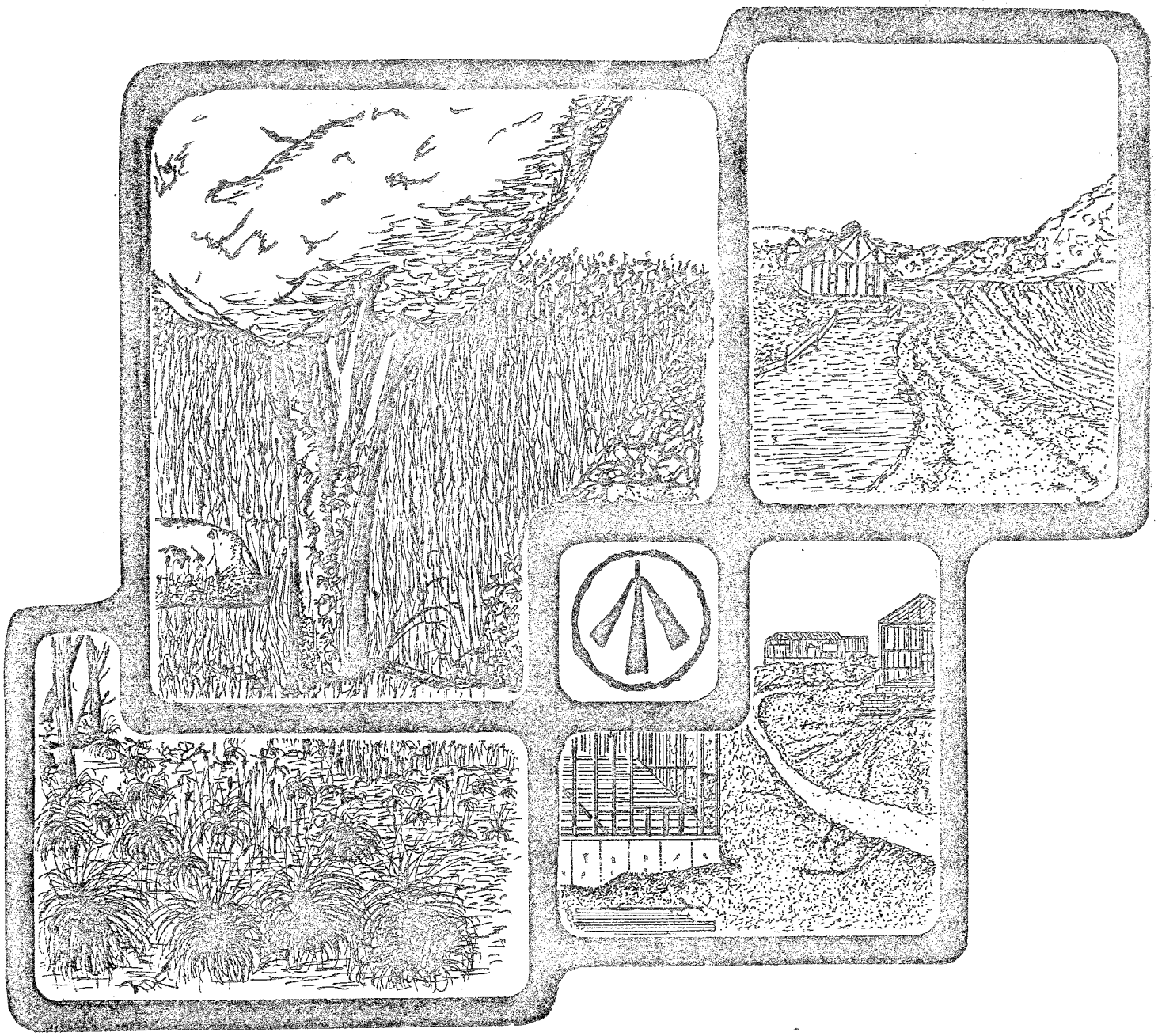
ENVIRONMENTAL REVIEW TEAM REPORT



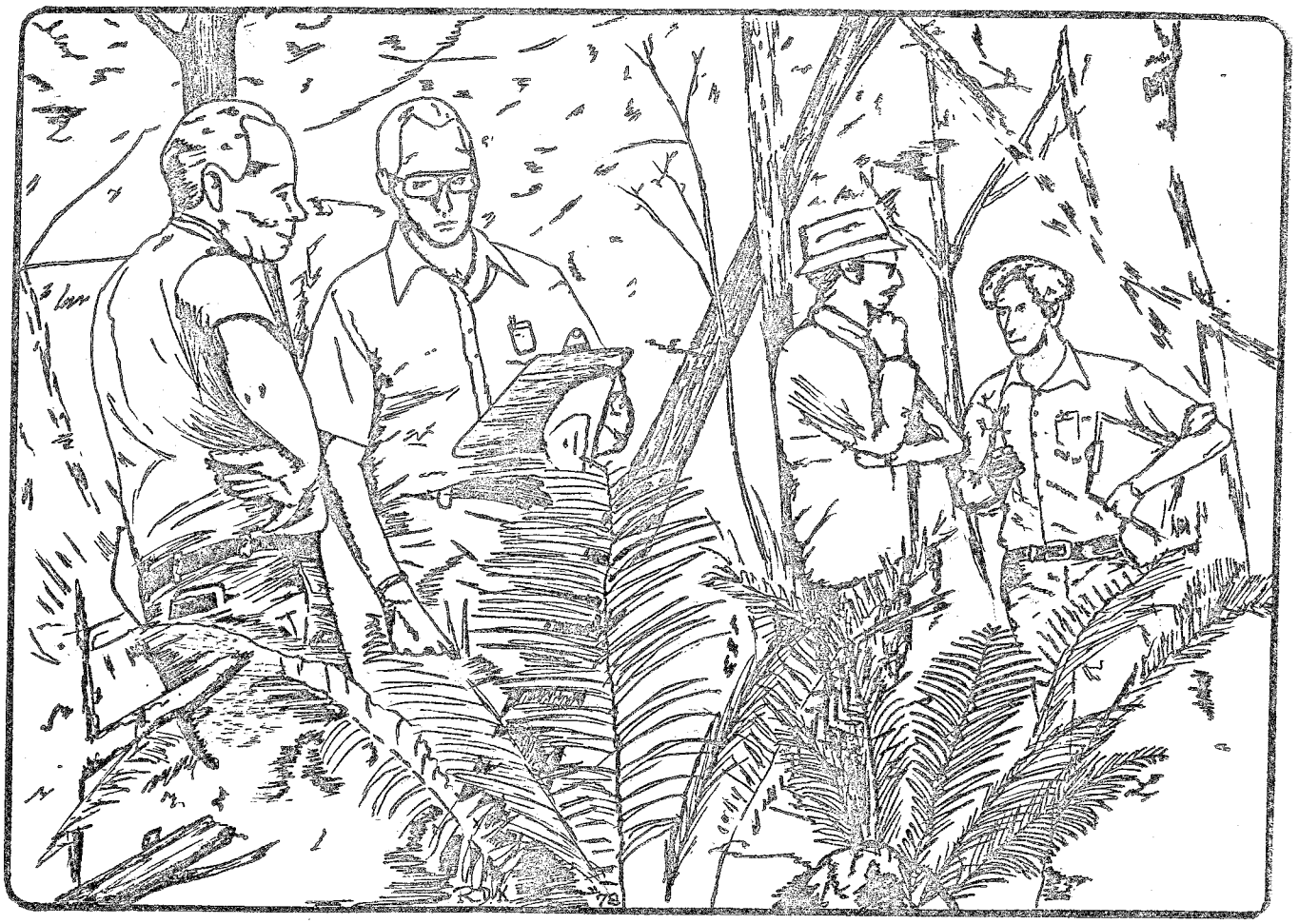
RIVER STREET SUBDIVISION
WINDSOR, CONNECTICUT

KING'S MARK
RESOURCE CONSERVATION & DEVELOPMENT AREA

KING'S MARK
ENVIRONMENTAL REVIEW TEAM REPORT

ON

RIVER STREET SUBDIVISION
WINDSOR, CONNECTICUT



SEPTEMBER 1980

King's Mark Resource Conservation and Development Area

Environmental Review Team

P. O. Box 30

Warren, Connecticut 06754

ACKNOWLEDGMENTS

The King's Mark Environmental Review Team operates through the cooperative effort of a number of agencies and organizations including:

