF STUDY SITE

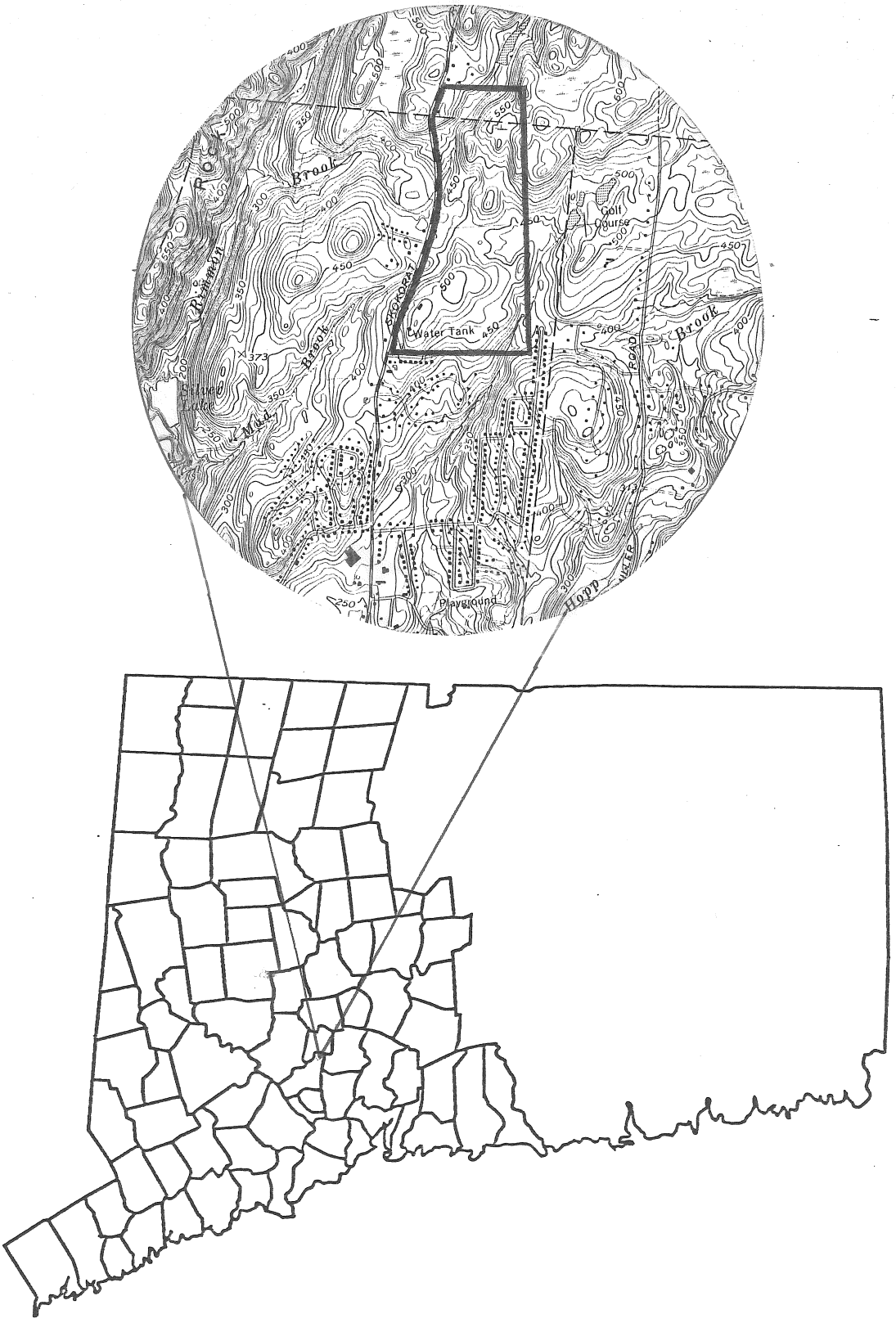
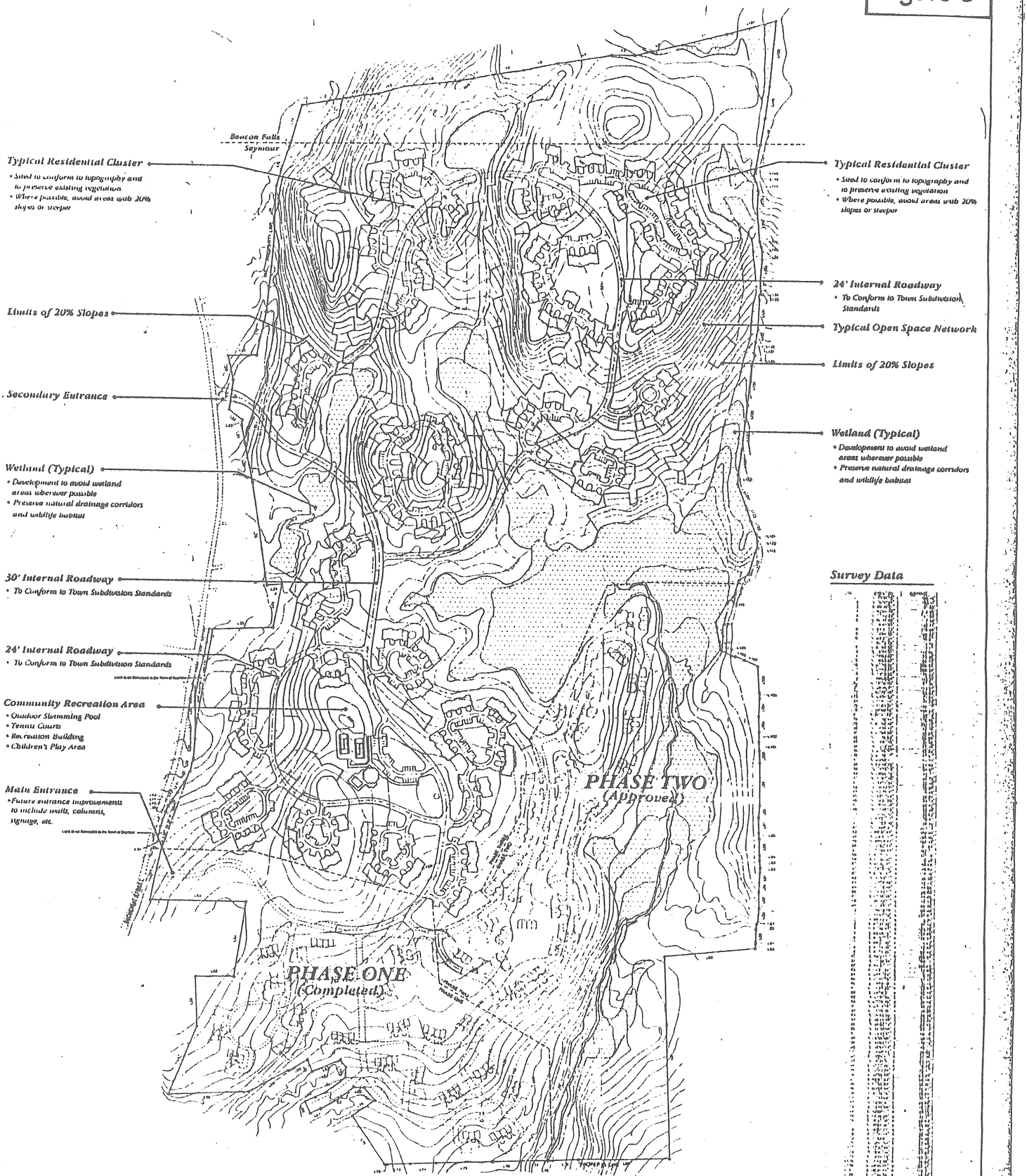


Figure 3



Site Tabulations

• Total Acres in Seymour	113.5 Ac
• Acres of Wetlands	16.9 Ac
• Acres of 30% Slope	12.7 Ac
• Acres of Internal Roads	4.9 Ac
• Proposed Open Space (Includes 2.4 Acre Recreation Area)	67.6 Ac
• Proposed Dwelling Units (Typical 20' x 40')	362
• Proposed Parking Spaces (Does not include one covered space per dwelling unit, which will also be provided)	482

Composite Development Plan

APRIL GARDENS

SEYMOUR, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = approx 400'

