

Chatfield Farms Active Adult Community

Beacon Falls, Connecticut



King's Mark Environmental Review Team Report

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

Chatfield Farms Active Adult Community

Beacon Falls, 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.

for the
Inland Wetlands and Watercourses Commission
Beacon Falls, Connecticut

July 2004

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Acknowledgments

This report is an outgrowth of a request from the Beacon Falls Inland Wetlands and Watercourses Commission to the Southwest Conservation District (SWCD). The SWCD referred this request to the King's Mark Resource Conservation and Development Area (RC&D) Executive Council for their consideration and approval. The request was approved and the measure reviewed by the King's Mark Environmental Review Team (ERT).

The King's Mark Environmental Review Team Coordinator, Elaine Sych, would like to thank and gratefully acknowledge the following Team members whose professionalism and expertise were invaluable to the completion of this report.

The field review took place on, Thursday, April 15, 2004.

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**Reports not yet received.*

***This report is included in the Appendix rather than in the body of the ERT report because it is a summary of comments and opinions regarding the proposed development made at a Valley Council of Governments Regional Planning Commission meeting held on April 27, 2004.*

I would also like to thank Rich Minnick and Dominick Sorrentini, Beacon Falls inland wetland and watercourses commission members, Ed Jurzynski, Beacon Falls conservation commission member, Jim Galligan, Nafis & Young (representing Beacon Falls), Darin Overton, Matthew Sanford and Jim MacBroom, Milone & MacBroom, engineers and consultants for the applicant, for their cooperation and assistance during this environmental review.

Prior to the review day, each Team member received a summary of the proposed project with location and soils maps. During the field review and after Team members were given plans, reports and related documents. Some Team members made follow-up visits or separate site visits, while others conducted a plan review only. Following the review, reports from each Team member were submitted to the ERT coordinator for compilation and editing into this final report.

This report represents the Team's findings. It is not meant to compete with private consultants by providing site plans or detailed solutions to development problems. The Team does not recommend what final action should be taken on a proposed project - all final decisions rest with the town and landowner/applicant. This report identifies the existing resource base and evaluates its significance to the proposed use, and also suggests considerations that should be of concern to the town. The results of this Team action are oriented toward the development of better environmental quality and the long term economics of land use.

The King's Mark RC&D Executive Council hopes you will find this report of value and assistance in the review of the proposed active adult community.

If you require additional information please contact:

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Introduction

Introduction

The Beacon Falls Inland Wetlands and Watercourses Commission has requested Environmental Review Team (ERT) assistance in reviewing an application for a proposed active adult community.

The project site is located in the southeastern corner of Beacon Falls very close to the Seymour and Bethany town lines. The 142 acre site is proposed for 244 housing units to be built in five phases. The project will also contain a community center, pool and tennis courts. The main access road will be from Skokorat Road, with an emergency access road connecting to Miller Road which enters the town of Bethany. The site contains a large pond and extensive wetlands. A municipal sewer line will need to be extended to service this development. The ERT Team received and reviewed plans and information dated March 9, 2004, revised April 14, 2004.

Objectives of the ERT Study

The Beacon Falls Inland Wetlands and Watercourses Commission has requested that the ERT Team assist them in reviewing this project because of its size and complexity. Areas of concern included wetland and watercourse impacts, water quality issues, stormwater management, potential impacts to wildlife and aquatic habitats and traffic and access issues.

The ERT Process

Through the efforts of the Beacon Falls Inland Wetlands and Watercourses Commission this environmental review and report was prepared for the Town of Beacon Falls.

This report provides an information base and a series of recommendations and guidelines which cover the topics requested by the town. Team members were able to review maps, plans and supporting documentation provided by the applicant.

The review process consisted of four phases:

1. Inventory of the site's natural resources;
2. Assessment of these resources;
3. Identification of resource areas and review of plans; and
4. Presentation of education, management and land use guidelines.

The data collection phase involved both literature and field research. The field review was conducted on Thursday, April 15, 2004. The emphasis of the field review was on the exchange of ideas, concerns and recommendations. Being on site allowed Team members to verify information and to identify other resources.

Once Team members had assimilated an adequate data base, they were able to analyze and interpret their findings. Individual Team members then prepared and submitted their reports to the ERT coordinator for compilation into this final ERT report.

Figure 1

Location Map
Scale 1" = 1000'

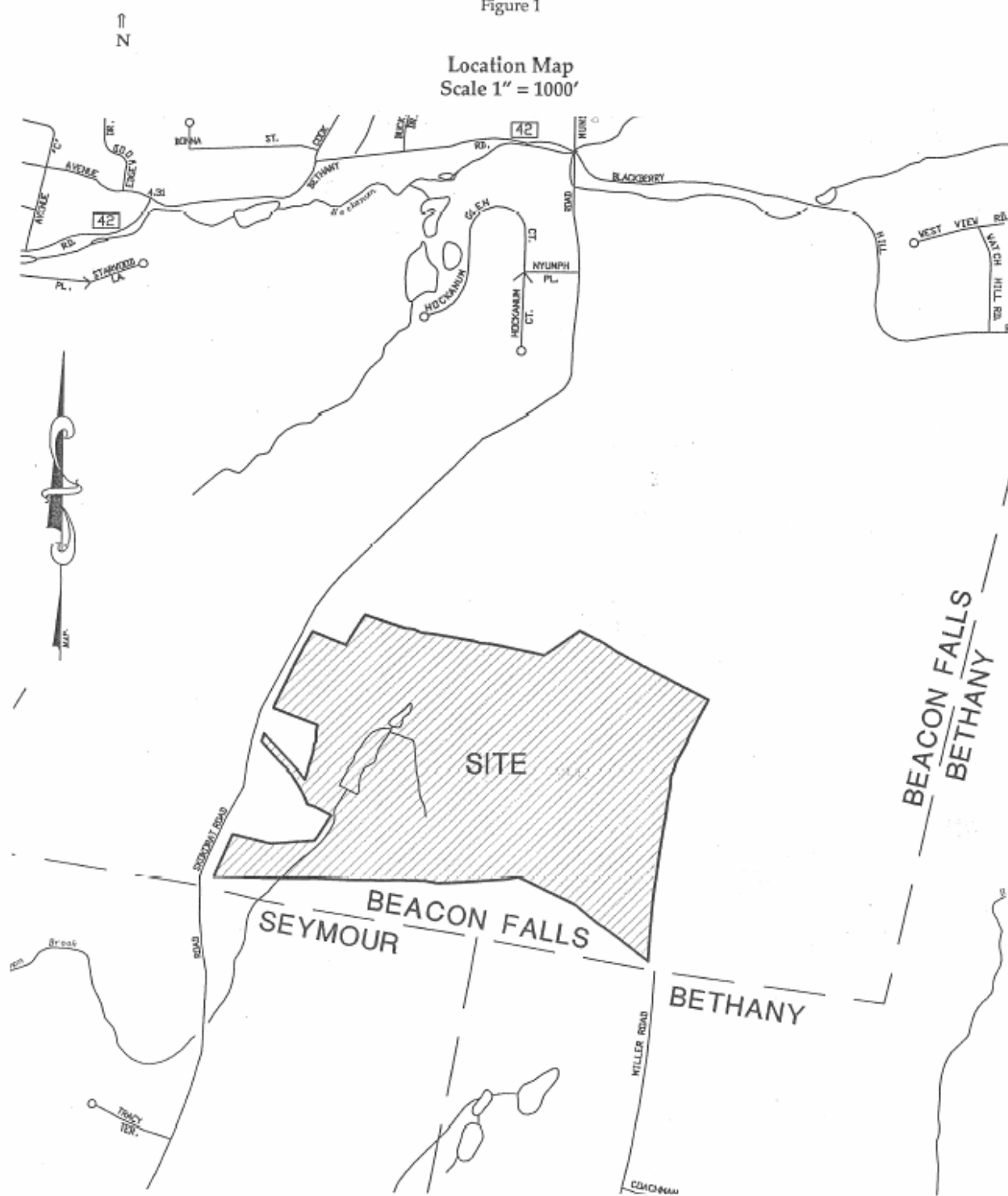


Figure 2

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Topographic Map
Scale 1" = 2000'



CHATFIELD FARMS

ACTIVE ADULT COMMUNITY
SKOKORAT ROAD - BEACON FALLS, CONNECTICUT
MARCH 9, 2004



Figure 3
Project Layout

Topography and Geology

The proposed development is located in a relatively high area that is cut by a steep-sided valley. Relief is greater than 200 feet. A small pond has been impounded within a portion of the valley. The eastern half of the area, where most of the development will occur, has moderate to gentle upland-slopes. Topography should pose no problem to development.

Bedrock seen in the area is mostly a poorly foliated gneiss and granofels of Ordovician (~450 million years) age (Rodgers, 1985). It is mapped as the Hartland Formation by Carr (1960), consisting mostly of biotite-muscovite schist, with pods of dark gray biotite augen-gneiss of the Prospect Gneiss. Rodgers (1985) refers to this as the Golden Hill Schist. Field inspection revealed a gray colored, weakly banded, somewhat lineated gneiss composed of biotite, muscovite and feldspar. Carr mapped a series of tight NE/SW trending folds immediately west of the parcel. The folds are cut by a southeast dipping normal fault (inactive) along which basaltic magma intruded during the Jurassic period (~180 million years). The resulting fault trace and diabase dike are found west of the parcel. The steep-sided valley has an orientation similar to the fault and diabase dike and likely owes this orientation to enhanced erosion along a fault or related fracture system.

Noteable is the very thin soil across the area, but especially within the steep-sided valley where it may be absent. Soils were developed on glacial till, compact, non-sorted sediment deposited by glacial ice. Flint (1975?) shows the entire parcel covered by a thin veneer of till. The steep sided valley is strewn with abundant slightly rounded to rounded small boulders of local gneiss and diabase. The lack of soil till in the valley was caused by glacial melt water erosion when the valley temporarily was the course for a major flow of high velocity [this is not indicated as such on Flint's (1975) map]. Hence, there may be small pockets of sand or gravel found associated with this melt-water channel. Lack of soil will pose problems in excavating. Blasting may be needed and extensive fill may need be imported.

Several non-watercourse wetlands (vernal pools and a swamp of several acres size) are located in the area. These owe their existence to thin soils covering local bedrock basins. More abundant till or soil material would likely have filled these depressions, especially the vernal pools.

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Conservation District Review

Summary of Recommendations for Conservation of Soil and Water Resources

- 1) Proposal should be consistent with existing zoning regulations. The proposed density is incompatible with protection of soil and water resources on this site and would also be detrimental to adjacent areas, particularly downslope and downstream. Buildings and infrastructure should be clustered to minimize resource impacts, but the total number of buildings should not exceed the number allowed under current zoning.
- 2) Provide adequate soil profile information with development proposal, particularly in critical areas such as detention basins, level spreaders and underground utilities.
- 3) Design sidewalks and driveways and access to trails with permeable pavement to reduce runoff wherever feasible (See samples at www.invisiblestructures.com).
- 4) Require roof, lawn and driveway runoff to be directed towards vegetated "rain gardens" or other vegetated areas - not to impervious surfaces or lawns where runoff will reach impervious surfaces.
- 5) Show limit of disturbance lines on plans. Minimize total site disturbance leaving existing natural vegetation wherever possible.
- 6) Change site access to reduce excessive road infrastructure (see Figure 10).
- 7) Have the application identify anticipated areas of cut and fill on the site plan *with volume calculations*.
- 8) Require a site maintenance plan that specifies:
 - The use (and estimated relative costs) of deicer pretreatment and/or other alternatives to road sand and salt use on roads and parking areas.
 - The use of organic land care standards on all common areas of lawn and roadsides. <http://www.organiclandcare.net/index.php>
 - A resident educational program on proper disposal of household wastes, including lawn debris, chemicals, pet wastes and car washing, and invasive plant species education. And a program that educates homeowners on organic lawn care practices.
 - Cost projections (as a proportion of monthly homeowner association fees per month) and details of contractual requirements for maintenance of roads, common buildings, stormwater infrastructure (including catch basin cleaning), retaining wall

maintenance and life expectancy, and sewer pump facility long term cost estimates.

