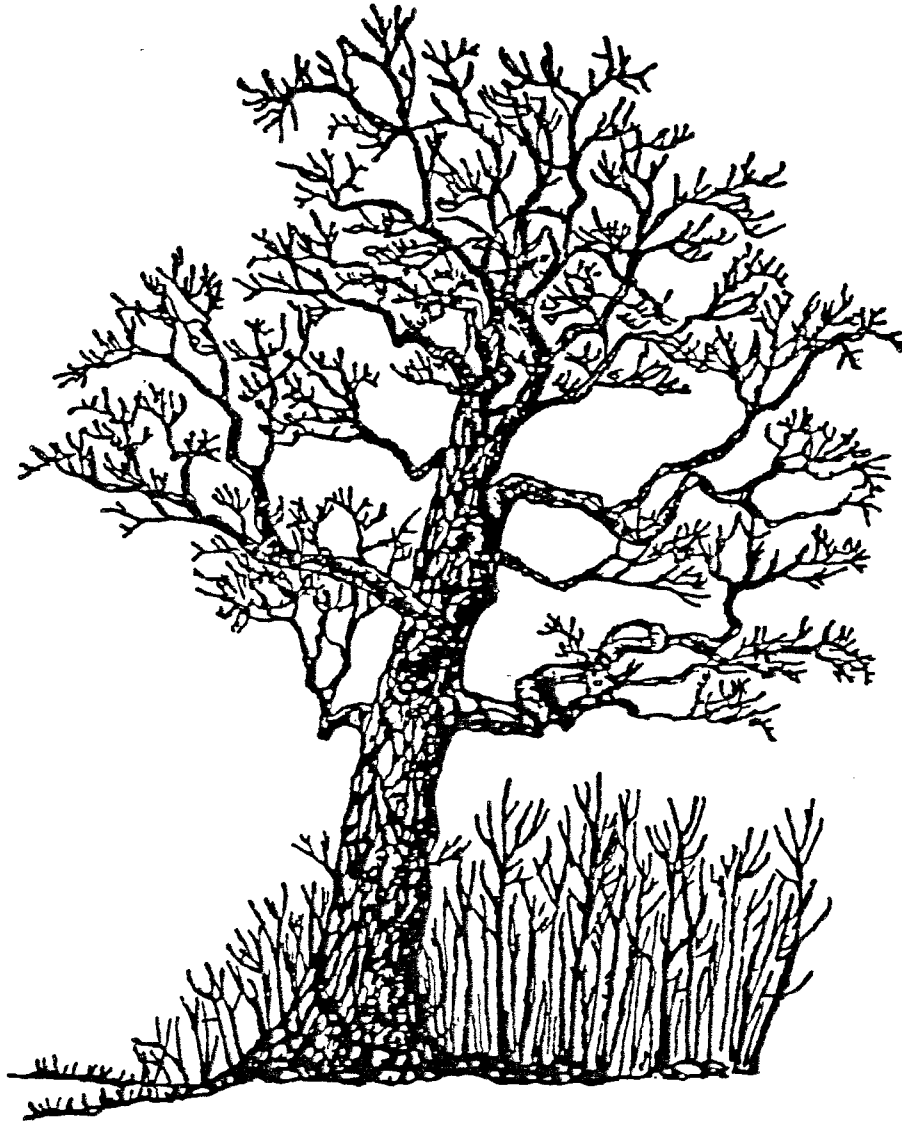


KING'S MARK ENVIRONMENTAL REVIEW TEAM



REPORT FOR

THE P & B BUILDERS SUBDIVISION

BRISTOL,
CONNECTICUT

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

THE P&B BUILDERS SUBDIVISION

BRISTOL, 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

Bristol Inland Wetlands 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 Inland Wetlands Commission and the City. 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.

OCTOBER 1989

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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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 Paul Strawderman, Asst. City Engineer, Lee Levesque, Bristol Inland Wetlands Commission, Thomas Barnes, property owner and Joseph Caggiano, engineer for the developer, for their cooperation and assistance during this environmental review.

EXECUTIVE SUMMARY

Introduction

The Bristol Inland Wetlands Commission has requested that an environmental review be conducted on the P&B Builders Property, a site proposed for subdivision development. The site is located in northcentral Bristol and contains woodlands, several areas of steep slopes and wetlands. The developer proposes 16 lots. Larkspur Lane will be extended with the intention of eventually connecting with a proposed road in Burlington. The road will cross a wetland and a stream with 12,500 cubic feet of fill proposed. Stormwater will be detained in an off-site pond. The site will be served by City sewer and water.

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. The major findings of the ERT are presented below:

Location, Land Use and Zoning

The site is bounded by a proposed subdivision, the Burlington Town Line, residences and private undeveloped land. The vicinity is characterized by medium to high density residential development. The site is located in a R-25 zone. The road placement will result in a loss of a narrow drainageway and 12,500 square feet of wetland filled.

Topography

Site elevations range from 680 to 780 feet above mean sea level. Slopes range from gentle to moderately steep.

Geology

The bedrock type underlying the site has been mapped Bristol Gneiss. The bedrock has been exposed by machinery. Glacial till overlays the bedrock on much of the site. The texture of the till ranges from sandy, stony and loose to silty and compact. Thickness of the till varies from shallow at the northern section to thicker in the remainder. There may be stratified drift deposits in the eastern parts, but this requires verification.

Geologic Development Concerns

Water and sewer lines will be extended to serve the project. This should ameliorate many of the hydrogeologic concerns. Geologic limitations to development include shallow to bedrock areas, moderately steep slopes, hardpan soils with high water tables and regulated wetland soils. Shallow bedrock may require blasting to place utilities, roads and foundations. Blasting should be done under the supervision

of persons familiar with the latest blasting techniques. A pre-blast survey of the area should be done. Certain blasting techniques can be used to reduce environmental damage. Moderately steep slopes and till soils increase the potential for erosion and siltation. A comprehensive erosion and sediment control plan that is properly enforced is needed. Basements will require footing drains because of the seasonal high water tables. These drains should be outletted to the storm drain system. Wetlands will be crossed in 2 places. A small drainageway will be piped into the stormwater drainage system, effectively eliminating the wetland. Consideration should be given to retaining the drainageway in its existing condition. The stream and its accompanying wetlands will be crossed by the road. Although undesirable, wetland crossings are feasible provided they are properly engineered.

Hydrology

Drainage from the site ultimately flows into Polkville Brook. Plans indicate that road drainage will be collected and routed to the stream. The water will then drain to an off-site pond which is proposed as a detention basin for a 25-year storm. Detention basins are the preferred method of controlling runoff on sites containing shallow bedrock and hardpan soils. The applicant's engineer should prepare a stormwater management plan that analyzes the peaks for the 2-year, 10-year and 100-year storm events. If the basin is to serve a sediment retention function as well, the 2-year and 10-year storm events should be analyzed. The basin will need to be maintained, therefore, an access road and a maintenance schedule should be determined.

