KING'S MARK ENVIRONMENTAL REVIEW TEAM

REPORT FOR

WINCHESTER COMMONS CONDOMINIUMS

WINCHESTER,
CONNECTICUT

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

WINCHESTER COMMONS CONDOMINIUMS

WINCHESTER, 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

Winchester Planning and Zoning Commission

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

APRIL 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
  Department of Environmental Protection - Natural Resource Center
  566-3540

* Kathy Johnson, District Conservationist
  USDA - Soil Conservation Service
  567-8288

* Daniel Mayer, Wetland Specialist
  Department of Environmental Protection - Water Resources Unit
  566-7280

* Richard Lynn, Planner
  Litchfield Hills Council of Governments
  491-9884

* Harry Siebert, Transportation Planner
  Department of Transportation
  566-7263

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 Joanne Williams, Building Inspector, David Cappabianca and Pat Miller of the Winchester Inland Wetlands Commission, David Carter and Tom Carry of the Winchester Planning and Zoning Commission, Philip Koziol, Wengell, McDonnell & Costello, Inc, Bart Clark and John Phillips, Lenard Engineering and Michael Kline, environmental consultant for the developer, for their cooperation and assistance during this environmental review.

EXECUTIVE SUMMARY

Introduction

The Winchester Planning and Zoning Commission has requested that an environmental review be conducted on Winchester Commons, a 118-acre site proposed for condominium development. The site is a recently abandoned farm and contains haylots, abandoned pasture and second growth hardwood and softwood forests. There are several areas of wetlands totaling 27.7 acres and 2 streams on the site.

The proposed condominium development consists of 472 units with a variety of streets and cul-de-sacs to serve them, tennis courts and a recreation facility. Open space with no construction allowed is proposed for 49.5 acres of the site. Four wetland crossings and 2 detention ponds are the proposed wetland impacts.

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:

Setting and Land Use

The site is bounded by Wallens Street, Wallens Hill Road and private undeveloped land. The vicinity is characterized by single-family houses, farmland and a multi-family residential development. The site is located in a RU-2 zone, which allows high density residential uses. Elevations range from 740 to 990 feet above sea level. Slopes range from gentle to steep.

Geology

The bedrock types underlying the site have been mapped as a layered gneiss and Hoosac schist. The bedrock is closest to the surface on the small knob near Wetland D. Glacial till overlays the bedrock on 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 knob near Wetland D to thicker near Wallens Hill Road.

Geologic Development Concerns

Water and sewer lines will be extended to serve the project. This should ameliorate many of the hydrogeologic concerns. Letters of conformation should be secured stating that the utilities can handle the demands of the project. Also, responsibility for the maintenance and operation of the pump stations should be decided.

Geologic limitations to development include hardpan soils with high water tables, shallow to bedrock areas, regulated wetland soils and steep slopes at the

western limits. Any cuts that occur in hardpan soils are difficult to stabilize due to seepage and erosion. Excavations in hardpan soils may change the groundwater levels because they act as intercepting drains. Changes in groundwater levels may affect the wetlands. Another concern is the potential for wet basements. Units with full basements should be protected by building footing drains. Shallow bedrock may require blasting. Blasting should be done under the supervision of persons familiar with the latest blasting techniques. Consideration should be given to completing all blasting prior to construction. Steep slopes and silty soils increase the potential for erosion particularly if large areas are disturbed. A properly prepared and enforced sediment and erosion control plan should reduce the potential for erosion. Disturbed areas should be kept to a minimum. Approximately 1000 feet of wetland crossings are proposed. Grading for buildings may encroach on the wetlands. There may be alternatives to the proposed crossings which would reduce the wetland disturbances. The major road crossing could be shifted to another location. Building setbacks from the wetlands should be considered to reduce the chance for illegal filling and provide more yard space.

Hydrology

Drainage from the site flows into Still River. Development of the property will cause increases in runoff. The drainage facilities plan indicates that post-development runoff will not exceed pre-development runoff. Two impoundments will detain the increases in runoff but will not capture runoff from the southern portion of the site. This uncontrolled runoff will flow through a developed area. It should be demonstrated that the flows will not cause flooding problems or aggravate existing problems downstream. The outlets for the detention basins flow through wetlands which are in an ideal position to filter silt and sediment from the stormwater. There are presently no developments downstream of these outlets to be effected by the increased runoff. Both detention basins are located in wetlands and will need a permit from the Inland Wetlands Commission. Permits may be needed from the DEP Dam Safety Unit for the berms. If the detention basins trap sediment, access roads for maintenance vehicles and a maintenance plan will be needed. Fine suspended particles, dissolved contaminants and fluid contaminants will not be retained by a sediment basin.

The groundwater on the site is classified as GA which is suitable for drinking without treatment.

Soil Resources

The major soil limitations on the site are inland wetlands, seasonal high water tables, slopes and shallow soils. Disturbance of inland wetland soils require permits. The berm for the detention basin in Wetland A may be beneficial to the system. The berm should be seeded immediately after construction. The berm for Wetland D will cause a large area of disturbance due to boulder removal. Most of the open space planned is wetland. Conservation easements or deed restrictions will help protect these areas from further disturbance. The units close to the wetlands may need further review. Soils with seasonal high water tables will require subsurface drainage. Cut slopes will seep. Shallow to bedrock areas may require blasting. The

Erosion and Sediment Control Plan will help control erosion. Due to the density proposed, additional measures may be needed including using more silt fence and snow fence, defining the maintenance for the silt fence and hay bales, creating a stable outlet for the stormwater pipe from the parking at Unit 65, locating the top soil stock piles on the plans and checking the seeding mixture.

Wetland Considerations

The wetlands found on-site are associated with the watercourses. Wetland functions include wildlife habitat, aesthetics, flood storage, water conveyance, research and educational potential and agricultural opportunities. The wetlands range from good to excellent quality and functional value.

Direct impacts to the wetlands include 4 crossings and 2 detention basins. The first crossing (Wetland B) includes 0.75 acres of disturbance. The crossing will inhibit wildlife movement, create a flow of road runoff and sediments into the wetland and inhibit the natural flow of drainage. Alternatives exist for this crossing and should be explored. The second crossing (Wetland A) will cross an area previously disturbed by agriculture. The third crossing (Wetland A) is in a transitional area that has excellent quality and function. There are alternatives to this crossing, and a buffer around the area should be considered. The fourth crossing (Wetland E) is located in a right-of-way that is used as access to the property. The crossing will destroy this portion of an intermittent stream, but is unavoidable. The 2 detention basins will be used to control stormwater runoff. It is recommended that detention basins be located in upland areas. Due to the size of the project, alternatives apparently have not been considered. A reduced number of units would provide greater flexibility and may eliminate the need for detention facilities. The stormwater discharges into the stream at the northwest corner of the site may result in significant erosion and may destabilize the banks. Alternative management systems should be explored. Recommendations include exploring all possible alternatives for the first and third wetland crossings, moving the detention basins out of the wetlands and considering alternatives to the stormwater management plan.

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 RU-2 which allows high-density development only as a special exception. The surrounding land in Winchester is also zoned RU-2. The land in Barkhamsted is zoned for 2-acre lots. The project will result in greater density than the existing patterns of development, but is not viewed as incompatible. The Winchester Zoning Regulations contain a provision for buffer plantings between land uses of different types. There are considerable setbacks, but much of this land is old pasture or shrubs. The shrubs may not be an adequate buffer screen, especially

during the winter months. Buffer plantings should soften the transition between the land uses.

The State Policies Plan for the Conservation and Development of Connecticut identifies the site as an urban growth area provided sewer and water facilities are available. The Litchfield Hills CEO supports the zoning of multi-family housing based on municipal characteristics and encourages higher density development close to urban centers. The project is not inconsistent with this goal, provided care is taken to minimize the disturbance to wetlands and water quality. Due to the magnitude of the proposed project, consideration should be given to setting aside a number of units for below market value housing. The Zoning Regulations allow condominiums in this area only as a special exception. The Town must determine if the project meets the criteria established for multi-family housing and should also consider the impact on the Town of Barkhamsted.

Traffic Considerations

The topography of the site does not constrain the roads and drainage, but revisions to the road configuration should be made to lessen the impact on the natural features. A total of 2800 new trips per day can be expected from the development. Local roads may require reconstruction due to the increased traffic. The improvement of the intersection of Wallens Hill Road and Poole Road should be considered to improve the sightlines. Reconstruction of Wallens Hill Road and Wallens Road should be considered, because the pavement and subgrade are inadequate to meet the needs of the increased traffic.