N

Composite Development Plan

April Gardens

Prepared for:
April Industries, Inc.
San Juan, Puerto Rico

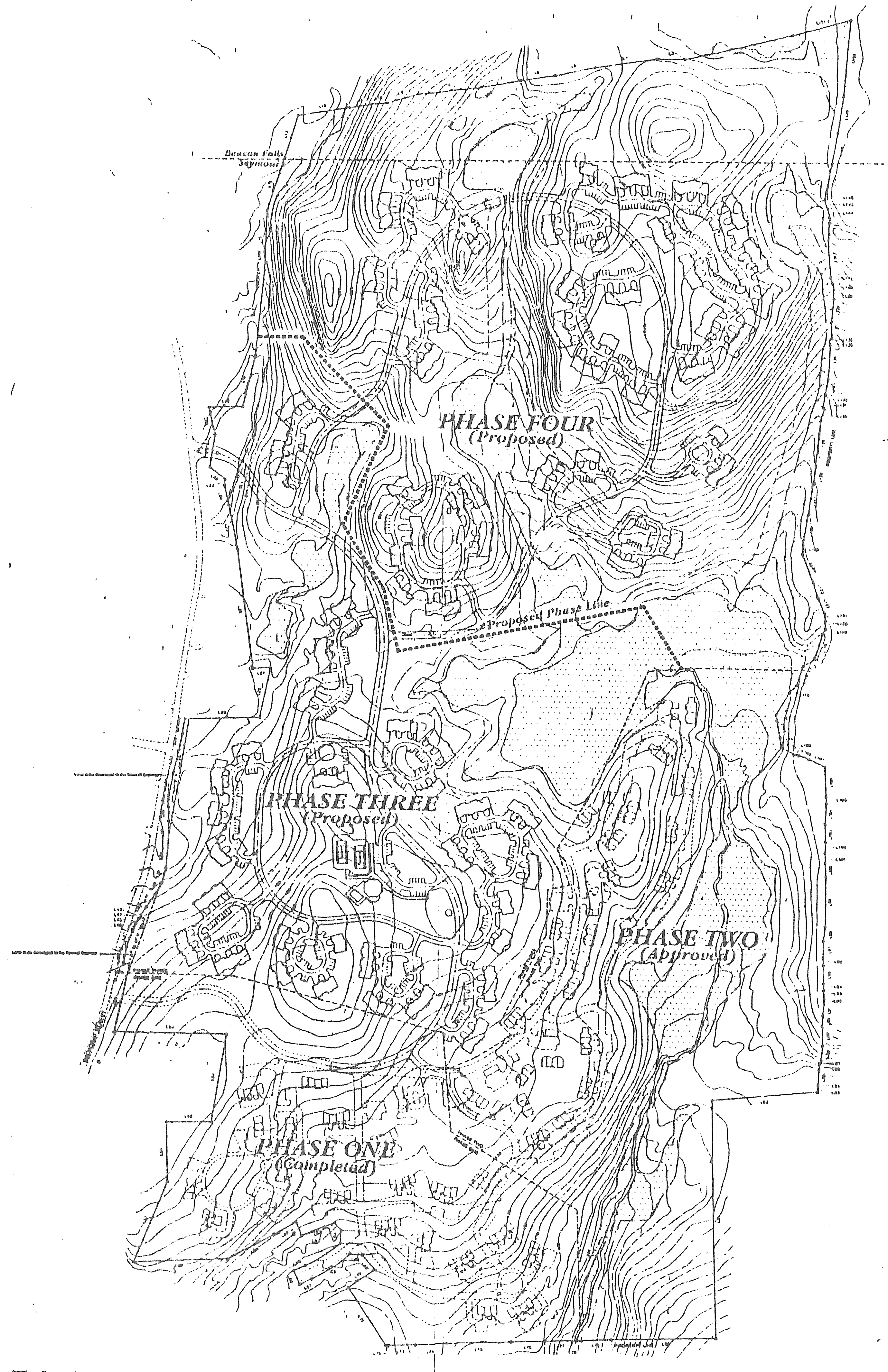
Prepared by:
Edward D. Stone, Jr. and Associates
Planners and Landscape Architects
Ft. Lauderdale, Florida

Michael H. Horbal
Land Surveyor

Milone & MacBroom, Inc.
Civil and Water Resource Engineering

Wilmer Smith Associates
Engineers • Land Surveyors

Figure 2



Site Tabulations

Phase 3

Total Acres	51.1 Ac.
Acres of Wetlands	10.1 Ac.
Acres of 30% Slopes	2.1 Ac.
Acres of Internal Roads	2.8 Ac.
Proposed Open Space (includes 3.4 Acre Recreation Area)	31.0 Ac.
Proposed Dwelling Units (Typical 30' x 40')	166
Proposed Parking Spaces (Does not include one covered space per dwelling unit, which will also be provided)	221

Phase 4

Total Acres	62.4 Ac.
Acres of Wetlands	6.8 Ac.
Acres of 30% Slopes	10.6 Ac.
Acres of Internal Roads	2.1 Ac.
Proposed Open Space	36.6 Ac.
Proposed Dwelling Units (Typical 30' x 40')	196
Proposed Parking Spaces (Does not include one covered space per dwelling unit, which will also be provided)	261

Anticipated Construction Timetable

Phase 3 - Begin Construction, January, 1994
Phase 4 - Begin Construction, January, 1999

Phasing Plan

April Gardens

Prepared for
April Industries, Inc.
San Juan, Puerto Rico

Prepared by
Edward D. Stone, Jr. and Associates
Planners and Landscape Architects

APRIL GARDENS

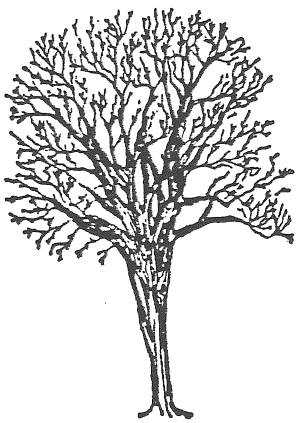
SEYMOUR, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = approx 400'

Phasing Plan

PHYSICAL CHARACTERISTICS



TOPOGRAPHY

The topography of the April Gardens development site is varied, ranging from gentle and moderate rolling slopes to steep slopes with several cliffs greater than 5 feet in relief where bedrock (i.e., ledge) crops out (see Figure 4). A considerable area of the site, particularly the northern portion, contains slopes of 20% or greater. Although some slopes are steep, no evidence of downslope soil movement was noted. When disturbed, steep slopes have greater potential for erosion and present several engineering problems. Deep cuts and fill will be required for several of the building sites. Several cut and fill locations of 25 feet or more were noted during casual inspection of the grading plan. The proposed local grading will produce oversteepened slopes in natural materials and artificial fill with oversteep slopes. Both of these construction operations could lead to mass wasting (i.e., soil creep, slumps and rock falls) during and after construction. E&S control plans should be carefully prepared to minimize erosion and prevent mass wasting.

GROUNDWATER HYDROLOGY

The small deposit of stratified drift along the western boundary of the site adjacent to Skokorat Road may provide domestic water for some of the existing single-family residences. According to the Town engineer, all of the houses obtain their domestic water supply from private wells. The houses are old enough that some of the wells may be shallow and draw water from the stratified drift. If the potential stratified drift aquifer is supplying adjacent or even distant homes with domestic water, aquifer protection measures should be considered. No other aquifers were noted on the site. Undoubtedly bedrock is fractured, but fracture density noted on outcrops is not frequent, and low-yield wells may be expected if attempts are made

to develop groundwater resources. Aquifer protection measures are not warranted for the bedrock aquifer. However, care should be taken to protect the small stratified drift aquifer.

SURFICIAL MATERIALS

Most of the site is covered by glacial till of variable thickness. Large areas in the northern portion of the site have steep slopes and a thin cover (i.e., only a few feet thickness) of glacial till. Lower portions of south facing slopes and most gentle lowland slopes contain thicker glacial soils. Thin soils on steep slopes may present construction problems.

Although not shown on the Surficial Geological Map of the Naugatuck Quadrangle by R.F. Flint (Map QR-35), a small area in the northwestern portion of Phase 3 is underlain by sand and gravel (i.e., stratified drift), a considerable portion of which has been excavated (see Figure 5). Stratified drift has good intergranular porosity, and the remaining stratified drift may be a small local aquifer. The extent of this deposit was not carefully determined during the field review, and the boundaries on Figure 5 are only approximate. The thickness of the stratified drift deposit is unknown.

BEDROCK GEOLOGY

Bedrock is close to the surface in most of the northern portion of the site and possibly in much of the central area as well. It crops out as cliffs in areas of steep topography. The bedrock is shown on the Geologic Map of the Naugatuck Quadrangle by Carr (1960, Map QR-9) as the Hartland Formation and consists of plagioclase gneiss, which resembles granite. The outcrops are not unusual and do