Soil Resources

The site is dominated by moderately drained to well drained soils on compact till. The major soil limitations on the site are slope, seasonal high water tables and large stones. The erosion hazard is high and the site will need an extensive erosion and sediment control plan. The proposed mitigation of the wetland impacts seems inappropriate. A detailed analysis of the functions being lost and mitigated is needed. Off-site locations could be considered. Stormwater detention could be achieved by altering the culvert under Hart Street, rather than repairing the breached dam.

Flood Control Considerations

The calculations for the stormwater drainage system were based on the TR-55 method. The calculations conclude that the stormwater detention system will reduce peak flows. However, it does not appear that the existing conditions were correctly defined. The analysis should be re-evaluated. The flooding impacts of the post-development runoff should be clearly understood. The stormwater management system should be compatible with the natural hydrology. Discharges from the 2-year, 10-year, and 100-year storms should be analyzed to insure that the sediment/detention basin acts to minimize erosion, sedimentation and flooding. Plans for the dam on the off-site impoundment should be submitted to the DEP Dam Safety Unit to see if a permit is needed.

Wetland Considerations

The wetlands on-site serve to collect and convey stormwater runoff. They aid in flood control by absorbing surface water and releasing it slowly. The vegetation and soils trap sediment and contaminants. Wetlands also provide habitat for wildlife.

Plans include piping the southern drainageway into the northern stream. This will result in negative impacts to the west of the pond. The road crossing of the stream is proposed to back-up the water for the 25-year storm event. This may have either a positive or negative impact on the wetland habitat. The stormwater discharge into the stream will increase the flows and erosion potential. A comprehensive erosion and sediment control plan is needed. Mitigation plans include enlarging the downstream wetlands. The benefits of this may not outweigh the disturbances. The Commission should require the applicant to submit alternative plans for the site to see if a prudent and feasible alternative exists.

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" on the site.

Planning Considerations

The site is zoned R-25 which requires a minimum lot size of 25,000 square feet. The lots either meet or exceed this requirement. The State Policies Plan for the Conservation and Development of Connecticut identifies the site as a Conservation Area bordering an area of urban growth. Development in a Conservation Area should be designed to protect natural resources. The Regional Development Plan classifies the area as low to medium density residential, allowing 1 to 4 units per acre. The Bristol Plan of Development identifies this as low density residential with lot sizes of 25,000 feet or larger.

Traffic circulation is provided by connecting Hart Street with Larkspur Lane in Burlington. Every effort should be made to reduce the wetland impacts by moving the road. To be more compatible with the various plans in the area, some open space should be provided either by designating open space or decreasing the number of lots. Conservation easements could protect the wetlands. Steep slopes will be difficult for development. Careful engineering and erosion and sediment control should be prepared and maintained.

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INTRODUCTION



INTRODUCTION

The Bristol Inland Wetlands Commission has requested that an environmental review be conducted on the P&B Builders Property, a site proposed for subdivision development. The site is located in northcentral Bristol on the Burlington border. Access to the site is provided via Larkspur Lane.

The 17.3-acre site contains woodlands, several areas of steep slopes and wetlands. The developer proposes 16 lots. Larkspur Lane will be extended with the intention of eventually connecting with a proposed road in Burlington. The road will cross a wetland and a stream with 12,500 cubic feet of fill proposed. Stormwater will be detained in an off-site pond. The site will be served by City sewer and water. The City is concerned with the impacts to the wetlands and surrounding ecosystems, the watershed and downstream landowners, the suitability of the soils to support the proposed development and planning implications.

The primary goal of this ERT is to inventory the natural resources of the site and the watershed and provide planning information. Specific objectives include:

- 1) Assess the topographic, hydrologic and geologic characteristics of the site, including the development limitations and opportunities;
- 2) Assess the impact of stormwater runoff;
- 3) Determine the suitability of existing soils to support the proposed development;
- 4) Discuss soil erosion and sedimentation concerns;
- 5) Assess the impact of the development on the wetlands and watercourses; and
- 6) Assess planning and land use issues.

THE ERT PROCESS

Through the efforts of the Bristol Inland Wetlands Commission, the developer's representative and the King's Mark ERT, this environmental review and report was prepared for the City. 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 August 23, 1989. 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, they were able to analyze and interpret their findings. The results of this analysis 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.