- 9) Provide details of the anticipated homeowners association structure which includes clauses that:
 - Requires informing potential homeowners of the maintenance plan aspects as outlined above and
 - Provides a bonding mechanism and/or easement so that the town has a means to monitor and correct unforeseen infrastructure deficiencies or intrusions on established conservation buffers that might affect the on site or off site soil and water resources.
- 10) Design for no disturbances, temporary or permanent, within 100 feet of vernal pools. This should not only include isolated "classic" vernal pools but vernal pools associated (if any) with other wetlands on the site. This may require more extensive surveying to determine vernal pool species habitat within larger wetland areas.
- 11) Limit disturbances within 750 of vernal pools and the wooded swamp to a maximum of 25% of the area so that 75% of the area within 750 of the pool is undisturbed and the disturbed area is limited to within one quadrant of the area within 750 feet. (See Figure 11).
- 12) Have no stormwater or lawn runoff directed towards vernal pools or upstream drainage areas (natural drainage areas of bedrock controlled at or near surface seasonal water flow).
- 13) Maintain undisturbed forested corridors between vernal pools, wetlands and streams a minimum of 100 feet in width.
- 14) Leave at least a 50 foot natural undisturbed buffer adjacent to wetlands and watercourses.
- 15) Eliminate road curbs in areas where vegetation for adequate runoff dispersal can take place. In other areas use "Cape Cod" type curbing to minimize wildlife restrictions. (See Appendix).
- 16) Have no cut and fill operations within natural drainage ways up gradient from vernal pools and have no down gradient cut and fill operations within 100 feet minimum of a vernal pool.
- 17) Locate permanent stormwater control structures outside of 50 foot review areas. During construction maintain temporary erosion and sedimentation controls outside of the 50 foot buffer area.
- 18) Leave bedrock outcrop features intact. Show bedrock outcrop areas on site plans.
- 19) Minimize total areas disturbed during construction especially on steep slope areas. Limit disturbance areas to 5 acres or less at one time and design development plan accordingly. Inspect and approve each 5 acre development before ground breaking on next 5 acre parcel.

- 20) Replace/ supplement Vortectnics units with equivalent surface water detention, for example multi cell vegetated "bioretention" systems, in order to increase plant and wildlife habitat and reduce maintenance requirements.

General Soil & Water Conservation Measures Applicable to This Site

All information provided by the Southwest Conservation District is strictly advisory.

Conservation of soil and water resources must ultimately begin with long term and large scale planning at the regional, state and federal scale. However, municipal level commissions, boards and planning departments have "the most comprehensive set of tools available for ensuring that regional conservation goals are met." (Regional Plan Association, 1996)

The State of Connecticut Conservation and Development Policies Plan, <http://www.opm.state.ct.us/pdpd3/physical/C&DPlan/C&DIntro.htm>, the Regional Plan Association's Third Regional Plan for the New York-New Jersey-Connecticut Metropolitan Area, and many other planning documents and state and regional policies all support planning concepts that maintain economic development while supporting conservation of natural resources.

Eventually Connecticut towns will have to adhere to goals such as the following, if we are to achieve balanced growth and conserve our soil and water resources over time:

Towns should adopt zoning that encourages higher density, mixed use development in centers. All commercial and most multifamily development should be accommodated in centers, perhaps in conjunction with transfer of development rights provisions that transfer density out of districts containing important natural resources. (RPA, 1996).

It is typical for a site with the soil and topographical constraints of the Chatfield Farms Estates to have development density limited by a minimum of one or two acre zoning. Some localities prohibit development on slopes greater than 20% or even 15% or have even larger lot size requirements 4 acres or more. The number of housing units buildable within these constraints can then be clustered in such a way to minimize impacts on natural resources. However, clustering should not imply that the total number of units should be increased beyond that allowed by existing regulations. Based on current zoning and a prohibitive area of 21% (Council of Governments, 2003) and without considering that another 53% of the site is considered to have severe constraints, the maximum feasible number of

units on this site would be 112 (142 acres x .79), not accounting for infrastructure land requirements. Including severe constraint areas the maximum number of units would be $142 \times .26 = 37$ units. Limiting development to this number of housing units combined with clustering will immediately reduce the development impact on this site. This is not to imply that 112 or 37 units is necessarily an acceptable amount, as there are many other site constraints to consider, but any proposal with amounts higher than this would not seem to be justifiable under current zoning regulations. Furthermore zoning regulations do not in themselves function as adequate planning tools for development, but rather must be used in conjunction with town plans of conservation of development and other tools.

Another general planning consideration is that water quality is related to the extent of impervious surfaces in a watershed.(NEMO, web site http://nemo.uconn.edu/impervious_surfaces/index.htm). Houses, lawns and roads in the upper reaches of watersheds inevitably leads to decreased water quality as well as loss of un-fragmented habitat. Even when "adequate" systems for storm water mitigation are designed, the practical long-term result is often decreased water quality coupled with unanticipated maintenance costs. Imperviousness of 10% or more of the watershed land area has been shown to contribute to decreased water quality. (Mattabesset Plan, 2000). Even if there are no direct immediate impacts on downstream resources, cumulative affects on resources, including Long Island Sound, should not be disregarded.

"The imperviousness associated with medium density single family homes can range from 25% to nearly 60%, depending on the street layout, parking and site design. Such a wide range suggests that significant opportunities exist to reduce the share of impervious cover generated by the transport component."(Schueler 1994)

Design factors that can reduce imperviousness or its impact for this proposal include:

- Design sidewalks and driveways and access to trails with permeable pavement to reduce runoff wherever feasible (See samples at www.invisiblestructures.com).
- Require roof, lawn and driveway runoff to be directed towards vegetated "rain gardens" or other vegetated areas - not to impervious surfaces or lawns where runoff will reach impervious surfaces.
- Show limit of disturbance lines on plans. Minimize total site disturbance. It is difficult to realize the total area to be disturbed if this limit is not clearly marked on a site plan.

- Change site access to reduce excessive road infrastructure (see Figure 10). The plan calls for an access road with a 2000' plus length which does not directly service any housing units. The impacts of this road include the necessity for intensive winter road maintenance due to the slope, construction and maintenance of significant retaining wall structures and a large area of impervious surface. The use of road sand and salt for winter road maintenance can negatively impact wetlands and watercourses. The most effective means for reducing this impact is by reducing the total lengths of road through site design changes, limiting the amount of winter time driving and the need to have dry pavement, and by reducing the amount of sand and salt used by utilizing appropriate management practices. The Southwest Conservation District's report "Norwalk River Watershed Road Sand/Salt Reduction Project" outlines some of these possibilities and is available on CD-ROM from the District.

Maintenance of "Best Management Practices" (BMP'S) systems over long periods of time is difficult to guarantee, violations of boundaries and buffers can occur, and various unanticipated residential activities (such as dumping yard waste in detention basins, spills of hazardous household chemicals, landscaping with invasive species, etc.) can have deleterious effects on water and soil resources. Preventative measures include:

Require a site maintenance plan that specifies:

- a) The use (and estimated relative costs) of deicer pretreatment and/or other alternatives to road sand and salt use on roads and parking areas.
- b) The use of organic land care standards on all common areas of lawn and roadsides. <http://www.organiclandcare.net/index.php> (Brochure Link).
- c) A resident educational program on proper disposal of household wastes, including lawn debris, chemicals, pet wastes and car washing, and invasive plant species education. And a program that educates homeowners on organic lawn care practices.
- d) Cost projections (as a proportion of monthly homeowner association fees per month) and details of contractual requirements for maintenance of roads, common buildings, stormwater infrastructure (including catch basin cleaning), retaining wall maintenance and life expectancy, and sewer pump facility long term cost estimates.
- e) Physical barriers (fences, embankments, swales, vegetation etc. as appropriate) that prevent intrusions into critical natural areas.

Provide details of the anticipated homeowners association structure which includes clauses that:

- a) Requires informing potential homeowners of the maintenance plan aspects as outlined below and

b) Provides a bonding mechanism and/or easement so that the town has a means to monitor and correct unforeseen infrastructure deficiencies or intrusions on established conservation buffers that might affect the on site or off site soil and water resources.

On this site wetlands and watercourses are an important resource and should be preserved. In particular, recent legislation, quoted below, indicates the extent to which Wetlands Commissions can regulate and protect these resources:

General Assembly February Session, 2004

Substitute Bill No. 445

An Act Concerning Jurisdiction of Municipal Inland Wetlands Commissions.

(NEW) (19) "Wetland or watercourse resources" means wetlands or watercourses and their related aquatic or wildlife habitats and includes, but is not limited to, the following functions as set forth in section 22a-36: Maintaining an adequate supply of surface and underground water; maintaining hydrological stability and controlling flooding and erosion; recharging and purification of groundwater; maintaining the existence of many forms of animal, aquatic and plant life, maintaining and improving water quality, preventing damage from erosion, turbidity or siltation, providing natural habitats for a diversity of fish, other aquatic organisms, wildlife and vegetation; deterring and inhibiting the danger of flood and pollution, and protecting the state's potable fresh water supplies from the dangers of drought, overdraft, pollution, misuse and mismanagement.

This legislation recognizes that resources cannot be conserved by looking at them as disconnected from everything around them, but rather by considering the connectivity between resource elements.

Soil Resources on This Site

Generally the site has soils that are marginal for development. There are soils on this site on steep slopes, shallow to bedrock, and have included soils that are wet and can have slow permeability. Bedrock controlled water flow can easily be disrupted by disturbing soils (including covering with impervious surfaces),

negatively impacting vegetation and wildlife down slope that depend on specific soil moisture conditions. (See Appendix for a soils map and non-technical soil descriptions.)

Soils information on the site plans provided is inadequate for determining specific site conditions. USDA New Haven County Soil Survey soil delineations (apparently the source of the delineations for the site plan of this project) are not on a scale (1:15,840 scale projected onto a 1:480 scale map compounds any soil type border inaccuracy by 33 times) that supports the determination of specific soil types that may be included in the soil complexes indicated. (New Haven County Soil Survey page 3). For example, there is an area on the northeast section of the site indicated as an area of Ridgebury, Leicester and Whitman extremely stony soils that the site plan shows developed with a number of housing units. The probability is that the entire area delineated as these hydric soils are in fact not this soil type at all, but it is not possible to tell from the information provided. From the site plan, one would conclude that a number of residential units are to be built within a wetland. See Figure 4.

When soils are removed or bedrock blasted, the ground water flows are likely to be affected. Likewise filling in depressions and drainage ways can alter near surface or intermittent surface water flows. All of these alterations can then effect changes to nearby plant and animal populations. Also, seeps can result from the interception of the water table especially in shallow to bedrock areas and areas of irregular topographic features. Finally disturbed or fill soils can be more compacted then preexisting soil conditions impeding near surface ground water flows. An example of filling in a drainageway is indicated in Figure 5.

Recommendations for Conserving Soil and Water Resources By Location on Proposal

1) Wetlands & Watercourses

a) General Planning & Approval Considerations

The February 3, 2004 letter from the Inland and Watercourse Commission, Town of Beacon Falls to Milone and MacBroom, Inc. states (line 3)

"Since the site is the headwaters of a very large "Class A Watershed", per Connecticut state statutes, it is imperative that it is demonstrated and well documented that the proposed development will not be the least detrimental to the wetlands and watercourses. This not only applies to the site itself but also the lower portions of the watershed." And "All activity is to be kept out of the 50ft upland review area/set back. Depending on the topography of various areas on the site, soil conditions and potential impact on the watershed, the upland review area may be extended."

b) Activity adjacent to Wetlands

There should be a clarification between *no activity* within a wetland buffer and *no improvements* within a wetland buffer. The Existing Conditions and Wetland Impact Assessment for Chatfield Farms states (page 9)

"Apart from the installation of the culverts that are needed to provide access through the site, all construction activities are set well back from the site's wetlands including the manmade pond and Rimmon Brook. The buffer exceeds 50 feet in most areas."

The site plan does in fact indicate that no buildings will be constructed within the 50 foot review area as stated above. However, Figures 5 through 8 detail disturbances, whether temporary or permanent, within the 50 foot wetland review area. Even though the wetland area itself is not directly disturbed in terms of soils and vegetation, the following impacts to the wetland are likely when disturbing in close proximity to the wetland boundaries:

- The subsurface and surface drainage discharge from wetland areas will be affected by filling.
- The existing soils, surface configuration and plant communities adjacent to the wetlands will be changed.
- Re-grading to within a few feet of erosion control devices (in this case silt fence and staked hay bales) is often problematic - the results are having soils and debris pushed up against them which they are not designed to accommodate.
- If an erosion control device does fail, not having a natural vegetated buffer increases the likelihood of deposition into the wetland proper.
- Permanent storm water controls need short and long term maintenance and having them near the wetlands boundary suggests ongoing minor disturbances to the wetlands buffer area.
- Areas with shallow soils, boulders and exposed bedrock are particularly vulnerable to re-grading and filling. Bedrock and surface features create a diverse habitat with varying soil moisture regimes, sun exposure, temperature and other microhabitat factors that cannot be duplicated. Disturbed soils, even if replanted with native species, lack the original plant and microbial diversity and increase the likelihood of the establishment of invasive species. The planned development includes cut and fill operations that will affect these landforms.
- Disturbed areas and artificially filled soils do not support the same infiltration capacity as undisturbed soils with their existing vegetation, varying geological features and textural variances:

"Each community has a unique mosaic of forest, wetlands, meadow, lawn, turf, landscaping and vacant

lots. While many of these pervious areas are green, their soils have been highly disturbed and compacted, and tend to produce greater rates of runoff than has been traditionally assumed." (Pitt 1987). (From Schueler, 1994)

c) Activity adjacent to Wetlands Designated as Vernal Pools

Vernal pool habitat demonstrates the need to protect the resources of a site by looking at the aerial connections between waterbodies, soil types, plant communities, topographic features etc, in order to not only save the resource itself but also its functioning. The vernal pools identified on this site are dependant on the functioning of the surrounding natural systems. An obvious example is the two adjacent pools on this site - one up gradient from the other and hydrologically connected, apparently (casual observation during site inspection), by seasonal near surface ground water flow. (Figure 5) Specific vernal pool protection requirements are outlined in Calhoun and Klemens. This publication contains many detailed steps for vernal pool protection. A few significant steps are quoted below:

"Vernal Pool depressions should never be used, either temporarily or permanently, for stormwater detention or biofiltration." (From Calhoun & Klemens, 2002) (See Figure 5)

"Detention and biofiltration ponds should be located at least 750 feet from a vernal pool; they should never be sited between vernal pools or in areas that are primary amphibian overland migration routes, if known." (See Figures 5 & 6).

