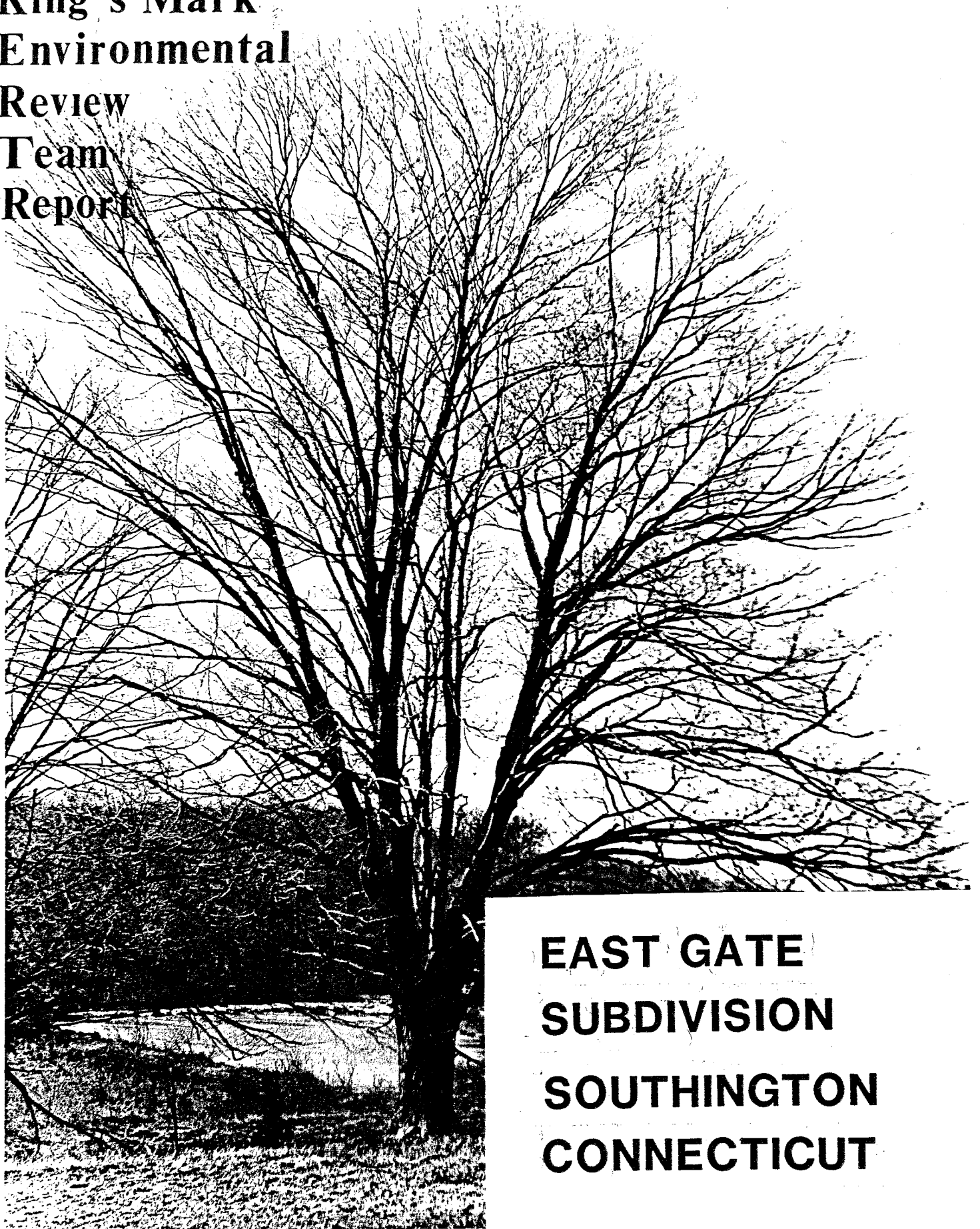


**King's Mark  
Environmental  
Review  
Team  
Report**



**EAST GATE  
SUBDIVISION  
SOUTHINGTON  
CONNECTICUT**

EAST GATE SUBDIVISION

SOUTHINGTON, 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

Southington Conservation 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 Conservation 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.

APRIL 1988

## ACKNOWLEDGMENTS

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

- \* William Warzecha, Hydrogeologist  
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USDA - Soil Conservation Service
- \* Kip Kolesinskas, Soil Resource Specialist  
USDA - Soil Conservation Service
- \* Daniel Mayer, Inland Wetland Specialist  
Department of Environmental Protection - Inland Wetlands Unit
- \* Judy Wilson, Wildlife Biologist  
Department of Environmental Protection - Western District
- \* Donald Mysling, Fisheries Biologist  
Department of Environmental Protection - Western District
- \* Willian Voelker, Planner  
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- \* William Britnell and Louis Reynolds, Traffic Engineers  
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Finally, special thanks to Steven Tuckerman, Town Planner, Maurice Cayer, Southington Conservation Commission and Anthony Milo, Ray Kastner, and Tony Denorfia, developers, James Saklonchick, engineer for the developer, and Frank Indorf, soil scientist for the developer, for their cooperation and assistance during this environmental review.

## EXECUTIVE SUMMARY

### Introduction

The Southington Conservation Commission has requested that an environmental review be conducted on East Gate, a site proposed for a subdivision development. The site is located in the central portion of Southington. Access is provided via Savage Street and Meriden Avenue (Route 120). The 110-acre site is characterized by second growth, mixed hardwood forests, wetlands, and former agricultural lands. Several former farm buildings are still standing. There are scattered wetland communities as well as numerous drainage swales. Misery Brook runs through the northwest section of the property. A 190-foot easement for the CL&P transmission lines and an 80-foot easement for the Tennessee Gas Company line run through the property.

The proposed subdivision would encompass approximately 90 house lots, ranging in size from 0.52 acres to 3.14 acres. The subdivision is planned in phases. Details of the first phase are complete. The future phases remain preliminary. A number of access roads and cul-de-sacs are proposed to serve the subdivision. The subdivision would rely upon municipal sewers and water.

The Town was primarily concerned with the potential impact that the proposed development would have on: (1) existing wetland corridors; (2) erosion and sedimentation; (3) wildlife and fisheries; and (4) site design compatibility. Therefore the City asked the ERT to inventory on-site resources and determine their suitability for the proposed development.

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

### Setting and Land Use

The site is located in eastcentral Southington. Zoning for the site is R-20/25, single family homes on 22,500 square foot lots. Land uses in the immediate vicinity consist of medium density residences. The site is predominantly wooded, with scattered wetland communities. A major concern for lots with a high percentage of wetland soils is the potential for gradual filling of the wetlands by future home owners. Also, cumulative impacts over long periods of time can cause drainage problems to property owners and abutting property owners. Efforts should be made to insure that each lot has sufficient dry land.

The site is located on the side of a streamlined hill whose shape derives itself from the smoothing action of glacial ice. Site elevations range from a high of 260 feet to a low of 180 feet above sea level.

### Geology

No bedrock outcrops were observed during the field review. Bedrock has been mapped as New Haven Arkose, relatively soft sandstones and siltstones. The bedrock should not pose a major problem to the development due to the available municipal sewers and water. If the rock is close to the surface, some blasting may be necessary.

The surficial geologic materials over much of the site are called till. The till has a shallow hardpan layer which can result in a seasonally high water table. A hardpan can be a hindrance to development because it is very difficult to stabilize cuts in it. Water seeps on top of the hardpan creating an unstable condition. Establishing a vegetation cover on the eroding slopes is very difficult. If homes are to have basements, it is suggested that footing drains be used to keep them dry. The surficial geologic materials along the northern border of the site are called stratified drift.

The inland wetlands have been flagged throughout the site. Soils in these areas are poorly to very poorly drained and have high water tables. Construction in these areas can pose engineering problems. The flood control and sediment retention capabilities of the wetlands are probably good. Any regulated activity that takes place in the wetlands will require a permit from the Conservation Commission and may require a permit from the U.S. Army Corps of Engineers.

### Hydrology

The entire site lies within the drainage of Misery Brook. The proposed development can be expected to increase the runoff shed from the site. The Town requires no increase in runoff from the site. To accomplish this, two detention basins are planned. The detention basins will be constructed with earthen dams. A permit from the DEP Dam Safety Unit may be required. The detention basin for Phase 1 and part of Phase 2 will be located in a wetland. It is expected that the wetland is already serving as a natural detention area. Since the detention basins may also serve a sediment retention function, maintenance may be required to remove silt and sand. An access road will be required for the maintenance.

According to the DEP, the water in Misery Brook is Class A. Protection of the watercourses from sand and silt is a major concern. A comprehensive erosion and sediment control plan is essential in view of the silty soils and potential for erosion. A stormwater management plan with road outlets is needed and stormwater should be outletted to a sediment basin rather than directly to watercourses. Considerations for maintenance of catch basins and detention/sedimentation basins is important.

Public water and sewer lines allay some of the hydrogeologic impacts associated with development. One concern is the construction of roads and houses in the wetlands. Road crossings are feasible but undesirable. The roads need to be adequately above the elevation of the wetlands to prevent frost heaving and permit better drainage. Construction should take place in the dry time of the year with provisions for effective erosion and sediment control. The applicant's engineer should quantify the amount of fill and delineate the fill lines on the plans. This will help the decision makers with the review of the plan.

Homes constructed in soils with high water tables will probably need foundation drainage to keep them dry. An alternative is to construct houses without basements. Soil testing for texture, depth to water table and soil loading rates will be needed in lots with a high percentage of wetland soils. Construction in wetlands is undesirable as it will take away any hydrological or ecological functions that the wetlands are performing.

Groundwater is classified as GA. One of the review questions was would the development impact the water supply wells to the north of the site. Domestic waste would be transported off-site through the sewer system and would not be available to recharge the groundwater in the area. In order to conduct a detailed study, a professional hydrogeologist will be needed.

### Soil Resources

The landforms on the site are dominated by soils formed in deposits of till materials derived from Triassic sandstones and siltstones. Higher areas are well to moderately well drained and lower areas are poorly drained to very poorly drained. Alluvial soils are found along the small watercourses and Misery Brook. The northwest section of the site forms a transitional area between dense till deposits and glacial outwash deposits. Soils in these areas are excessively drained to moderately well drained. Much of the site is characterized by seasonal high water tables. Fill, subsurface drainage and homes without basements may be needed on many lots.

### Erosion and Sediment Control Plan

The erosion and sediment control plan presently does not adequately address the site resource needs. A review of the Connecticut "Guidelines of Soil Erosion and Sediment Control" may help to develop an appropriate plan. Additional measures that may be needed include: (1) a construction entrance pad; (2) improved catch basin protection; (3) permanent and temporary seeding specifications; (4) mulching specifications; and (5) silt fence details.