Figure 1

LOCATION OF STUDY SITE

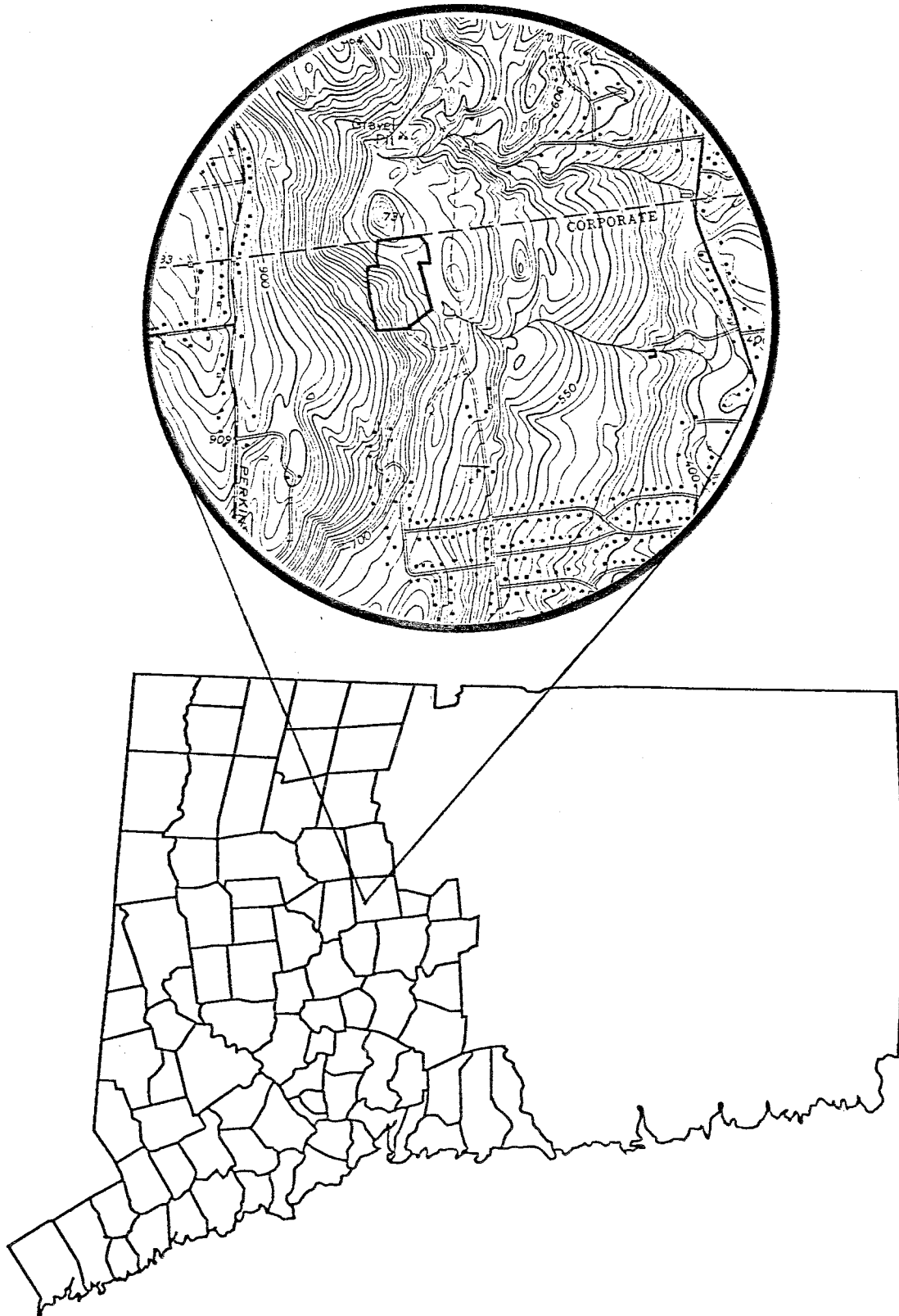
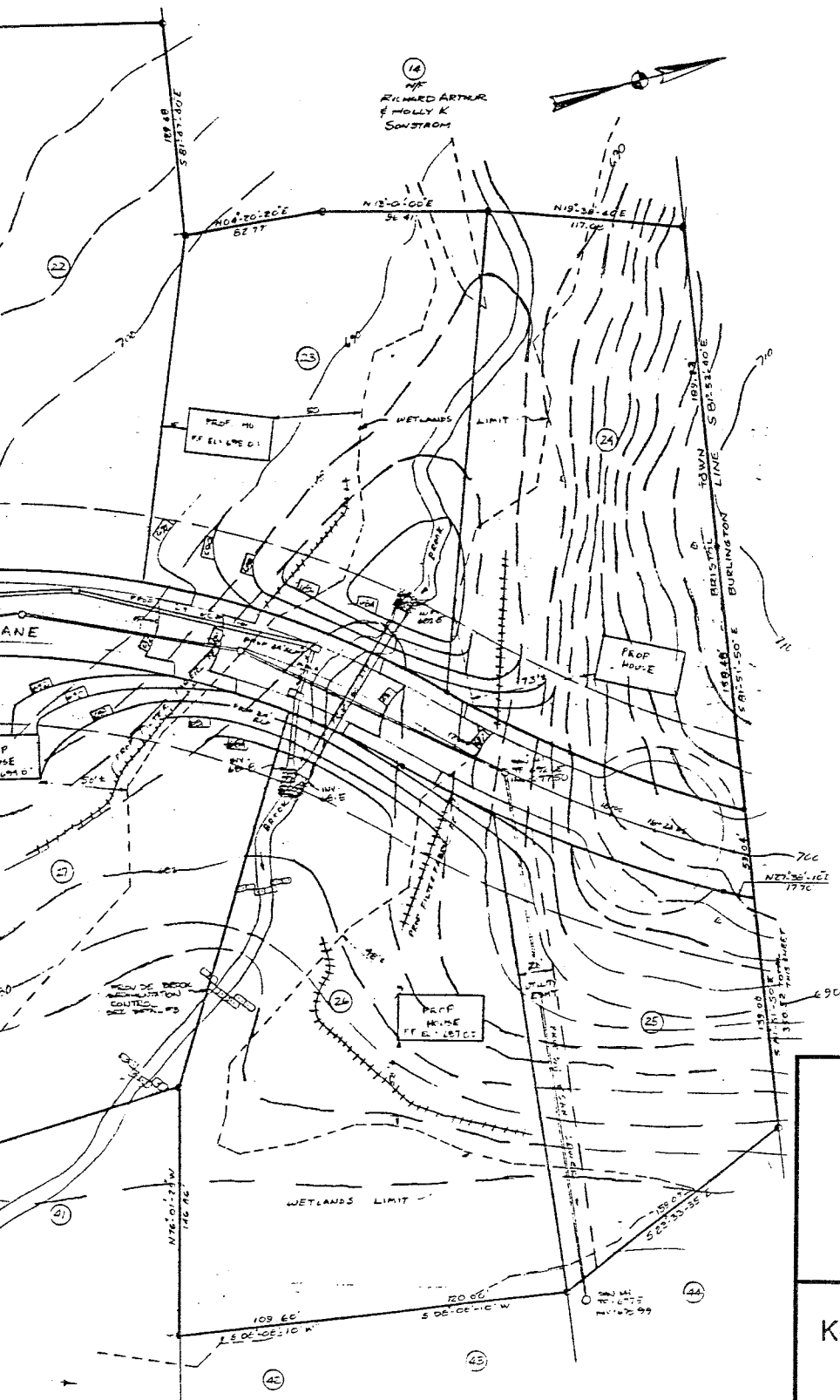


Figure 2



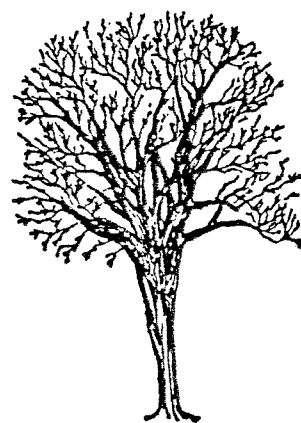
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BRISTOL, CONNECTICUT

King's Mark Environmental Review Team
Scale: 1" = 100'

Proposed Site Plan

Information from "High Hill Section V,
Larkspur Lane"

PHYSICAL CHARACTERISTICS



GEOLOGY

The site is founded on crystalline, metamorphic bedrock known as Bristol Gneiss, a light-gray medium-grained gneiss (see Figure 4). Bedrock has been exposed by machinery along the proposed Larkspur Lane. Blasting of the rock appears necessary. Generally speaking, gneisses are coarse grained rocks characterized by the relatively parallel orientation of mineral grains with a massive to platy appearance.