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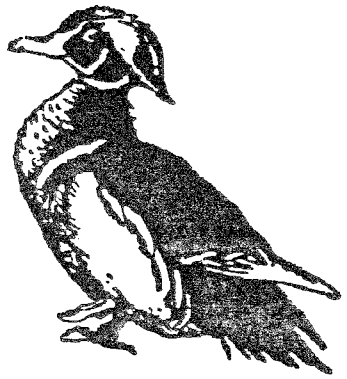


THE ERT PROCESS

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

1) Inventory of the site's natural resources (collection of data);

2) Assessment of these resources (analysis of data);

3) Identification of resource problem areas; and

4) Presentation of planning and land use guidelines.

The data collection phase involved both literature and field research. The ERT field review took place on March 1, 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

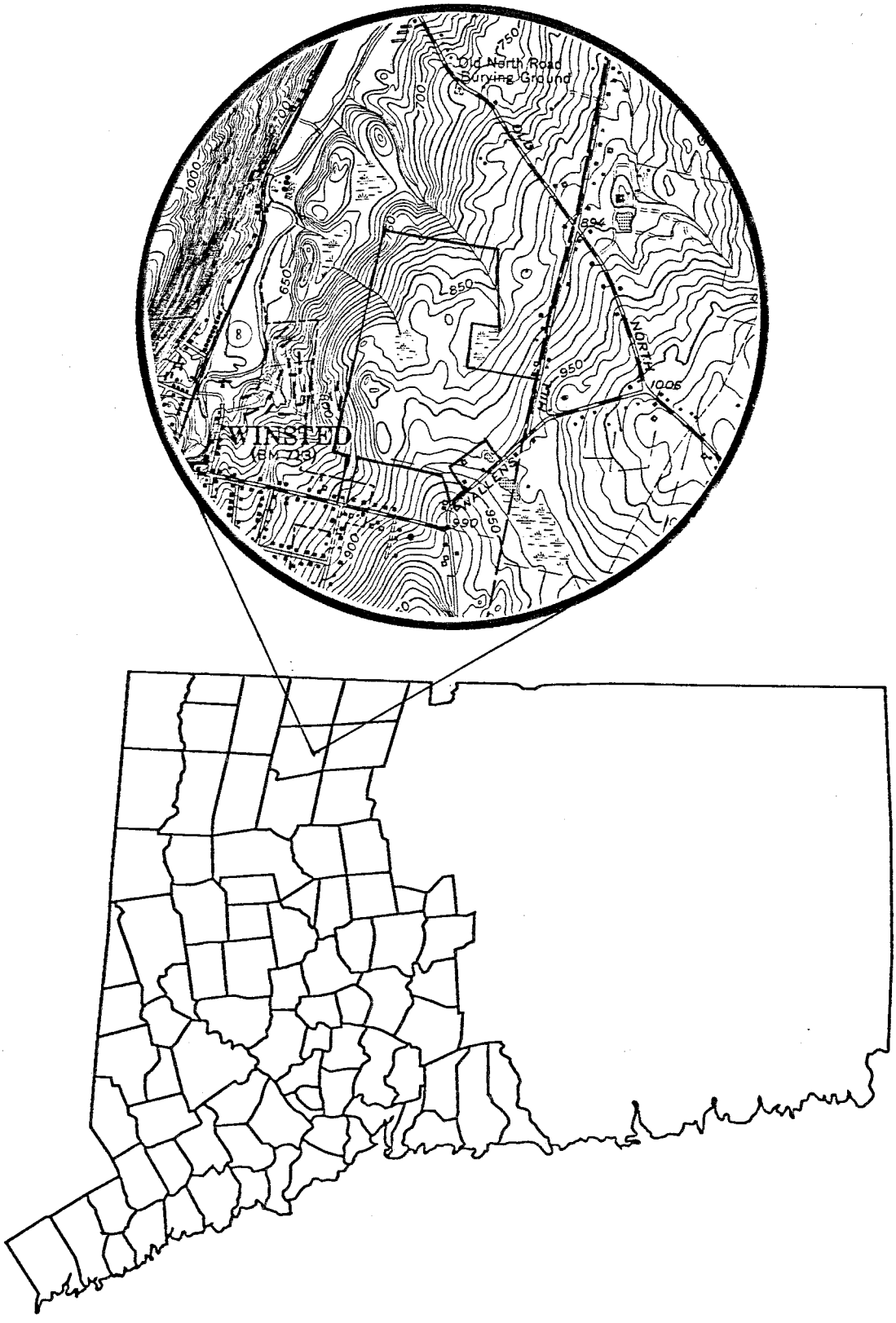
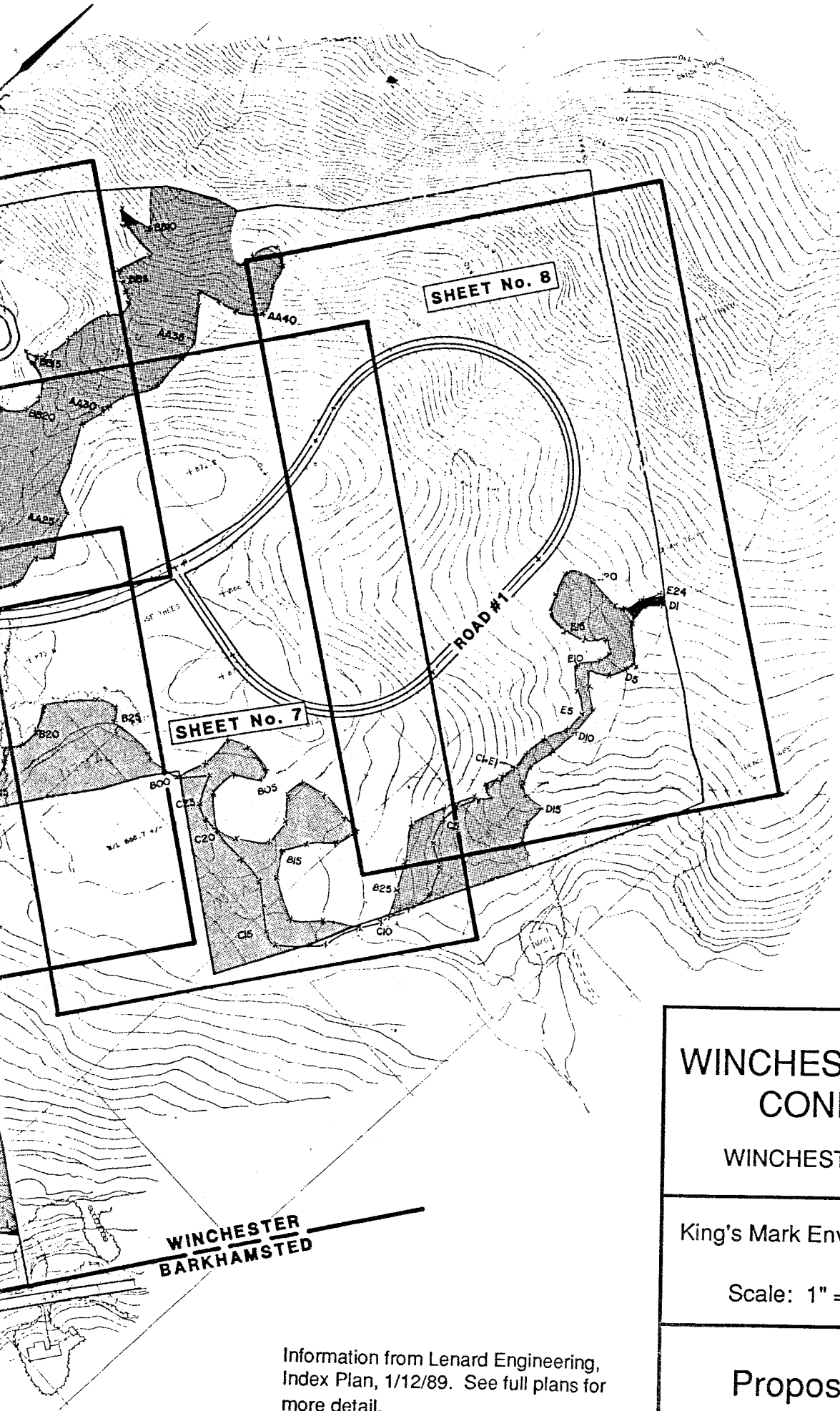


Figure 2



Information from Lenard Engineering, Index Plan, 1/12/89. See full plans for more detail.