Federal Agencies
U.S.D.A. SOIL CONSERVATION SERVICE

State Agencies
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DEPARTMENT OF HEALTH
DEPARTMENT OF TRANSPORTATION
UNIVERSITY OF CONNECTICUT COOPERATIVE EXTENSION SERVICE

Local Groups and Agencies
LITCHFIELD COUNTY SOIL AND WATER CONSERVATION DISTRICT
NEW HAVEN COUNTY SOIL AND WATER CONSERVATION DISTRICT
HARTFORD COUNTY SOIL AND WATER CONSERVATION DISTRICT
FAIRFIELD COUNTY SOIL AND WATER CONSERVATION DISTRICT
NORTHWESTERN CONNECTICUT REGIONAL PLANNING AGENCY
VALLEY REGIONAL PLANNING AGENCY
LITCHFIELD HILLS REGIONAL PLANNING AGENCY
CENTRAL NAUGATUCK VALLEY REGIONAL PLANNING AGENCY
HOUSATONIC VALLEY COUNCIL OF ELECTED OFFICIALS
AMERICAN INDIAN ARCHAEOLOGICAL INSTITUTE

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KING'S MARK RESOURCE CONSERVATION AND DEVELOPMENT AREA

Victor Allan, Chairman, Executive Committee
Stephen Driver, ERT Committee Chairman
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Staff Administration Provided By

NORTHWESTERN CONNECTICUT REGIONAL PLANNING AGENCY

Leicester H. Handsfield, Chairman
Charles A. Boster, Director
Richard Lynn, ERT Coordinator
Rebecca West, ERT Cartographer
Irene Nadig, Secretary
Patricia Dyer, Secretary