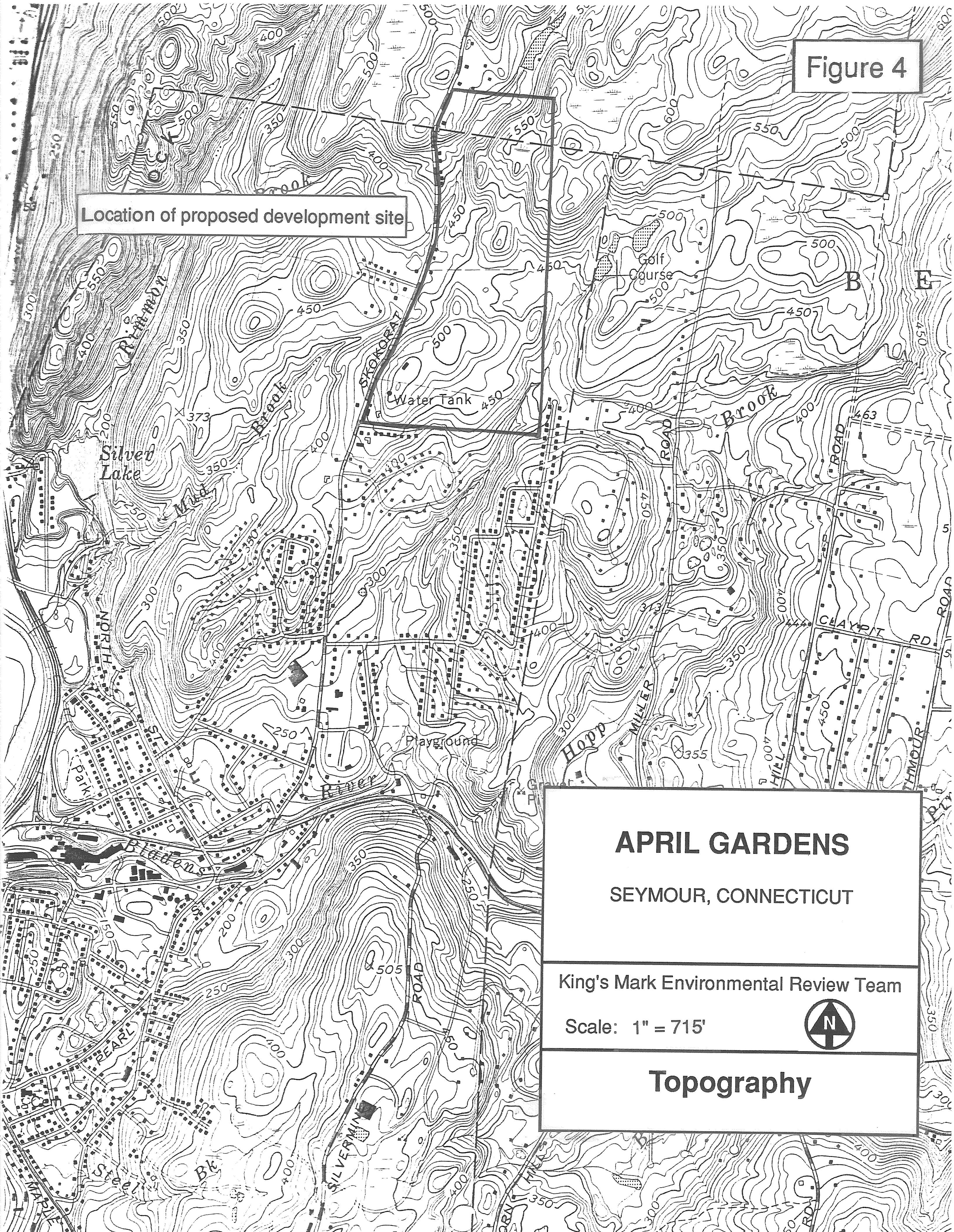
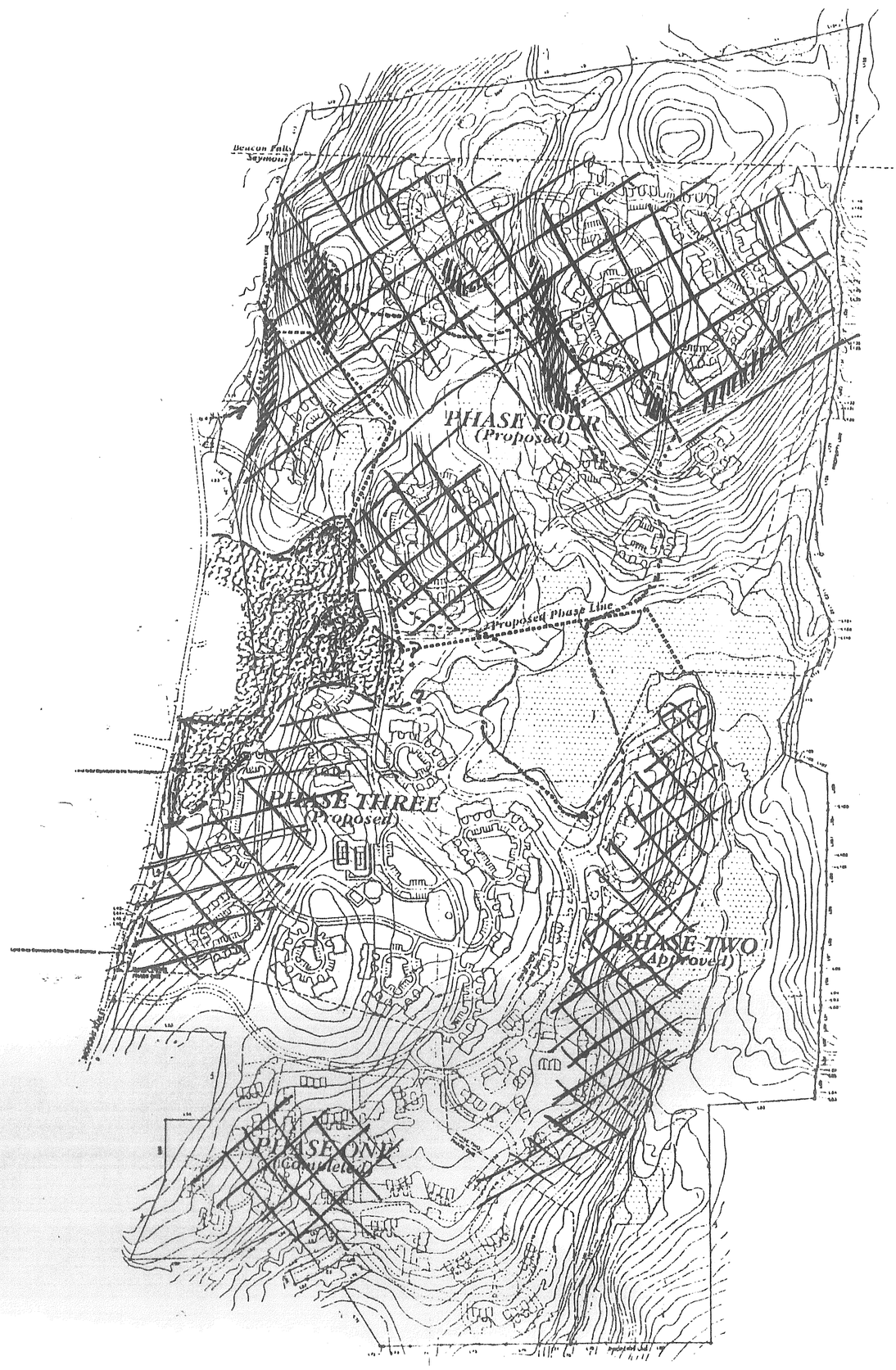


Figure 4
Location of proposed development site
Water Tank
Golf Course
Playground
Silver Lake
SKOKORAT
Brook
Mud
Rimmon
Hopp
MILLER
ROAD
CLAYPIT RD
NORTH ST
Park
River
Bladens
PEARL
MAPLE
Steel Bk
SILVERMINE
APRIL GARDENS
SEYMOUR, CONNECTICUT
King's Mark Environmental Review Team
Scale: 1" = 715'
N
Topography

Figure 5



areas with thin soils

areas with ledge at surface

stratified drift

geological transverse

APRIL GARDENS

SEYMOUR, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = approx 400'

N

Geology

not warrant protection. No important geologic resources will be destroyed by the proposed development.

AESTHETIC NON-GEOLOGIC CONSIDERATIONS

Clear-cutting the site prior to construction could accelerate erosion and is not recommended during construction of the remaining phases, especially where steeper slopes are involved. The northern portion of the site is an area of considerable scenic beauty. Limited tree cutting will provide some excellent southward vistas into the lower Naugatuck River Valley. Townhouses could be placed to afford each dwelling the best possible view. Numerous older trees are scattered over the site, including several oaks and maples 36 inches or more dbh and at least 1 oak 48 to 54 inches dbh. For aesthetic purposes, the large trees should be protected from the chainsaw and bulldozer.

SOIL RESOURCES

The April Gardens development site contains a variety of topographic conditions, ranging from relatively level wetland areas to deep, narrow drainageways to steep bedrock cliffs. The USDA Soil Conservation Service (SCS) soils map shows areas of deep, moderately to steeply sloping Charlton soils intermingled with shallow, bedrock controlled Hollis soils (see Figure 6). In several areas, there are extremely steep slopes with numerous bedrock outcrops. Small areas of moderately well-drained soils lead into the poorly drained till-based soils in the drainageway wetlands.

Wetlands on the site were flagged by Ken Stevens of Soil Science and Environmental Services, Inc. in Cheshire. Some flags were observed in the field and appeared to be reasonable in delineating the wetland boundaries.

Soils information should be included on the final site plans. Due to the widespread existence of shallow to bedrock conditions on the site, test pits should be made to determine depth to bedrock. The composite grading plan shows 10-foot or deeper cuts in areas where bedrock is close to the surface. This may affect the balance of cuts and fills for the site and will make site stabilization more difficult due to the small amount of topsoil present.

A detailed listing of important soil features and interpretations is presented in Appendix A.

EROSION AND SEDIMENT CONTROL

Because the composite plan is intended to present a broader, conceptual layout of the proposed April Gardens development, an E&S control plan has not yet been developed. Detailed E&S plans should be included with the final site plans because the site contains many areas of steep slopes where development is planned close to wetlands. Road crossings of wetlands will require large amounts of fill to achieve safe grades. All of these areas can pose a severe erosion risk if E&S control is not properly planned.

In 1983, Public Act No. 83-388, "An Act Concerning Soil Erosion and Sediment Control," was passed to "reduce the danger from stormwater runoff, minimize non-point sediment pollution from land being developed, and conserve and protect the land, water, air and other environmental resources of the state." The Connecticut Guidelines for Soil Erosion and Sediment Control, revised in 1988, should be used as the standard reference in preparing a E&S control plan for this development. A