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WINCHESTER, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 300'

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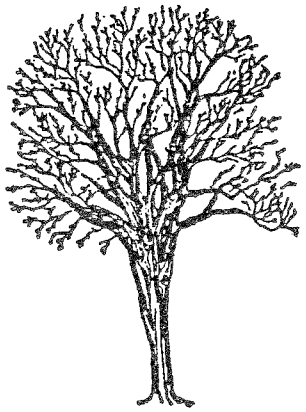
Proposed Site Plan

NATURAL RESOURCE CHARACTERISTICS



ranges from about 740 feet above mean sea level at the northwest corner to about 990 feet above mean sea level at the southeast corner (see Figure 3). Scenic vistas are available to the northwest.

GEOLOGY

The condominium site is located entirely within the Winsted topographic quadrangle. A surficial geologic map (60-871, by Charles R. Warren, 1970) for the quadrangle has been published by the Connecticut Geological and Natural History Survey. No bedrock map has been completed for the quadrangle to date. The Team's geologist referenced the Bedrock Geological Map of Connecticut, Rodgers 1985, for the bedrock geology of the area.

Bedrock is not well exposed on the site. It is closest to the ground surface on the small knob southwest of Wetland D in the central parts. Rodgers (1985) identifies 2 types of bedrock underlying the parcel: a layered gneiss and Hoosac Schist (see Figure 4). The southeastern corner of the site is underlain by a gray, rusty-weathering, fine- to medium-grained schist referred to as a Hoosac Schist. The remainder is underlain by a gray, medium-grained, well-layered gneiss. Gneisses are coarse-grained rocks, geologically altered by heat and pressure (metamorphosed) with generally strong layering. Schists are also crystalline metamorphic rocks but are characterized by the presence of flaky, platy and elongate minerals that give the rock a slabby appearance. Schists and gneisses may grade into one another in a single outcrop.

The bedrock on the site is overlain by till, a nonsorted glacial sediment (see Figure 5). It consists of a mixture of sediments ranging in size from clay-sized particles to large boulders, but is predominantly sand and silt. The rock materials that make up the till were accumulated by an ice sheet as it moved southward