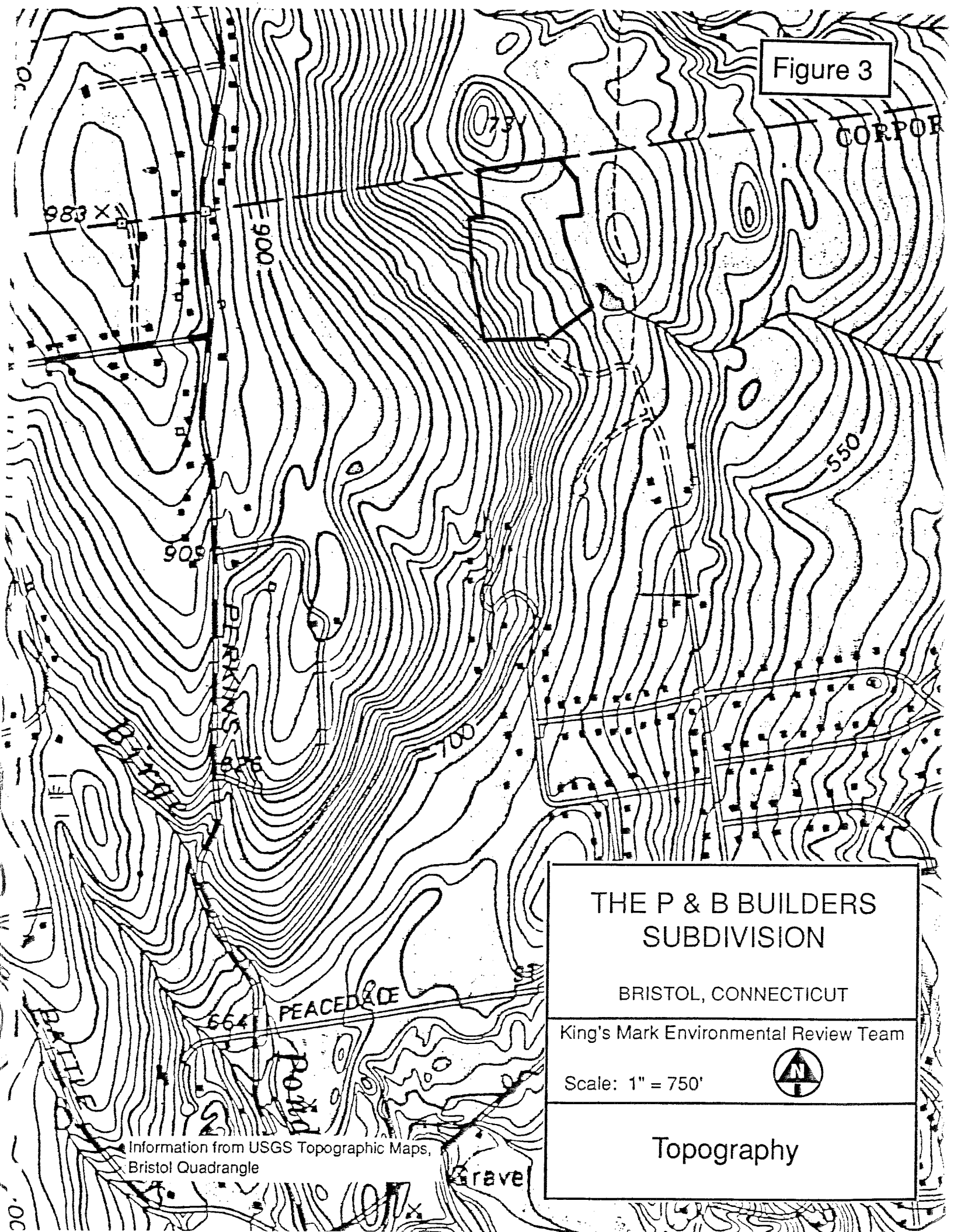
Most of the site is covered by glacial sediments called till (see Figure 5). Till generally consists of an unstratified, non-sorted mixture of clay, silt and coarse to fine sand, with lesser amounts of gravel, cobble and boulders. The till materials were transported and deposited directly by glacial ice moving across the region north to south-southeast. The texture of the majority of the till on the site is characterized by a hardpan layer that has developed below the weathered and surficial soil zone. The presence of hardpan soils commonly results in seasonally high water tables. The texture of the till at the northern limits is sandy and loose. Bedrock is at or near ground surface throughout this area. The exact thickness of the till is unknown, but is probably thinnest in the northern parts (1.5 feet) and becomes thicker (10 feet or more) on the remainder of the site.

There may be some sandy, gravelly deposits of stratified drift in the eastern parts, but this requires verification. Stratified drift deposits were deposited by glacial meltwater streams.

GEOLOGIC DEVELOPMENT CONCERNS

The availability of municipal water and sewer lines to the subdivision site will soften the principal hydrogeologic concerns that usually arise when these utilities

Figure 3




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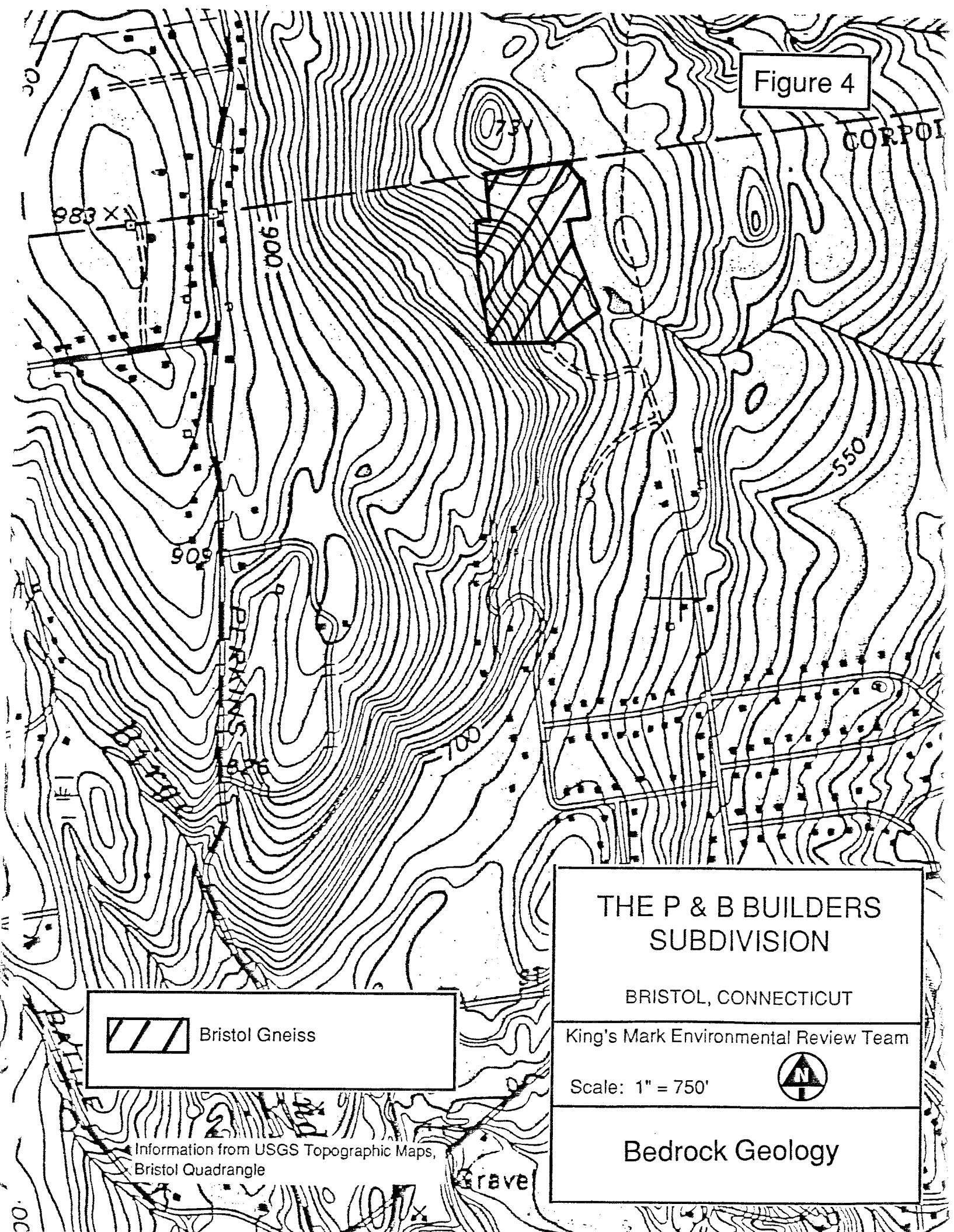
Scale: 1" = 750'