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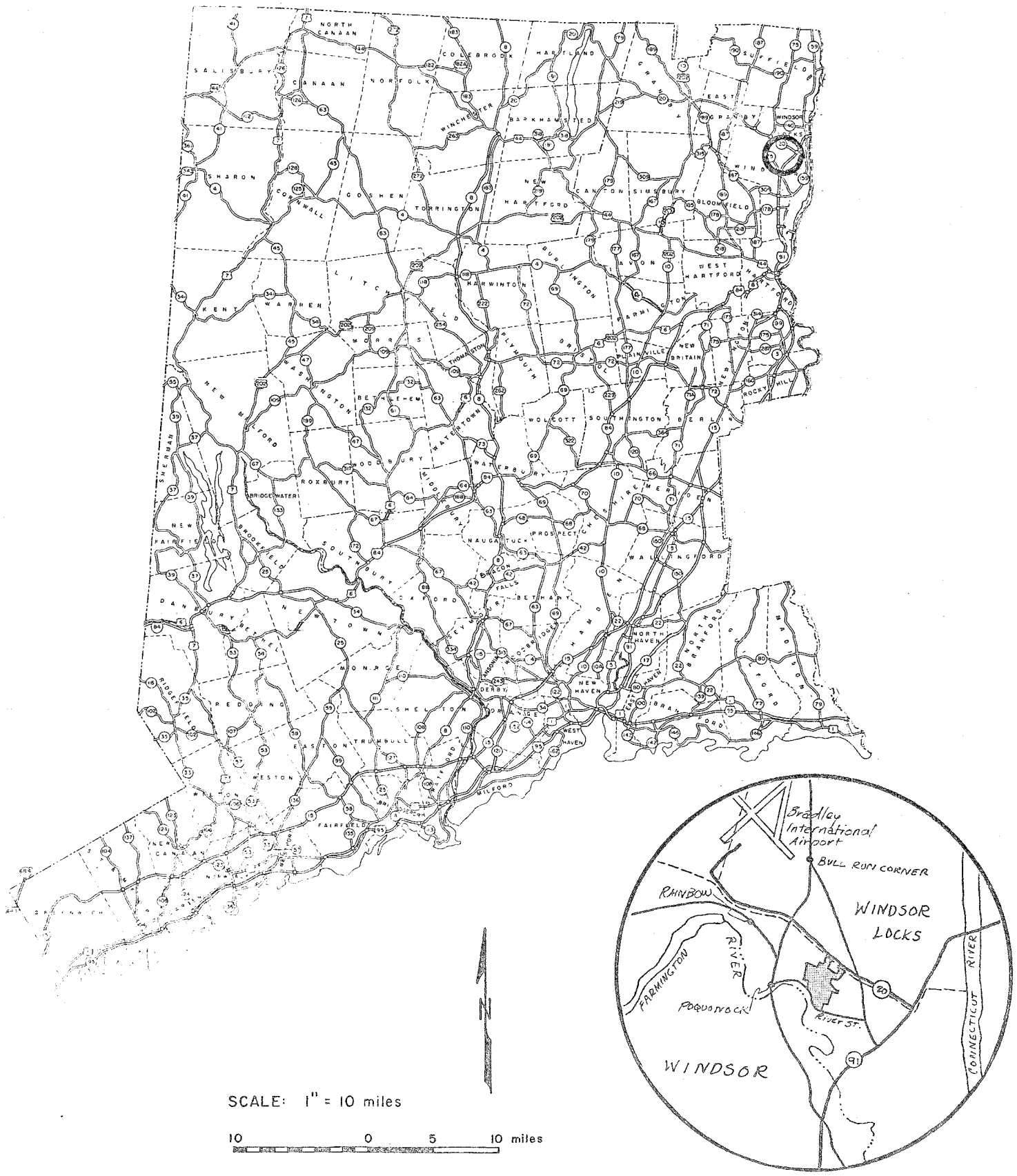
RIVER STREET SUBDIVISION
WINDSOR, CONNECTICUT



ENVIRONMENTAL REVIEW TEAM REPORT
ON
RIVER STREET SUBDIVISION
WINDSOR, CT.

I. INTRODUCTION

The Windsor Inland Wetlands Commission is presently reviewing an application for subdivision of ± 155 acres of land in the northcentral portion of town. The subject site is bordered on the south by River Street, on the west by residential land, on the north by the Bradley Field Connector, and on the east by tobacco fields (see Figure 1). The land is mostly wooded and characterized by several steep ravines which traverse the property.

The subdivision plan for the proposed "River Street Subdivision" calls for ± 120 units. These are to consist of ± 85 single family homes and ± 35 condominium units. Access to the project is to be provided by re-routing River Street and constructing a series of cul de sacs and loop roads off River Street (see Figure 2). Access will also be available off Stage Coach Road to the north of the project site. The project is to be serviced by public sewers and water.

The Inland Wetlands Commission from the Town of Windsor requested the assistance of the ERT to help the Town in analyzing the development proposal. Specifically, the Team was asked to identify the natural resource base of the site, to comment on the suitability of the land for the proposed project, and to provide an objective evaluation of the potential development impact. Of major concern to the Inland Wetlands Commission is the proposed crossing of the steep ravines on the property.