"Use hydrodynamic separators only in conjunction with Cape Cod curbing or swales to avoid funneling amphibians into treatment chambers, where they are killed." (See Appendix for Cape Cod curbing detail).

The "Breeding Amphibian Survey" provided with this development plan does not determine the extent of breeding amphibians on this site but concludes "The results indicate an increase in observed amphibian breeding activity at the site in 2004. In contrast to 2003, when confirmed breeding activity of vernal pool obligate species was limited to the pool (VA) at the eastern property limit, wood frogs and spotted salamanders were found in several flagged wetlands in April 2004. Based upon their known habitat preferences, requirements and dispersal patterns, it is likely that these two species are widely distributed in the forested portions of this and neighboring properties."

In order to locate areas appropriate for development for this site the extent of breeding amphibian habitat should be determined. Buffers between vernal pool habitats and development activities depend on knowing the full extent of these habitats. A more extensive survey of the site and adjacent off site potential vernal pool habitats should be completed before locations of development are determined. A description of the survey's quantitative criteria (were all wetland areas randomly sampled or just selected locations and if so, what was the selection criteria?, etc.) should be included in the survey report.

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Figure 4

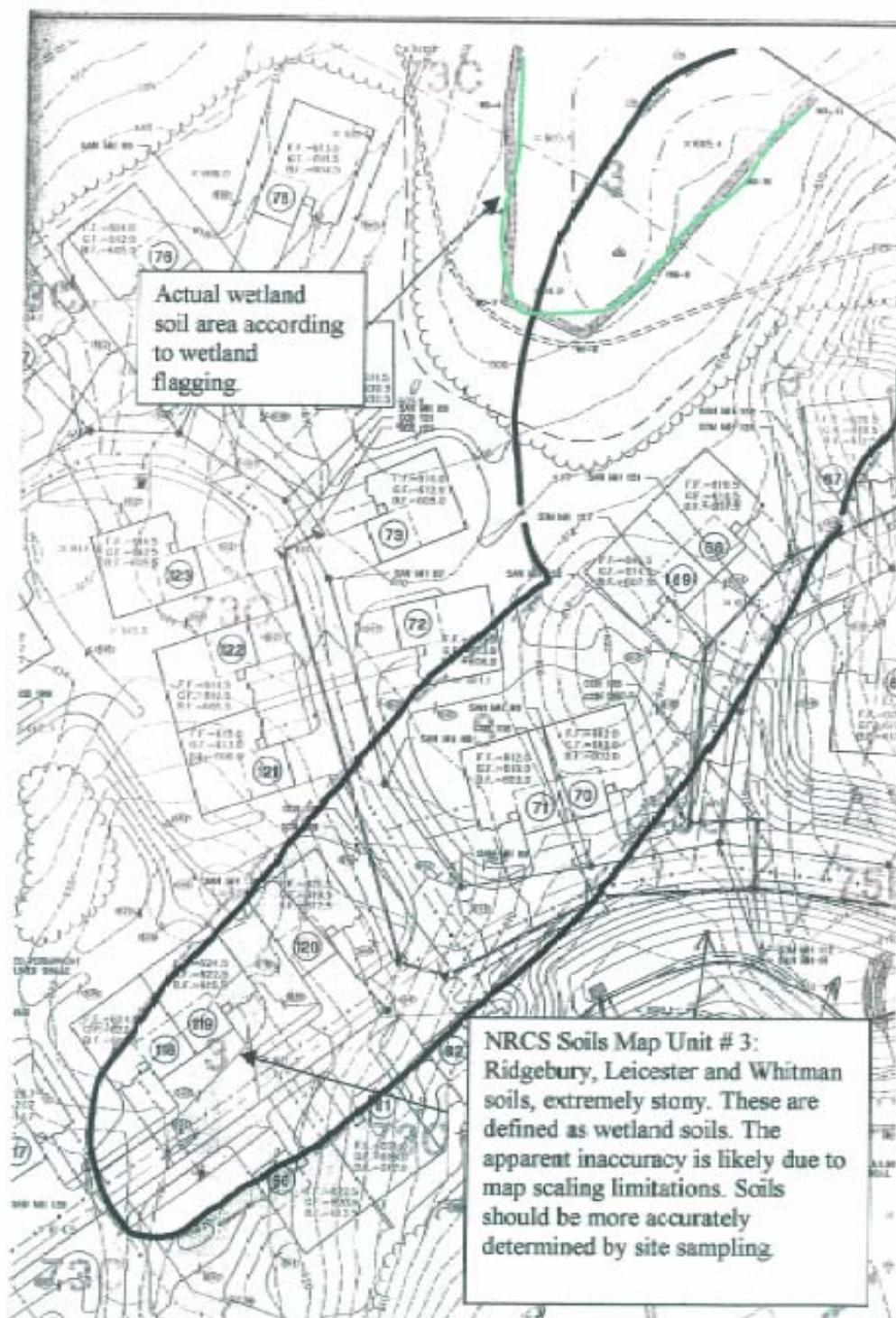


Figure 5

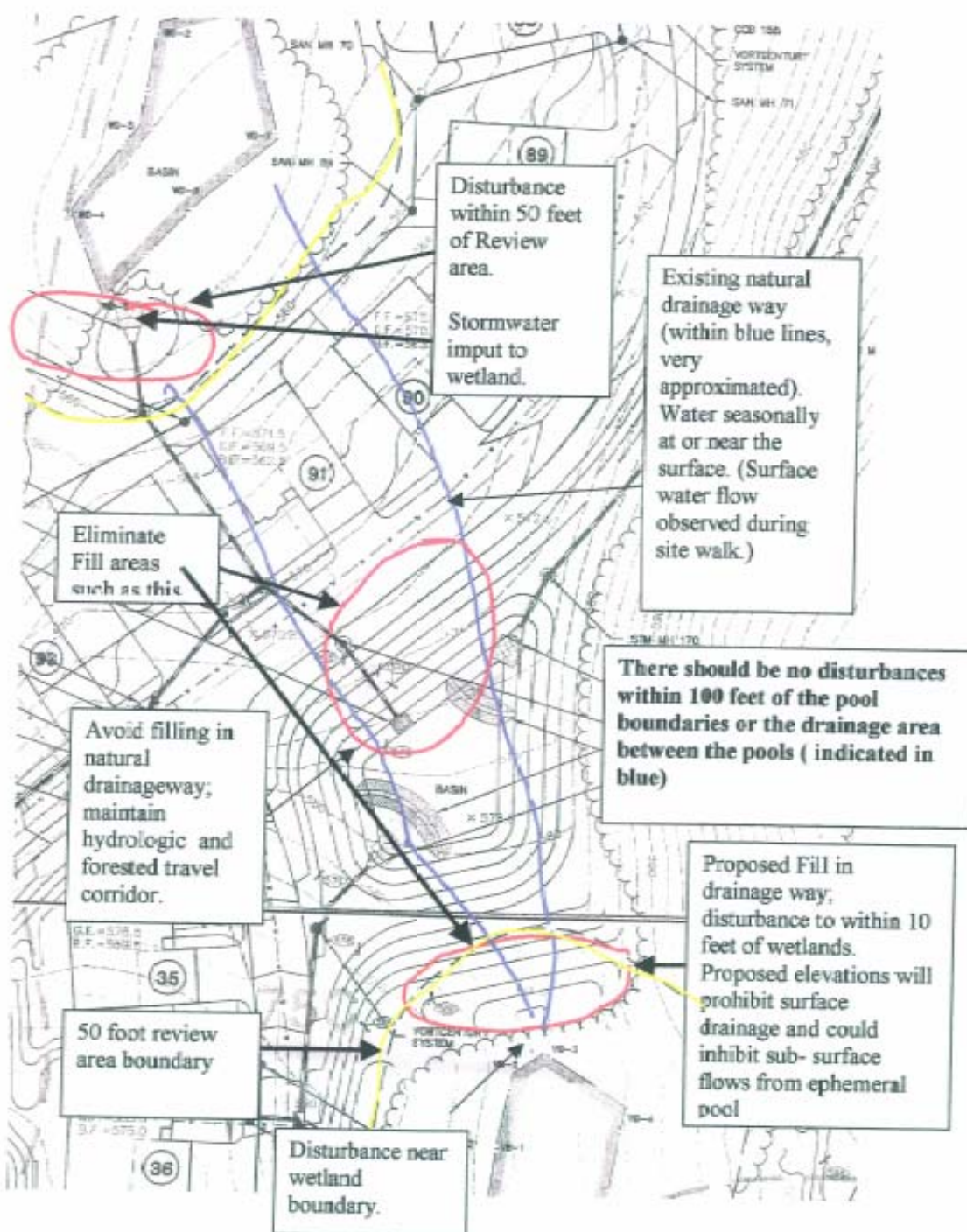


Figure 6

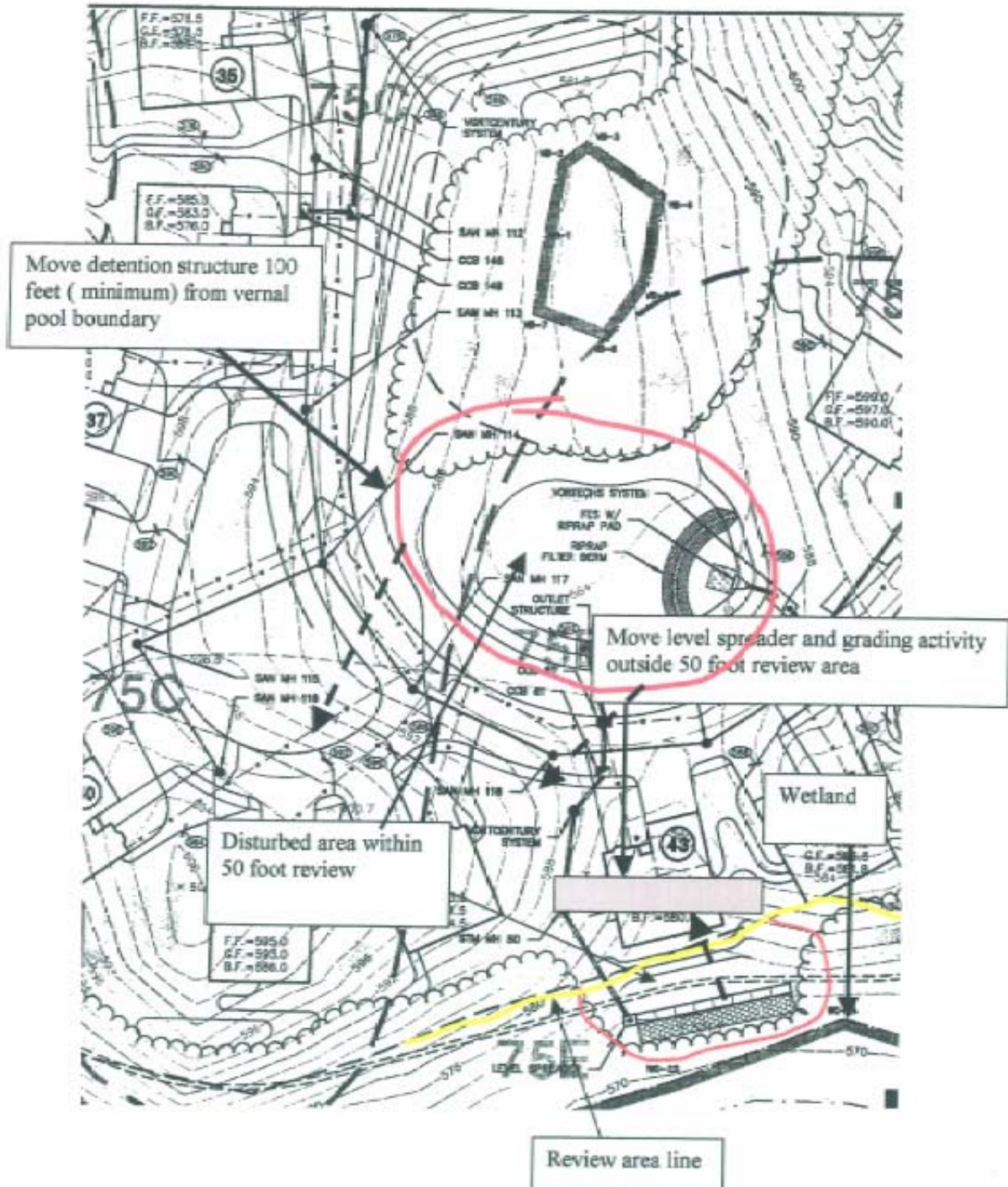


Figure 7

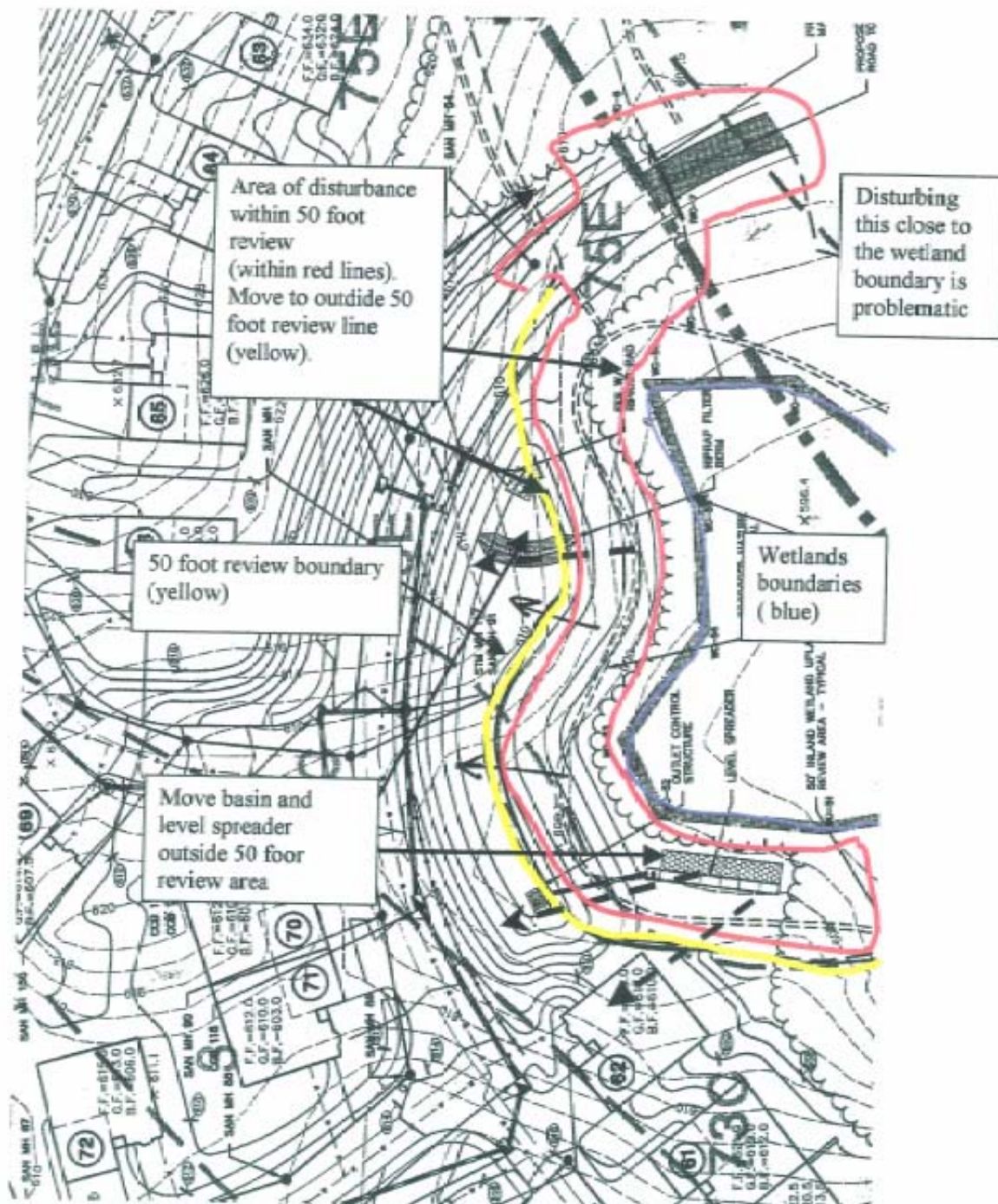