APRIL GARDENS

SEYMOUR, CONNECTICUT

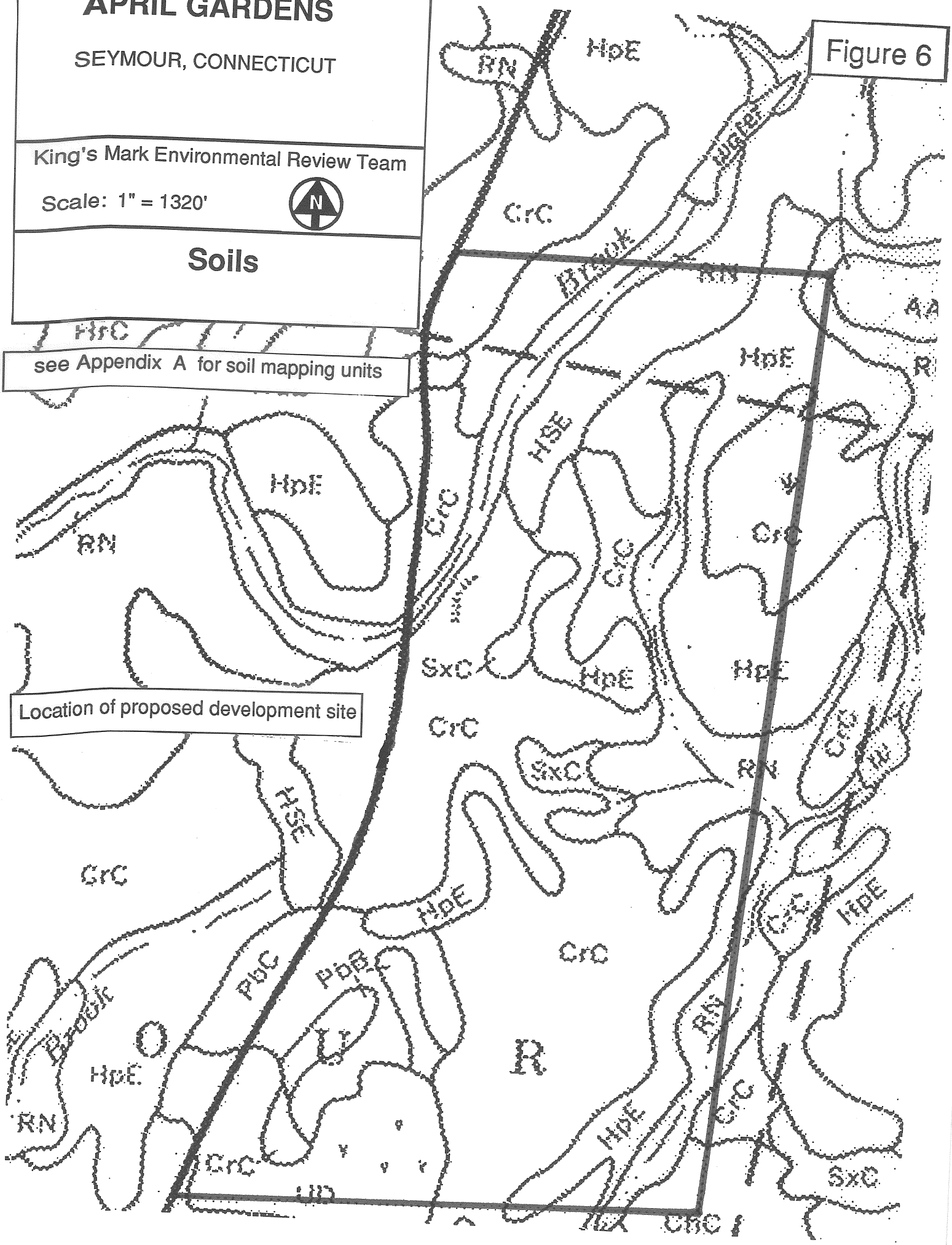
King's Mark Environmental Review Team

Scale: 1" = 1320'

Soils

Figure 6

see Appendix A for soil mapping units



worksheet is included in Appendix B which should be useful in plan development. Important elements to consider are:

1) Short- and long-term maintenance of erosion control structures and assignment of responsibility for this maintenance;

2) Details and design specifications for stormwater outlets;

3) Comprehensive vegetative stabilization measures;

4) Plans for sediment removal during dewatering activities; and

5) Methods for protection of disturbed areas when time of year or weather prohibit establishment of permanent vegetative cover.

HYDROLOGY

Watershed 1 includes a major portion of the site's drainage which flows into an unnamed tributary of the Bladens River. Figures 1 and 2 of the Conceptual Stormwater Management Plan prepared by Milone and MacBroom, Inc. of Cheshire are found in Appendix C. Figure 1 of the Milone and MacBroom report does not show drainage entering Watershed 1 from Birchwood Road. Flows from approximately the northern 1,000 feet of Birchwood Road enter catch basins at the cul-de-sac. The outlet pipe from these catch basins is located at the top of the slope leading down to Rimmon Brook. Severe slope erosion and sedimentation of wetlands are occurring due to the improper location of this outlet.

Most of the Watershed 2 portion of the site drains into Rimmon Brook as shown in Figure 1 of the Milone and MacBroom report. During a site investigation following the ERT field review, a small drainage which flows directly west was observed. This drainage does not appear to join Rimmon Brook east of Skokorat Road as shown in Figure 1 of the Milone and MacBroom report. Rather it leads to a catch basin in the front yard of a home on Skokorat Road and outlets on the other side of

Skokorat Road through a 12-inch reinforced concrete pipe. The pipe outlets midslope, and there is some erosion below it as flows travel downslope to eventually join Rimmon Brook.

Development of the site will increase runoff during storm events. These increases will result from soil compaction, removal of vegetation and placement of impervious surfaces over permeable soils. The Conceptual Stormwater Management Plan utilizes the SCS TR-20 computer model. Results of the analysis showed an increase of 65 cubic feet per second in the peak rate of runoff for the 100-year storm event in Watershed 1. There are 3 detention basins proposed for control of this increase in runoff. All of these basins are located in wetland areas, a situation which is undesirable due to the negative impacts posed by direct influx of urban pollutants such as oils, grease, road salts and road sands.

A portion of the Phase 3 stormwater drainage outlets into the stormwater system planned for the approved Phase 2. Hopefully, the already approved Detention Basin C in Phase 2 was designed with this additional runoff in mind.

The stormwater system in Subwatershed 1C (Watershed 1) appears to drain into Detention Basin B on the 1"=100' drainage plan on Figure 2 of the Milone and MacBroom report. In the schematic shown in Figure 3 of the drainage report, Subwatershed 1C appears to enter in after Detention Basin 1B. This should be clarified. There is a section of the storm drainage system on the 1"=100' plan map in the northeastern portion of the site which does not appear to be connected with any outlet.

Stormwater detention is not recommended by the applicant for Watershed 2. However, other stormwater management measures are required in the Conceptual Stormwater Management Plan. These are not described in detail except for mention of a berm to direct flows away from the small westerly flowing drainage northward into the planned access road stormwater drainage system. To accomplish this, the

berm will have to be quite high, and the system will have to be carefully designed to assure safety of the residences downslope on Skokorat Road.

Dam permits from the Department of Environmental Protection (DEP) will be required for Detention Basins 1A and 1B and the proposed berm. Diversion permits are also needed. Responsibility for ownership, operation and maintenance of the dams and associated liability should be determined. Town ownership is recommended.

Worksheet 3 of the basic TR-20 data for Watershed 2 shows 3,550 feet of shallow concentrated flow. This should be checked because such flows in Connecticut are generally less than 1,000 feet. Appendix D contains the Checklist for Reviewing Reports using TR-20 Analysis. The Town engineer should carefully review the detailed hydrologic analyses when they are submitted with final site plans.

All stormwater outlets should be carefully designed and located to avoid erosion problems such as those observed at existing outlets in the 2 watersheds. Roof runoff not entering the stormwater systems should also be properly handled to protect the steep slopes located throughout the development site.

Best Management Practices such as filter strips, biofilters, sand and sediment traps and oil and grease traps should be carefully incorporated into the final plans for this development.

There are 3 road crossings proposed over wetland areas, with 2 of these crossings serving as the dams for detention basins. The most significant crossing is the secondary access road from Skokorat Road. Although undesirable, wetland road crossings are feasible, if properly engineered. Roads must be constructed adequately above the surface of the wetland to improve drainage and to decrease the frost heaving potential. Road bed preparation must include removal of all organic material before the fill material is placed. In cut areas, underdrains should be installed on both sides of the road. Road construction through wetlands should be

done during the dry time of year and should include provisions for effective E&S control. The U.S. Army Corps of Engineers should be contacted to determine if a permit is required for the proposed activity.

BIOLOGICAL RESOURCES

WILDLIFE CONSIDERATIONS

Description of Area/Habitats

The 113.51-acre site contains hardwood forest, reverting fields, wetlands and 2 small watercourses. There are several areas where topsoil and gravel have been removed. The topography is gently rolling, but also contains some steeply sloping hillsides with rocky outcroppings.

A total of 535 townhouse units are planned, of which 81 units have already been constructed and an additional 92 units have been approved. The site includes 16.87 acres of classified wetlands and 67.6 acres of designated open space.

Wildlife habitat is the complex of vegetative and physical characteristics that provides for all the requirements of wildlife, including food, shelter, resting, nesting and escape cover, water and space. Generally, the greater the habitat diversity and degree of interspersion of various habitat types, the greater the variety of wildlife there is using an area. Because the site provides a diversity of wildlife habitat fairly well interspersed, the site provides good wildlife habitat. The site contains valuable deciduous wooded or palustrine forested wetland type habitat that is further enhanced by watercourses or riparian habitat. These wetlands, along with the upland forest and reverting field habitat, increase the site's value for wildlife.

A wide variety of wildlife is expected to utilize this site to serve all their needs, while many other species find it a place to meet some requirements. These species include deer, ruffed grouse, weasel, raccoon, otter, fox, coyote, hawks, owls, warblers, woodpeckers, thrushes, vireos, sparrows and a variety of reptiles and amphibians. Appendix E contains a complete list of the potential species that might use the site.

Forestland: The majority of the site is hardwood forest. Species include tulip, beech, sugar maple, shagbark hickory, ash, birch and various types of oaks.

Understory species include viburnum, spicebush, birch, sugar maple, cherry, blueberry and ironwood. Forests provide wildlife with cover, food, nesting places, denning sites and roosting places. In addition, oak trees provide a source of acorns or mast for a variety of species. The beech trees and hickory trees provide nuts. Birch trees provide catkins and seeds which are used by ruffed grouse, chickadees, pine siskins and tree sparrows. Deer browse on the twigs of a number of tree species. The snag trees (i.e., dead trees) on the site are a source of insects which serve as food for many species such as woodpeckers and chickadees. Den trees or trees with cavities can serve as nesting or denning places for animals such as squirrels and raccoons. The "Environmental Assessment of the April Gardens Property" by Soil Science and Environmental Services, Inc. contains a detailed description of the vegetation found at the site.

Reverting Fields: The site includes several areas of old reverting fields and an area where topsoil and gravel has been stripped from fields which contain early successional stage vegetation. Typical species include red cedar, red maple, birch, aspen and spirea. Various grasses and herbs are found in areas where openings still exist and enough light reaches the ground to promote this growth. Tree growth is very thick in places, and trees are approaching pole size. Old field and reverting field areas provide a very useful habitat type because they contain a variety of young trees/shrubs, grasses and herbaceous growth which provides a variety of food and cover to a number of birds and small mammals. Other mammals such as fox may hunt in these areas, and deer may browse on the young saplings and herbaceous growth.

Wetlands: Because wetlands increase the habitat diversity of an area and offer a variety of food and cover to wildlife, they are important areas to consider for protection. Acre for acre, wetlands and their associated riparian zones exceed all other land types in wildlife productivity. In addition to their value as wildlife habitat,

wetlands serve other valuable functions, including water recharge, sediment filtering, flood storage, etc. For these reasons, the development of, filling in and/or crossing of wetlands should be avoided or limited whenever possible.