Topography

Information from USGS Topographic Maps,
Bristol Quadrangle

Figure 4



Bristol Gneiss

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Scale: 1" = 750'

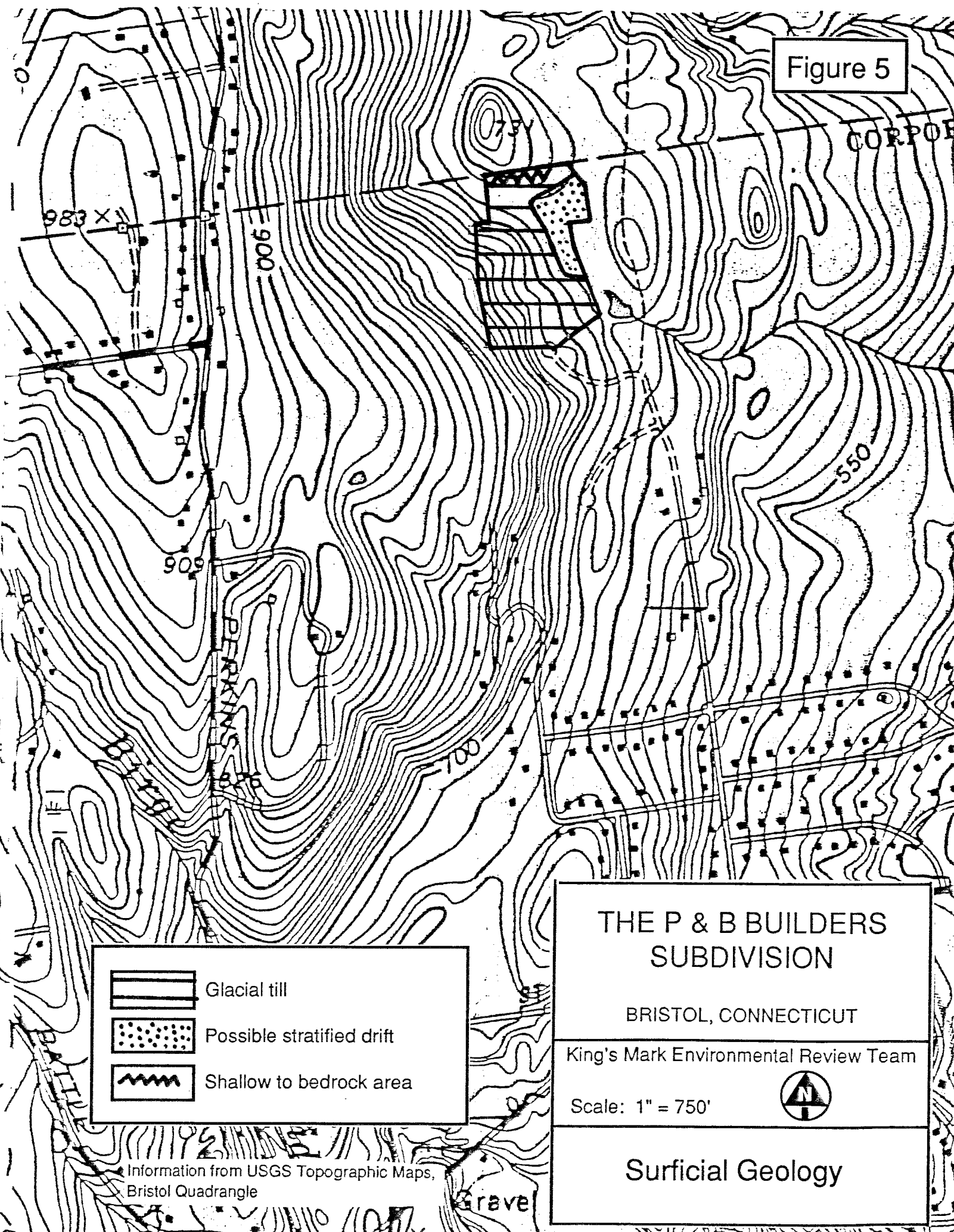


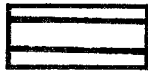
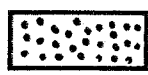
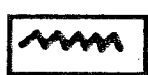
Bedrock Geology

Information from USGS Topographic Maps,
Bristol Quadrangle

Grave

Figure 5




	Glacial till
	Possible stratified drift
	Shallow to bedrock area

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Scale: 1" = 750'



Surficial Geology

Information from USGS Topographic Maps,
Bristol Quadrangle

Grave

are not available. Nevertheless, there are potential hydrogeologic impacts to the site's resources that warrant careful examination. They include:

- 1) The presence of shallow to bedrock soils, especially in the northern parts;
- 2) The presence of moderately steep slopes;
- 3) A high percentage of till soils that are characterized by a seasonally high water table; and
- 4) The presence of regulated inland wetland soils.