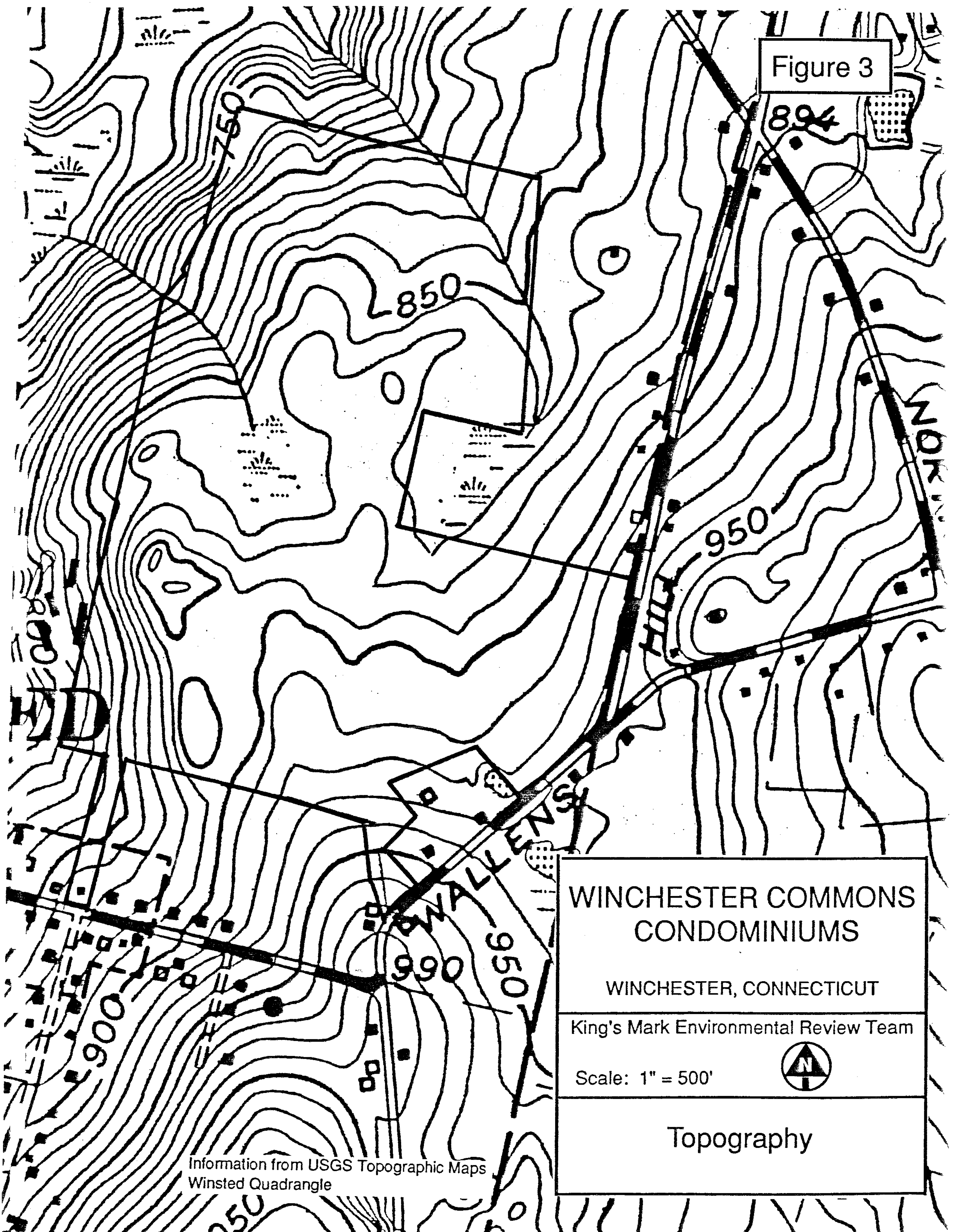


Figure 3
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HILL
WALLENS ST
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WINCHESTER COMMONS
CONDOMINIUMS
WINCHESTER, CONNECTICUT
King's Mark Environmental Review Team
Scale: 1" = 500'
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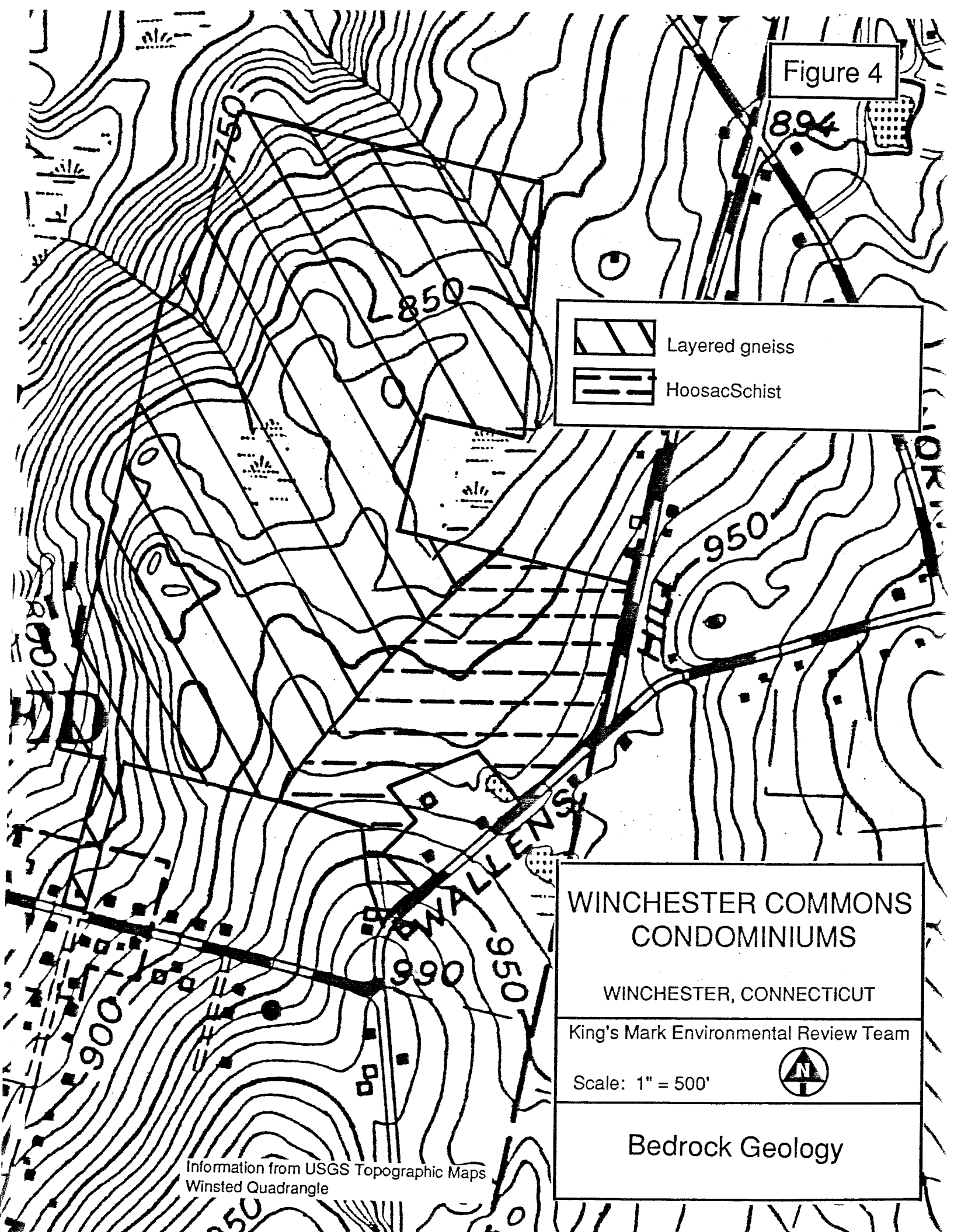
Topography
Information from USGS Topographic Maps
Winsted Quadrangle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WALLEN ST
Layered gneiss
HoosacSchist
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Scale: 1" = 500'
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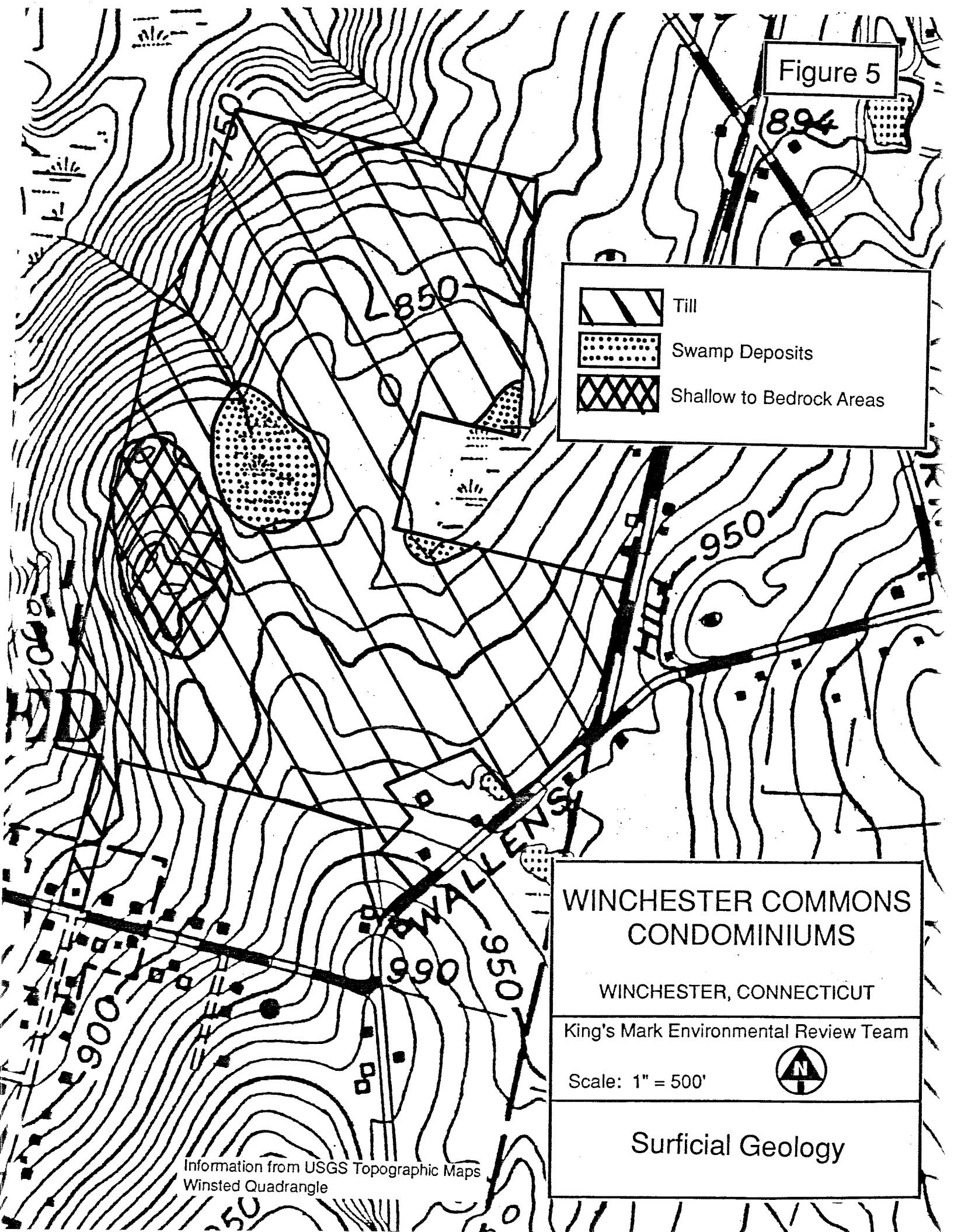
Bedrock Geology
Information from USGS Topographic Maps
Winsted Quadrangle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WALLEN ST
Till
Swamp Deposits
Shallow to Bedrock Areas
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Surficial Geology
Information from USGS Topographic Maps
Winsted Quadrangle

through New England, scraping, chipping and gouging the former soil and bedrock surfaces. The sediment was then redeposited on the freshly scoured landscape, either by being plastered against the surface from underneath the ice or by being let down gently from within the ice as it stagnated and wasted during a stage of glacial retreat. As a result, there may be sand and gravel lenses in the till.

As noted by the Soil Survey for Litchfield County, the texture of the till on-site ranges from sandy, stony and loose to silty and compact. In general, the compact variety (hardpan) is found mostly in the open fields. The remainder of the site is covered by till which is sandier and less compact.

The thickness of the till on the site is variable. It is probably shallowest on the knob southwest of Wetland D in the central parts. Well records at 2 locations near the site (Wallens Hill Road) indicate the till is 20 feet thick.

GEOLOGIC DEVELOPMENT CONCERNS

Present plans indicate that municipal water and sewer lines would be extended to serve the proposed condominium project. The availability of these utilities should ameliorate the common hydrogeologic concerns that usually arise where public utilities are not available. The developer should be required to secure letters of confirmation from the Winsted Water Works and Sewer Authority stating that the development can be served adequately without overtaxing either utility. In addition, it should be decided who will be responsible for the maintenance and operation of the sewage pumping station and water main booster pump proposed for the site.

Despite the availability of utilities to the site, a review of available soil mapping data, geologic maps and observations made during the field review identifies the following geologic limitations for the proposed condominium project: (1) the presence of hardpan soils, which are characterized by seasonally high water tables,

(2) an area of shallow to bedrock soils southwest of the Wetland D on the site, (3) the presence of regulated wetland soils, and (4) the presence of steep slopes at the western limits.

Any cuts that occur in hardpan soils are extremely difficult to stabilize due to seepage of water over the hardpan layer. This water creates an unstable condition just below the seepage line. The weight of free unstable soil causes the soil to flow down the slope. Once this begins, the slope is very difficult to stabilize. The establishment of a good vegetative cover is practically impossible on these eroding slopes. Besides unsightly conditions, the eroded soil must be removed from the base of the slope.

Excavating trenches in the hardpan soils for utilities may act as groundwater intercepting drains, since the backfill material will more than likely be less compact. Since this activity will be extensive for the development, there is a good chance that groundwater levels may be altered significantly. The applicant should demonstrate that wetland areas will not be affected by this type of activity. There is a chance that water levels near wetlands may be inadvertently lowered to a point where a wetland becomes non-wetland.

A final concern with hardpan soils is the potential for wet basements. The condominium units constructed with full basements should be protected by building footing drains, which should reduce the chances for wet basements.

The shallowest soil cover is located in the western parts of the site. Blasting may be needed for utility lines, foundations, roads, etc., where solid bedrock is encountered. Any blasting that takes place on the site should be done only under the strict supervision of persons familiar with the latest blasting techniques. Only then will the effects of blasting be kept to a minimum. Also, completion of all blasting prior to construction should be considered.

The presence of steep slopes (western parts), silty soils and the anticipated disturbance of large land areas will undoubtedly increase the chance for erosion/ siltation problems. The Connecticut Soil Erosion and Sediment Control Act (Public Act, 83-388), which became fully effective July 1,1985, requires a detailed erosion/ sediment control plan for the project. The erosion and sediment control plan should be properly enforced by the Town. Every effort should be made to keep disturbed areas to a minimum.