The site contains 6 wetland areas, which combined total 16.87 acres. In general, all the wetlands can be classified as deciduous wooded wetlands or palustrine forested wetlands. The "Environmental Assessment of the April Gardens Property" by Soil Science and Environmental Services, Inc. contains a detailed description of all the wetlands. Although the 6 wetlands vary in size and other physical features, they are fairly similar in terms of the vegetation they support and the habitat they provide for wildlife.

Wetlands 1 and 6 (shown on the map prepared by Soil Science and Environmental Services, Inc.) are associated with permanent watercourses. These watercourses are small, but are strewn with rocks and boulders and appear as though they support a good flow during wet times of year. Wetlands associated with streams tend to be more diverse because they provide an additional riparian habitat type, a year-round source of water and different types of vegetation. Therefore, these wetlands are generally more useful to a wider variety of wildlife.

Wetlands 2, 3 and 5 have intermittent streams that in some areas form a maze of rivulets. Wetland 4 has no intermittent stream associated with it, but appears to be wet a good deal of the time. Although these wetlands may be less diverse, they still provide valuable wooded wetland habitat for a variety of wildlife.

In general, all the wetlands are characterized by an overstory of red maple, basswood, yellow birch and oak. Typical understory species include spicebush, witchhazel, sweet pepperbush, blueberry and maple leaved viburnum. Vegetation is very thick in some areas, providing abundant cover. The wide variety of trees and shrubs provide wildlife with berries, catkins, buds and bark for food as well as providing additional cover.

Although not directly observed during the field review, there were several depressions which looked as though they could serve as vernal pools. Vernal pools are temporary bodies of freshwater that provide important habitat to many species of wildlife. Many of these pools are filled in the spring, but many are also filled during the fall. Vernal pools are typically small, and since they only hold water on a temporary basis, they do not support fish life, a factor which plays a unique role in their ecology. Many species of amphibians and reptiles use vernal pools for breeding. Some species such as the mole salamander (i.e., the spotted salamander) and the wood frog breed almost exclusively in vernal pools. Other species such as the spring peeper, gray treefrog, green frog, American toad and red-spotted newt breed in vernal pools, but also use permanent wetlands. In addition, these pools provide a concentrated source of prey items for some species of birds and mammals. Because vernal pools provide an important habitat component for many species of wildlife and are critical for some species survival, they are important areas to consider for protection.

Many factors influence the value of a wetland for wildlife, including size, proximity to other habitats, type of wetland and diversity of vegetation within the wetland. Although wooded wetlands tend to receive the lowest rating when using the "Method for Evaluation of Inland Wetlands in Connecticut, Bulletin No. 9" (Amman et. al., 1986), they are still very valuable to a number of wildlife species. Because they are more abundant than some other types of wetlands, they tend to be areas where allowances are made for regulated activities.

Wildlife/Habitat Recommendations

As with any development, the impact on wildlife habitat will be negative. The impact at this site will probably be fairly extensive because of the density of the development, addition of roads and proximity to wetlands. Large portions of the site will be broken-up and lost in the construction of condominiums, roads, parking lots

and walkways. Habitat will be lost where cover is cleared for lawns and landscaping. Another impact is the increased human presence, vehicular traffic and number of free roaming children, dogs and cats. This could drive the less tolerant species from the immediate area of development and even from areas where there has been no physical change. The value of the site for wildlife habitat will correspondingly decrease as the amount of development increases. Certain species which are adaptable to man's activities may increase due to his presence, and associated nuisances may occur. Typical species which can become a nuisance include pigeons, starlings and raccoons. Species sensitive to man's presence or the changes made at the site will either move away or perish.

Ideally, a buffer of undisturbed vegetation should be left around all watercourses and wetlands. A minimum of 100 feet of undisturbed vegetation left along the brook/riparian zone and around the perimeter of wetlands is recommended to preserve the usefulness of the brook or riparian habitat for wildlife. In many areas on the phasing plan, the condominiums are much closer than 100 feet to the wetland boundary.

The design of developments can augment or decrease the negative effects of development on a site. Typically, clustering homes and leaving more open space (as long as density is not increased) is more desirable than chopping an area up into small lots.

From the Development Plan, it appears that at least 3 wetland crossings are proposed. Wherever possible, wetland crossings should be avoided and/or minimized. According to the developers, several detention basins are planned for the site. The detention basins, riprap channels, etc., will be located partially within the wetlands. In general, it is never preferable to excavate detention basins in wetlands because this results in a net loss of wetlands, represents a long-term change/ disturbance to the wetlands and can alter wetland vegetation. Alteration of wetland

vegetation is not caused by the fluctuating water levels, but by the addition of silt, salts and oils from roads and fertilizers from lawns that are contained in runoff. Also, detention basins require cleaning out or regular maintenance which means that they must be accessible to equipment. If basins are excavated in wetlands, the wetland vegetation and soils will be disturbed each time equipment is brought in to clean out the basins.

Maintaining good water quality in wetlands is important for people as well as wildlife. Silts and oils from runoff can smother invertebrate life forms, thereby effecting the food chain. Road salts can alter water chemistry and the types of wildlife which can ultimately utilize a wetland area. All precautions should be taken to insure that all water entering the wetlands during and after development is of good quality.

Planning For Open Space Areas

Open space areas should meet certain requirements if they are truly going to be valuable to wildlife. Open space areas should contain a variety of habitats. Many times the only open space areas are small islands of wetlands (usually unbuildable land) interspersed among development. Woodlands are important to wildlife, and the ecotones formed at wetland and woodland edges provide additional habitat where a dense understory provides cover and screening from human disturbance. This does not provide for the needs of a large variety of wildlife species. Open space areas should be connected. Setting aside an "island of open space" surrounded by development is the least desirable for wildlife. Open space areas should have natural travel pathways (i.e., streams, valleys and ridgetops) for wildlife to enter and exit to other open space areas outside the development. There should also be ancillary corridors that extend from this system into and through the developed area, encouraging the movement of wildlife into and through the residential development. The stream/wetland corridors are the logical base for a wildlife corridor/open space

system. Mammals such as mink and otter use streams to travel to large waterbody areas. Other species such as fox, raccoon and opossum use stream/wetland corridors to travel along in search of food. The open space area is more valuable to wildlife if not traversed by roads which may impede the movements of wildlife.

Despite the amount of open space to be set aside, development close to wetlands represents a substantial impact to the value of wildlife habitat. A buffer of at least 100 feet of undisturbed vegetation is recommended around any wetland to preserve its value and use by wildlife. Development of the site will result in negative impacts to the wetland areas by: increased disturbance to wildlife and habitat from humans, loss of wetlands if detention basins are built in them, some degree of siltation into the wetlands, increased runoff of water of questionable quality (i.e., water from roads containing salt and water from lawns containing fertilizer) and loss of upland habitat so close to valuable wetland and stream habitat. All precautions during and after construction should be taken to decrease the impacts to the site.

Additional Considerations

In a small but heavily developed and populated State like Connecticut, where available habitat continues to decline on a daily basis, it is critical to maintain and enhance where possible existing wildlife habitat.

In planning and constructing a development, there are measures that should be considered to minimize adverse impacts on wildlife. Despite these measures, wildlife habitat will increasingly be adversely impacted as the amount of development increases on a site. These measures include:

1) Maintain a 100-foot (minimum) wide buffer zone of natural vegetation around all wetland/riparian areas to filter and trap silt and sediments and to provide some habitat for wildlife.

2) Utilize natural landscaping techniques (avoiding lawns and chemical runoff) to lessen acreage of habitat lost and possible wetland contamination.

3) Stonewalls, shrubs and trees should be maintained along field borders.

4) Early successional stage vegetation (i.e., field) is an important habitat type and should be maintained if possible.

5) During land clearing, care should be taken to maintain certain forest wildlife requirements:

   a) Encourage mast producing trees (i.e., oak, hickory and beech). A minimum of 5 oaks per acre, 14 inches dbh or greater should remain.

   b) Leave 5 to 7 snag/den trees per acre because they are used by birds and mammals for nesting, roosting and feeding.

   c) Exceptionally tall trees, used by raptors as perching and nesting sites, should be encouraged.

   d) Trees with vines (i.e., fruit producers) should be encouraged or can be planted as part of the landscaping in conjunction with the development, especially those that produce fruit which persists through the winter (i.e., winterberry). Appendix F contains a list of suggested shrub and tree species that can be encouraged and/or planted to benefit wildlife.

   e) Brush debris from tree clearing should be piled to provide cover for small mammals, birds, amphibians and reptiles.

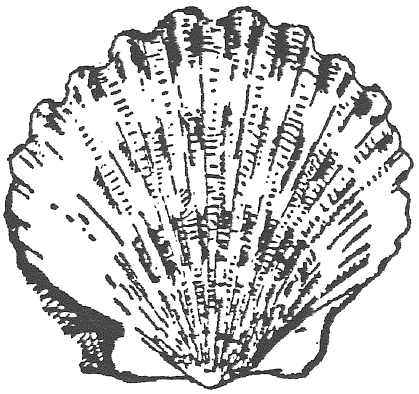
THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

According to Natural Diversity Data Base maps and files, there are no known extant populations of Federally Endangered and Threatened species or Connecticut "Species of Special Concern" occurring at the site.

Natural Diversity Data Base information includes all information regarding critical biologic resources available at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geologic and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultation with the Data Base should not be substituted for on-site surveys

required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as enhance existing data. New information is incorporated into the Data Base as it becomes available.

ARCHAEOLOGICAL RESOURCES



ARCHAEOLOGICAL RESOURCES

A review of the State of Connecticut Archaeological Site Files and Maps shows no known archaeological sites on the April Gardens development property. However, a series of small Native American encampments dating to 4,000 years ago are listed to the east in Bethany along Hopp Brook. These sites have similar environmental and topographic features as the development property and suggest that undiscovered sites may exist, especially along the stream system that disects the property in its southeastern portion.