The proposed construction in wetlands will impact the stream and possibly several of the wetland functions. Even with proper site protection during construction, long term impacts can be expected. Direct stormwater discharge into the stream is proposed. All surface and subsurface water reaches Misery Brook. If on-site detention is recommended or desired, it is suggested that it be done in non-wetland areas whenever possible. Detention basins can be constructed to create artificial wetlands. They can also be constructed to retain road sediments and pollutants prior to outlet to a natural wetland system. If concern exists for maintaining groundwater, the design of the stormdrain system and detention pond could reflect this.

This site might be more suitable for alternate layouts such as a cluster type development. This would create large buffer areas to wetlands, reduce impervious areas and reduce development runoff peaks.

### Wetland Considerations

The wetlands on the site are divided into two main systems both of which flow into Misery Brook. The first wetland is located in the eastern parts of the site and flows northeast to Misery Brook. The second wetland is located in the central portion of the site and spreads until it meets Misery Brook. Both of these wetlands are in good condition.

Both of the wetlands have intermittent streams which serve as drainage ways. Other functions include wildlife habitat, water purification, sediment filtration, flood water storage, nutrient recycling and visual and aesthetic diversity. The habitat value of the wetlands ranges from good to excellent and the several different types of communities on the site provide the diversity needed by animals and birds.

The project will be developed in phases. Phase 1 will include two wetland crossings and construction of houses in lots with large percentages of wetlands. A detention basin with a detention berm is planned in the wetland. Construction of the detention basin will result in some filling of wetlands and can change the vegetative quality of the surrounding area. The future phases have lots with high percentages of wetlands in the lots. The wetland functions will be reduced in quality, especially wildlife habitat and aesthetics.

In Phase 1 the use of box culverts is preferable because they will maintain wildlife corridors. They will also allow natural flow rates to isolated portions of the wetland. Due to the high percentage in lots 43 and 44, the elimination of these lots as building sites might be considered. Creation of new wetlands should be considered to mitigate the impacts to the wetlands. Proper erosion and sediment controls will be needed to protect the wetlands. Alternatives to constructing the detention basins in wetlands might be considered. In the future phases, there will be significant impact to the wetlands. Alternatives such as cluster development would minimize the impact to the wetlands.

### Wildlife Resources

The site contains a variety of habitats including mixed hardwood forest, old field areas, open field areas, wetlands and a brook. The high degree of interspersed of the habitat types offers good to excellent wildlife habitat.

As with any development, the impact on wildlife habitat will be negative. The area will be broken up and lost with the construction of roads, driveways, walkways, parking areas, and homes. Other impacts include the creation of lawns and introduction of humans, traffic, dogs and cats. The proposed retention basins will have little value to wildlife.

There are many steps that can be taken in order to make the area more suitable for wildlife. These include buffer strips, natural landscaping techniques, maintaining forest wildlife requirements and providing nesting boxes for birds. Large lots would help to minimize the impacts on wildlife as would cluster development.

### Fisheries Resources

Phase 1 will impact a tributary to Misery Brook. This stream does not appear to have a viable fishery population. A detention basin is planned for this phase. It should be built before any further development to prevent sediments from entering into Misery Brook.

The future phases will impact Misery Brook. Misery Brook is not stocked with trout but supports a population of wild trout and redbfin pickerel. Potential impacts of the development on Misery Brook include: degradation of the water quality by erosion and sedimentation, introduction of road salts, sand and lawn chemicals into the stream, and depleted flows to Misery Brook because of groundwater withdrawals upstream. These impacts can be mitigated by maintaining a buffer zone around Misery Brook, using a comprehensive soil erosion and sediment control plan and effective stormwater control plan, limiting the use of lawn chemicals close to the brook and educating the consumers about conservation of water.

### Threatened and Endangered Plant and Animal Species

According to the DEP - Natural Diversity Database there are no Federally listed Endangered Species or Connecticut "Species of Special Concern" that occur within the study area.

### Planning Considerations

Surrounding land uses include medium density residential development and farmland. Many of the lots appear to have considerable portions as designated wetland. Consideration might be given to a minimum percentage of lot area in wetlands before filling is allowed. If this requirement were imposed on the current plan, the impact would be the creation of larger lots. Another alternative is to allow performance zoning techniques such as cluster single family development. This would allow development of the property in accordance with the underlying zoning yet minimize the impacts on the wetlands.

### Traffic Considerations

Sightlines from Canterbury Lane could be improved by removing some trees and grading the land. Sightlines from several driveways on Savage Street will be poor. The development may require a certification from the State Traffic Commission. The proposed curb cut on to Route 120 should require a permit from the ConnDOT District Office. Sightline easements should be considered to guarantee the maximum distance possible. Bridle Path Road will form a direct connection from Savage Street to Meriden Avenue. Some people may use this new route to circumvent the traffic signal which will be installed at the intersection of Savage Street and Meriden Avenue. Since this will be a residential neighborhood, it might be wise to avoid this.



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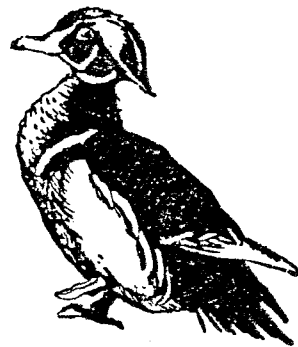
Appendix A:     Soils Limitation Chart

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## INTRODUCTION



The review process consisted of four 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.
- (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 March 23, 1988. Field review and inspection of the proposed development 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.

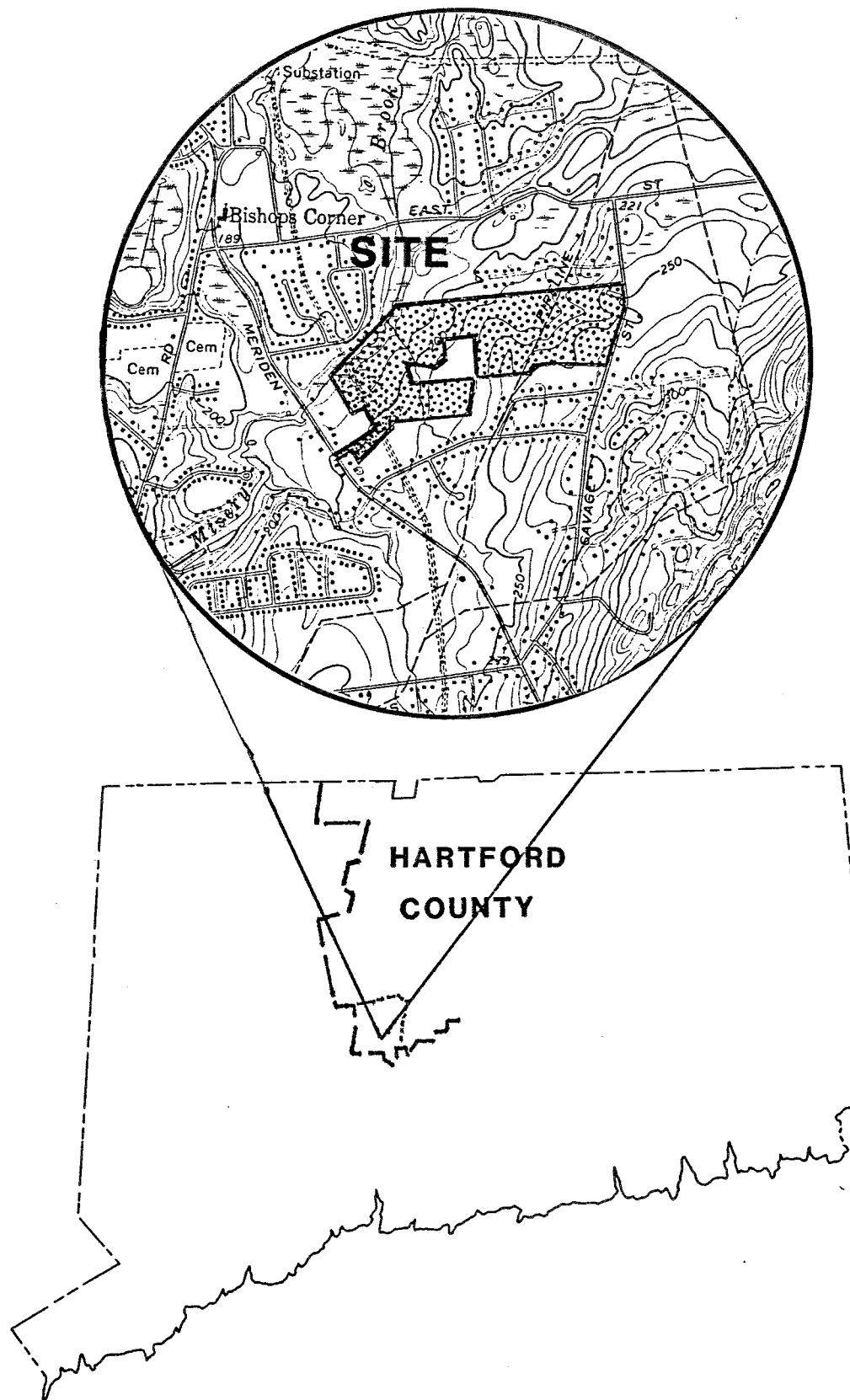
Once the Team members had assimilated an adequate data base, it was then necessary to analyze and interpret their findings. The results of this analyses enabled the Team members to arrive at an informed assessment of the site's natural resource development opportunities and limitations. Individual Team members then prepared and submitted their reports to the ERT Coordinator for compilation into the final ERT report.