Figure 8

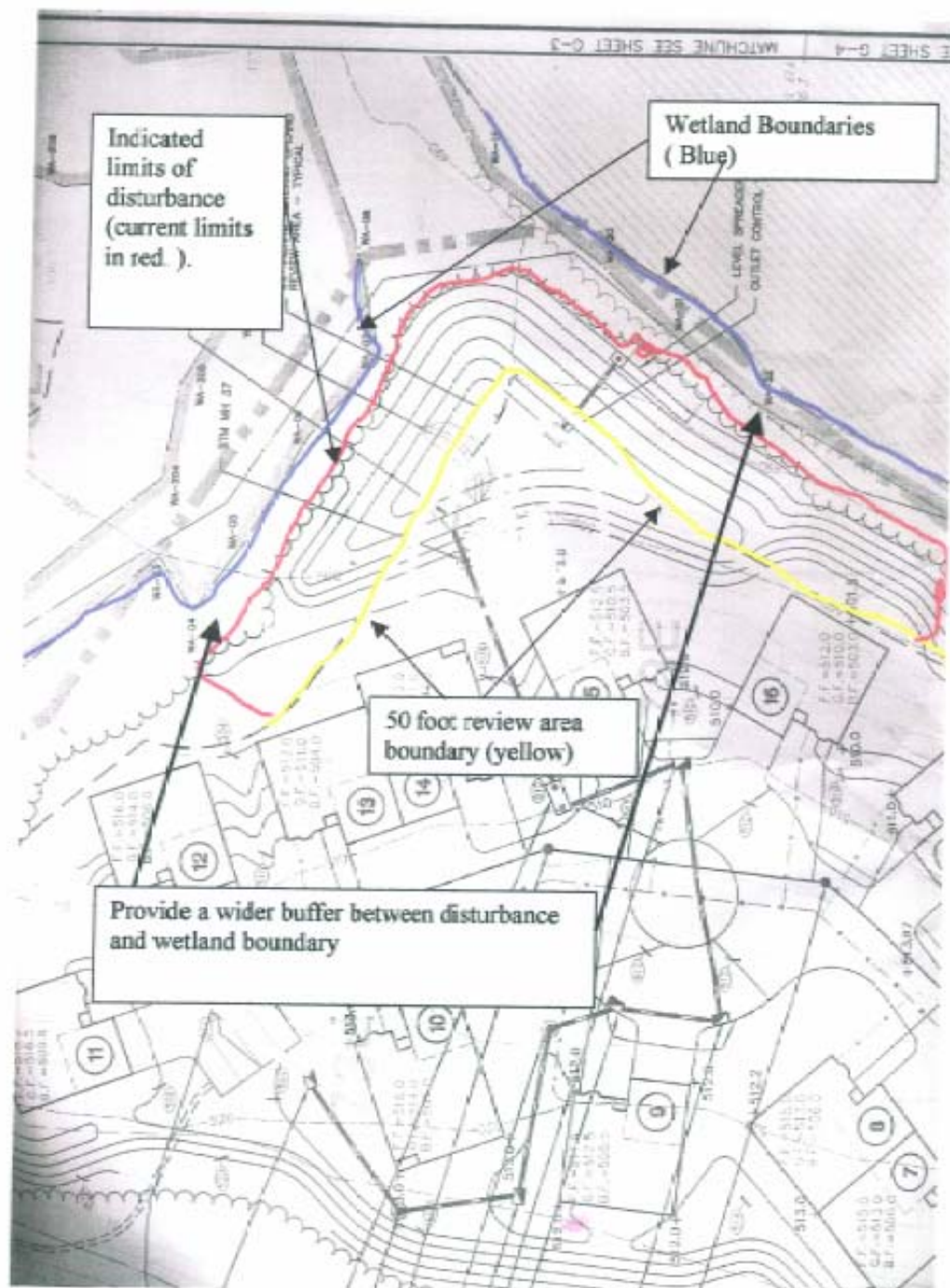


Figure 9

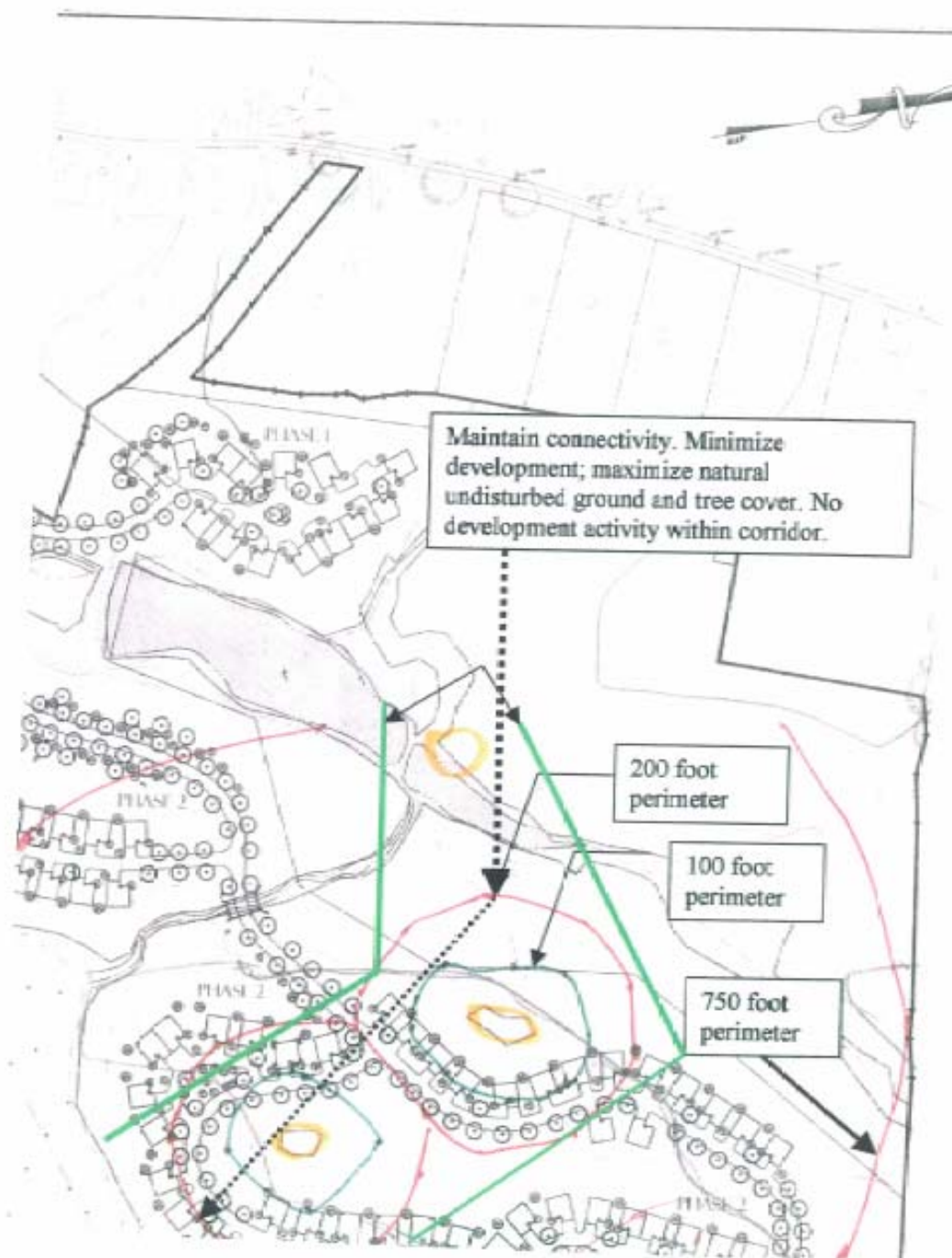


Figure 10

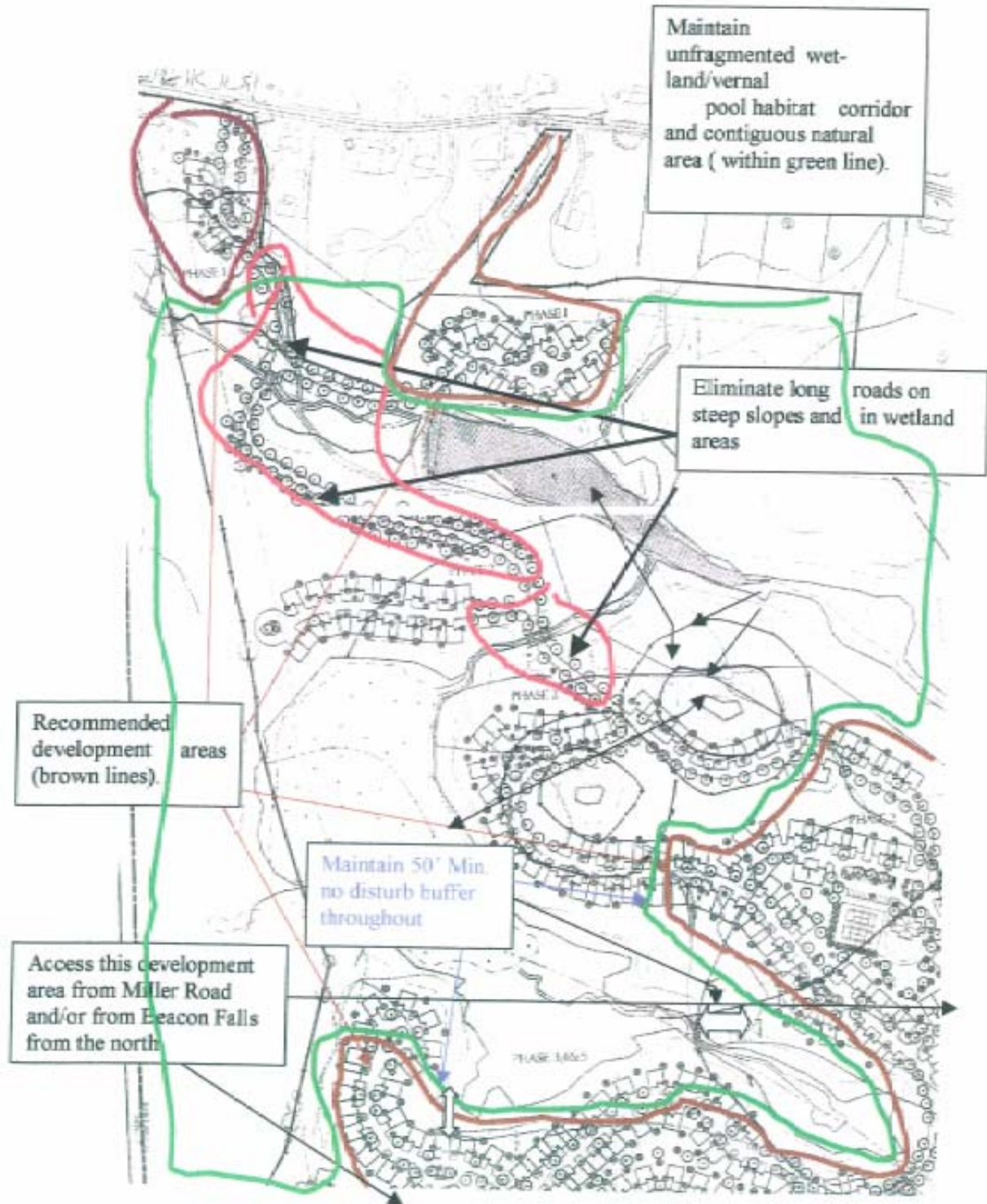


Figure 11

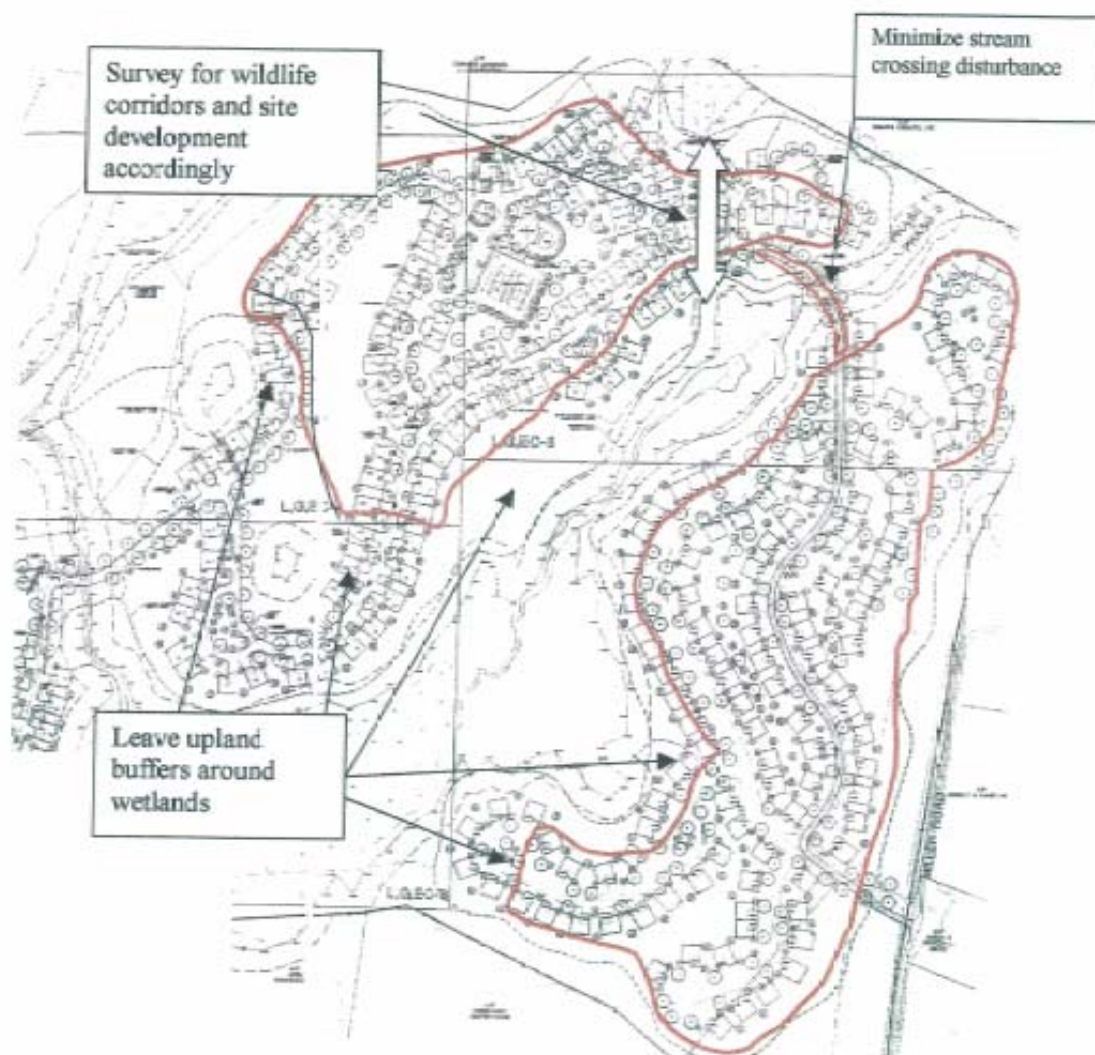
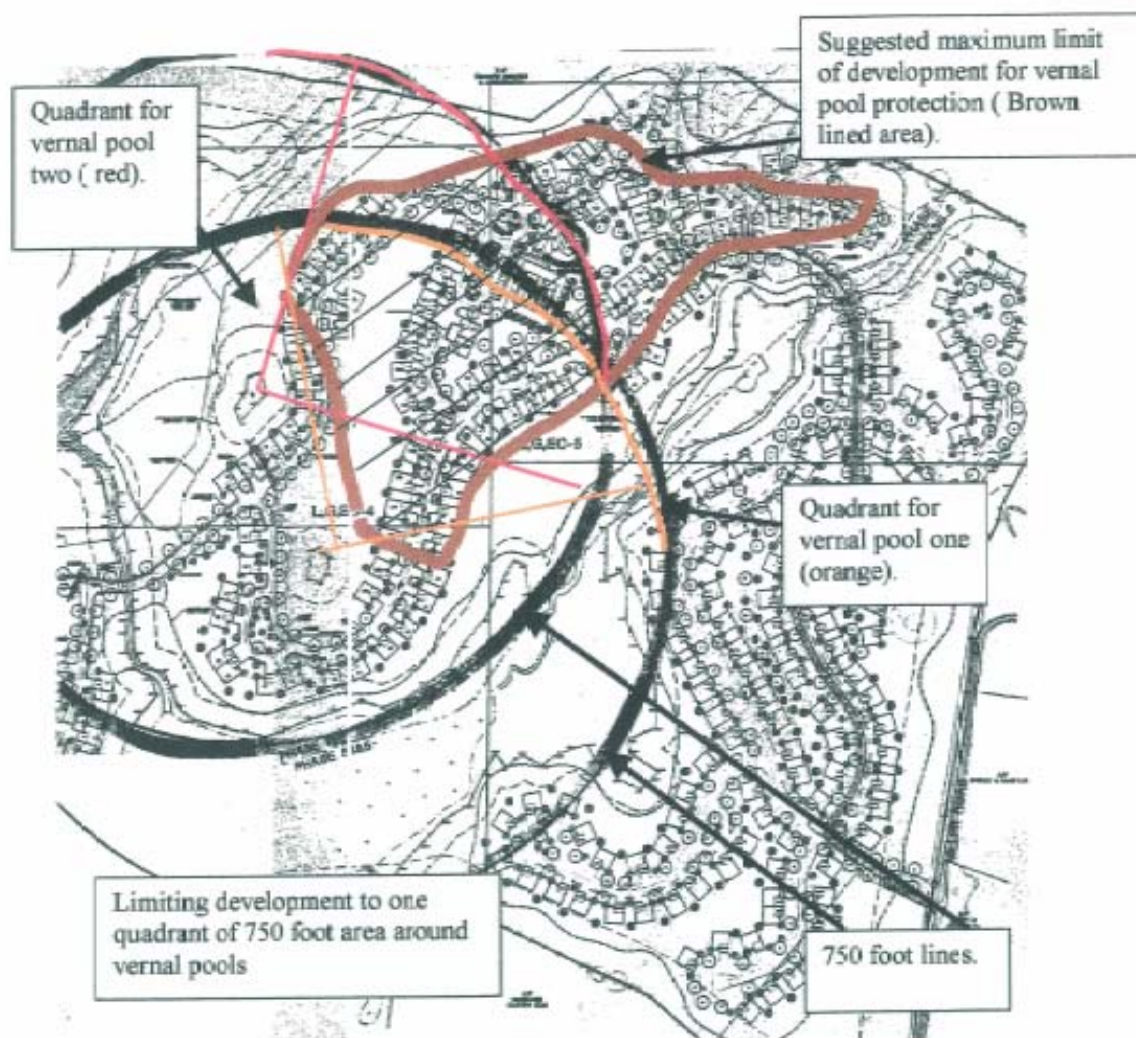


Figure 12



Highlight of Vernal Pool Quadrants and 25% Development Criteria. This site design maintains development within a quadrant of the recommended 750 buffer area. **Note:** Does **not** consider any vernal pool habitat that might be associated with the large wetland, nor any other development areas but only uses the two isolated pools and possible adjacent development as examples. See Calhoun and Klemens report page 34 for 25% development area criteria.

Stormwater Permitting Review

Since the site construction involves the disturbance of over five acres, Connecticut's General Permit for the Discharge of Stormwater and Dewatering Wastewaters (the "Permit") will cover the project. The permit requires that the site register with the Department of Environmental Protection (CTDEP) at least 30 days before the start of construction. The registrant must also prepare, submit, and keep on site during the construction project a Stormwater Pollution Control Plan (the "Plan").

Due to the size and potential impacts on natural resources of this project, the Department has recommended to the developer that the pollution control plan be submitted 180 days prior to the start construction. If the Department finds that the Plan is inadequate, Connecticut General Statutes Section 22a-430b and General permit Section 7(c) allow the Commissioner to require an individual permit, a process that could delay approval of the project for several months. In order to prevent this and to ensure adequate review time, the Department has requested early submittal of the plan.

Please note that this review is only specific to the plans as given to the ERT on April 15, 2004 and not on the whole project. This review is based primarily on the state Permit, but many of the erosion and sedimentation issues are included in the Connecticut Guidelines for Soil Erosion and Sediment control ("the guidelines"), and are issues that must be dealt with on a local level before being included in the Plan. It should also be noted that the permit requires compliance with the guidelines. The developer must register for the permit, and the contractor and any subcontractors involved in grading must sign the contractor certification statement in the permit. Any registration submitted by anyone other than the developer will be rejected.

The Plan must include a site map as described in Section 6(b)(6)(A) of the General Permit and a copy of the erosion and sedimentation (E & S) control plan for the site. The E & S plan that is approved by the Town maybe included in the Plan. This plan and site map must include specifics on controls that will be used during each phase of construction. Specific site maps and controls must be described in the Plan, as well as construction details for each control used. The permit requires that "the plan shall ensure and demonstrate compliance with" the guidelines.

Due to the amount of soil disturbance, one of the best ways to minimize erosion potential is to phase construction in order to minimize unstable areas. The Plan must be flexible to account for adjustment of controls as necessary to meet field conditions. At a minimum, the plan must include interior controls appropriate to different phases of construction.