Bedrock has been encountered along the proposed Larkspur Lane, and soil mapping data indicates it is at or near the ground surface in the northern limits. Where bedrock is encountered at shallow depths, blasting will be required in order to place utility lines, roads and/or house foundations.

Any blasting that takes place on the site should proceed only with great care and under the strict supervision of persons experienced with state-of-the-art blasting technology. The major environmental impacts of blasting in the area are the potential for undue seismic shock and airblast, particularly in view of the site's proximity to recently constructed single-family residences. The applicant's blasting contractor should conduct a thorough pre-blast survey of the area. In general, when blasting is conducted without regard to the potential environmental effects, there can be problems to surrounding property. Certain blasting techniques can be employed to minimize the environmental effects of blasting in the area, depending upon the blasting requirements and geology of the site. A sufficient number of bedrock borings is required for a geotechnical study of the bedrock.

The presence of moderately steep slopes and till soils that may contain fine-grained particles such as silt and clay indicates a potential for erosion and siltation problems during construction. This potential problem needs to be addressed by the developer with the implementation of a comprehensive erosion and sediment control

plan that is properly enforced by the City. Because most of the till soils on the site are characterized by seasonally high water tables, every effort should be made to provide building footing drains. This should keep basements dry. These drains can be outletted to the storm drainage system.

In order to develop the site, streamcourses and their accompanying regulated wetlands will be crossed by Larkspur Lane in 2 areas. The first wetland disturbance by the proposed Larkspur Lane will occur at the existing narrow drainageway that bisects the southcentral parts of the site. This drainageway, which acts largely as a conduit for runoff during periods of precipitation and/or snowmelt, collects surface drainage west of the site and transports it to an unnamed tributary of Polkville Brook. Present plans indicate that an 18-inch reinforced concrete pipe will be installed on Lot 19, which could intercept and route the water into the stormwater drainage proposed for Larkspur Lane. This activity will "starve" the drainageway of the surface water that it presently carries during wet periods on the west and east sides of Larkspur Lane. As a result, the drainageway will no longer serve as a discharge point for surface flow but would "dry up." Leaving the drainageway in its existing condition will help to effectively reduce the velocity of surface flow in the channel, control the volume of runoff discharged from the developed area, increase infiltration of runoff into the groundwater system and reduce the erosive potential of the runoff. It is strongly suggested that the advantages and disadvantages of eliminating this drainageway be carefully considered, keeping in mind the hydrologic benefits of a natural or vegetative drainageway. Any work in wetlands will require a permit from the Bristol Inland Wetland Commission.

The second wetland disturbance, a road crossing of a streamcourse and its accompanying wetland, will occur at the northern limits of the site between Lots 23 and 24 and Lots 26 and 27. According to the applicant's soil scientist, these soils comprise the Leicester, Ridgebury and Whitman soils series. This undifferentiated

group consists of poorly drained (Leicester and Ridgebury soils) and very poorly drained (Whitman) soils that are commonly found in drainageways. The land surface is usually flat (0-5%) in these areas. The major engineering concerns with regard to these soils include a seasonally high water table and a slowly permeable hardpan layer.

Although undesirable, wetland crossings are feasible, provided they are properly engineered. The road should be constructed adequately above the surface elevation of the wetlands. This will allow for better drainage of the road and decrease the frost heaving potential. Road construction through wetlands should be done during the dry time of year and should include provisions for effective erosion and sediment control. Any unstable, organic or mucky material should be removed and replaced with a permeable road base material. Culverts should be properly sized and located to avoid altering the water levels in the wetland or causing flooding problems.

Classified inland wetland soils in Connecticut are regulated under the Connecticut Inland Wetlands Act. Any activity which involves modification, fillings, removal of soils, etc. will require a permit and ultimate approval by the Bristol Inland Wetland Commission. In reviewing a proposal, the Commission must determine the impact that the proposed activity will have on the wetlands. If Commission members determine that the wetland is serving an important hydrological or ecological function and that the impact of the proposed activity will be significant, they may deny the activity altogether, or at least require measures that would minimize the impact (see Wetland Considerations section).