The primary goal of this ERT is to inventory and assess existing natural resources occurring on the site as well as providing planning and traffic/access information. Specific objectives include:

- (1) assessment of the hydrogeologic characteristics of the site, including development limitations and stormwater hydrology;
- (2) determination of the suitability of existing soils to support the proposed development;
- (3) discussion of soil erosion and sedimentation concerns;

Figure 1

# LOCATION OF STUDY SITE



**Figure 2**



## WETLAND BOUNDARY

# EAST GATE SUBDIVISION

SOUTHINGTON, CONNECTICUT

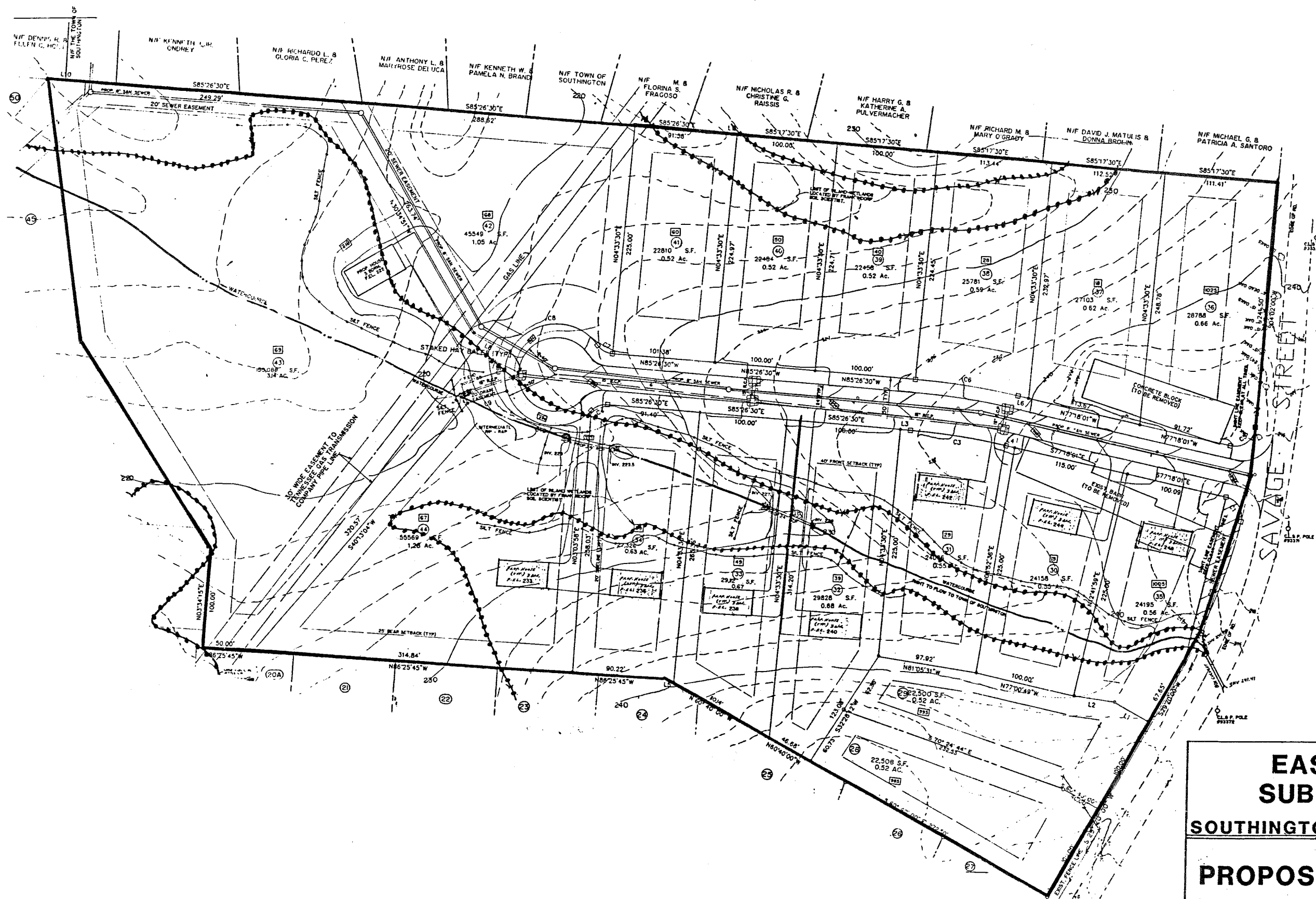
# PROPOSED SITE PLAN

King's Mark Environmental Review Team

**0 300**



Figure 3



WETLAND BOUNDARY

# EAST GATE SUBDIVISION

## SOUTHINGTON, CONNECTICUT

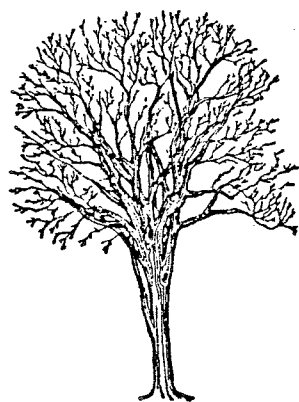
### PROPOSED PHASE 1

King's Mark Environmental Review Team

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- (4) assessment of the impact of the development on the wetlands;
- (5) assessment of the impact of the development on the wildlife habitat and fisheries, and;
- (6) assessment of planning and land use issues.

## **PHYSICAL CHARACTERISTICS**





to significant drainage problems to the property owner and abutting property owners. Every effort should be made by the Town to ensure that each lot has sufficient dry land. In order to accomplish this, certain lots may need to be combined or lot lines reconfigured.

The site is located on the northwestern flank of a streamlined hill whose shape derives from the smoothing action of overriding glacier ice. The hill slopes gently north to northwest towards Misery Brook and East Street.

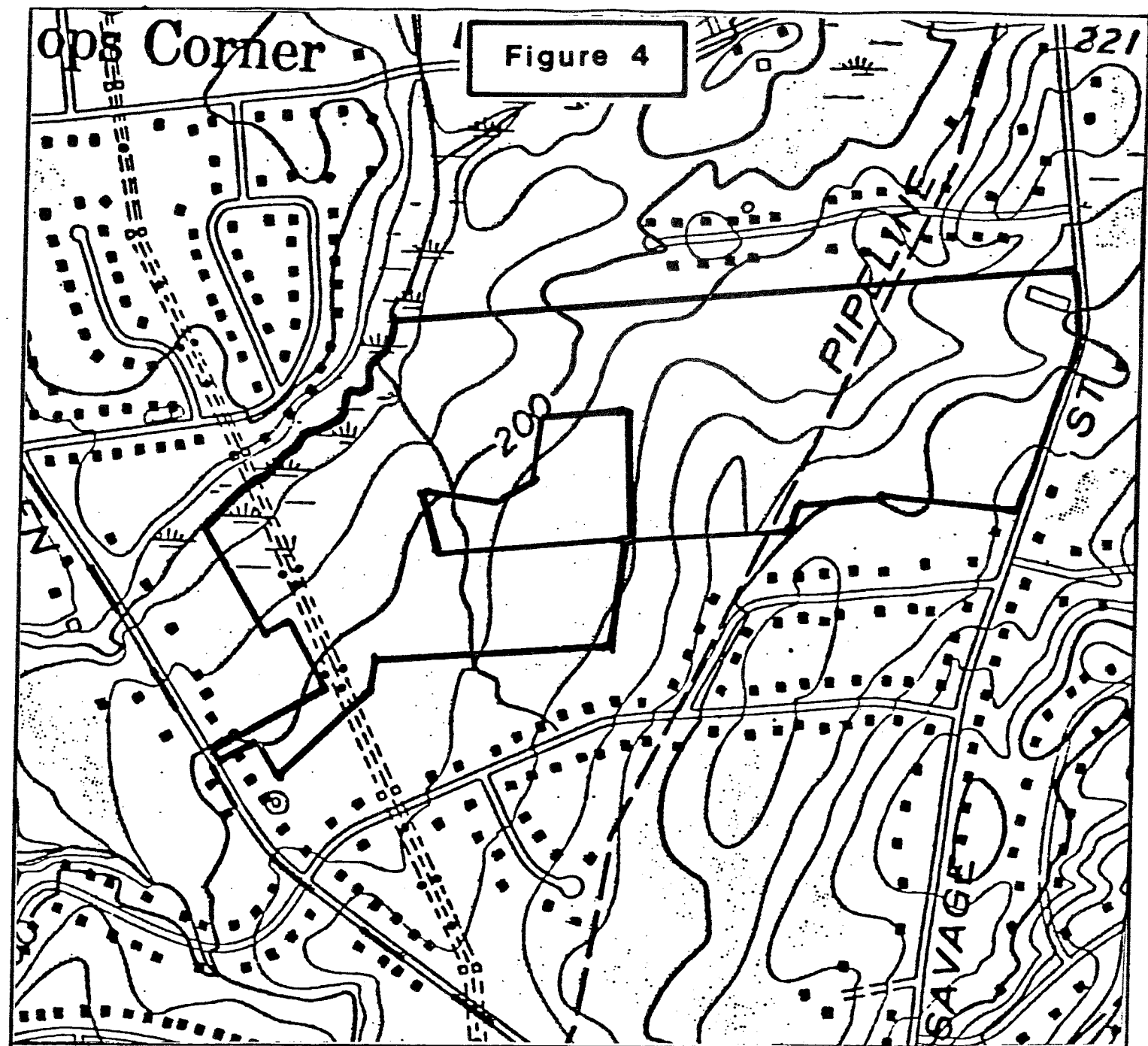
Site elevations range from a high of 260 feet above mean sea level at the southeast corner of the site to about 180 feet above mean sea level along Misery Brook in the northwest corner (see Figure 4).

#### GEOLOGY

The site is located entirely within the Meriden Topographic quadrangle. A surficial geologic map (Map GQ-150) and a bedrock geologic map (Map GQ-738) by Penelope Hanshaw have been published for the quadrangle by the U.S. Geologic Survey.

No bedrock (ledgerock) outcrops were visible during the field review. Depth to the bedrock surface is unknown on the site. The applicant's soil scientist indicates that the bedrock surface may be within 20 to 40 inches of the ground's surface in areas covered by Yalesville soils (YaC on the soils map). Depth to the bedrock surface in the remainder of the site is probably at least 10 feet.