Prehistoric Indian groups often utilized wetland areas for the natural resources available during seasonal rounds. Settlements are usually located in well-drained soils adjacent to even minor drainages. The stream system served as an ideal place to trap and spear fish, and ledge areas may have provided rockshelter habitats for camp sites. Site locational data and the natural features of the development property suggest that there is a high potential for archaeological resources to be recovered along the stream corridor.

The Office of State Archaeology recommends an archaeological reconnaissance survey for the southeastern portion of the development property to locate and preserve any sites which might exist. All archaeological work should be undertaken in accordance with the Connecticut Historical Commission's Environmental Review Primer for Connecticut's Archaeological Resources.

LAND USE AND PLANNING CONSIDERATIONS

PLANNING CONSIDERATIONS

Land Use

The proposed expansion of the April Gardens development is surrounded mostly by vacant land and some single-family residences. The north side of the site is bordered by forested land in Beacon Falls. The south side contains the 81 completed condominiums of Phase 1. To the east, a golf course is located on adjacent property in Bethany. The west side is bounded by Skokorat Road and a few single-family dwellings.

Although this condominium expansion is compatible with surrounding land uses, a large development of this size (454 additional units) merits close examination of impacts. The actual location and arrangement of the roadways and dwelling units should be given careful consideration. Encroachment of development on the wetlands and watercourses should be minimized as much as possible. Lack of adequate drainage and runoff control could create problems, both during and after construction. Development of this site in phases is commendable because it allows greater ability to handle any unforeseen problems and lessens the initial environmental impacts.

Plans of Development

Seymour's Plan of Development (1988) recommends multi-family residential land use for this site, with open space along the northern, eastern and western borders. The Regional Plan of Development for the Naugatuck River Valley (1988) has a similar recommendation for the site, with the Map of Future Land Use recommending open space along the east side watercourse. The map is a generalized interpretation of present and future development areas and is not always specific down to individual properties. However, this development proposal is generally consistent with the Regional Plan.

Zoning Regulations

Surrounding zoning in Seymour includes Residence R-15 (15,000 square feet minimum lot size) to the south and west and R-4O (40,000 square feet minimum lot size) to the west. In Beacon Falls to the north, the entire surrounding area is zoned Residential R-2 (15,000 square feet minimum lot size with public water and sewers). In Bethany to the east, zoning is R-65 residential (65,000 square feet minimum lot size).

Site Design

Site design is an important consideration in the development of this site. Although much of the wetland areas are proposed as open space, inadequate drainage could create problems both on-site and downstream. Some segments of the road network may be unnecessary. The segments that could be eliminated are those which run parallel to the access drives for a small number of structures. This occurs with the 5 northernmost structures in Phase 3 and the first 2 structures in the upper leg of Phase 4. These units could be placed closer to the main drive, and parking could be between and/or behind the units. A single road through the site would result. In general, use of this technique throughout the development could significantly reduce total paved area and improve visual quality through a discrete placement of parking spaces. Phases 1 and 2 actually use this technique to some degree, yet it seems to have been overlooked in Phases 3 and 4. Consideration should be given to realigning the roadway at some of these locations to reduce impervious surface area. Some of the site was once farmland and orchards. These areas should be preserved as much as possible to create usable, recreational open space for residents. Much of the proposed open space consists of either unusable wetlands or steep slopes.

Traffic Considerations

The proposed development of 362 additional condominium units of Phases 3 and 4 will be served by Skokorat Road. Traffic generated by the development should be viewed in the context of future traffic volumes for the entire length of this road. This table defines projected traffic generation for the dwelling units:

APRIL GARDENS CONDOMINIUMS PROJECTED TRAFFIC GENERATION

Total Dwelling Units = 362 (Phases 3 & 4)

		Average Trip Rate	Trip Ends @ 362 Units
Average Weekday Vehicle Trip Ends		5.40	1,955
A.M. Daily Peak Hour	Enter	0.07	25
	Exit	0.37	134
	Total	0.44	159
P.M. Daily Peak Hour	Enter	0.36	130
	Exit	0.18	65
	Total	0.54	195

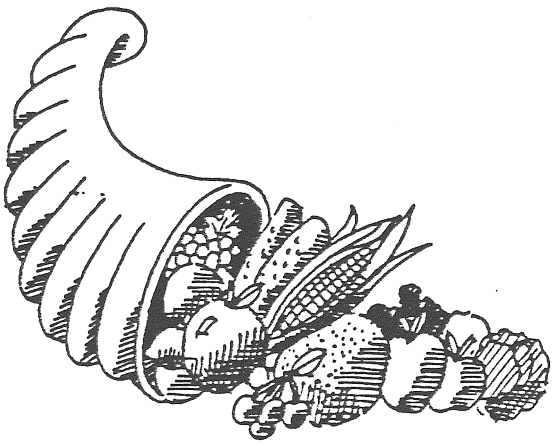
As shown by the table, full development of this site will generate approximately 1,955 trip ends (i.e., trips entering or leaving). At an average trip rate of 3.3 per vehicle (condominium rate), at least 592 cars would use this development on a daily basis. Nearly 200 of the vehicle trips will occur in the evening peak hour.

These projections are generally consistent with those found in the November, 1990 report by Wilbur Smith Associates. This traffic impact study accounts for other future development anticipated for the Skokorat Road area, including the Rimmon Brook and Briarwood Subdivisions, a convalescent home and an industrial subdivision. This will result in an operating level of service (LOS) C or better for Skokorat Road with all the anticipated development, according to the study. The

intersection of Skokorat Road and Route 67 will operate at LOS D, which is marked by an average delay of 25 to 40 seconds per vehicle.

Roadway improvements to Skokorat Road, including widening between Paramount Drive and April Gardens Road, were required as part of Phase 1, but have not yet been undertaken. These improvements, combined with implementing the recommendations of the State Traffic Commission and Wilbur Smith Associates, should provide acceptable levels of service and accommodate present and future traffic on Skokorat Road.

APPENDICIES



Appendix A: Soil Limitations Chart

MAP UNIT NAME	GENERAL SOIL PROPERTIES	DRAINAGE CLASS AND DEPTH TO SEASONAL HIGH WATER TABLE	MAJOR LIMITATIONS TO THE DEVELOPMENT OF: DWELLINGS WITH BASEMENTS	LAWNS AND LANDSCAPING	ROADS AND STREETS
°PbC - Paxton fine sandy loam, 8-15% slopes	Very deep soils on uplands formed in glacial till derived from schist, gneiss and granite	Well-drained 1.5-2.5 feet between February and April	Wetness, slope	Slope	Wetness, slope, frost action
*RN - Ridgebury, Leicester and Whitman extremely stony fine sandy loams	Deep soils on uplands formed in glacial till	Poorly and somewhat poorly drained 0-1.5 feet (Whitman: +1-0.5 feet)	Wetness	Wetness	Wetness, frost action
SxC - Sutton extremely stony fine sandy loam, 3-15% slopes	Very deep soils formed in glacial till derived mainly from schist and gneiss	Moderately well-drained 1.5-2.5 feet	Wetness	Large stones, wetness	Large stones, wetness, slope
UD - Udorthents	Composed of cut or borrow areas, filled areas and areas consisting of both cut and fill	Well-drained to excessively drained	Not rated	Not rated	Not rated

*Inland wetland soil †Prime Farmland soil °Additional Farmland of Statewide Importance

Appendix B: Erosion and Sediment Control Plan Worksheet

EROSION AND SEDIMENT CONTROL PLAN WORKSHEET

This is a guide for the development and review of erosion and sediment control plans. Local commissions should be consulted for regulatory requirements concerning erosion and sediment planning.

Checked ( ) items are those that have been provided on the current erosion and sediment control plan. Items identified with a star (*) should be incorporated into final plans.

Name of development_____
Materials received_____
_____
_____
_____
Total Area_____Location_____
Engineer_____
Date Received_____Site Visit_____Reviewed by_____
Submitted by_____

NARRATIVE SECTION DESCRIBING:

_____ The development
_____ Major land uses of adjoining areas
_____ The number of total acres and acres to be disturbed in the project
_____ The schedule of grading and construction activities including:
-Start and completion dates.
_____ Application sequence of all E & S control measures
_____ The design criteria for all proposed E&S control measures
_____ Construction details and installation procedures for all proposed E&S control measures
_____ The operations and maintenance program for all proposed E&S control measures
_____ The name of the person or organization that will be responsible for the installation and maintenance of the E&S control measures
_____ Organization or person responsible for maintenance of permanent measures when project is completed. Measures include:_____
_____
_____

==========

A SITE PLAN AT A SUFFICIENT SCALE SHOWING:

Natural Features

_____Existing topography
_____Existing vegetation
_____Soils information, including test pit data if available
_____Identification of wetlands, watercourses, major drainageways and water bodies on the site
_____Name of soil scientist who performed wetlands delineations and flag numbers
_____Rock outcrop areas
_____Seeps, springs
_____Major aquifers
_____Floodplains (100 yr.) and floodways
_____Channel encroachment line (DEP permit required)
_____Coastal zone boundary
_____Public water supply watershed boundaries
_____Possible Army Corps Sec. 404 or Sec. 10 Permit Areas (Contact Corps @ 1-800-343-4789).