This project has steep slopes, a large amount of wetlands, very poorly drained soils, and sensitive surface waters that must be protected, which will make weekly inspections and modifications to erosion controls an important part of this project. The permit (Section 6(b)(6)(D)) requires inspections of all areas at least once every seven calendar days and after every storm of 0.1 inches or greater. The plan must also allow for the inspector to require additional control measures if the inspection finds them necessary, and should note the qualifications of personnel doing the inspections. In addition, the plan must include monthly inspections of stabilized areas for at least three months following stabilization and the end of construction. Due to the scope and potential wetland and stream impacts of this project, there must be someone available to design and adjust E&S controls for changing site conditions, who has the authority and resources to ensure that such necessary changes are implemented.

Particular attention must be paid to the construction in the area of the site, which has steep slopes. Soil type and the location of the water table must be considered when cutting and filling slopes during the construction process. Also, when the cutting and filling portion of the project is conducted please ensure that the tops of the slopes are stabilized with berms or other means that comply with the guidelines. The Department recommends erosion control matting for slopes greater than 3 to 1.

Structural practices including sedimentation basins are required for any discharge point that serves an area greater than 5 disturbed acres at one time. The basin must be designed in accordance with the guidelines and provide a minimum of 134 cubic yards of water storage per acre drained. At a minimum, for discharge points that serve an area with between 2 and 5 disturbed acres at one time, a sediment basin, sediment trap, or other control as may be defined in the guidelines for such drainage area, designed in accordance with the guidelines, shall be designed and installed. All sediment traps or basins shall provide a minimum of 134 cubic yards of water storage per acre drained and shall be maintained until final stabilization of the contributing area. Outlet structures from sedimentation basins shall not encroach upon a wetland. The commissioner must approve any exceptions in writing. Silt fence installation must comply with the guidelines, and may be used only in drainage areas of one acre or less. Maintenance of all structural practices shall be performed in accordance with the guidelines, provided that if additional maintenance is required to protect the waters of the state from pollution, the Plan shall include a description of the procedures to maintain in good and effective operating conditions.

Section 6(b)(6)(C)(ii) of the permit requires the plan to address dewatering wastewaters that this site may generate. Specific details for construction control during installation of any wetland crossings must be provided. A description of the operational and structural practices which will be used to ensure that all

dewatering wastewaters will not cause scouring or erosion or contain suspended solids in amounts which could reasonably be expected to cause pollution of waters of the State. Dewatering wastewaters shall be discharged in a manner, which minimizes the discoloration of the receiving waters.

Particular attention must be paid to the areas during construction that will drain toward the pond, the dam, Rimmon Brook and the intermittent watercourse(s).

Post-construction Stormwater Treatment

The permit (Section 6(b)(6)(C)(iii)) requires that the plan include a design for post-construction stormwater treatment of 80% of total suspended solids from the completed site. In order to comply with this requirement, the Department recommends incorporating swirl concentrator technology. Although, swirl concentrators are effective at removing sediment, they require a long-term maintenance commitment from the town or a homeowners association greater than that required for a basin once it is fully grown-in and stabilized. If an inground, "black-box" solution is used, swirl concentrator technology is a minimum requirement. Some newer generation swirl concentrators also incorporate filtration systems to address other pollutant issues, but these also require long-term maintenance plans.

Erosion and Sediment Control Notes

General permit stabilization requirements include the following: "where construction activities have permanently ceased or have temporarily been suspended for more than seven days, or where final grades are reached in any portion of the site, stabilization practices shall be implemented within three days."

Other Issues

It is strongly recommended that the local wetland and zoning commissions ensure that the bond required for this project be adequate to remediate all wetlands and watercourses in the event of control failures on this site. The developer should be aware that regardless of the storm event size, they would be responsible for remediation of any impacts.

This report addresses some of the major issues concerning the project and does not constitute a complete review of the Plans for permitting purposes.

Wetland Review

Site walk

The wetland reviewer visited the site on May 05, 2004, after the field visit made by the ERT team. The most recent significant rainfall had been sixth tenths of an inch 48 hours previous recorded at Oxford. Unfortunately, there were very few wetland flags remaining on site from when the delineations were made in October of 2002, 19 months previous. It was difficult at times for this reviewer to pinpoint his exact location.

Watershed

For all intents and purposes the Chatfield Farms proposal falls within the 156+ acre watershed defined by the relief behind the dam. The water from the northeast part of the parcel flows southwest to the large wetland area in the south central portion of the property. The outlet of that large wetland flows as a stream to the northwest where it empties into Shaw Pond. The water that flows out of Shaw Pond is considered to be Rimmon Brook. Rimmon Brook flows approximately two miles where it enters Silver Lake. From Silver Lake it flows about four tenths of a mile directly into the Naugatuck River. (See Figure 13)

The watershed now, before development, is completely vegetated, although trees have been cut in many places. An understory of scrub shrub and an herb layer have filled in in the absence of trees. The land as a whole provides excellent filtering of water. While the DEP water quality mapping indicates a surface water quality of A (on a scale of AA, A, B, C, D; with double A being the best) it is likely in this watershed that the water quality is AA, or the best it can be since there are no known sources of leachate or waste water discharges effecting it. In fact, there are no structures at all (except the dam) in the watershed. This in and of itself is a unique feature given the development density of much of the Naugatuck Valley.

Given the existing quality of water, it is important that the on-site construction not impact water quality before, during or after construction. The quality of water leaving the site post construction should be the same as it now before construction.

Observations

On the day of this reviewer's visit he spent time visually inspecting the two proposed road crossings and the two vernal pools which he refers to here as the north and south pools.

Both road crossings, at station 8 and station 20.15, seem to fit the need of preservation and minimum impacts. They show elements of design work committed to maintaining the integrity of the watercourses.

Of the vernal pools, the northern pool was difficult to see into because of heavy floating leaf cover and the presence of dense filamentous algae along the edges. The reviewer was unable to get a good in water visual from any vantage point. In addition, the boundaries of this wetland were found to be greater than what was depicted on the Milone and McBroom project map he was using. From this wetland there was overland flow of water eight feet wide and one to two inches in depth. Audible from a ways off, there was flow to the edge of the hill to the northwest ~100 feet away where the flow was lost in the leaf litter.

The southern pool was easier to inspect. With much less floating leaf cover it was easy to spot scores of tadpoles making their way about the shallow water. Subsequent to his visit this reviewer read the report from Bill Root of Milone and McBroom which confirmed the occurrence of obligate vernal pool species breeding in both the subject pools. His descriptions of both the pool locations and species, notwithstanding the "bag-limit" hunting terminology applied to the spotted salamander, describe the area sufficiently to show with no doubt the nature of these two vernal areas.

It was evident in both pools that the water was high and that it must dry to a great extent during the summer months. It is little wonder that these are both vernal pools. Both show springtime signs of high water (the red maples are testament to this as they stood in standing water at the time of the visit but cannot exist in this inundated state indefinitely).

The locations of the pools serve two purposes: 1.) surface water runoff (especially snowmelt) from the immediate slopes serves to fill the pools in the spring and 2.) once past their amphibious stages, both the wood frog and the spotted salamander use the drier/well drained upland for their home. Thus, in essence, vernal pool breeders spend only a short period of their lives in the water. After hatching they move upslope where it is drier to spend the balance of their life cycles, returning to the pond briefly to breed in spring.

If the town is intent on protecting these vernal pool resources there is much to understand about their needs. However, it is highly unlikely that the balance of water quality and quantity will be maintained in the larger northern vernal pool with two sources of road drainage emptying into it, or the southern pool with road drainage passing through it. While it is true that the Vortcentury systems settle out a great percentage of solids and sediments, they do not capture it all. Dissolved hydrocarbons and road salts, as well as up to 15-20% of sediments will still find their way into the breeding pool.

Vernal Pools

Issues regarding vernal pools are apparent and need to be explored before any impacts to these areas begin. These issues are discussed below.

- The largest integral part of the vernal pool system is the upland area neighboring the pool. This typically extends away from the pool uphill or upslope to drier soil types. The slopes can vary from gentle to steep. In places some slopes can approach 45 or more degrees. Often, the drainage areas for these pools found on typical till based soils are 2 or 3 acres or up to 5-6 acres. Thus, impacts that are local can be dramatically damaging to the vernal pool ecology.
- There is extensive information in print about vernal pools. Much of it points to the fact that the reduction of more than a certain percentage of critical habitat and adjacent upland could have telling impacts on the pool ecology.

The USGS's Northeast Amphibian Research and Monitoring Initiative produced a document for their vernal pool survey method protocol entitled: *Wood Frog and Spotted Salamander Egg Mass Counts and Percent Vernal Pools Occupied by Amphibian Species on DOI lands in the Northern United States*. In it they state that "... (spotted) salamanders require both wetlands (usually vernal pools) for breeding and surrounding upland woodlands, where they spend about 95% of their lifetime burrowed underground, for survival."

(This document may be obtained via -

<http://216.239.39.104/search?q=cache:RV1NbgXYTCQJ:www.pwrc.usgs.gov/nearmi/projects/Vernal%2520Pool%2520Protocol.pdf+Egg+Mass+Counts+and+Percent+Vernal+Pools+Occupied+&hl=en&ie=UTF-8.>)

Dr. Klemens also suggests in his recent book co-authored with Dr. Aram J.K. Calhoun entitled: *"Best Development Practices - Conserving Pool Breeding Amphibians in Residential and Commercial Developments in the Northeastern United States"* that the upland use by various vernal pool amphibians can range from 386 feet from the pool for spotted salamanders to 1,550 feet from the pool for juvenile wood frogs (3,835 feet for adults). Indeed, he suggests there be no development in the 100 foot buffer around the vernal pool and no more than 25% in the critical terrestrial habitat, that is, the distance from 100 feet to 750 feet away from the pool. (This book is available from the DEP Store on-line at: <http://www.whereeverythingis.com/depstore/>)

Incorporating these guidelines, the southern pool will likely lose its value as a breeding pool. The proximity of lots, the impacted uplands and the potential for impacted water quality running into it will likely all take their toll unless the road runoff is eliminated from the plan. Due to the fragile nature of the pools, it is important that they are not linked with any detention basins before during or after construction.

The Dam

The age of the on-site dam had been in question. It does appear on the DEP inventory of dams and is referred to as Shaw Dam. It impounds an area of about two acres of open water (approximately 1.75 acres for the main pond and 1/4 acre for the smaller ponded area to the northeast).

As seen in the two contrasting aerial photographs (Figure 14), in March of 1965 the dam was not in place and it does not appear that construction was about to begin. In the March, 1970 aerial photograph the dam and pond are not only in place but have the appearance of being well established by that time. Until a more definite record can be located, a reasonable estimation would be that the Shaw Dam Pond was built in 1968 plus or minus one year making it roughly 36 years old at the time of the field walk.

The Plan

The plans provided to the ERT Team does not show the proposed development in its entirety. It showed details only up to the line that defined the break between Phases 1&2 and Phases 3, 4 & 5. Many of the town commissioners found this difficult to work with.

Road Width

The road width as described is 26 feet. The length of road within the subdivision will be about $\pm 5,000$ feet. A study done to correlate road width and safety has pointed to the width of 24 feet as the safest. The study concludes that roads narrower and wider than 24 feet are both more dangerous for a variety of reasons. From a wetlands point of view, the 24 foot wide road would reduce impermeable surface by approximately 10,000 square feet (nearly a quarter acre) over the 26 foot wide road over the length of the project. This permeable surface will allow infiltration of more precipitation and snow melt allowing the natural groundwater recharge to work for that 10,000 square feet. The 24 foot road would reduce impermeable surface by about 7.7% over the 26 foot wide road. A review of the subject can be found at http://nemo.uconn.edu/publications/tech_papers/tech_paper_9.pdf.

Additional Comments

Additional Comments on the Milone and McBroom, Inc. document MMI #2288-01 entitled: *Existing Conditions and Wetland Impact Assessment* dated March 10, 2004.

On Page four at the end of the first paragraph it states that small pockets of wetlands were found within some wetland map units. These pockets should be mapped so that the town commissions are able to locate and assess any impacts.

On pages five through seven two functional evaluations were provided, one for Rimmon Brook and one for the upland swamp. This reviewer believes in both cases the recreation and the education potential functions are understated. One of the great outdoor forms of recreation is bird watching and both of these wetlands provide ample opportunity for this activity. The same is true for the educational value. While this value is generally increased with proximity to schools, it should not be overlooked that both offer extensive hydrophytic diversity, a broad range of morphology and a strong attraction for wildlife. (This reviewer located a nearly complete, recently hatched wild turkey egg on my visit.) The rounded boulders of Rimmon Brook are classic glacially rounded rocks. Both of these wet areas would be any outdoor educator's dream.

This reviewer also believes the aesthetic value is also strongly understated. Wetland and watercourses areas are frequently found to be attractive - and it is assumed this is the case here since the proposed community footpath/nature trail is parallel to the wetlands for much of its length.