Present plans indicate that approximately 1000 feet of new road will need to traverse areas mapped as regulated wetland soils on the site. Also, the necessary grading for building units in proximity to wetlands may cause additional wetland disturbances on-site.

The wetland areas on the site have varying importance in terms of hydrological functions including streamflow regulations, erosion control and surface water quality protection. Additionally, they may have ecological assets. The developer's environmental consultants' assessment of the wetlands discusses these benefits in an environmental report. In consideration of the hydrologic and ecologic benefits of the wetlands on the site and because the wetlands within the site range from seasonally to permanently wet, they hold low potential for building purposes.

Since wetland soils are regulated under Connecticut's Inland Wetland and Watercourses Act (Connecticut General Statute Sections 22a-36 through 22a-45, inclusive), any activity which involves modification, filling and/or removal of wetland soils will require a permit and ultimate approval by the Town's Inland Wetlands Commission. In reviewing a proposal, the Commission needs to determine the impact that the proposed activity will have on the wetlands. If the Commission determines 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.

A review of existing plans indicates that alternatives to the present road layout exist which would reduce wetland disturbances. The major wetland road crossing (B-7) could be shifted about 840 feet to the west, thereby eliminating the wetland crossing altogether. Other alternatives appear to exist and should be carefully considered by the applicant and his technical staff. Also, every effort should be made to keep building units set back from wetlands. In some places, building units are proposed on immediate wetland margins. Setbacks will reduce the chance for illegal filling and provide more usable yard space for residents (see Wetland Considerations section).

HYDROLOGY

The site, which lies entirely within the Still River drainage basin, can be divided roughly into 3 sub-drainage areas (see Figure 6). Surface runoff arising in the central and eastern parts drains to the unnamed streamcourse which flows through the northeast corner of the site. It flows into a wetland area just above Still River. Surface runoff that arises in the western parts flows to the wetland located in the westcentral parts or to its outlet stream. The water then flows to a wetland pocket which is also located just above Still River. Finally, surface runoff in the southern parts drains westward to a topographic swale which routes the water to Still River.

The condominium development as planned, followed by the construction of buildings, roads and parking areas, is expected to lead to increases in the amount of runoff shed from the site. According to the drainage facilities report supplied by the applicant's technical staff, post-development runoff conditions will not exceed pre-

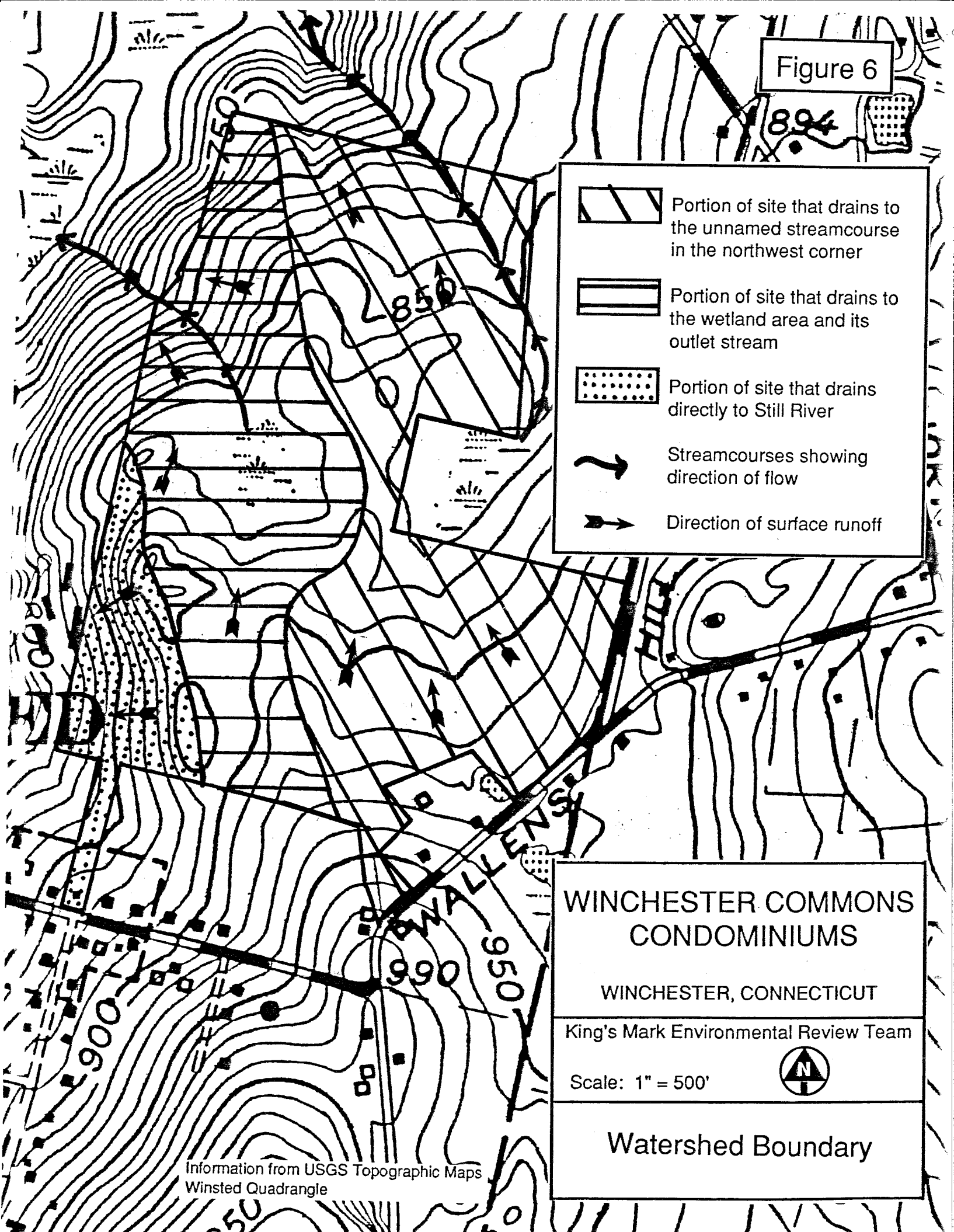
Figure 6
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Portion of site that drains to the unnamed streamcourse in the northwest corner
Portion of site that drains to the wetland area and its outlet stream
Portion of site that drains directly to Still River
Streamcourses showing direction of flow
Direction of surface runoff
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Scale: 1" = 500'
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Watershed Boundary
Information from USGS Topographic Maps
Winsted Quadrangle

particles (clay and silt), dissolved contaminants (salts, etc.) and fluid contaminants (spilled hydrocarbons, fuels, etc.) will not be effectively retained by most structures.

According to the DEP, groundwater beneath the site is classified as GA, which means it is suitable for drinking water without treatment.

SOIL RESOURCES

The soils on the site are mapped and described by the Soil Survey of Litchfield County, 1970 (see Figure 7). The wetland soils were flagged on-site by Don Fortunato and Bruce Laskey, 10/88. They have verified that the surveyed map of this wetland area is correct.

These soils are further described in Tables 1, 2 and 3 in Appendix A. Table 1 is a soil legend. Table 2 lists soil properties which are likely to effect development. Table 3 rates how severely these soil properties are likely to effect development.

The major soil limitations found on the site are: inland wetlands, seasonal high water tables, steep slopes and shallow soils.