Project Features

_____The location of the proposed development
_____A plan legend
_____Adjacent properties
_____Property lines
_____Lot lines and setback lines
_____Lot and/or building numbers
_____Planned and existing roads
_____Proposed structures
_____Location of existing and planned utilities
_____Location of wells and septic systems
_____Proposed topography
_____North arrow

Clearing, Grading, Vegetative Stabilization

_____The sequence of grading, construction, and sediment and erosion control activities
_____The location of and construction details for all proposed E&S control measures
Recommended measures include_____
_____
_____

_____Limits of disturbed areas
_____Extent of areas to be graded
_____Disposal procedure for cleared material
_____Location of stockpiled topsoil and subsoil
_____Temporary erosion protection for stockpiles
_____Areas to be vegetatively stabilized
_____Temporary erosion control in disturbed areas
_____Method for protection of disturbed areas when time of year or weather prohibit establishment of permanent vegetative cover
_____Seedbed preparation (including topsoiling specifications)
_____Seeding mixture, rates, and seeding dates
_____Fertilizer and lime application rates
_____Mulch application rate
_____Mulch anchoring measures

Drainage System

_____Existing and planned drainage pattern
_____Drainage areas used in design of stormwater management system
_____Size and location of culverts and storm sewers
_____Drainage calculations for review by town engineer
_____Stormwater management measures and construction details
_____Groundwater control measures (footing drains, curtain drains)
_____Planned water diversions and dams (DEP permit may be required)

House Site Development

_____Sediment and erosion control measures for individual lot development

Additional Comments

Appendix C: April Gardens Conceptual Stormwater Management Plan
Figures 1 and 2

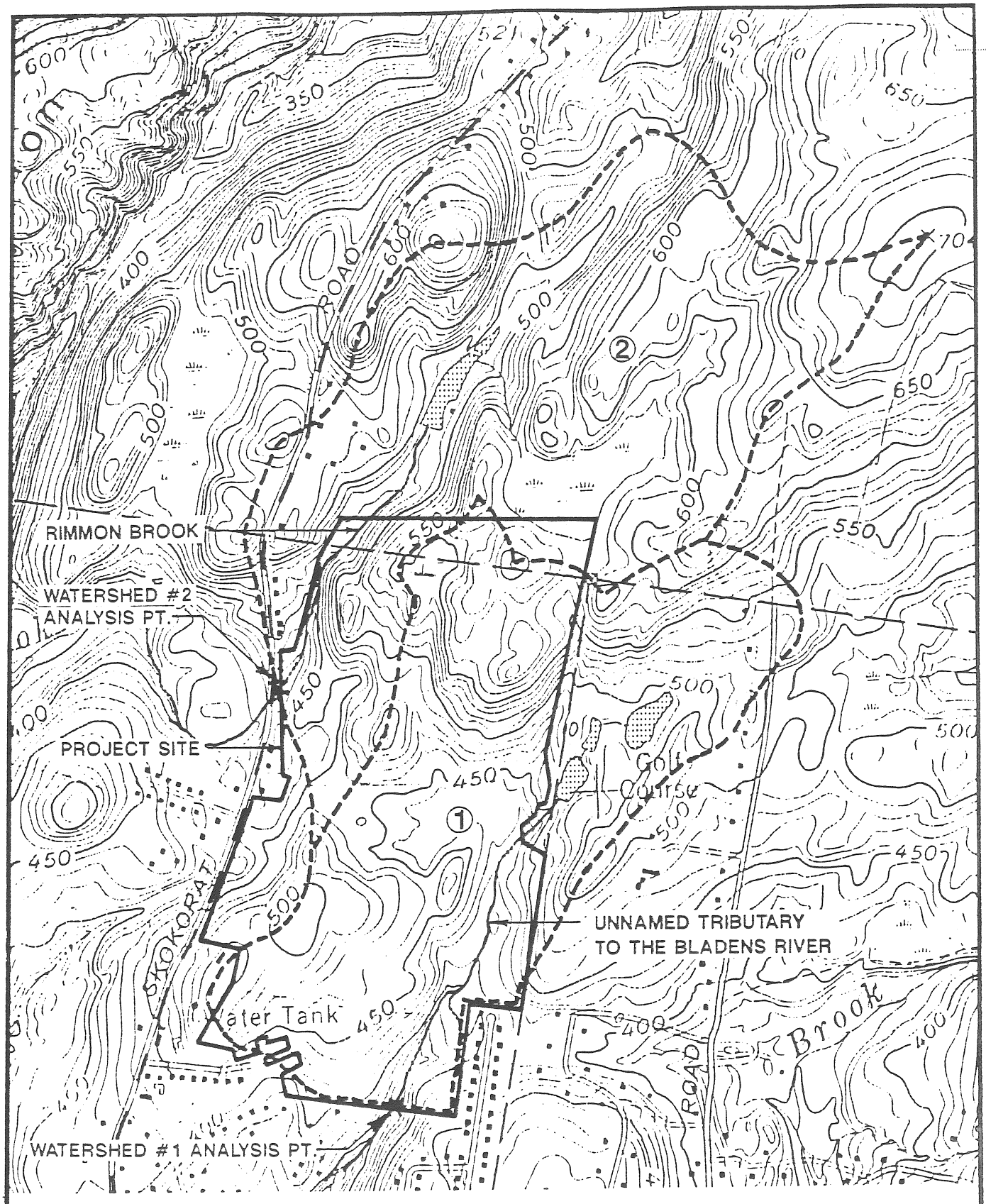
APRIL GARDENS

CONCEPTUAL STORMWATER MANAGEMENT PLAN

November 27, 1990

Milone & MacBroom, Inc.
470 West Main Street
Cheshire, Connecticut 06410

(203) 271-1773



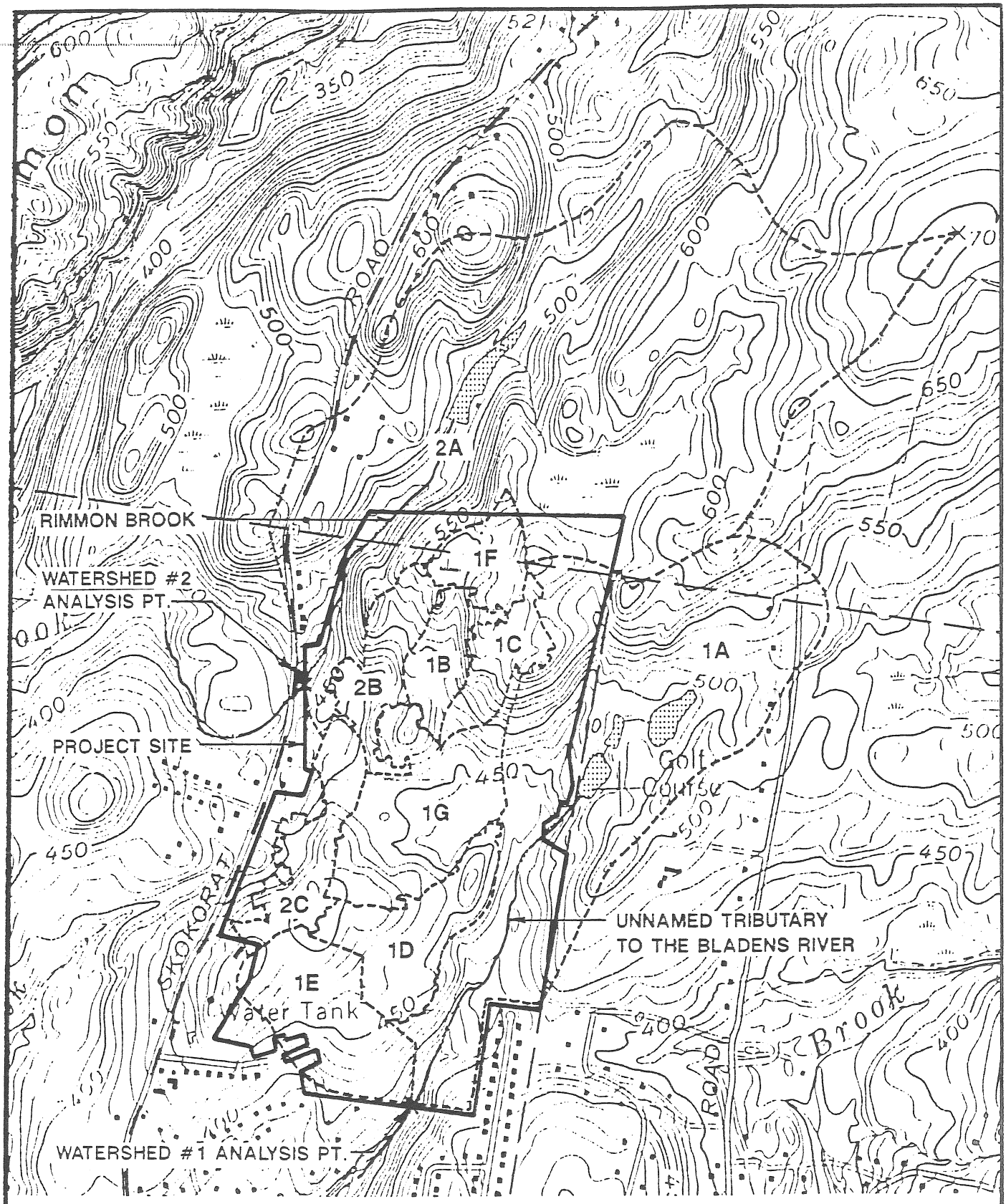
EXISTING WATERSHEDS

APRIL GARDENS

SEYMOUR, CONNECTICUT

SCALE: 1"=1000'

FIGURE 1



PROPOSED WATERSHEDS

APRIL GARDENS

SEYMOUR, CONNECTICUT

SCALE: 1"=1000'

FIGURE 2

Appendix D: Checklist for Reviewing Reports Using TR-20 Analysis

SCS-CT-ENG-HYD2-Trial
April 1988

U.S. DEPT. OF AGRICULTURE
SOIL CONSERVATION SERVICE
STORRS, CONNECTICUT

This form should be used in conjunction with Chapter 9 of the Connecticut Guidelines for Sediment and Erosion Control to develop Hydrologic Reports. TR-20 utilizes NEH-4 procedures as noted in Chapter 9.

CHECKLIST FOR REVIEWING REPORTS USING TR-20 ANALYSIS

PROJECT: _____ LOCATION: _____

BY: _____ DATE: _____

1. ____ TR-20 Watershed Map at a scale of 1" = 500' or larger. Show subarea boundaries, cross section locations and numbers, structure locations and numbers, and subarea names or numbers. (Optional - show Tc, CN, and Drainage Area for each subarea on the map). Contour maps must include some additional area outside the property line boundaries.