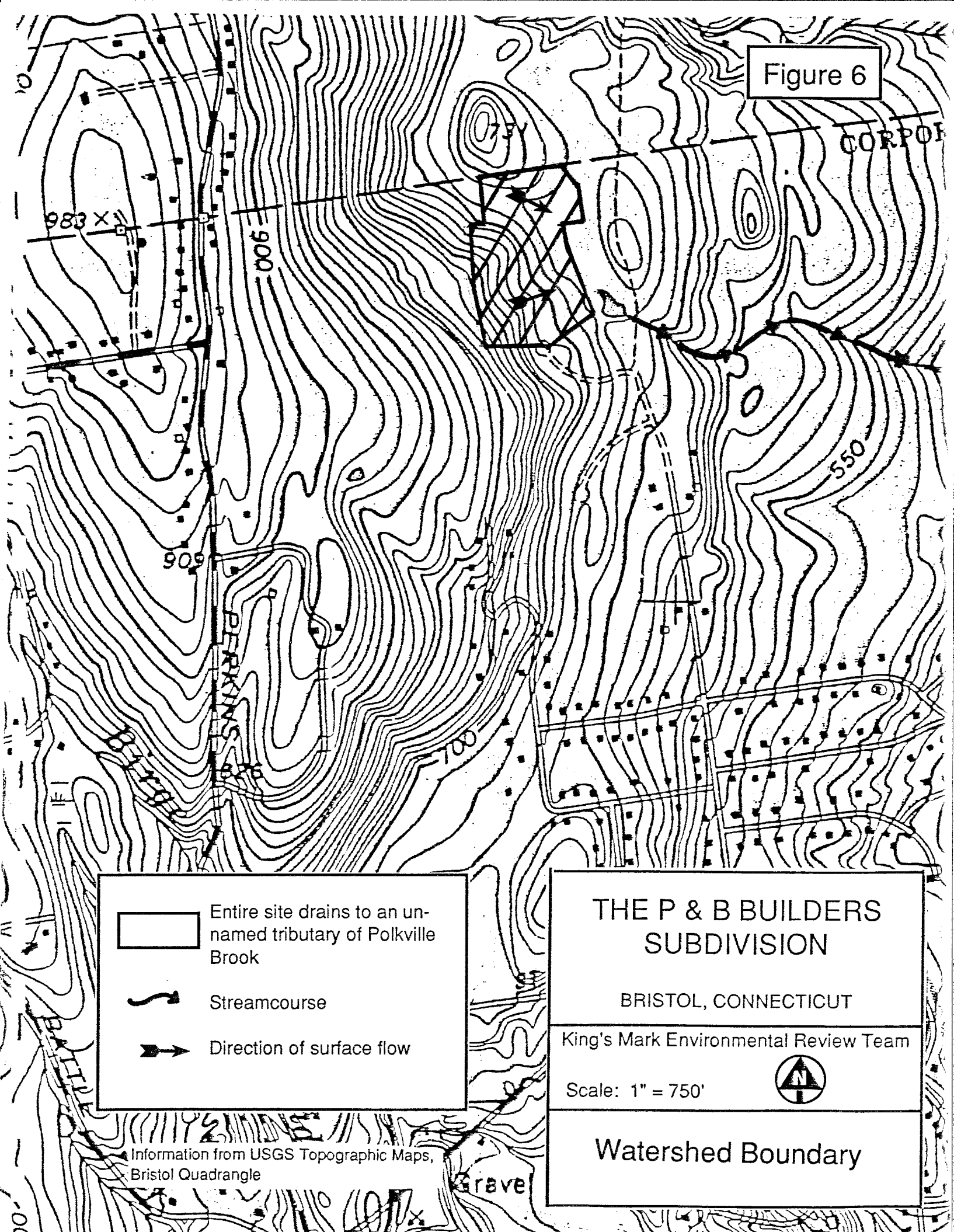
HYDROLOGY




Surface runoff on the site drains generally eastward to an unnamed streamcourse that ultimately routes the water to Polkville Brook (see Figure 6).


Present plans indicate that road drainage will be collected artificially by catch basins and routed to the west side of the proposed wetland road crossing in the northern parts. It is not known if building footing drains and roof gutters will be tied into the road storm drains. Ultimately the water will be routed to an off-site pond, about 1 acre in size, which is proposed for the detention of post-development runoff. The purpose of the detention basin will be to maintain post-development flows at pre-development flow rates for the 25-year storm event. Detention basins are the preferred method for controlling post-development runoff increases on the site. The presence of shallow to bedrock soils and hardpan soils that are slowly permeable prevent the use of underground storage facilities for controlling post-development runoff increases. The applicant's engineer should prepare and submit a stormwater management plan which includes supporting calculations for all pertinent storm events and a narrative and summary report of the plan. The criteria in Chapter 8 of Connecticut Guidelines for Soil Erosion and Sediment Control should be used for the detailed design of the detention basin. According to this publication, the peak discharge from the 2-year, 10-year and 100-year frequency, 24-hour duration, Type III distribution storms should be analyzed, if the primary purpose of the detention basin is to minimize flooding. If the detention basin also serves a sediment retention function (minimizes erosion and sedimentation), the peak discharges from the 2-year and 10-year frequency, 24-hour duration, Type III distribution storms should be analyzed.

Since the detention/sedimentation basin will probably need to be cleaned from time to time, an access road for maintenance vehicles should be shown on the plan, and the party responsible for the maintenance should be determined.

Figure 6



	Entire site drains to an unnamed tributary of Polkville Brook
	Streamcourse
	Direction of surface flow

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King's Mark Environmental Review Team	
Scale: 1" = 750'	
Watershed Boundary	

Information from USGS Topographic Maps,
Bristol Quadrangle

Grave

PeC,

PeD - These soil units consist of deep, well drained, loamy soils formed in compact glacial till on uplands. Permeability is moderate in the surface layer to slow or very slow in the dense substratum. Surface runoff is moderate to rapid. Major limitations of these soils are a stony surface, slow percolation rate and steepness of slope.

WzBC - This soil unit consists of deep, moderately well drained, loamy soils formed in compact glacial till on uplands. Permeability is moderate in the surface layer to slow or very slow in the substratum. Surface runoff ranges from slow to rapid. Site limitations for this soil unit include wetness (high water table), frost action on roads and large stones on the surface layer.

Soils Summarization

Slope, high water tables and large stones will make site development difficult. Additional engineering measures, than normally used on less restrictive sites, will be needed to overcome these limitations. The erosion hazard on this site is high due to the steepness of slope. Extensive grubbing for stumps and removal of stones will increase the need for an extensive soil erosion and sediment control plan. A detailed, phased plan is needed to protect off-site resources. The on-site investigation showed extensive sedimentation of watercourses from both natural and man-made activities. Concentrated flows will increase the hazard of erosion.

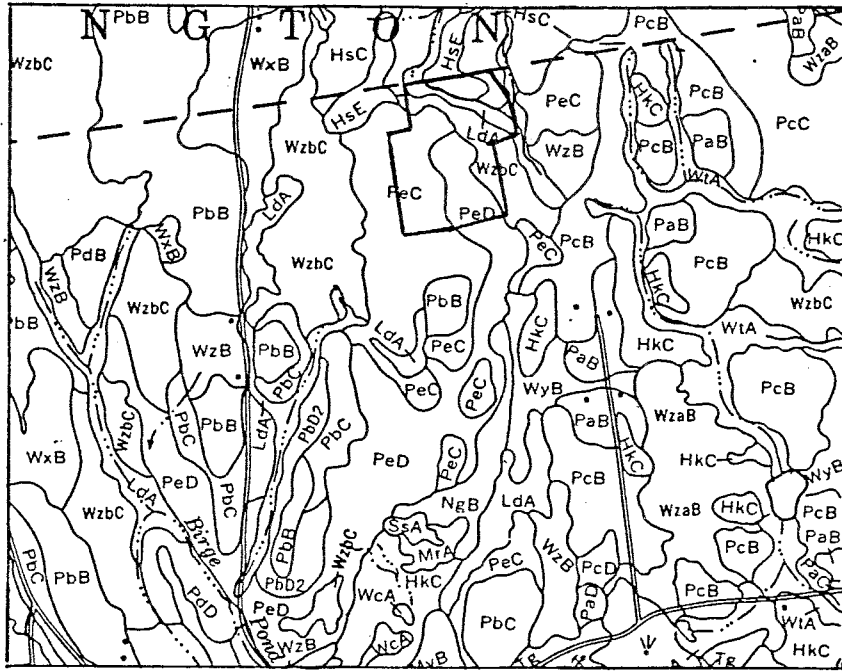
The wetland soils on this parcel include zones of groundwater discharge and a watercourse for vernal flows. At present, plans include interrupting and/or eliminating most of these wetland functions.

Additional Comments

The proposed mitigation for the P&B Builders site seems inappropriate. The mitigation area has significant value to associated wetlands. A more detailed analysis of the wetland functions being lost and mitigated is needed. One alternative site for selection of mitigation is upstream of the excavated roadway on-site. Other off-site locations of highly disturbed areas within the same watershed could also be investigated.