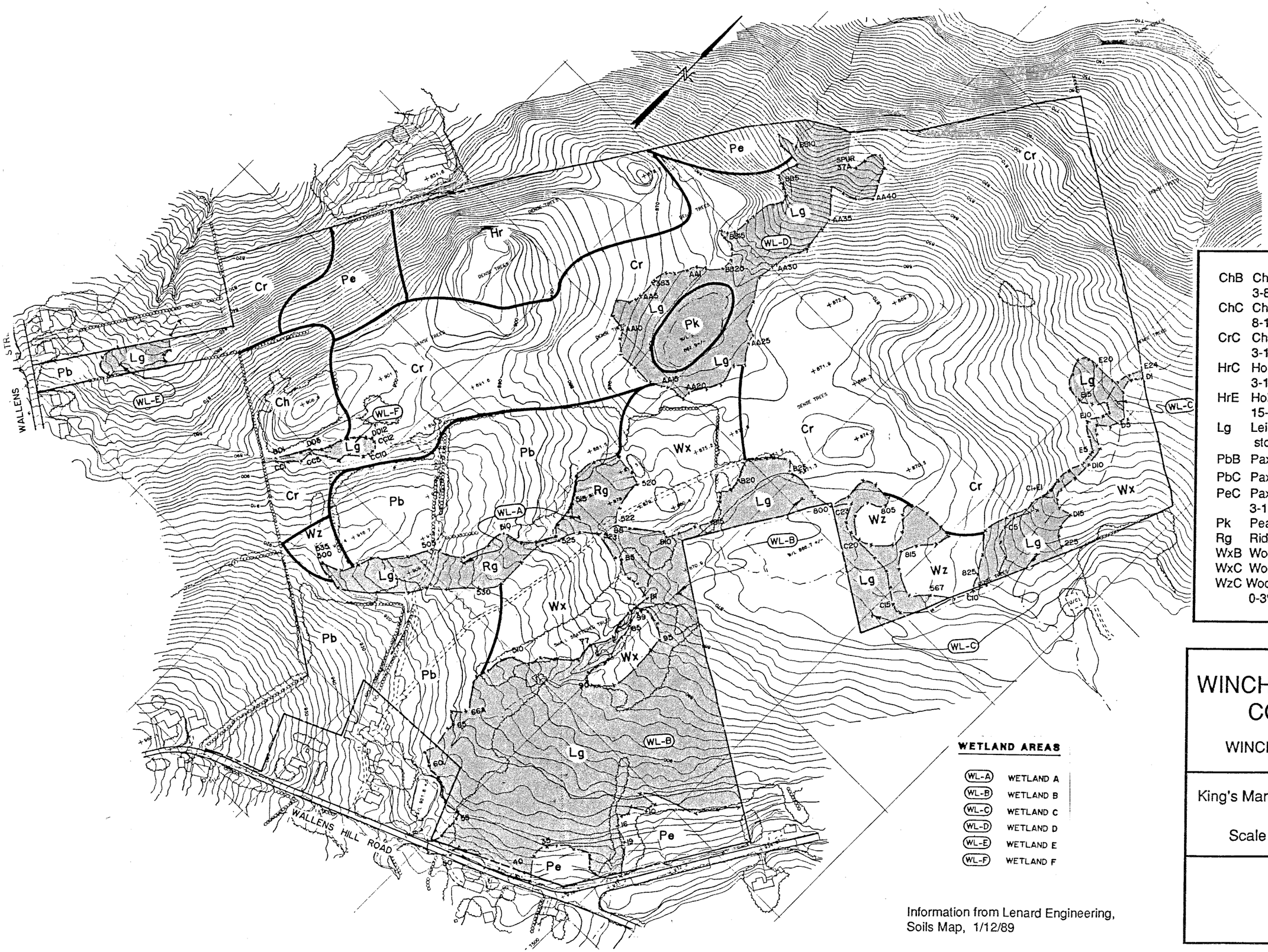
Inland Wetlands

The Lg, Rg and Pk soils are all classed as inland wetland soils in Connecticut. A permit is required for any disturbance of these areas. Planned disturbance of these wetlands has been described in the "Natural Resources Inventory and Wetland Impacts Assessment" report prepared by Environmental Planning Services, 1/5/89.

Raising the elevation of the detention berm in Wetland A described on Page 11 of the 1/5/89 report may be beneficial to the remaining wetland system. Construction of this berm should take place at a time when permanent vegetation can be planted immediately after construction.

The berm planned in Wetland D may cause a large area of disturbance due to boulder removal. Boulders should be placed outside of the wetland boundary. Extra

Figure 7



ChB	Charlton stony fine sandy loam, 3-8% slopes
ChC	Charlton stony fine sandy loam, 8-15% slopes
CrC	Charlton very stony fine sandy loam, 3-15% slopes
HrC	Hollis very rocky fine sandy loam, 3-15% slopes
HrE	Hollis very rocky fine sandy loam, 15-35% slopes
Lg	Leicester, Ridgebury and Whitman very stony fine sandy loam
PbB	Paxton fine sandy loam, 3-8% slopes
PbC	Paxton fine sandy loam, 8-15% slopes
PeC	Paxton stony fine sandy loam, 3-15% slopes
Pk	Peat and Muck
Rg	Ridgebury stony fine sandy loam
WxB	Woodbridge fine sandy loam, 3-8% slopes
WxC	Woodbridge fine sandy loam, 8-15% slopes
WzC	Woodbridge very stony fine sandy loam, 0-3% slopes

WETLAND AREAS

WL-A	WETLAND A
WL-B	WETLAND B
WL-C	WETLAND C
WL-D	WETLAND D
WL-E	WETLAND E
WL-F	WETLAND F

Information from Lenard Engineering, Soils Map, 1/12/89

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Scale: 1" = 300'

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Soils

Erosion and Sediment Control

The Erosion and Sediment (E&S) Control Plan submitted will be beneficial in controlling erosion and sediment from this construction site. Due to the density of construction on-site combined with steep slopes with seepage, additional E&S measures are recommended. These are as follows:

1) Silt Fence is needed:

-- below Units 61, 62 and 63
-- on both sides of the berm construction in Wetland D
-- in any place not planned for perimeter of Wetland D
-- completely around Wetland A; snow fence is not acceptable below Units 20, 22 and 26
-- on both sides of the road crossing Wetland B
-- below road fill south of Unit 3
-- extended from planned silt fence at Unit 5
-- between Units 14, 15 and 16 and Wetland F
-- below fill bank at Unit 13
-- completely around Wetland A, below Unit 27, the pool and the tennis courts
-- at the top and middle of the slope north of Unit 51 as well as the bottom to reduce slope length during vegetation establishment
-- on both sides of 2 pipes going to the plunge pool below Units 56 and 57
-- around plunge pool construction
-- below the drainage swale between Units 1 and 2 and the swale west of Unit 17

2) Snow fence is needed:

-- around all areas where existing trees are to be preserved such as near Units 30, 32, 33, 37, 38, 42, 43, 45, 54, 58, 60, 61, 63, 64, 67, 70 and 73
-- around the stonewall to be preserved at Units 2 and 28
-- around maple trees to be preserved by Units 4 and 5
-- around hedgerows to be preserved by Unit 27 and the pool

3) The snow fence should be replaced by silt fence below:

-- Units 34, 36, 57, 58 and 59 to protect Wetland C
-- Unit 29 and extended below Units 28 and 30

4) Each phase is scheduled to last 2-3 years. Hay bales need to be replaced at least every 60 days; filter fabric needs to be replaced at a maximum each 2 years. This should be included in the construction sequence.

5) The water chute from the Unit 65 parking lot outlets on a steep slope. A stable outlet should be planned to get this water to flatter ground.

6) Proposed soil stock piles should be located on the site plans.

7) The seed mixes on the E&S plans are suitable. The project owner may want to check the cost of switchgrass versus a suitable cool season grass mix.

WETLAND CONSIDERATIONS

Wetland Classification and Functions

The site encompasses approximately 118 acres of forested areas, wetlands and pasture/agricultural fields. Approximately 49 of the 118 acres are proposed for permanent open space, including the majority of the wetlands and unbuildable areas found on-site. The applicant is proposing to build 472 condominium unit on the remaining 70 acres, approximately 6.75 units per acre of buildable land. The total wetland and watercourse area found on-site is approximately 28 acres. These areas include forested wetlands, open water and shrub/scrub wetlands, as well as 2 small stream corridors which feed into Still River. As defined by the U.S. Fish and Wildlife Service National Wetland Inventory Survey, these wetlands are classified as follows:

PFO1E Palustrine, forested, broad leaved deciduous, seasonally saturated.

PFO4E Palustrine, forested, needle leaved evergreen, seasonally saturated.

Due to the nature of this survey, which uses different criteria in the designation of wetlands than those used within Connecticut's Wetlands Act, not all wetland areas and their differing ecosystems are delineated on the inventory maps.

The value of such functions as wildlife habitat and aesthetics are significantly increased because of the diversity of both upland and wetland environments. The location of these wetlands within the Still River watershed does not make them significant areas for flood storage. However, if development were to take place on

this site, their importance as flood storage areas may increase. Additional functions which the wetlands and the site provide include water conveyance, research/ education opportunities, recreation potential and agricultural opportunities. In general, the wetlands found on the site range from good to excellent quality with very good functional capacities.

Development Impacts

The project contains 4 different roadway crossings of wetland areas and proposes to place 2 large detention areas within existing wetlands. The first and largest crossing (B-7) is located at the southern access point to the site, off of Wallens Hill Road. This crossing will traverse approximately 600 feet of a forested and shrubby swamp area. The roadway construction would consist of some excavation and filling where needed and create an 80-100-foot wide corridor of disturbance. The applicant also proposes to construct an arch culvert over an area which conveys water from a pond located on an adjacent property. The overall impact from this crossing would be the loss of 0.75 acres of high quality wetland area and create a continual flow of road water runoff and sediments directly into the wetlands (see pages 6 & 8 of the applicant's Natural Resources Inventory and Wetland Impact Assessment). Additionally, the bisection of this system would create a barrier to wildlife migration through the area and inhibit the natural flow and drainage patterns which presently exist. This crossing may be unnecessary due to the existence of an alternative location for access to the site within the same area (see alternative #2 within Engineering and Environmental Reports on Wetlands Disturbances). This alternative, which would not require any wetland impacts, should be fully explored by the applicant and used if at all possible. Lastly, the application gives little to no justification for the design route chosen considering the severity of resulting wetland impacts.