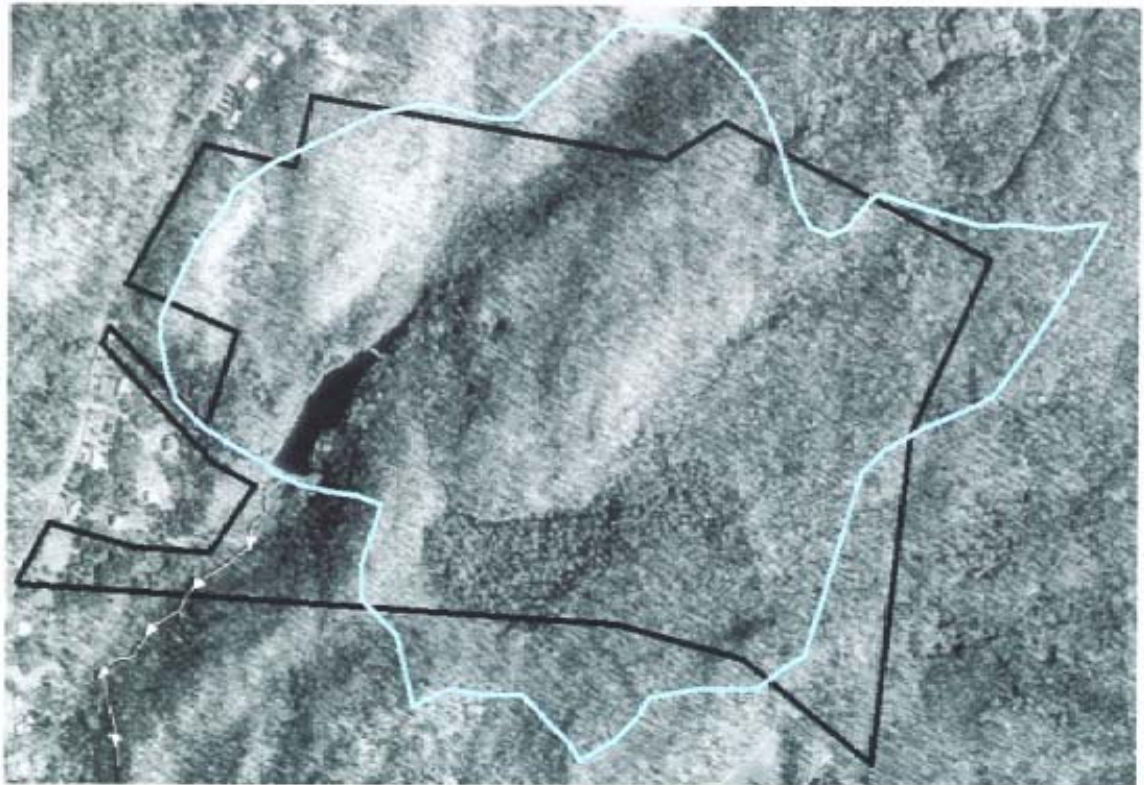
On page 13 in the bottom paragraph there is some conflict in what is written and what is shown on the plans. The text states for the larger or northern vernal pool there will be no clearing of vegetation or other disturbance. In fact, two storm water outlets are directed right at the pool - one with its outlet 20 feet from the pool boundary. These structures will bring with them soluble and floatable post-Vortechnics runoff that will in fact alter the water chemistry of this breeding pool. This setup will likely increase the total runoff entering the pool, the speed of the post-storm runoff and as yet undetermined is the question of any water temperature increase (or thermal pollution) to the pool.

Also on page 13, the last two sentences deal with the treatment of the smaller, southern vernal pool. The plans show that road runoff from four catch basins that serve ~200 feet of roadway and seven houses' roofs and driveways will be directed into this smaller pool. The same issues mentioned above apply to the effects on the wetland. The text implies this is "...an opportunity to expand wetland conditions." It is believed the plan as proposed will terminate the pool's life as a balanced breeding vernal area and change it into a larger, common, detention basin with wetland plantings.

Recommendations

- The town should not allow the discharge of road runoff in the two breeding vernal pools.
- The town should require water quality testing for the wetlands and watercourses and agree upon a set of indicator parameters before, during and after construction.
- Due to the density of the work being done erosion and sediment controls must be very effective to keep sediments from entering the wetlands. Slopes on-site are steep in places and a lot of earth moving work will be done in tight spaces.
- Soil stock pile locations have been provided for the first two phases of the proposal. They should be checked by the town during construction use to preclude the failure of these important structures.
- Catch basin maintenance - a plan should be in place with the homeowners group and the town to clean out the catch basins on a regular schedule. If not, once the sump or low areas in the basins are full of road sands etc., future runoff and sediments will be carried directly to the wetlands and watercourses.
- The town should strongly encourage the channeling of roof runoff directly into the ground or encourage the use of rain gardens. These practices hold the dual benefits of filtering and recharging the ground water and decreasing the load the storm drain system has to carry. (For information on rain gardens see:
[http:// nemo.uconn.edu/case_studies/demosite_rain_garden.htm](http://nemo.uconn.edu/case_studies/demosite_rain_garden.htm).)

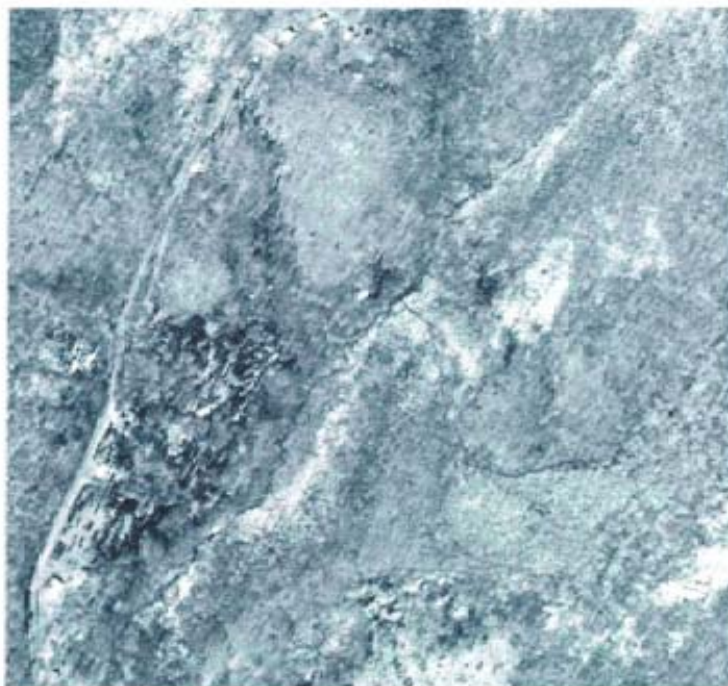
Figure 13



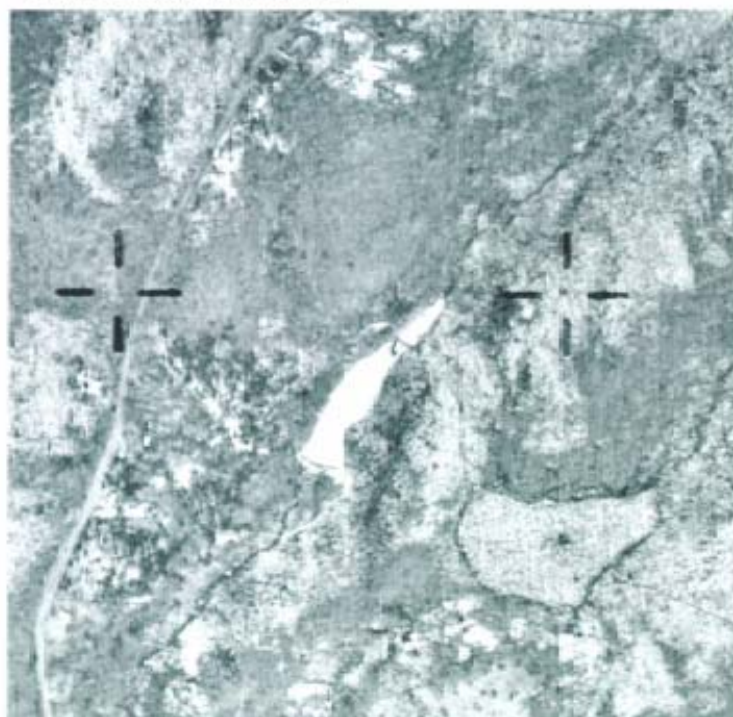
The approximate outline of the Chatfield Farms proposal is shown in black. The Shaw Pond Watershed is shown in white. Rimmon Brook is depicted as the white arrow-line on its way to the Naugatuck River 2.5 miles+ to the southeast.

Figure 14

March 2, 1955 Aerial Photo (DEP)



March 1, 1970 Aerial Photo (DEP)



Watershed Perspective

*Report not yet received.

Aquatic Resources

*Report not yet received.

The Natural Diversity Data Base

The Natural Diversity Data Base maps and files regarding the project area have been reviewed. According to our information there are two historic occurrences of Special Concern plant species from this area. The plants are *Blephilia ciliata* (downy-wood mint) last observed in 1888 and *Platanthera hookeri* (hooker's orchid) last observed in 1915. Our program ecologist Mr. Ken Metzler (DEP-EGIC; 860-424-3585) recommends that a field survey for these plants be conducted as part of the site assessment for this property. If you have specific questions regarding these two plants please direct them to Mr. Metzler.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us 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. Consultations with the Data Base should not be substitutes 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.

Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Archaeological Review

The Office of State Archaeology (OSA) and the State Historic Preservation Office (SHPO) have reviewed the State of Connecticut Archaeological Site files and Maps, which show no known archaeological sites within the proposed area. However, well-drained soils adjacent to the wetland systems within the project area suggest a moderate-to-high sensitivity for undiscovered prehistoric Native American sites.

The Connecticut State Historic Preservation Office and Office of State Archaeology recommend that a reconnaissance survey be professionally undertaken in order to locate, evaluate and responsibly consider all archaeological resources as an integral component of the local decision-making processes. All archaeological studies must be carried out pursuant to the *Environmental Review Primer for Connecticut's Archaeological Resources*.

The OSA and SHPO offices are prepared to offer the Town of Beacon Falls and the applicant any technical assistance in conducting the recommended survey. In addition, they would be able to provide a list of qualified archaeological consultants.

Planning Comments

Regional Plan of Conservation and Development for the Central Naugatuck Valley

The Regional Plan of Conservation and Development, adopted December of 1998, promotes prudent conservation and development of the Region. The plan advocates guiding future growth towards the regional center as well as towards areas with pre-existing infrastructure. A key objective of the plan is to encourage settlement patterns, such as cluster development, that reduce the rate of land consumption in the region.

The Regional Plan encourages a variety of housing types throughout the region. The region's senior and elderly population is projected to continue growing through the year 2010. Although, some will seek lower cost rental housing, many will desire to live in active adult communities and the proposed development could help to serve this population.

Based on the Future Land Use Map (Figure 15) the proposed development site is recommended for conservation as a Rural Area. Any development, within a Rural Area, should respect natural resource and environmental constraints. Low-density residential development is an acceptable land use for rural areas, according to the Regional Plan. However, the plan does not recommend the extension of public infrastructure into rural areas because densities are too low to efficiently serve with the infrastructure. The benefits of serving low-density development do not exceed the expense of extending public sewer and water lines. The Regional Plan advocates reducing the impacts of sewer discharges. This can be accomplished by using existing infrastructure to guide future growth and encouraging private maintenance of septic systems.

A total of 266 housing units are proposed for the 142-acre site, a density of 2 units per acre for the site. The Regional Plan encourages efforts to preserve open space action areas and critical environmental areas. A concern with the proposed Chatfield Farms Estates development is that a majority of open space set aside from development is comprised of wetlands and other undevelopable land. For subdivision developments, the Council of Governments Central Naugatuck Valley (COGCNV) staff recommends that land set aside for open space has similar characteristics to land being developed.

The Regional Plan lists four development constraint classifications. Classification is based on the soil composition, slope, presence of wetlands and flood plains, and the presence of public water and sewer infrastructure. Based on guidelines listed in Table 1, the proposed site would be classified as

having a severe or prohibitive development constraint. Based on COGCNV staff analysis of natural resource constraints, approximately 21% of the site is classified as being prohibitive to development, 53% is severely constrained, 24% is moderately constrained, and 2% is minimally constrained. The site contains extensive wetlands and a large pond. As a general guideline, the Regional Plan recommends a maximum density of 0.5 units per acre for severely constrained areas with a private well and septic system. This equates to a minimum lot size of 2.0 acres. Assuming the extension of the municipal sewer line and private water system, as proposed, the Regional Plan recommends a maximum density of 0.67 for severely constrained areas which equates to a minimum lot size of 1.5 acres.