Hanshaw (Map GQ-738) has identified bedrock below the site as New Haven Arkose (see Figure 5). It formed during the middle to late Triassic geologic period, approximately 200 million years ago. Most of the rock consists of reddish-brown feldspathic and micaceous sandstones and siltstones. As a result



**EAST GATE  
SUBDIVISION**

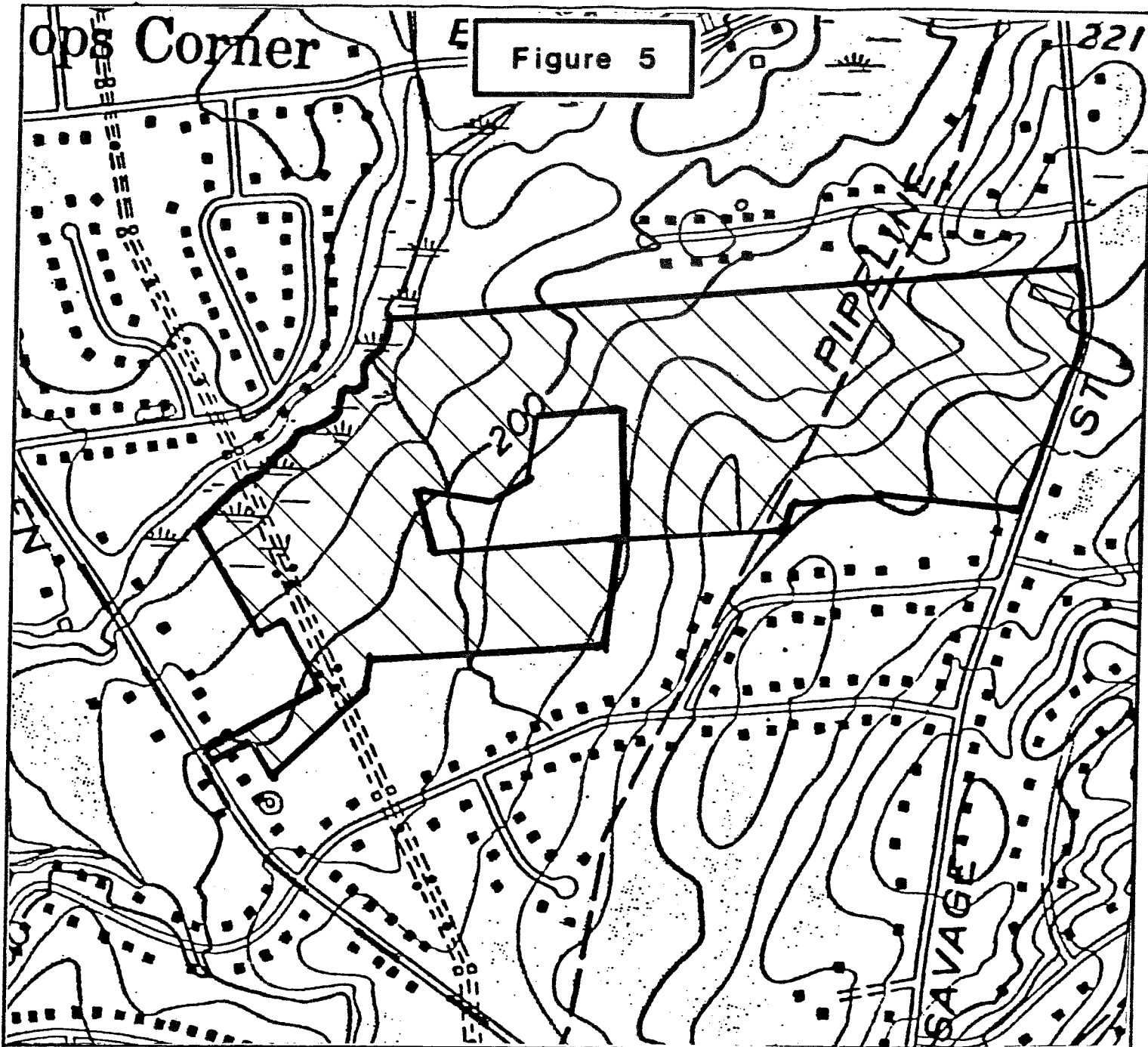
**SOUTHINGTON, CONNECTICUT**

**TOPOGRAPHY**

King's Mark Environmental Review Team

0 600





**NEW HAVEN ARKOSE**

## **EAST GATE SUBDIVISION**

**SOUTHINGTON, CONNECTICUT**

## **BEDROCK GEOLOGY**

King's Mark Environmental Review Team

0 600



of its composition, the rock is relatively soft.

The underlying bedrock should not pose a major problem with respect to the proposed subdivision, especially with the extension of the municipal water line. The bedrock may be encountered in the area encompassed by the Yalesville soils. If it is encountered, it may be necessary to blast in this area.

According to Hanshaw's surficial geologic map (Map GQ-150), the surficial geologic or unconsolidated material overlying bedrock on most of the site is glacial till (see Figure 6). Another type of glacial sediment, called stratified drift covers bedrock and till along northern limits of the site.

Till is a sediment that was deposited directly from an ice sheet. It consists of a generally non-sorted, structureless mixture of clay, silts, sand, gravel and boulders. The texture of the till may vary from place to place. According to the applicant's soil scientist and soil mapping data, the texture of till on most of the site is generally sandy, stony and loose in the upper 1.5 to 2.0 feet but below that depth it becomes a more compact, slightly finer grained till. The latter type of till, locally referred to as "hardpan," is often characterized by a seasonally high water table due to a slowly permeable medium in the compact zone. The texture of the till in the YaC (Yalesville soils) is generally sandy and loose and lacks a compact zone.

Deep cuts into "hardpan" soils can be very difficult. Because of the seepage of water on top of the hardpan layer, it is very difficult to stabilize slopes in these areas. The water creates an unstable condition just below the seepage line. The weight of the saturated soil causes the soil to flow down the slope. Stabilizing and establishing a vegetation cover on these eroding slopes is extremely difficult. Also, it is strongly suggested, if homes are constructed with a full basement, building footing drains should be installed. This will, hopefully, reduce the chance for wet basements.

As mentioned above, sandy soils derived from glacial stratified drift were deposited along the northern borders. The stratified drift was deposited by glacial meltwater streams during ice retreat in the Misery Brook/Quinnipiac River Valley. Sand and gravel are the major components of stratified drift.

The inland-wetland areas have been flagged throughout the site. These areas are comprised of poorly to very poorly drained wetland soils that have formed mainly in drainageways and depressional features on the upland till soils. The water conditions in these areas fluctuate seasonally and in response to precipitation. During the field review, the streamcourses in the wetland area were experiencing moderate flow conditions. The water table in the flatter areas was at or near ground surface and, for the most part, is probably at or near ground surface from November to May. The major engineering concerns with soils in this area are the seasonally high water table and a slowly permeable soil layer, at depth ranging from about 16-20 inches below ground surface. Any construction in these areas poses engineering problems. As a result, every effort should be made to avoid these areas where possible.

Because of the relatively flat gradients and areal extent, the flood control attributes and sediment retention capabilities of the wetlands on the site are probably good. The streamcourses, which have moderate gradients serve as conduits for surface runoff to adjacent, larger floodplains and streamcourses.

All areas identified as wetland soils are considered "regulated areas" under Chapter 440 of the Connecticut General Statutes. Any proposed activity that impacts regulated areas must be approved by the Southington Conservation Commission. In reviewing a proposal, the Commission will need to determine the impact that the proposed activity will have on the wetland. If the Commission feels that the regulated areas are serving an important hydrologic or ecologic

### Figure 6



function and that the impact of the proposed activity will be severe, they may deny the activity altogether or, at least, require measures that would minimize the impact. If more than 1 acre of wetlands are proposed to be filled, the U.S. Army Corps of Engineers should be contacted as they may require a permit.

### HYDROLOGY

The entire site lies within the drainage area of Misery Brook (see Figure 7). At its point of outflow to Quinnipiac River, Misery Brook drains an area of 6.05 square miles or 3,872 acres. The proposed subdivision, therefore, represents about 3 percent of its drainage area.

The subdivision of the property as planned, followed by the construction of new homes, driveways and roads can be expected to lead to increases in the amount of runoff shed from the site. Because of these anticipated runoff increases and because the town requires that post-development runoff conditions do not exceed pre-development runoff conditions, the applicant's engineer has proposed two detention basins to handle the increased runoff anticipated from the development. The detention basins, to be created by construction of an earthen dam embankment, will detain the increased runoff for various storm events and release it slowly. The detention basin which will serve Phase 1 and part of Phase 2 is located in a regulated wetland area. It is expected that the wetland area is already serving a natural runoff detention area. This activity will require a permit from the Town's inland-wetland agency. The dam, which will be constructed by on-site materials (till) may require a permit by DEP's Dam Safety Unit (566-7245). They should be contacted as soon as possible regarding this matter. Also, the applicant's engineer has included in the subdivision plans specifications for the construction of detention ponds. If

the town permits the detention basins, it would be wise to have the design engineer on-site to supervise or oversee the construction of the detention basins. This would, hopefully, ensure the construction of the basins to the prescribed specifications.

Since the proposed detention basins may also serve a sediment retention function during and following construction, it seems likely that maintenance, i.e., silt and sand removal from the basins, will be necessary on a periodic basis. Therefore, an access road to the basins for maintenance vehicles will be required and should be shown on the subdivision plan.

The protection of watercourses on-site, which have been classified as Class A\* by DEP, from silt and road sand is a major concern. In this regard, a comprehensive erosion and sediment control plan would be essential to the assessment of the development, particularly in view of the silty soils and potential for erosion. The applicant's engineer needs to show in the stormwater management plans where road drainage will outlet. Ideally, it should be outletted to sediment basins on the site rather than directly to watercourses.

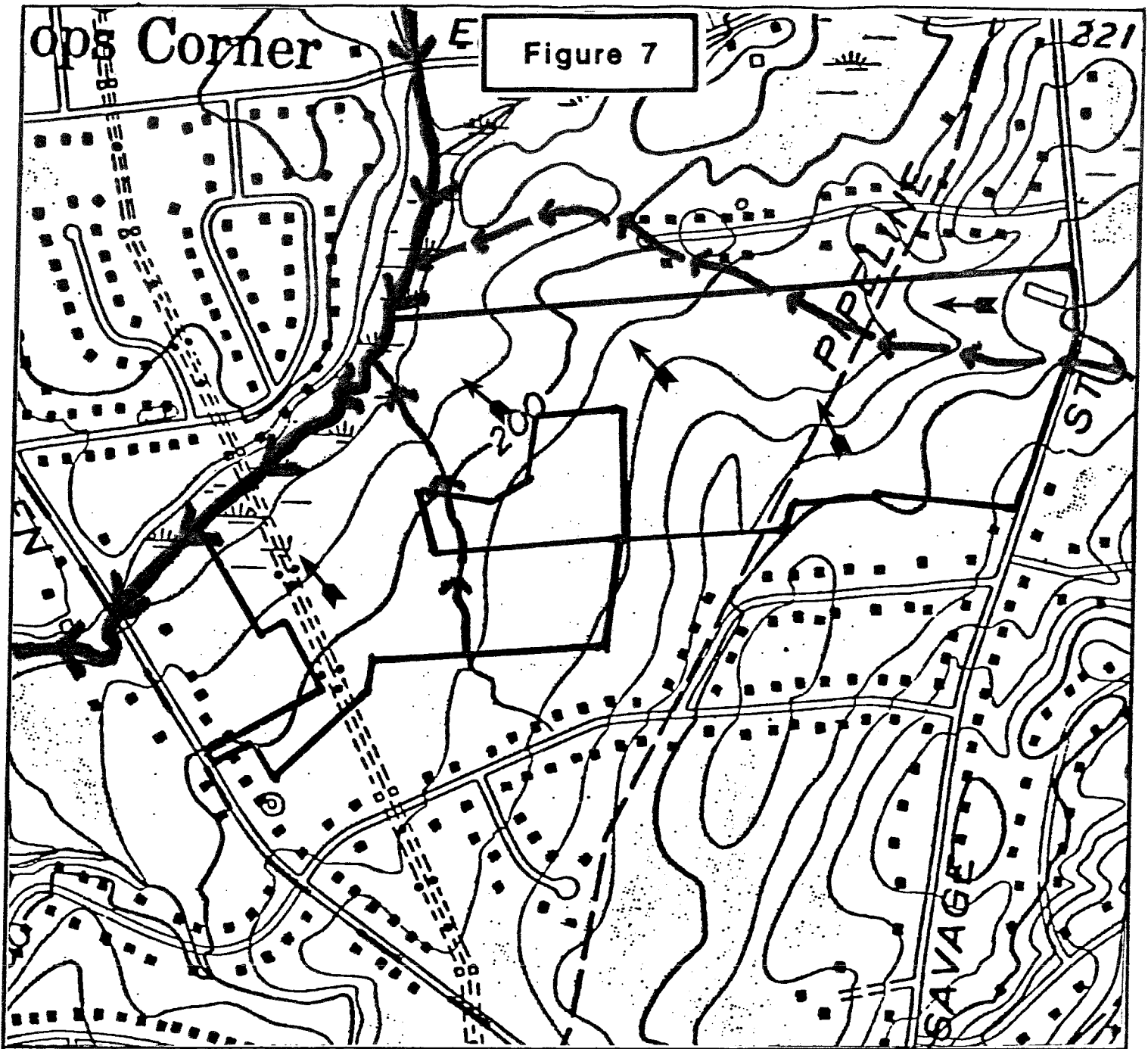
Considerations for the maintenance of catch basins and detention/sediment basins on a regular basis are also important. Finally, close examination of all downstream culverts for proper sizing is warranted.