Figure 7

HARTFORD COUNTY, CONNECTICUT-SHEET NUMBER 41



Scale 1:20 000 0 5000 Feet


HsE -	Hollis very rocky loam
LdA -	Leicester, Whitman, Ridgebury, very stony soils
PeC, PeD -	Paxton very stony loam
WzB -	Woodbridge stony loam

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Scale: 1" = 1666'



Soils

Information from Hartford County Soil Survey
Scale: 1" = 1666'

should be compatible with the natural hydrology of the watershed. The peak discharges from the 2-year, 10-year and 100-year frequency storms should be analyzed to insure that the detention pond acts to minimize erosion and sedimentation and potential flooding. Another consideration for the design of the detention basin is the timing of runoff with respect to flow in Polkville Brook.

The hydrologic methods employed in stormwater management analysis are intended to keep the runoff hydrographs for the detention basins and the watershed separate and out of phase with each other. In this proposal, the detention facilities are located in the upper part of the watershed. Therefore the outflow from the system should be detained long enough to avoid overlapping the hydrographs from the lower watershed areas. Based on their location, the detention basins should be designed to allow a slow, gradual release of water into Polkville Brook. The controlled release of water will act to mitigate potential downstream flooding conditions.

The stormwater management system is designed to work in conjunction with an existing impoundment that lies on the P&B Builders property. Based on an earlier assessment, it was determined that the dam sustaining the impoundment did not fall under the jurisdiction of the Department of Environmental Protection (DEP). It is recommended that the owner of the dam submit design plans and calculations for the stormwater management system to the DEP Dam Safety Unit for a re-evaluation. Since the proposal indicates the basin will be employed as a permanent detention/retention facility and modifications to the dam are proposed, a dam construction permit may be required.

BIOLOGICAL RESOURCES



discharging it to the northern wetlands/watercourse may result in negative impacts west of the pond. However, since these flows are intended to be diverted through the northern brook, adverse effects may be less apparent. During the construction of Larkspur Lane, sediment and erosion controls should be placed and maintained stringently to prevent the sedimentation of the lower wetlands area.

The road crossing proposed for the northern wetlands may create backing up of water during the 25-year storm event. This will act as a detention basin and allow sediments to accumulate within the wetlands and temporarily inundate this area. This effect may eventually result in a change in the representative plant and animal communities, which may either be positive or negative.

The proposed discharge of stormwater drainage to the existing brook will increase the rate of flow and may augment erosion processes. Proper erosion and sediment controls must be designed and maintained for the protection of the water resources on- and off-site.

Mitigation plans include a conservation area and enlargement of the existing off-site pond. The preservation of a wildlife habitat within the proposed subdivision will positively affect the ecological community and help preserve its natural functions. However, enlarging the downstream pond for the specific purpose of wetlands mitigation may not provide significant benefits because of the inevitable disturbance required for this proposal. This waterbody appears to be a productive ecosystem, and its preservation is preferable to the alternative.

General Comments

The Inland Wetlands and Watercourses Act (CGS Sec. 22a-36 through 22a-45) provides for the preservation and protection of wetlands and watercourses from random, unnecessary and undesirable disturbances. This is to insure that the wetlands and watercourses resources of the State can continue to provide their natural functions including providing terrestrial and aquatic wildlife habitats,

minimizing the danger of flooding by detaining overland runoff, protecting water supplies by absorbing pollutants prior to entrance into watercourses and providing recreational and aesthetic public values.

The Commission should require the applicant to submit alternative configurations of the subdivision which are more sensitive to the wetlands on the site. Pursuant to CGS Sec. 22a-41(b), the Commission should not issue a permit if a feasible and prudent alternative exists.

THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

According to the Natural Diversity Data Base, there are no Federal Endangered and Threatened Species or Connecticut "Species of Special Concern" that occur 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 Geological 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.

LAND USE AND PLANNING CONSIDERATIONS



PLANNING CONSIDERATIONS

The site is currently zoned R-25, requiring a minimum lot area of 25,000 square feet. Burlington has zoned the abutting area (R-30), which requires a minimum lot area of 30,000 square feet. The lots in this subdivision meet or exceed this requirement. This subdivision is compatible with the single-family residential character of the surrounding neighborhoods.

The State Policies Plan for the Conservation and Development of Connecticut has classified this land as a Conservation Area bordering an area of urban growth. Development in a conservation area should be designed to protect natural resources. The Central Connecticut Regional Planning Agency's Regional Development Plan has classified this area for future land use as residential with low to medium density, 1 to 4 units per acre. The subdivision conforms to the minimum size land use suggested by this Plan. The City of Bristol's Plan of Development has classified the area as Low Density Single-family Residential (R-25 and R-40 zones) with lot sizes 25,000 square feet or larger.

Traffic circulation is provided by connecting the road with Larkspur Lane in Burlington. However, every effort should be made to move the wetlands crossing west in order to reduce the amount of wetlands filled for the road. To be more compatible with the various plans of development for the area, some provision for open space should be included. This can be accomplished by designating areas of open space or by increasing the size and decreasing the number of lots. Conservation easements protecting the wetlands could make the subdivision consistent with development plans. Some of the lots, especially those along the Bristol-Burlington Town Line, may be too steep for easy development. Regrading and erosion and sediment control plans for house construction should be carefully prepared and maintained. One of the goals of the Regional Development Plan is to preserve and

minimize any potential adverse impacts in sensitive areas such as slopes in excess of 15%. Careful engineering techniques should be considered within this development when construction takes place on slopes in excess of 15%.

APPENDICIES



Appendix A: Soil Limitations Chart

LIMITATIONS TO THE DEVELOPMENT OF:

MAP UNIT	GENERAL SOIL PROPERTIES	% SLOPE	DEPTH (FT) TO HIGH WATER TABLE	TYPE WATER TABLE	SEPTIC TANK ABSORPTION	DWELLINGS WITH BASEMENTS	ROADS AND STREETS	LAWN AND LANDSCAPING
HsE	Very stony glacial till	15-35	>6.0	-	Severe Br	Severe Br	Severe Br	Severe Tl
LdA	Loamy glacial till	0-5	+1-1.5	Apparent, perched	Severe W, Ps, Pd	Severe W	Severe W, Fa	Severe W
PeC	Very stony glacial till	3-15	1.5-2.5	Perched	Severe Ps, Sl	Moderate W, Sl	Moderate Fa, Sl	Moderate St, Sl
PeD	Very stony glacial till	15-35	1.5-2.5	Perched	Severe Ps, Sl	Severe Sl	Severe Sl	Severe Sl
WzbC	Very stony glacial till	3-15	1.5-2.5	Perched	Severe W, Ps	Severe W	Severe Fa	Moderate St

Br - Shallow to Bedrock Fa - Risk of Frost Action Pd - Ponding Ps - Percs Slowly Sl - Slope St - Large stones
 Tl - Thin Layer of Top Soil W - Wetness

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 Nancy Ferlow, 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.