Transportation: Traffic Generation

The Regional Plan also recommends that land use development be coordinated with transportation planning actions. It is important to anticipate the impact on local traffic flow of the proposed development and plan improvements, if necessary. The Regional Plan as well as the State Plan recommends that intersections be as close to 90-degree angles as is possible. From the site walk it appears that the entrance to Chatfield Farms Estates and its intersection with Skokorat Road can be at a 90 degree angle. The visibility and sight lines for cars entering and exiting the development would be appropriate because Skokorat Road is without obstructions (such as curves and hills) at the approach to the development's entrance. The planned emergency access to the development at Miller Road will need improvements. The current condition of the road would be unsuitable for emergency vehicles.

The likelihood of the proposed development creating congestion along Skokorat Road is minimal. The traffic generated from the 266 housing units would mostly occur at times other than the peak periods for Skokorat Road (7-9AM and 4-6PM). The Institute for Transportation Engineers (ITE) compiles traffic generation statistics for a large database of land uses in *Trip Generation 7th Edition*. For senior detached housing, including active adult, ITE found that the peak periods were 10AM- 12PM and 1PM-6PM.

The average detached senior housing unit generated 3.7 trips per day, compared to 9.6 for single-family detached housing. The proposed Chatfield Farms Estates development, therefore, could be expected to generate 984 trips daily. Using ITE statistics, the development would generate 53 trips during the morning peak on Skokorat Road and 69 trips during the evening peak. Even fewer trips would be expected on the weekend. The table below provides a breakdown, using ITE figures, of the directional distribution of expected trips generated for the proposed 266-unit Chatfield Farms Estates development.

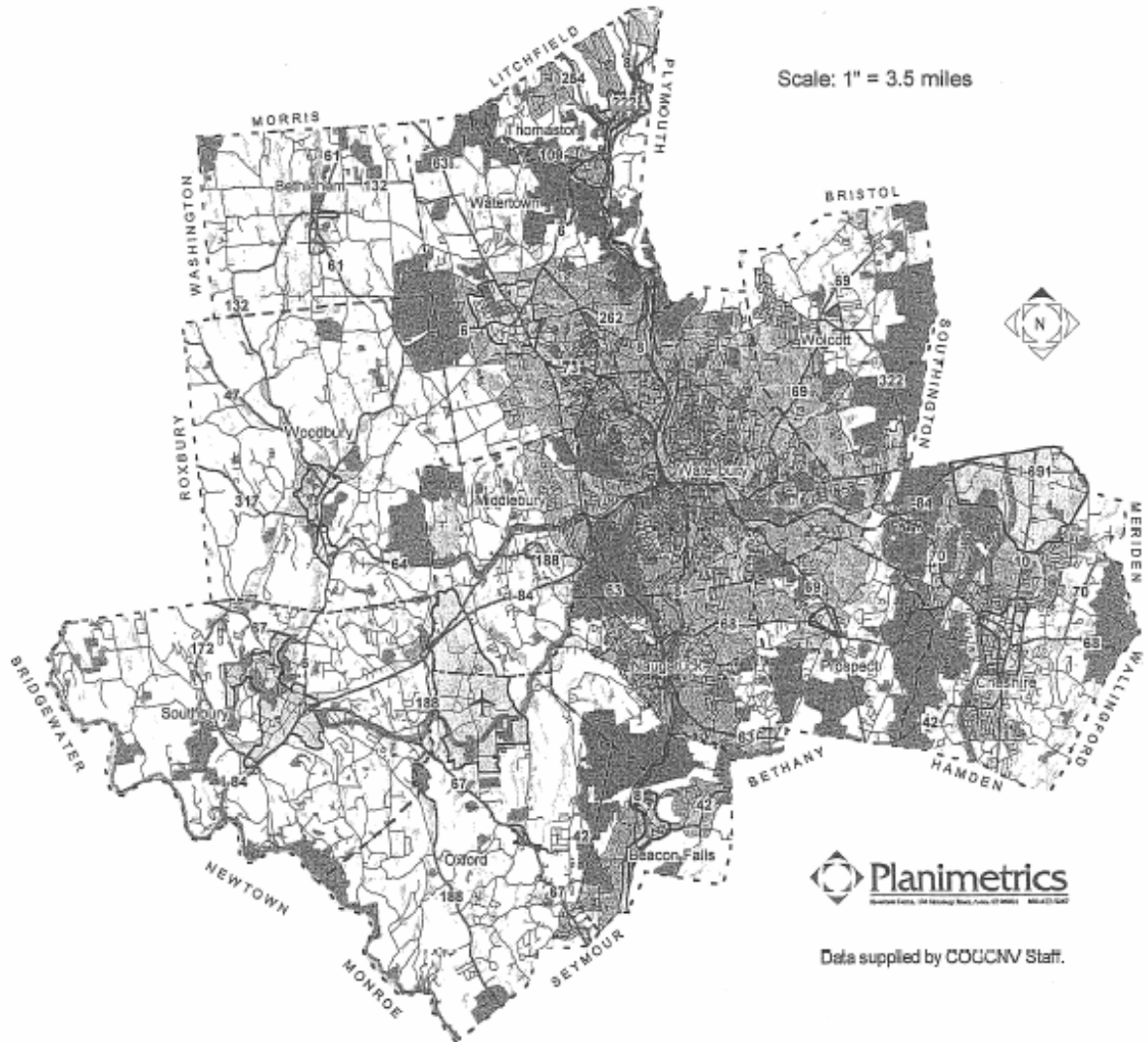
Time Period and Day	Expected Trips Generated	Expected Trips Entering	Expected Trips Exiting
Entire Day, Weekday	984	492	492
Entire Day, Saturday	746	373	373
Entire day, Sunday	612	306	306
AM Skokorat Rd. Peak Hour, Weekday	53	20	33
PM Skokorat Rd. Peak Hour, Weekday	69	42	27
AMChatfield Farms Peak Hour, Weekday	82	42	40
PMChatfield Farms Peak Hour, Weekday	93	55	38

The statistics indicate that the highest expected rate of traffic entering and exiting Chatfield Farms Estates would be 93 vehicles per hour, which would occur in the early afternoon. ITE found that the average age of residents, development location and size, affluence of residents, employment status and vehicular access are factors affecting the number of trips generated from a detached senior adult housing development.

Future Land Use

Central Naugatuck Valley

Figure 15



Data supplied by COG/CNV Staff.

Development Areas

- Regional Core
- Major Economic Areas
- Community Centers
- Growth Areas

Conservation Areas

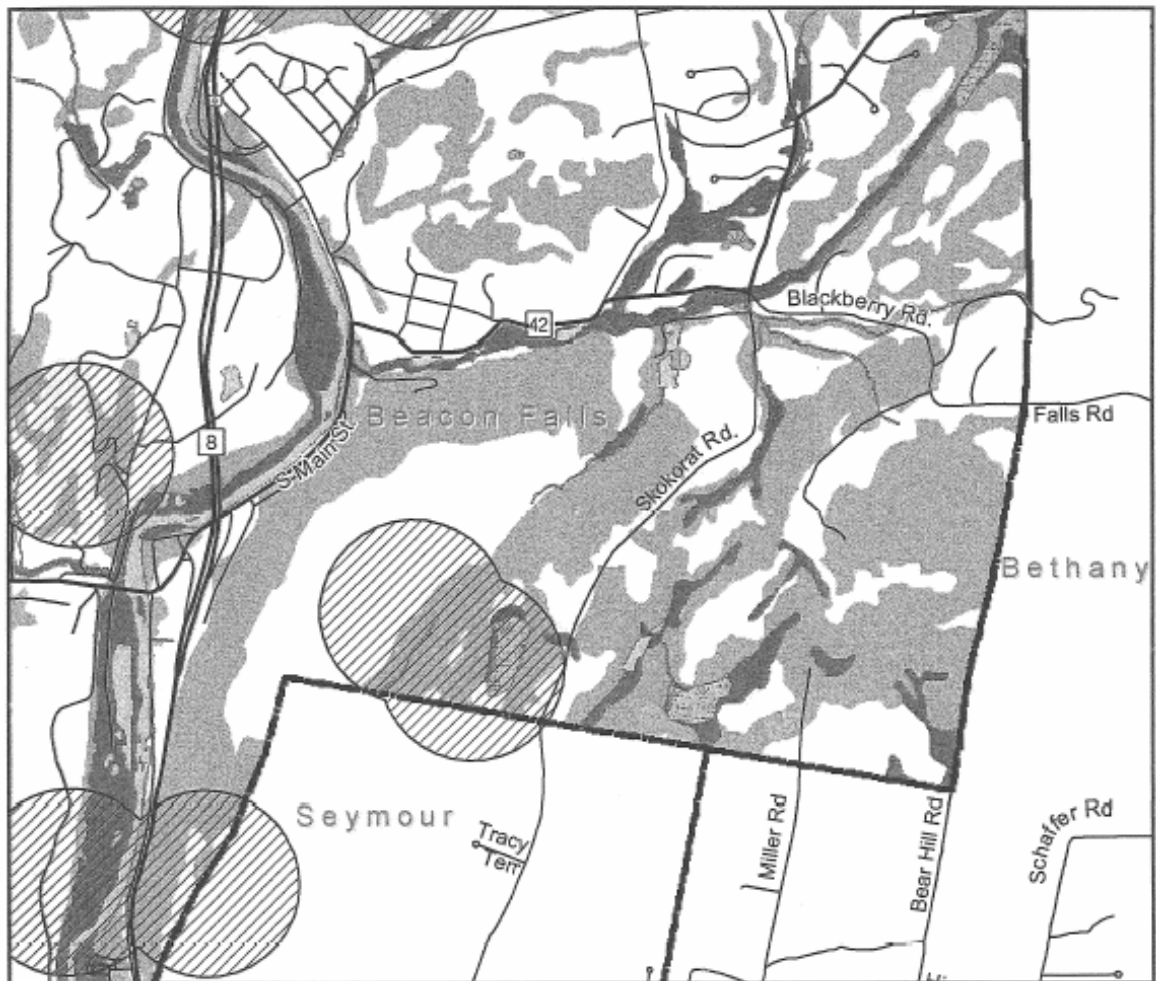
- Rural Areas
- Severe Environmental Constraints
- Public and Proposed Open Space

Transportation and Other

- Regional Arterial
- Local Road
- Airport
- Municipal Boundary
- Place Municipality Name

Figure 16

Natural Resource Constraints Skokorat Rd Area



Constraints

Minimal - (Well drained soils, <15% slopes)

Moderate - (Well drained soils with slope 15 - 25% or hardpan, shallow or rocky soils with <15% slopes)

Severe - (Slope >25%, or hardpan, shallow or rocky soils and slope 15 to 25 %, or 500-year floodplain)

Prohibitive - (Wetlands, 100-year Floodplain)

Site of Endangered, Threatened, or Special Concern Species

Marsh

Water

Roads

Area of Interest

0 1,350 2,700 Feet



Council of Governments of
the Central Naugatuck Valley

April 2004

For general planning purposes only.
Delineations may not be exact.

Table 1

Natural Resource Summary Table

Development Constraint	Conservation Opportunity	Definition	Resource Condition
Minimal	Low	Having only few or slight environmental constraints on development. Most difficult to conserve from development.	<ul style="list-style-type: none"> Excessively drained soils Well drained soils, less than 15% slopes
Moderate	Modest	Having moderate or localized severe restrictions on development which may be overcome with environmental planning and mitigation. Difficult to conserve from development.	<ul style="list-style-type: none"> Well drained soils, 15-25% slopes Well drained soils, high seasonal water table Hardpan soils, less than 15% slopes Shallow or rocky soils, less than 15% slopes Floodplain (500-year, 0.2% probability)
Severe	Important	Having some severe or very severe limitations on development which may be difficult to overcome with environmental planning and mitigation. Present many opportunities to conserve important natural resources and functions.	<ul style="list-style-type: none"> Any soil with slopes in excess of 25% Shallow or rocky soils, 15 to 25% slopes Hardpan soils, 15 to 25% slopes Hardpan soils, high seasonal water table
Prohibitive	Significant	Having only severe or very severe limitations on development. Represent areas where it is most important to conserve natural resources and functions.	<ul style="list-style-type: none"> Watercourses and waterbodies Poorly drained soils (wetlands) Floodplain (100-year, 1.0% probability)

Appendix

Contact the ERT Office at
860-345-3977 for Appendix
Information

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 and 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 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 in the review of sites proposed for major land use activities or natural resource inventories for critical areas. 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 recreation/open space projects.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision making. This is done through identifying the natural resource base of the 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 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 landowner/developer allowing the Team to enter the property for the purposes of a review and a statement identifying the specific areas of concern the Team members should investigate. When this request is reviewed by the local Conservation District and approved by the King's Mark RC&D Executive Council, the Team will undertake the review. At present, the ERT can undertake approximately two reviews per month depending on scheduling and Team member availability.

For additional information regarding the Environmental Review Team, please contact the King's Mark ERT Coordinator, Connecticut Environmental Review Team, P.O. Box 70, Haddam, CT 06438. The telephone number is 860-345-3977.