The second proposed crossing is located within a previously disturbed area of poorly and very poorly drained soils which exist in the south central portion of the site (A-7). This crossing would be approximately 100 feet in length and be within an area which was formerly used for agricultural activities. The impacts which would result from this crossing are decreased due to the past disturbances and the present character and functional quality of this wetland. Overall, there would be a permanent loss of approximately 0.25 acres of wetland area and an interference with the natural drainage flow patterns in this portion of the site.

The third proposed crossing within this application is located along the southern property boundary at the southern end of a wetland finger which extends out from the center portion of the site (A-4). This crossing will result in the filling of a small portion of wetlands, but is located in a sensitive and significant transitional portion of the site. The end of this finger (along the segment of the proposed road) is directly adjacent to a sugar maple grove of excellent quality. Within this transitional area there are 5 different and distinct ecological systems of good to excellent quality, including open water, fields/meadow, shrub and forested swamp and hardwood forest (sugar maple grove). This area, though it does not present any essential or endangered natural function, is a unique feature of the site and provides excellent potential for many high quality functions including wildlife habitat, aesthetics, agriculture (including maple syrup production) and education/recreation. This wetland area and its surrounding upland habitats should not be disturbed, and measures should be taken to establish a buffer around this area. Additionally, this crossing appears to be completely unnecessary because the portions of buildable area to be accessed by this crossing could be reached through alternative road designs.

The last crossing is located within the southern access right-of-way off of Wallens Street (E-1). This crossing is situated at the upper reaches of an intermittent watercourse which ultimately drains into Still River. The crossing is approximately

200 feet long and will require excavation and filling activities which will destroy this portion of the wetlands (less than 0.20 acres). This crossing is unavoidable since it provides the only presently existing access to the site off of Wallens Road.

In addition to the 4 wetland crossings, the applicant is proposing to create 2 detention basins within existing wetland areas. The proposed detention basins are intended to control the volume and rate of runoff waters which are expected to be generated on-site during storm events. It is generally recommended that no detention facilities be constructed within existing and functional wetland systems unless alternative upland locations do not exist on-site. Due to the size and density of the proposed development plan, apparently no alternative upland locations for these facilities have been considered. A reduced number and density of units would present greater flexibility in design alternatives which could remove the detention facilities from the wetlands or eliminate a need for such structures altogether. The impacts to wetlands from detention basins usually takes place over an extended period of time resulting in increased sedimentation, potential adverse impacts to the existing wetland vegetation due to changes in the established hydrologic character of the systems and potential changes in the water/soil chemistry of the wetland system.

The application indicates that the entire stormwater management system for the northwest portion of the site, will be discharged through two 30-inch RCP's into an energy dissipation structure approximately 100 feet long and ultimately drain into an existing watercourse which flows to Still River. This watercourse would also receive discharge flows from the detention structure which is proposed in the central portion of the site. The proposed volume of discharge to this watercourse may result in significant erosion and sedimentation problems downstream from the site as well as destabilizing the existing channel and its surrounding vegetation. Considering alternative stormwater management systems including a reduction of the proposed building density, may be prudent.

Recommendations and Conclusions

1) With respect to the first wetland crossing, it is recommended that the alternative right-of-way located further south on Wallens Hill Road be used if at all possible. The proposed crossing represents a significant wetland impact and creates the potential for continual secondary impacts due to road maintenance and traffic volumes.

2) The third wetland crossing (in the area of the sugar maple grove) is also of major concern. All attempts should be made to remove the proposed roadway from this area and use alternative road designs to access buildable areas.

3) Construction of detention and/or retention facilities within existing wetland areas should be discouraged, and efforts should be made to place them within suitable upland areas if at all possible. The facility proposed within the central portion of the site (Wetland A) may be acceptable because impacts will be minor. However, the detention facility proposed within the forested and organic swamp area along the western border of the site (Wetland D) should be discouraged, and all possible alternatives to eliminating this basin should be explored, including the reduction of the development density to minimize increases in runoff from the site.

4) The proposed stormwater management system presents significant potential for adverse wetland impacts. The proposed volumes and velocities, which will be created within the watercourse in the northwest corner of the site, could cause significant erosion and sedimentation impacts downstream from the site and into Still River. All possible alternatives to the designed system should be explored.

5) The proposed development plan may exceed the reasonable capacity of the site to support such activities without making significant sacrifices to the ecological integrity. Overall, the site possesses potential for residential development, providing that plans are sensitive to the existing environmental concerns and limitations and designed accordingly.

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. Such new information is incorporated into the Data Base as it becomes available.

LAND USE AND PLANNING CONSIDERATIONS

PLANNING CONSIDERATIONS

Compatibility of Proposed Project with Surrounding Land Uses

The site is zoned RU-2 where the minimum lot area for single-family residential development allowed is 30,000 square feet. The proposed condominium project is allowable only through Winchester Planning & Zoning (P&Z) Commission approval as a special exception.

The land surrounding the site within the Town of Winchester is also zoned RU-2. The easternmost border of the site abuts property in the Town of Barkhamsted. This section of Barkhamsted is zoned for single-family residential development with minimum lot size of 2 acres.

Existing land use in the vicinity is characterized by mostly undeveloped wooded land to the north and west of the site and single-family residential development to the south and east. Mountain View Apartments on Nanny Drive is located a short distance from the southwestern border of the site.

While the proposed project will result in residential development of considerably greater density than existing development patterns in this section of Winchester, the project is not viewed as incompatible with adjacent land uses or zoning. Likewise, although the project will create a development of considerably greater density than allowed in the abutting residential zone in Barkhamsted, the project is not viewed as incompatible with existing or proposed land use and zoning in this area.

The Winchester Zoning Regulations contain provisions for landscaped buffers to produce a visual barrier between adjacent land uses of different types. Under the multiple dwelling provisions of the Winchester Zoning Regulations, a landscaped buffer consisting of a mixture of evergreen and deciduous trees is required for side and rear yards abutting single-family areas. The proposed project does not now contain a planting plan or plant list as required by the regulations. There is a

considerable set back distance between Wallens Hill Road and the proposed units. However, much of the land within this buffer strip consists of old fields and shrub vegetation according to the vegetation map prepared for the project. This shrub level vegetation may not provide an effective visual screen, especially during the winter months when the leaves are off the trees. Development of an effective planting plan with the inclusion of native species of conifers such as hemlock or white pine in the buffer zone should be included in the project plans. This buffer zone should be at least 15 feet wide. Effective implementation and maintenance of a well designed planting plan and adherence to the minimum 50-foot setback buffer now proposed by the applicant will serve to soften the transition between the proposed project and adjacent residential development. With the majority of the open space proposed on the periphery, the visual impact of the project on adjacent neighbors will be lessened. Provisions should be made through conservation easements or other controls to protect the open space in perpetuity.

Consistency of Project with State, Regional and Local Plans

The State Policies Plan for the Conservation and Development of Connecticut, 1987-1992 is a statement of the growth, resource management and public investment policies of the state. The Plan was prepared by the Office of Policy and Management (OPM) and adopted by the Connecticut General Assembly in 1987. The objective of the Plan is to give a balanced response to human, environmental and economical needs in a manner which best suits the future of Connecticut. Regional planning organizations in the state have been encouraged by OPM to foster implementation of the Plan at the local level.

According to the Locational Guide Map which accompanies the State Plan, the majority of the subject site has been classified as an urban growth area. As such, it is considered suitable for intensive development, provided adequate sewer and water facilities are available.

The Litchfield Hills Council of Elected Officials (LHCEO) is the official regional planning organization for the Litchfield Hills Region which includes the Towns of Winchester and Barkhamsted. The LHCEO recently adopted a preliminary housing policy which, among other objectives, supports the zoning of a reasonable amount of land in each municipality for multi-family housing based upon municipal employment characteristics and trends, encourages higher density development patterns close to the centers of urban services, discourages residential development on wetlands and steep slopes for environmental reasons and promotes the provision of open space and recreation areas with future residential development. The proposed project does not appear to be inconsistent with the goals LHCEO's preliminary housing policy provided care is taken to minimize disturbance to wetlands and water quality with project implementation.