The availability of public water and sewer lines will help to allay some of the hydrogeologic impacts commonly associated with residential development. However, the major hydrogeologic concerns that remain at issue are the construction of roads and homes currently proposed in the wetlands on the site.

---

\* (The designed uses for Class A streams include potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply and other legitimate uses including navigation.)





-  Misery Brook showing direction of flow
-  Misery Brook tributaries on the site
-  Surface drainage showing direction of flow

Based on the site plan distributed to Team members, approximately 1,110 feet of road will need to cross regulated wetland soils. This does not include driveway crossings. Although undesirable, wetland road crossings are feasible provided they are properly engineered. These roads need to be constructed adequately above the surface elevation of the wetland. This will permit better drainage of the road and also decrease the frost heaving potential. Road bed preparation needs to include removal of all organic material before the fill material is placed. In cut areas, underdrains should be installed on either side of the road. Road construction through wetlands should preferably be done during the dry time of the year, and should include provisions for effective erosion and sediment control. Culverts should be properly sized and located so as not to alter the water levels in the wetland or cause flooding problems.

The applicant's engineer should quantify the amount of fill to be placed over regulated soils and delineate the fill lines on the subdivision plan. This will also greatly help local decision makers during their review of the plan.

The water table in the wetland on the site is probably at or near ground surface for at least 6 months during the year (November to May). This seasonal water table is a pertinent engineering concern in terms of constructing homes in the area. Several building lots which contain a high percentage of wetland soils are proposed for development. Soil testing, which includes detailed soil borings, needs to be conducted throughout these areas to determine soil textures and depth to the water table if these are developed for house lots. Ideally, this testing should be done during the wet time of the year. Also, soil testing to determine the allowable loading rate of soil is needed. It seems likely that all homes constructed on the site will need foundation

drainage. All foundations should have both exterior footing drains and an interior underdrain system, especially if construction is allowed on wet soils. Hopefully, this will keep basements dry. An alternative would be to construct houses without basements. Any drainage work that takes place should be monitored through a wet season to ensure that it is effective. Even with the potential engineering measures mentioned above, the construction of buildings on wetland soils is highly undesirable. The destruction of the wetland due to draining and filling will take away any of the natural hydrological or ecological functions that it may be presently performing in the drainage area.

Groundwater in the area is classified by the DEP as GA, which means that it is suitable for private drinking water supplies without treatment.

Town officials questioned on the review day whether or not the water demand for the proposed subdivision will impact the municipal water supply wells north of the site, since domestic wastes for the subdivision will be discharged to the municipal sewer line. As such, domestic waste will not be available as recharge to the well(s), since the sewer line will transport the domestic waste out of the Misery Brook watershed. Regardless of how distasteful it may sound, renovated domestic wastes via on-site septic is a very important element of the groundwater budget.

In order to conduct such a study, one would need to compile geological, topographic and climatological conditions for the Misery Brook watershed area and water usage rates for the service area. Due to the size of the watershed area, a study of such magnitude would be beyond the scope of the ERT. It is suggested that the town consult with a professional hydrogeologist or engineering firm regarding this issue.

## SOIL RESOURCES

The landforms on the proposed East Gate Subdivision are dominated by soils formed in deposits of firm to loose glacial till material derived from red Triassic sandstones and siltstones (see Figure 8). Higher, convex areas are dominated by well drained to moderately well drained soils. Lower concave areas, and drainageways are dominated by poorly and very poorly drained soils. Poorly drained to very poorly drained alluvial soils are found along the small watercourses and along Misery Brook.

The northwest portion of the Phase 1, the northern and western portions of "Future Phase", and western portions of Phase 2, are transitional areas between dense till deposits and glacial outwash deposits of sand and gravel. The soils in Phase 1 are excessively drained to moderately well drained. Small areas of soils disturbed by the right-of-way are included. The soils in the other phases are excessively drained to moderately well drained.

All discussions about inland wetland locations and boundaries should use wetlands maps generated by consulting soil scientists. The soil map included in this report has been created from on-site investigation, information provided by consultants, air photo interpretation, and the Soil Survey of Hartford County, 1962. This map can be used for a general discussion of soil limitations on the parcels.

Because of the large number of map units involved, a chart of important soil features and interpretations has been prepared (Appendix A). Below are listed some additional soils information and concerns:

1. Included in areas mapped WtA are areas of soils with loose, sandy and gravelly substratum, and areas of soils underlain by silts and clays.
2. Included in areas mapped LwC are areas of soils with loose, sandy and gravelly substratum.

3. Generally, much of the parcel is characterized by soils with seasonal high water tables at a depth which is limiting to homes with or without basements. Fill, subsurface drainage, and homes without basements may be needed on many lots. Current proposed fills of as little as 2 feet over poorly and very poorly drained soils may not be adequate to overcome this limitation.

#### EROSION AND SEDIMENT CONTROL PLAN

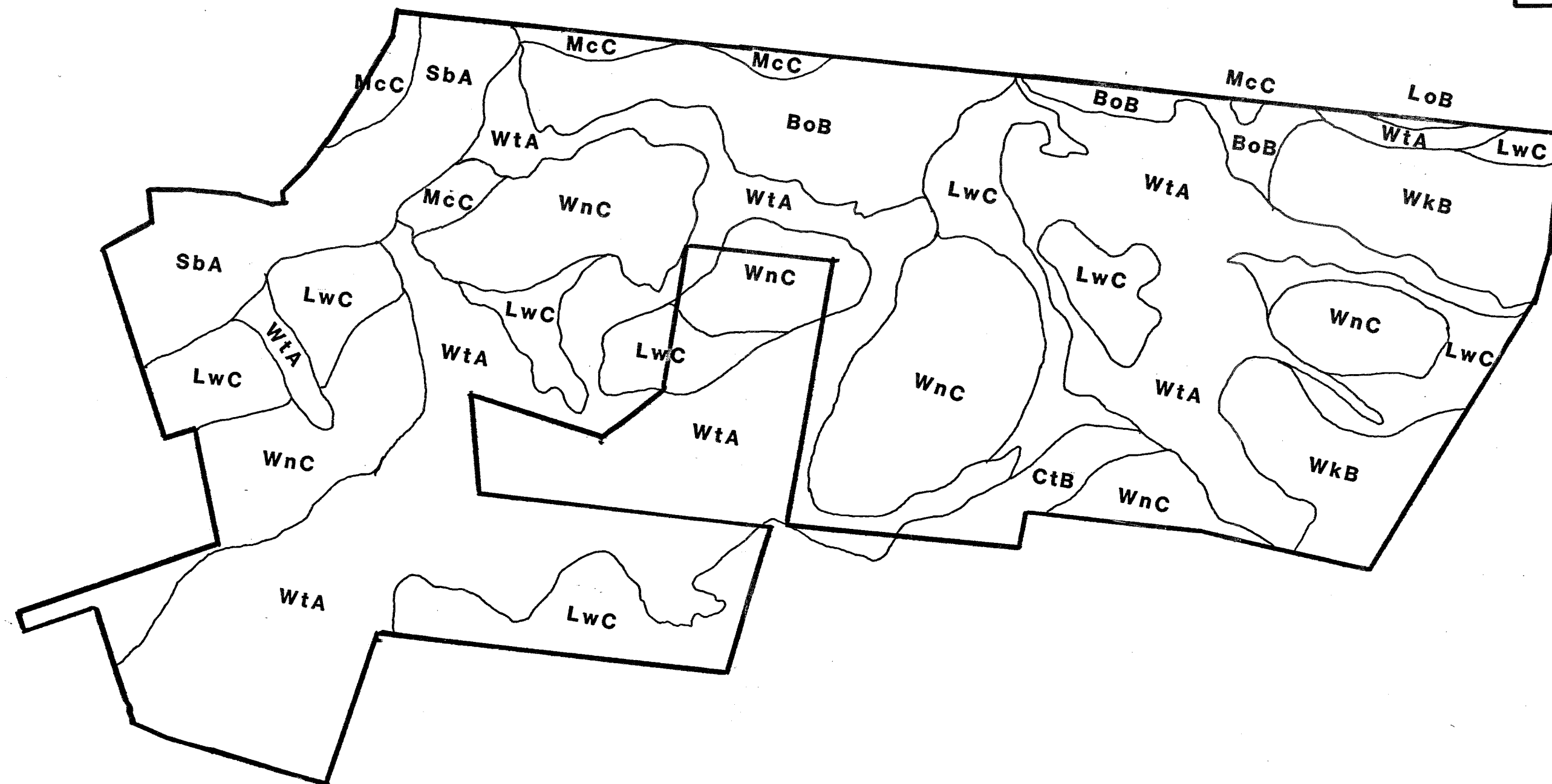
The soil erosion and sediment control plan, as presented does not adequately address the site resources needs. It would be prudent for the engineer to review the Connecticut "Guidelines for Soil Erosion and Sediment Control" in order to help develop an appropriate plan. The plan's narrative and construction sequence should be more detailed as to how the project will proceed. Each major land disturbing activity should be phased so as to disturb as little land as possible at any one time. The first phase should include road construction and utility installation while the remaining site be left in vegetation. If a stormwater detention structure is to be installed during Phase 1, the construction sequence should show this structure to be installed and stabilized prior to outletting of stormwater into it.