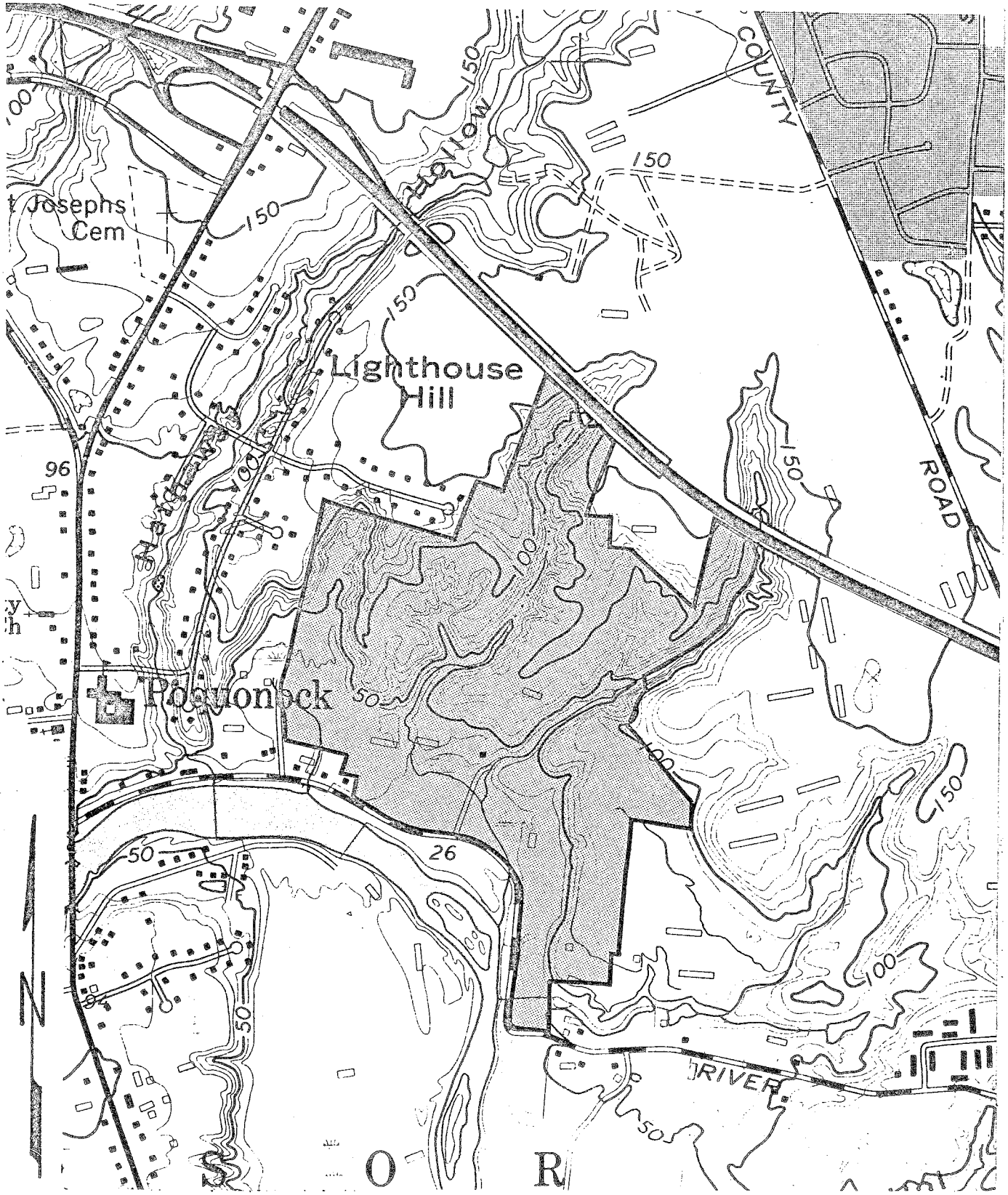
The ERT met and field reviewed the site on August 12, 1980. Team members for this review consisted of the following:

Vern Anderson	District Conservationist	U.S.D.A. Soil Conservation Service
Steve Jackson	Wildlife Biologist	Connecticut Department of Environmental Protection
Robert Orciari	Fishery Biologist	Connecticut Department of Environmental Protection
Rob Rocks	Forester	Connecticut Department of Environmental Protection
A. Carl Stamm	Recreation Specialist	Connecticut Department of Environmental Protection
Mike Zizka	Geohydrologist	Connecticut Department of Environmental Protection

Prior to the review day, each team member was provided with a summary of the proposed project, a checklist of concerns to address, a detailed soil survey map, a soils limitation chart, a topographic map, and a simplified site plan of the development proposal. Following the field reivew, individual reports were prepared by each team member and forwarded to the ERT Coordinator for compilation and editing into this final report.