Due to the magnitude of the proposed project and the affordable housing crisis of northwestern Connecticut, consideration should be given to setting aside a certain percentage of the proposed units for permanent below market value housing. This technique is known as inclusionary zoning and has been effectively applied in a number of Connecticut communities.

The Town of Winchester does not have a Town Plan which has been adopted by the community. Whether the project is compatible with the comprehensive plan for the community as expressed through the Zoning Regulations, is for the Winchester P&Z Commission to decide. The proposed condominium project is allowable only through the Winchester P&Z Commission approval of the project as a special exception. According to criteria established in the Winchester Zoning Regulations, special exceptions for multiple dwellings will be granted only when the P&Z Commission finds that the use:

1) Will not result in undue concentration of population in the neighborhood;

2) Will not create traffic hazards or traffic volumes beyond the capacity of the roads;

3) Will not have a depreciating effect on the neighborhood;

4) Will conform to these regulations; and

5) Will be the subject to such further conditions as the Commission deems necessary to protect the health, safety, convenience and property values.

In considering the consistency of the proposed project with the above criteria established for multiple dwelling projects, the Winchester P&Z Commission is encouraged to give full and fair consideration of the potential impacts of the project on the neighboring Town of Barkhamsted.

TRAFFIC CONSIDERATIONS

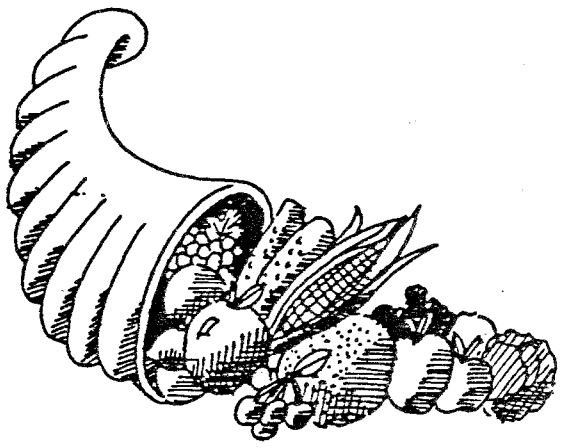
The topography of the proposed development is not severe, but some revisions to internal roads and designed drainage should be made to avoid impact to the remaining natural features.

The site access will be from Wallens Street and Wallens Hill Road. The split on trips will be about 90% by way of Wallens Street and 10% by way of North Road in Barkhamsted. Assuming 6 trips per day per unit, a total of approximately 2,800 new trips will be generated by the development. Peak hour trips will be about 225 during the morning peak and 200 during the evening peak. Trip characteristics can be adjusted for other factors.

Local roads may require reconstruction due to the increase in traffic from this development. Because Road #7 intersects Wallens Hill Road, the developer should consider improving the intersection of Poole Road and Wallens Hill Road to the east of the Barkhamsted Town Line for improved sightlines. Reconstruction of Wallens Hill Road and Wallens Street should be considered because the pavement and

subgrade are considered inadequate to meet the demands of increased traffic generated by the development.

APPENDICIES



Appendix A: Soil Limitations Chart

TABLE 1: Soil Symbols and Mapping Unit Names

Soil Symbol	Soil Mapping Unit Name
ChB	Charlton stony fine sandy loam, 3-8% slopes
ChC	Charlton stony fine sandy loam, 8-15% slopes
CrC	Charlton very stony fine sandy loam, 3-15% slopes
HrC	Hollis very rocky fine sandy loam, 3-15% slopes
HrE	Hollis very rocky fine sandy loam, 15-35% slopes
Lg	Leicester, Ridgebury, and Whitman very stony fine sandy loam
PbB	Paxton fine sandy loam, 3-8% slopes
PbC	Paxton fine sandy loam, 8-15% slopes
PeC	Paxton stony fine sandy loam, 3-15% slopes
Pk	Peat and Muck
Rg	Ridgebury stony fine sandy loam
WxB	Woodbridge fine sandy loam, 3-8% slopes
WxC	Woodbridge fine sandy loam, 8-15% slopes
WzC	Woodbridge very stony fine sandy loam, 0-3% slopes

TABLE 2: Soil Characteristics Important to Development

Soil Symbol	Permeability (in/hr) Action	K	Corrosivity to Steel	Conc.	Flooding	Water Table Depth (ft.)	Water Table Kind	High Water Months	Depth to Rock (in.)	Frost
ChB	0.6-6.0	0.20	low	high	none	>6.0	---	---	>60	low
ChC	0.6-6.0	0.20	low	high	none	>6.0	---	---	>60	low
CrC	0.6-6.0	0.20	low	high	none	>6.0	---	---	>60	low
HrC	0.6-6.0	0.17	low	high	none	>6.0	---	---	10-20	mod
HrE	0.6-6.0	0.17	low	high	none	>6.0	---	---	10-20	mod
Lg	0.6-6.0	0.20	low	high	none	0-1.5	apparent	Nov-May	>60	high
PbB	0.6-2.0	0.24	low	mod	none	1.5-2.5	perched	Feb-Apr	>60	mod
PbC	0.6-2.0	0.24	low	mod	none	1.5-2.5	perched	Feb-Apr	>60	mod
PeC	0.6-6.0	0.20	low	mod	none	1.5-2.5	perched	Feb-Apr	>60	mod
Pk	0.2-6.0	-0-	high	low	none	+.5-1.0	apparent	Sep-Jun	>60	high
Rg	0.6-6.0	0.20	high	high	none	0-1.5	perched	Nov-May	>60	high
WxB	0.6-2.0	0.24	low	mod	none	1.5-2.5	perched	Nov-May	>60	high
WxC	0.6-2.0	0.24	low	mod	none	1.5-2.5	perched	Nov-May	>60	high
WzC	0.6-2.0	0.20	low	mod	none	1.5-2.5	perched	Nov-May	>60	high

K-Erodibility Factor
.10 -.24 - Low Erodibility
.28 - .37 - Medium Erodibility
.43 - .64 - High Erodibility

Flooding Classes
None
Occasional
Common
Frequent

---no data available

TABLE 3: Major Soil Limitations for Development

Soil Symbol	Septic Systems	Excavations	Dwellings	Basements	Commercial	Roads	Lawns	Fill	Ponds
ChB	A	A	A	A	B-9	A	B-16	A	C-11
ChC	B-9	B-9	B-9	B-9	C-9	B-9	B-16,9	A	C-11
CrC	B-9	B-9	B-9	B-9	C-9	B-9	B-16,9	A	C-11
HrC	C-15	C-15	C-15	C-15	C-15,9	C-15	C-15	C-23,15	C-11
HrE	C-15,9	C-15,9	C-9,15	C-15,9	C-9,15	C-15,9	C-9,15	C-23,15,9	C-11
Lg	C-2	C-2	C-2	C-2	C-2	C-2,8	C-2	C-2	B-18
PbB	C-6	B-13,2	B-2	B-2	B-2,9	B-2,8	A	A	C-11
PbC	C-6	B-13,2,9	B-2,9	B-2,9	C-9	B-2,9,8	B-9	A	C-11
PeC	C-6	B-13,2,9	B-2,9	B-2,9	C-9	B-2,9,8	B-16,9	A	C-11
Pk	C-12,4,6	C-14,4	C-12,4,10	C-12,4,10	C-12,4,10	C-12,4,8	C-4,14	C-2	C-18
Rg	C-6,2	C-2	C-2	C-2	C-2	C-2,8	C-2	C-2	C-11
WxB	C-2,6	C-2	B-2	C-2	B-2,9	C-8	B-2	B-2	C-2
WxC	C-2,6	C-2	B-2,9	C-2	C-9	C-8	B-2,9	B-2	C-2
WzC	C-2,6	C-2	B-2,9	C-2	C-9	C-8	B-16,2,9	B-2	C-11

Degree of Limitation:
A - Soil properties and site features are generally favorable for indicated use and limitations are easily overcome.
B - Soil properties are not favorable for indicated use and special planning, design or maintenance is needed.
C - Soil properties or site features are so unfavorable to overcome that special design, increases in costs,and possible increased maintenance are required.

Types of Limitations:

1 Seepage	2 Wetness	3 Poor Filtration	4 Ponding	5 Banks Cave
6 Slow Perc	7 Flooding	8 Frost Action	9 Slope	10 Low Strength
11 No Water	12 Subsides	13 Dense Layer	14 Humus	15 Shallow Depth
16.Lrg.Stone	17 Sm.Stones	18 Slow Refill	19 Piping	20 Dam Seepage
21 Erosion	22 Droughty	23 Area Reclaim		

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.