It is suggested that clearing and grubbing limits be shown on plans and field marking or delineation be required prior to start of construction.

The inland wetlands along Lots 37 through 41 should be protected with a sediment barrier.

Additional soil erosion and sediment control measures that may be needed during Phase 1 include: (1) a construction entrance pad (showing location, details on plans and appropriate place within construction sequence); (2) improved catch basin protection by use of an "envelope" over and under the grate; (3) permanent and temporary seeding specifications; (4) mulching specifications; and (5) silt fence details.

Figure 8



- BoB - BRANFORD SILT LOAM, 3-8% SLOPES
- CtB - CHESHIRE STONY FINE SANDY LOAM, 3-8% SLOPES
- LoB - LUDLOW SILT LOAM, 3-8% SLOPES
- LwC - LUDLOW AND WATCHAUG VERY STONY SOILS, 3-15% SLOPES
- McC - MANCHESTER GRAVELLY SANDY LOAM, 3-15% SLOPES
- SbA - SACO SILT LOAM, 0-3% SLOPES
- WkB - WETHERSFIELD LOAM, 3-8% SLOPES
- WnC - WETHERSFIELD VERY STONY LOAM, 3-15% SLOPES
- WtA - WILBRAHAM AND MENLO VERY STONY SILT LOAMS, 0-3% SLOPES


**EAST GATE  
SUBDIVISION**

**SOUTHINGTON, CONNECTICUT**

**SOILS**

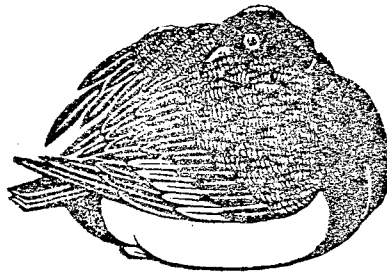
King's Mark Environmental Review Team

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Access to the site from Savage Street and Inland Wetland Delineations for Phase 1 indicate that this site might be more suitable for alternative layouts utilizing a cluster type development. A cluster development would create larger buffer areas to wetlands, reduce impervious areas, and therefore reduce post development runoff peaks.

## **BIOLOGICAL RESOURCES**





## WETLAND RESOURCES

### Wetland Description and Classification

The proposed project under review is 110 acres, located in the Town of Southington, between Savage Street on the east, and Meriden Avenue (Rt. 120) on the west. Residential developments exist north and south of the site. There are two major wetland systems on site, both of which flow to the west into the Misery Brook watershed. The first wetland system (A) is located on the eastern portion of the development site, adjacent to Savage Street, and flows northwest towards Misery Brook. This wetland, of approximately 11 acres, consists of Wilbraham and Menlo very stony silt loam soils, and possesses several long fingers which follow intermittent watercourses. The wetland vegetation is dominated by Red Maple (Acer rubrum), Spicebush (Lindera benzoin) and Brambles (Rubus sp. and/or Rosa sp.). As defined by the Fish and Wildlife Service, this wetland system is as follows (see Figure 9):

PF01E-Palustrine; forested; broad-leaved deciduous;  
seasonally saturated.

PSS1E-Palustrine; scrub/shrub; broad-leaved deciduous;  
seasonally saturated.

This wetland has been previously disturbed in its eastern portions, towards Savage Street, from past farming activities, but is of good quality overall.

The second wetland system (B), approximately 28.7 acres, consists of Wilbraham and Menlo very stony loam and Saco silt loam soils, and is located in the central portion of the site and spreads west-southwest until it meets Misery Brook. Due to its size and diversity a complete vegetative inventory was difficult. Species most often observed in the wetlands include Red Maple

(Acer rubrum), Spicebush (Lindera benzoin), Skunk Cabbage (Symplocarpus foetidus) and Brambles (Rubus sp. and/or Rosa sp.). This wetland system includes the following Fish and Wildlife Service classifications (Figure 9):

PSS1E-Palustrine; scrub/shrub; broad-leaved deciduous;  
seasonally saturated.

PEM1E-Palustrine; emergent; persistent; seasonally saturated.

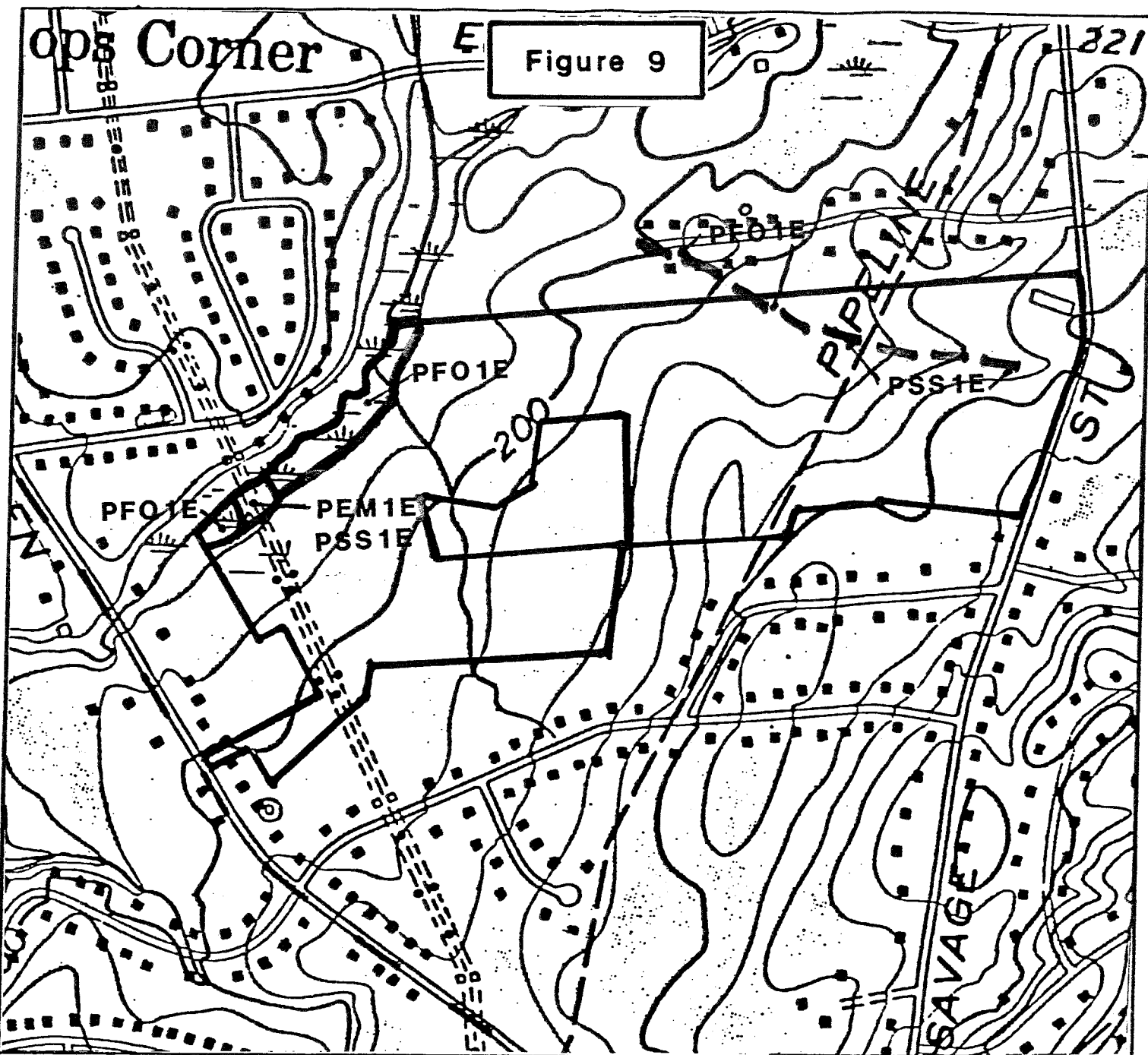
PF01E-Palustrine; forested; broad-leaved deciduous; seasonally  
saturated.

In addition, Misery Brook, which runs to the north and west of the property, offers areas of slow flowing open water for certain periods during the year. This wetland is diverse in character and in very good condition. Little to no disturbance has occurred and its functional capacities are of high quality.

#### Wetland Functions

Both of these wetland systems possess intermittent watercourses which serve as drainageways for seasonal high water levels and storm event runoff. Due to their size and diversity, these systems also function as excellent habitat areas for a wide variety of wildlife. The dense ground cover and vegetation within these wetlands greatly enhance their functions of pollution abatement and sediment filtration resulting in much improved water quality of runoff. Flood water storage is also an important function of these wetland areas due to their size and close proximity to Misery Brook. This function will increase in value as development pressures are experienced up and downstream of this site.

These wetlands possess high vegetative productivity capacities which increase their functional values of habitat, as nutrient production areas and as recycling areas. This attribute also increases their aesthetic quality and value. Though not topographically distinct, the many edges between uplands and wetlands provide desirable visual, vegetative and habitat diversity. Lastly,



**PFO1E** Palustrine, forested, broad-leaved,  
deciduous, seasonally saturated

**PSS1E** Palustrine, scrub/shrub, broad-  
leaved, deciduous, seasonally  
saturated

**PEM1E** Palustrine, emergent, persistent,  
seasonally saturated

## EAST GATE SUBDIVISION

SOUTHINGTON, CONNECTICUT

## NATIONAL WETLAND INVENTORY

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these wetlands provide excellent areas for education and various recreational activities. Their combined functions and attributes create excellent opportunities for wildlife study, observation, photography and recreational hikes; all within close proximity to a measured population source. Overall, these wetlands perform very high quality functions and are of high environmental quality throughout.

#### Development Impacts

The East Gate Subdivision, as proposed, would be developed in several phases. The first and second phases would take place on the eastern portion of the site and consist of a combined 52 building lots, 2 cul-de-sacs and a deadend road which will be extended upon the development of future phases in the western portion of the site. Each phase will be looked at separately in this section since future phases are not yet finalized and impacts would therefore be difficult to accurately assess.