FIGURE I.

TOPOGRAPHIC MAP



0 1/4 1/2 mile

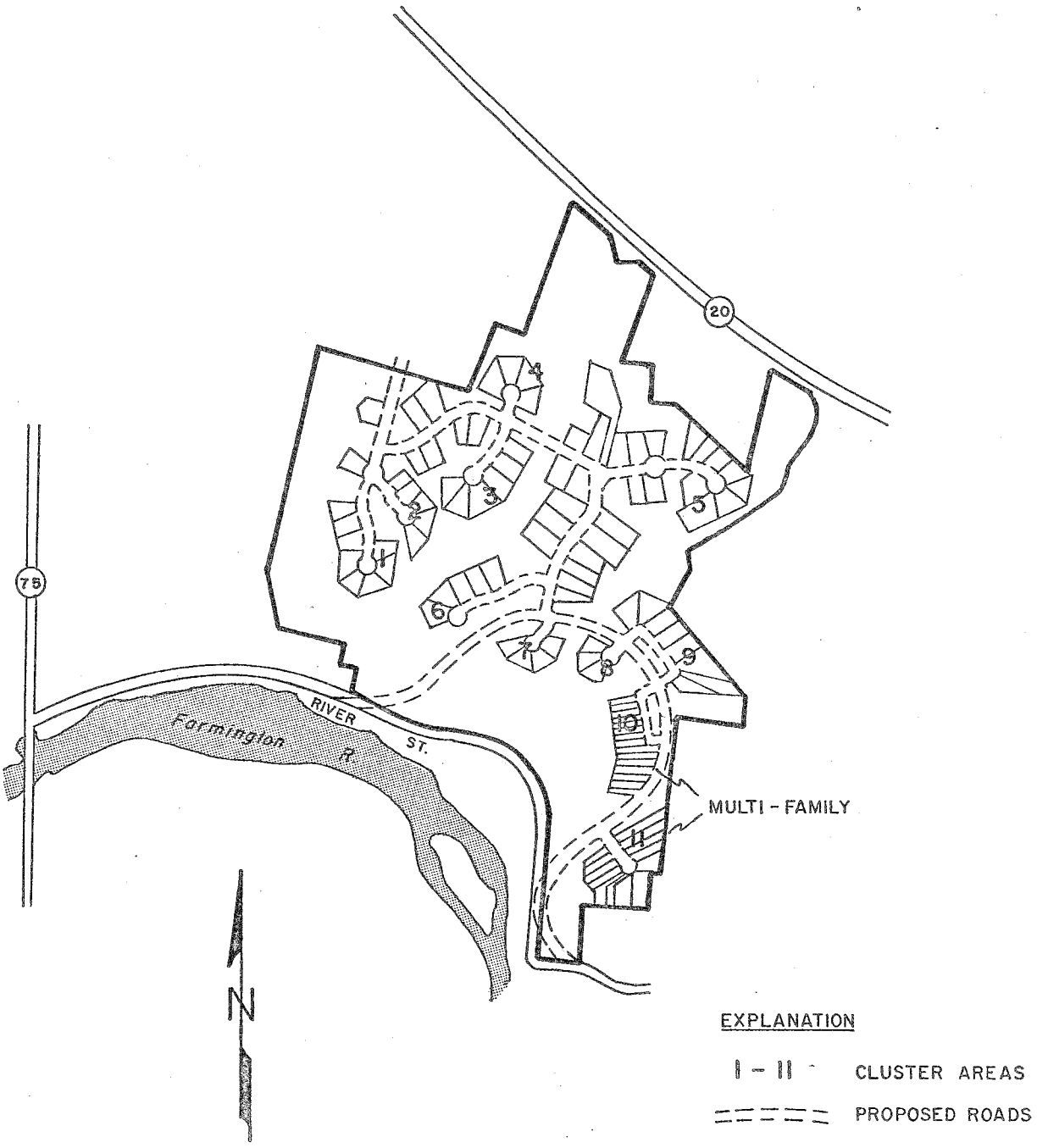
0 1000' 2000' 3000'

SCALE: 1" = 1000'

FIGURE 2.