2. ____ Large scale map showing different soils within each subarea and subarea boundaries. May also be used to measure drainage areas. Could also show Tc calculation path used for each subarea.

3. ____ Tabulation sheet or computer printout showing Curve Number and Time of Concentration calculations for each subarea. Drainage areas, Hydrologic Soils Groups, and Land Use areas should be documented from soils maps or other references.

4. ____ Tabulation sheet showing calculations and equations used for structure stage-discharge-storage volumes and cross section elevation-discharge-area calculations. Include sketches of structures and cross sections showing elevations and dimensions used in the calculations.

5. ____ TR-20 printout showing input listing and a minimum output of the summary tables. The minimum required output is listings and summary tables for the pre-development, post development, and post development with control for all required storms. These runs must document the zero discharge increase for all required storms.

6. ____ The written report should state the initial conditions and storm frequencies to be analyzed. Include a summary table showing the pre-development, post development, and designed system peak discharges for all design frequencies. A "fullprint" printout of the TR-20 run is not needed in the report, only the input and summary tables. The fullprint output can be attached as extra material.

Appendix E: Species List by Habitat for Litchfield County

CONNECTICUT SPECIES DATABASE
WILDLIFE BUREAU
WESTERN DISTRICT HEADQUARTERS

SPECIES LIST BY HABITAT FOR NEW HAVEN COUNTY

This is a list of the potential or possible species that could occur in the habitat types found on the proposed development site. General habitat types include: Deciduous Woodland, Old Field, Riverine Upper Perennial Wetland and Palustrine Forested Wetland. This list does not guarantee that these species will be present, but that they may potentially occur at the site. Many factors in addition to habitat type determine a species presence, although species presence based on habitat type is both a practical and sound method for many evaluational/informational purposes. Some of the species listed, if present at all, may only use the area on a temporary or sporadic basis.

SPECIES	DW	OF	RUP	PFO
Marbled Salamander	X			
Jefferson Salamander	X			X
Blue-spotted Salamander			X	X
Spotted Salamander	X	X		X
Red-spotted Newt	X			
Northern Dusky Salamander			X	X
Slimy Salamander	X			
Four-toed Salamander				X
Northern Spring Salamander	X		X	X
Northern Two-lined Salamander	X			X
American Toad	X	X		
Fowler's Toad	X			X
Northern Spring Peeper	X		X	X
Greater and Lesser Grey Treefrog		X		
Wood Frog	X			X
Northern Leopard Frog		X	X	X
Pickerel Frog			X	
Spotted Turtle			X	
Wood Turtle	X	X		X
Eastern Box Turtle	X	X		X
Five-lined Skink	X			
Northern Water Snake			X	
Northern Brown Snake	X	X	X	X
Northern Redbelly Snake	X			X

SPECIES	DW	OF	RUP	PFO
Eastern Garter Snake	X	X	X	X
Eastern Ribbon Snake	X		X	X
Eastern Hognose Snake	X	X		X
Northern Ringneck Snake	X			
Eastern Worm Snake	X	X	X	X
Northern Black Racer	X	X		X
Eastern Smooth Green Snake	X	X		X
Black Rat Snake	X	X		X
Eastern Milksnake	X	X		X
Turkey Vulture	X	X	X	X
Northern Harrier (Marsh Hawk)			X	X
Sharp-shinned Hawk	X	X		
Cooper's Hawk	X	X		X
Goshawk	X			
Red-shouldered Hawk	X			X
Broad-winged Hawk	X			
Red-tailed Hawk	X	X		X
American Kestrel		X		
Ring-necked Pheasant			X	
Ruffed Grouse	X	X		
Eastern Wild Turkey		X		
Northern Bobwhite		X		
Killdeer		X		
American Woodcock		X		
Rock Dove		X		
Mourning Dove	X	X		
Black-billed Cuckoo	X	X		
Yellow-billed Cuckoo	X	X		X
Barn Owl		X		
Screech Owl	X	X		
Great Horned Owl	X			X
Barred Owl	X			X
Long-eared Owl	X	X		X
Northern Saw-whet Owl	X			X
Common Nighthawk		X		
Ruby-throated Hummingbird				X
Belted Kingfisher				X
Red-headed Woodpecker	X			X
Downy Woodpecker				X
Hairy Woodpecker	X			X
Northern Flicker	X	X		
Wood Pewee	X			
Acadian Flycatcher	X			X
Willow Flycatcher		X		

SPECIES	DW	OF	RUP	PFO
Least Flycatcher	X	X		
Eastern Phoebe	X			
Great Crested Flycatcher	X			X
Eastern Kingbird		X		
Tree Swallow				X
Northern Rough-winged Swallow		X		
Blue Jay	X			
Common Crow	X			
Black-capped Chickadee	X			X
Tufted Titmouse	X			X
White-breasted Nuthatch	X			
Brown Creeper	X			X
Carolina Wren		X		
House Wren		X		X
Winter Wren				X
Blue-gray Gnatcatcher	X		X	X
Eastern Bluebird		X		
Veery	X			X
Swainson's Thrush	X			
Wood Thrush	X			X
American Robin	X	X		
Northern Mockingbird		X		
Brown Thrasher		X		
Cedar Waxwing	X			X
European Starling		X		
White-eyed Vireo		X		
Yellow-throated Vireo	X	X	X	X
Warbling Vireo	X			
Red-eyed Vireo	X			
Blue-winged Warbler		X		
Golden-winged Warbler	X	X		
Nashville Warbler	X	X		X
Yellow Warbler		X	X	
Chestnut-sided Warbler		X		
Cerulean Warbler	X		X	
Black-and-white Warbler	X			
American Redstart	X		X	
Worm-eating Warbler	X			
Ovenbird	X			
Northern Waterthrush				X
Louisiana Waterthrush			X	X
Common Yellowthroat		X	X	
Canada Warbler	X		X	X
Yellow-breasted Chat		X		

SPECIES	D W	O F	R U P	P F O
Scarlet Tanager	X			X
Northern Cardinal		X		
Rose-breasted Grosbeak		X	X	
Indigo Bunting		X	X	
Rufous Sided Towhee		X		
Field Sparrow		X		
Song Sparrow		X		
White-throated Sparrow		X		
Red-winged Blackbird		X		
Eastern Meadowlark		X		
Common Grackle		X		
Brown-headed Cowbird	X			
Orchard Oriole		X		
Northern Oriole (Baltimore)		X	X	
House Finch		X		
American Goldfinch		X		
Virginia Opossum	X		X	X
Masked Shrew	X			X
Water Shrew			X	X
Smoky Shrew	X		X	
Short-tailed Shrew	X	X	X	
Least Shrew		X		
Hairy-tailed Mole	X	X		
Eastern Mole		X		
Star-nosed Mole		X	X	
Snowshoe Hare	X			
European Hare		X		
Woodchuck		X		
Little Brown Myotis			X	X
Keen's Myotis		X		
Silver-haired Bat	X			X
Eastern Pipistrelle	X		X	X
Big Brown Bat	X			
Red Bat	X			
Hoary Bat	X			
Eastern Cottontail	X	X		X
New England Cottontail	X	X		X
Grey Squirrel	X			
Red Squirrel	X			
Southern Flying Squirrel	X			
White-footed Mouse	X	X	X	
Meadow Vole		X	X	X
Woodland Vole	X	X		
Southern Bog Lemming	X	X		

SPECIES	DW	OF	RUP	PFO
House Mouse		X		
Meadow Jumping Mouse		X		
Woodland Jumping Mouse	X		X	
Coyote		X		
Red Fox		X		
Gray Fox	X			X
Raccoon		X	X	
Short-tailed Weasel		X		
Long-tailed Weasel		X	X	
Mink			X	X
Striped Skunk		X		
River Otter			X	X
Bobcat	X	X		X
White-tailed Deer	X	X		X

Habitat selections for New Haven County

DW	Deciduous Woodland
OF	Old Field
RUP	Riverine Upper Perennial Wetland
PFO	Palustrine Forested Wetland

Appendix F: Suitable Planting Materials for Wildlife Food and Cover

SUITABLE PLANTING MATERIALS FOR WILDLIFE FOOD AND COVER

Herbaceous/Vines	Shrubs	Small Trees
Panicgrass	Sumac	Hawthorn
Timothy	Dogwood	Cherry
Trumpet creeper	Elderberry	Serviceberry
Grape	Winterberry	Cedar
Birdsfoot trefoil	Autumn olive	Crabapple
Virginia creeper	Blackberry	
Switchgrass	Raspberry	
Lespedeza	Honeysuckle	
Bittersweet	Cranberrybush	
Boston ivy		

NOTES

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, soil scientists, foresters, climatologists, landscape architects, recreational 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 - an 83-town area serving western Connecticut.

As a public service activity, the Team is available to serve towns and/or developers within the King's Mark RC&D Area - free of charge.

Purpose of the Environmental Review Team

The Environmental Review Team is available to assist towns and/or developers in the review of sites proposed for major land use activities. For example, the ERT has been involved in the review of a wide range of significant land use activities including subdivisions, sanitary landfills, commercial and industrial developments and recreational/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 site and highlighting opportunities and limitations for the proposed land use.

Requesting an Environmental Review

Environmental Reviews may be requested by the chief elected official of a municipality or the chairman of an administrative agency such as planning and zoning, conservation or inland wetlands. Environmental Review Request Forms are available at your local Soil and Water Conservation District and through the King's Mark ERT Coordinator. This request form must include a summary of the proposed project, a location map of the project site, written permission from the land owner/ developer allowing the Team to enter the property for purposes of review and a statement identifying the specific areas of concern the Team should investigate. When this request is approved by the local Soil and Water Conservation District and King's Mark RC&D Executive Committee, the Team will undertake the review. At present, the ERT can undertake approximately two (2) reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil and Water Conservation District or Sue Ferrarotti, ERT Coordinator, King's Mark Environmental Review Team, King's Mark RC&D Area, 322 North Main Street, Wallingford, Connecticut 06492. King's Mark ERT phone number is 265-6695.