Phase 1 Impacts: Phase 1 consists of a cul-de-sac which will access 17 building lots. As explained by the developer, these lots will be sold with deed restrictions preventing the land owner from performing any activities in within the wetlands without first notifying the local wetlands commission. Upon review, the commission may request the land owner to apply for a wetlands permit.

This phase of the development proposes two wetlands crossings, 50 and 100 feet in length, which will access four building lots on the south side of the cul-de-sac. The crossing will occur on an intermittent stream channel and wetland corridor of good quality. These crossings would isolate an approximate 100 ft. by 200 ft. section of wetlands and require the direct fill of approximately 8,000 sqft. of wetlands. Two lots within this phase (43 & 44), contain such a high percentage of wetlands within their boundaries that direct

impacts from construction would be unavoidable. The last area of impact in this phase is the proposed detention basin in the northwest corner of the site. This would be created by the construction of a berm, designed to control runoff from a 100-year storm event, and would be created within an existing wetland area. Construction of this basin will result in some direct fill of wetlands and potentially change the vegetative quality of the surrounding wetland area.

Overall, this phase of development would have impacts on the habitat and visual quality of the wetlands and create future secondary impacts from increased traffic and human activity. Sedimentation problems will also increase with road maintenance and temporary ponding of water in the detention area during storm events.

Phase 2 & Future Phases: These phases have not yet been finalized for application and are therefore subject to change in the interim. Any specific development impacts discussed here would be hypothetical and may not apply to all future proposals.

As presented these phases would encompass approximately 75 building lots accessed by one cul-de-sac and one connecting road between Savage Street and Meriden Avenue. Approximately 20 of the 75 building lots contain substantial wetlands within their boundaries and would require some form of direct wetland manipulation in order to be developed. Many of the remaining lots possess some wetlands within their boundaries, and would require special care in order to reduce any possible wetland impacts. All functions would be reduced in quality with habitat and aesthetics sustaining the most obvious losses. Water purification abilities would be impacted by reducing the available filtration area, and increasing sediment and pollution flows within site runoff. This

would result in a net reduction in the water quality of runoff from the site entering in to Misery Brook. The site, at best, possesses marginal suitability for development due to the environmental constraints which the wetlands impose.

#### Recommendations and Conclusions

- (1) In phase one the use of box culverts for the crossing is highly preferable so as to limit long-term disturbance to the habit corridor. Box culverts with natural bottoms would provide a less intimidating barrier to the movement of small mammals and invertebrates. Crossings of this type would also have less impact on the isolated portion of the wetland by maintaining natural water flow rates and allowing the wetland to perform natural flushing of sediment and debris during storm events without any ponding of water. If ponding were to occur because of the use of smaller culverts this could alter the natural character of the corridor and would result in increased sediment and debris accumulation.
- (2) Due to the high percentage of wetlands which exist on lots 43 and 44 in Phase 1, the elimination of these lots as building sites might be seriously considered. Any construction on these lots would either be within or in such close proximity to wetland boundaries, that these potential long term wetland disturbance and structural problems would be very high.
- (3) The proposal shows no attempt on the part of the developer to create new wetland areas to compensate for wetlands lost due to filling in Phase 1 and in the tentative future phases. Proposals of this magnitude (all phases included) often include such measures as mitigation for wetland area and functions lost to development.

- (4) Though the slopes present on site are not severe, proper monitoring and maintenance of sediment and erosion control devices will be crucial in mitigating these potential hazards.
- (5) Alternatives to constructing the detention basin within existing wetlands should be thoroughly explored. Construction of such basins within wetlands create potential for adverse changes in wetland characters (vegetative types, water regime, sediment filtration functions, etc.) and wetland quality.
- (6) With respect to Phase 2 and future phases, lot development as proposed may result in significant adverse impacts to wetland quality and functions. The evaluation of any future development on these sites should seriously consider the merits of cluster development to minimize wetland loss and maintain the highest possible percentage of wetland functional area and open space. Such development techniques maintain the productivity and usefulness of the land to its owner while having the least amount of overall impact to the general public and environment.

In conclusion, the Town of Southington needs to decide if the impact of the development is consistent with the State's Inland Wetlands and Watercourses Act, Section 22a-36 to 22a-45 inclusive. Feasible and prudent development alternatives might exist for certain portions of the site and should be explored thoroughly.

#### WILDLIFE RESOURCES

##### Description of Area/Habitats

The 110-acre site currently contains a variety of habitat types including mixed hardwood forest, old field areas, open field areas, wetlands and a brook and its associated wetlands. Misery Brook runs through the northwest section

of the property. A 190-foot wide easement for CL&P transmission lines and an 80-foot wide easement for the Tennessee Gas Company line run through the property. Both of these easements provide additional early successional stage habitat types.

Generally, the greater the habitat diversity and degree of interspersions of these habitat types, the greater the variety of wildlife there will be using an area. The area offers a good variety of habitats and also offers a good degree of interspersions of these habitat types. Because of this the area currently offers good to excellent wildlife habitat.

Although the area is surrounded by development, it does offer an area of habitat to species which can live in relatively close proximity to man.

#### Forest

The mixed hardwood forest contains oak, ash, beech and a variety of other species. In addition to providing cover, nesting and roosting places, the oak and beech provide a valuable food source in the form of mast. Parts of the forest have a heavy undergrowth of greenbrier, barberry and various shrubs such as spicebush. These are all valuable as a cover to mammals and birds and also a producer of berries used as food.

The snag trees (dead trees) on the property provide insects for a variety of wildlife such as woodpeckers, chickadees and other insect eating birds. The den trees (trees with holes) found scattered throughout the property provide cavities for nesting owls, swallows, etc. The cavities also provide denning sites for raccoons, etc.

#### Old Fields/Open Fields/Easements

The old fields, open fields and easements provide early successional stage habitat, an important type of habitat because it contains a variety of plant communities, including grass, herbaceous plants, shrubs and young trees, which provide both food and cover to wildlife.



These areas not only increase the overall diversity of the area, they also increase the "edge" or "edge effect." Edge effect is the phenomena that occurs where vegetational types meet with a high degree of interspersion and vegetational diversity or richness is achieved. Because of this effect, the needs of a wide variety of wildlife can best be met.

The grass and herbaceous areas provide habitat for small mammals, which in turn provide food for birds of prey. The old field areas contain a variety of fruit and berry producing shrubs and trees, such as muliflora rose, barberry, cherry and various dogwoods, which are a valuable food source to a variety of wildlife.

#### Misery Brook/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 as open space areas. 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 and flood storage. Because of their value as wildlife habitat and the other important functions they serve, the development of, filling in and/or crossing should be avoided or limited whenever possible.

Wetland areas are limited in quantity in the state and continue to dwindle on an almost daily basis, another important factor in considering their preservation. Their value increases as the quantity of the resource diminishes. A buffer of at least 100 feet is recommended around any wetland to preserve its value and use by wildlife.

Whatever type or combination of types of areas are set aside, setting aside an "island of open space" surrounded by development is the least desirable for wildlife. The area should have natural travel pathways for wildlife (such as

streams, valleys, and ridgetops) to enter and exit to other open space areas outside the development. The open space area is more valuable to wildlife if not traversed by roads which may impede the movements of wildlife at times.

#### Recommendations

As with any development, the impact on wildlife habitat in general will be negative. A sizeable area will be broken up and lost with the construction of roads, driveways, walkways, parking areas and homes. Another impact is the loss of habitat where cover is cleared for lawns and landscaping. A third impact is the increased human presence, vehicular traffic, and a number of free roaming dogs and cats. This could drive the less tolerant species from the site, even in areas where there has been no physical change.

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 racoons.

The design of this development which contains many small lots (ranging in size from .52 acres to 3.14 acres) will probably augment the negative impacts to wildlife habitat.

As proposed (grassed in shallow excavation) the retention basins will have little value to wildlife. A grassed in retention pond does not typically duplicate the function of a naturally created wetland with its own unique hydrology and vegetational diversity. Because the basins would probably not provide water on a steady basis and would have low vegetational diversity, they would not be attractive to many species of wildlife. The grass would offer little cover and have limited food value.

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 steps that should be considered in order to help minimize adverse impacts on wildlife.

- 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) Stone walls, shrubs and trees should be maintained along field borders.
- 4) Early successional stage vegetation (i.e., field) is a 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, beech). A minimum of five oaks, 14 inches dbh or greater should remain.
  - b) Leave 5 to 7 snag/den trees per acre as they serve 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.
  - e) Brush debris from tree clearing should be piled to provide cover for small mammals, birds, amphibians and reptiles.
  - f) Shrubs and trees which produce fruit should be encouraged (or can be planted as part of the landscaping in conjunction with the development), especially those which produce fruit which persists through the winter (winterberry, autumn olive) (see Appendix B for a list of suggested shrub and tree species that can be encouraged and/or planted to benefit wildlife).
- 6) Nesting sites can be provided for a great variety of birds with placement of artificial nest boxes.

Large houselots and implementation of the suggested guidelines may help to minimize the adverse impacts to local wildlife populations. Implementation of backyard wildlife habitat management practices should be encouraged. Such activities include providing food, water, cover and nesting areas.

If large houselots cannot be provided for, cluster housing should be considered. By clustering the homes together, less land is disturbed and built on and therefore more remains to be utilized for wildlife habitat.

## FISHERIES RESOURCES

### Phase 1

Phase 1 of the proposed subdivision will directly impact an unnamed tributary stream to Misery Brook. The stream is planned to be crossed by two driveways with flows being passed underneath through culverts.

The stream does not appear to contain a viable fishery population within the proposed crossing site. In addition, fish do not have access to the site from Misery Brook. As such the driveway crossings will not adversely impact a fishery resource.

A stormwater detention basin will be created as part of this construction phase. The basin should be installed prior to the development construction. By doing so it will serve as a catchment for the sediments associated with construction and prevent the sediments from entering into Misery Brook.

The detention basin will be of benefit to the Misery Brook watershed following the completion of the project by entrapping stormwater runoff and associated contaminants. The detention basin and any roadway catch-basins should be maintained on a regular basis to remove accumulated material.

### Misery Brook

The proposed subdivision will border the easterly shoreline of Misery Brook. Misery Brook is classified by the Department of Environmental Protection as "Class A" surface waters. Designated uses for this classification are: potential drinking water source, fish and wildlife

habitat, recreational use, agricultural and industrial supply, and other legitimate uses. Municipal water supply wells for the Town of Southington are located along Misery Brook at its headwaters.

Misery Brook flows through an extensive wetland area within the proposed development area. The stream averages approximately 12 feet in width and 2 to 3 feet in depth. The stream channel is characterized by moving pool over a substrate of coarse sand and sand/silt fines. Instream fisheries habitat is composed of undercut banks and a dense streambank canopy of woody shrubs. The riparian vegetation affords the stream cooling summertime shade. Several sections of the stream channel had abundant macrophytic growths.

#### Aquatic Resources

The Bureau of Fisheries does not stock Misery Brook with trout. Historically, the stream supported a thriving population of wild brook trout (Salvelinus fontinalis). As there was a lack of actual data, Misery Brook was sampled by backpack electroshocker 3/30/88 to determine the existing fishery population. The sample site was that section of stream to be adjacent to the proposed development. Fish species captured were brook trout and redbfin pickerel (Esox americanus americanus).

#### Impacts

The following potential impacts on Misery Brook can be expected to occur if proper mitigative measures are not taken.

- (1) During construction, soil erosion and sedimentation of watercourses through increased surface runoff from unvegetated zones can be a major cause of stream degradation. There exists a great potential for increased surface runoff given the layer of impermeable till and clay that underlie the entire site.

- (2) Surface drainage from roads and driveways may allow road salts, sands and oils to enter Misery Brook. This scenario will result in water quality and stream habitat degradation.
- (3) Runoff and leaching of nutrients from lawn and garden fertilizers will stimulate excessive aquatic plant growth. Introduction of lawn chemicals may result in "fish kills" and water quality degradation.
- (4) Any water quality problems and habitat degradation within this area of Misery Brook due to increased sedimentation, road and stormwater drainage and lawn chemicals and fertilizers will eventually be observed in downstream areas.
- (5) This subdivision and others existing or planned for the immediate area will rely on a municipal groundwater supply primarily from a well system at the Misery Brook headwaters (Well 7 and Well 8). Groundwater removed will be lost from the Misery Brook watershed as a municipal sewer system serves the immediate area negates the potential for groundwater recharge. In the past increased withdrawals from the aforementioned well system has severely depleted flows of Misery Brook affecting not only the immediate stream section, but those downstream, also.

#### Recommendations

The impact of this residential development can be minimized by implementing the following precautionary measures:

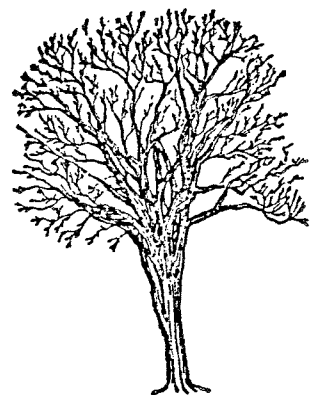
- (1) Maintain at the minimum a 100 foot open space buffer zone along the edge of Misery Brook - no construction or alteration of riparian habitat shall take place within this zone. The buffer zone should be widened in areas of steeper terrain.

- (2) A comprehensive erosion and sedimentation control plan should be submitted and installed prior to the start of construction and maintained through all construction phases. Mitigative measures should include, but not be limited to, detention basins, catch basins, silt fences and hay bales. Surface runoff must not be allowed to directly enter Misery Brook. Once construction is initiated, officials from the Town of Southington should regularly police this development to ensure that all erosion and sedimentation controls are properly emplaced and are being regularly maintained.
- (3) An effective stormwater management plan should be designed and implemented. Stormwaters should not directly enter Misery Brook.
- (4) Limit liming, fertilizing and the introduction of chemicals to subdivision lawns close to the brook. This restriction will help abate the amount of additional nutrients to Misery Brook.
- (5) Educate the customers of the municipal water supply to develop water conservation measures throughout the year and being especially critical during extended low precipitation periods.

#### THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

According to the DEP - Natural Diversity Database there are no Federally listed Endangered Species or Connecticut "Species of Special Concern" that occur within the study area. The Natural Diversity Data Base contains the most current biologic data concerning endangered or threatened plant or animal species. On-going research continues to locate additional populations of species or locations of habitats of concern as well as updating existing data.

# **LAND USE AND PLANNING CONSIDERATIONS**





## PLANNING CONSIDERATIONS

Adjacent properties to the north and south of the proposed subdivision are developed with low to medium density residential, single family subdivisions. Property on to the east across Savage Street is undeveloped and appears to be formerly used for farming or pasture purposes.

The site has considerable standing water in the low lying wetland areas at the end of Canterbury Lane. According to the subdivision plan, considerable portions of many of the lots are designated Inland Wetlands. In some cases virtually all of the lots are comprised of wetlands.

It is evident that there is a lack of regulations to provide the Town with additional controls for regulating development in wetland areas. The proposed development is a conventional, single family subdivision with fairly typical rectangular lots. All lots are to be served by Town water and sewer. The layout is obviously designed to maximize the development of the property in accordance with the current zone. According to Steve Tuckerman, Town Planner, the Town has no regulations governing the amount of wetlands which may comprise the minimum lot area required by the local zoning. Also, there are no performance zoning regulations available as an alternative to the conventional single family subdivision proposed.

The proposed layout appears to show little respect for the obvious limitations of the land imposed by the substantial wetland areas. It is suggested that the Town of Southington consider adopting a minimum percentage in the lot area requirements of the zoning regulations. For example, the Town might require that lots contain no more than twenty-five percent of wetland soils before any fill of these wetlands is proposed. If this requirement were

imposed on the existing layout, the impact would be larger lots than those proposed in accordance with the existing minimum zoning requirements resulting in less disturbance to the wetlands. There is no doubt that fewer lots would be created with this regulation.

As an alternative to this, the Town might allow performance zoning techniques such as cluster single family. Cluster development could allow for development of the property in accordance with the density of the underlying zone while minimizing impacts on wetland areas. Cluster development could allow for more flexibility in layouts by either reducing or eliminating the lot areas, dimensions and setback requirements of conventional zoning. This could be done with the requirement that remaining land be preserved as permanent open space. Overall, further consideration should be given to the vast wetland areas in this proposal.

### TRAFFIC CONSIDERATIONS

#### Canterbury Lane

- 1) Sight line from proposed Canterbury Lane at Savage Street could be improved by removing some large trees to the north and by grading the land to the south. The proposed sight line easement should be larger to accommodate the potential traffic.
- 2) Lots #28 and #29 will have very poor sight distance looking north along Savage Street due to a vertical curve in the Savage Street profile.

#### Meriden Avenue (Route 120) Connection

- 1) The development will require certification from the State Traffic Commission if it exceeds 100,000 square feet and/or

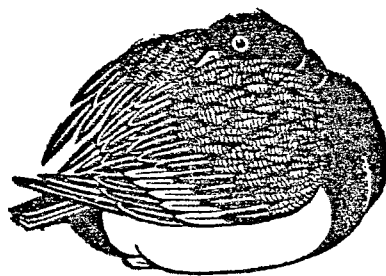
200 parking spaces. Since approximately 90 single-family houses are proposed, it appears this development would require certification.

- 2) The proposed curb cut on to Route 120 (Meriden Avenue) should require a permit from the Department of Transportation District 1 Office.
- 3) A southbound left-turn bypass area may be required on Route 120 at the proposed road. This will be determined during the State Traffic Commission certification process.
- 4) Some trees/bush removal on the east side of Route 120 may be required to provide the necessary intersection sight distance at the proposed road.
- 5) The present flashing beacon at the intersection of Route 120 and Savage Street will be replaced with a traffic signal sometime this year. The signal should have no problem handling the extra traffic at this intersection, which would be generated by the subdivision.

#### Bridle Path Road

- 1) If Bridle Path Road is extended from Lot #14 to the vicinity of Lot #87, and connected with the proposed road which intersects Route 120, a more direct connection between Route 120 and Savage Street would be created. This may tend to increase traffic on the road, as people would use it as a shortcut to avoid the above-mentioned future signal at Route 120 and Savage Street. Since this would be a concentrated residential area, it may be wise to avoid this.
- 2) Sight line easements could be granted to guarantee the maximum sight distance possible at the intersection of Savage Street and Bridle Path Road.

## APPENDICES



Appendix A: Soils Limitation Chart

MAJOR LIMITATIONS TO THE DEVELOPMENT OF:

MAP UNIT NAME	GENERAL SOIL PROPERTIES	DRAINAGE CLASS AND DEPTH TO SEASONAL HIGH WATER TABLE	HOMES WITH BASEMENTS	HOMES WITHOUT BASEMENTS	ROADS AND STREETS
BoB-Branford silt loam, 3-8% slopes	Formed in silty over sandy and gravelly glacial outwash materials	Well drained >4 ft.	None	None	None
CtB-Cheshire stony fine sandy loam, 3-8% slopes	Formed in loose, loamy glacial till materials	Well drained >4 ft.	None	None	None
LoB-Ludlow silt loam, 3-8% slopes	Formed in firm, dense loamy glacial till materials	Moderately well drained 1.5-2.5 ft.	Wetness	Seasonal wetness	Subject to frost action
LwC-Ludlow and Watchaug very stony soils, 3-15% slopes	Formed in firm, dense loamy glacial till materials	Moderately well drained 1.5-2.5 ft.	Wetness	Seasonal wetness	Subject to frost action
McC-Manchester gravelly sandy loam 3-15% slopes	Formed in sand and gravel glacial outwash materials	Excessively drained >6 ft.	None	None	None
SbA-Saco silt loam 0-3% slopes	Formed in silty recent alluvium	Very poorly drained 0-0.5 ft	Flooding Wetness	Flooding Wetness	Flooding Wetness Subject to frost action
WkB-Wethersfield loam, 3-8% slopes	Formed in firm, dense loamy glacial till materials	Well drained 1.5-2.5 ft.	Seasonal wetness	None	None
WnC-Wethersfield very stony loam, 3-15% slopes	Formed in firm, dense loamy glacial till materials	Well drained 1.5-2.5 ft.	Seasonal wetness	None	None
WtA-Wilbraham and Menlo very stony silt loams, 0-3% slopes	Formed in firm, dense loamy glacial till materials	Poorly drained to very poorly +1 to 1.5 ft.	Wetness	Wetness	Wetness subject to frost action

Appendix B:     Suitable Planting Materials for  
Wildlife Food and Cover

SUITABLE PLANTING MATERIALS FOR WILDLIFE FOOD AND COVER

Herbaceous/Vines

Panicgrass

Timothy

Trumpet creeper

Grape

Birdsfoot trefoil

Virginia creeper

Switchgrass

Lespedeza

Bittersweet

Boston Ivy

Shrubs

Sumac

Dogwood

Elderberry

Winterberry

Autumn olive

Blackberry

Raspberry

Honeysuckle

Cranberrybush

Small Trees

Hawthorn

Cherry

Serviceberry

Cedar

Crabapple



## 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 - a 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 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 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 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 two (2) reviews per month.

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