SIMPLIFIED SITE PLAN

* ADAPTED FROM DEVELOPER'S SITE PLAN OF 7/1/80



This report presents the team's findings and recommendations. It is important to understand that the ERT is not in competition with private consultants and hence does not perform design work or provide detailed solutions to development problems. Nor does the team recommend what ultimate action should be taken on a proposed project. The ERT concept provides for the presentation of natural resources information and preliminary development considerations--all conclusions and final decisions rest with the town and developer. It is hoped the information contained in this report will assist the Town of Windsor and the landowner/developer in making environmentally sound decisions.

If any additional information is required, please contact Richard Lynn, (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P. O. Box 30, Warren, Connecticut 06754.

* * * * *

II. GEOLOGY

The River Street site is located in an area encompassed by the Windsor Locks topographic quadrangle. A bedrock geologic map, by R. W. Schnabel and J. H. Eric, and a surficial geologic map, by R. B. Colton, of the quadrangle have been published by the U. S. Geological Survey. Bedrock appears to be deeply buried by unconsolidated materials (overburden) and is not discussed further in this report.

The topography of the site consists of highly dissected glacial terraces and a modern floodplain. The terraces, composed largely of sand with some gravel, are interpreted as deltaic deposits, which formed when preexisting glacial streams emptied into a glacial lake in the northern Connecticut Valley. The sudden change in stream velocity caused the streams' loads of suspended materials to drop out at the lake margin. In some places, the deltaic sediments were deposited over thick accumulations of alternating silt and clay layers. Ravines, or "hollows", in nearby areas of the Town of Windsor, but not on the site itself, have shown the presence of these finer-grained materials beneath the sand and gravel of the terraces. The Team observed only sand in the slopes of the ravines on the site. Colton, however, has reported encountering till beneath the terrace sediments in the westernmost ravine on the property. Till is a nonsorted sediment that was deposited directly from glacier ice; it consists of rock particles and fragments ranging in size from clay to boulders and ranging in shape from flat or angular to rounded.

The lower terraces on the property were formed by the lateral cutting of the prehistoric Farmington River. Following the disappearance of ice from the area, the river began cutting down through the thick deltaic deposits. Occasional pauses in the downward development of the valley were accompanied by sideward migration of the river (a process occurring today on the floodplain just southeast of Poquonock). Caps of silt, sand, and clay up to 20 feet thick were deposited on the newly eroded terraces by the river during these phases. The modern Farmington River floodplain is covered by more recent deposits of silt, sand, gravel, and clay. The surficial geology of River Street site is shown in Figure 3.

III. HYDROLOGY

The site lies immediately north of, and is entirely within the watershed of, Farmington River. Intermittent streams flow through a system of deep, precipitous ravines which originate just north of the site. Much of the present frontage of the property on River Street lies within the floodplain of Farmington River and, according to local residents, is flooded every year. The U. S. Department of Housing and Urban Development has issued Flood Boundary and Floodway Maps for the Town of Windsor; a flood boundary map of the River Street site, adapted from the HUD studies, is included as Figure 4 of this report. The developers plan to reroute River Street so that it would no longer be affected by the more frequent floods. Most of the new section of road would lie outside the HUD - designated floodway; however, a small portion of road at the southern tip of the site would have to be built on fill within the floodway. The "floodway" is defined as the area of land bordering a stream that must be kept free of encroachment in order to assure that the 100-year flood levels would not be raised significantly (more than one foot). Since the proposed road construction involves a violation of

FIGURE 3.

SURFICIAL GEOLOGY

(Adapted from U.S.G.S. Map GQ-137)

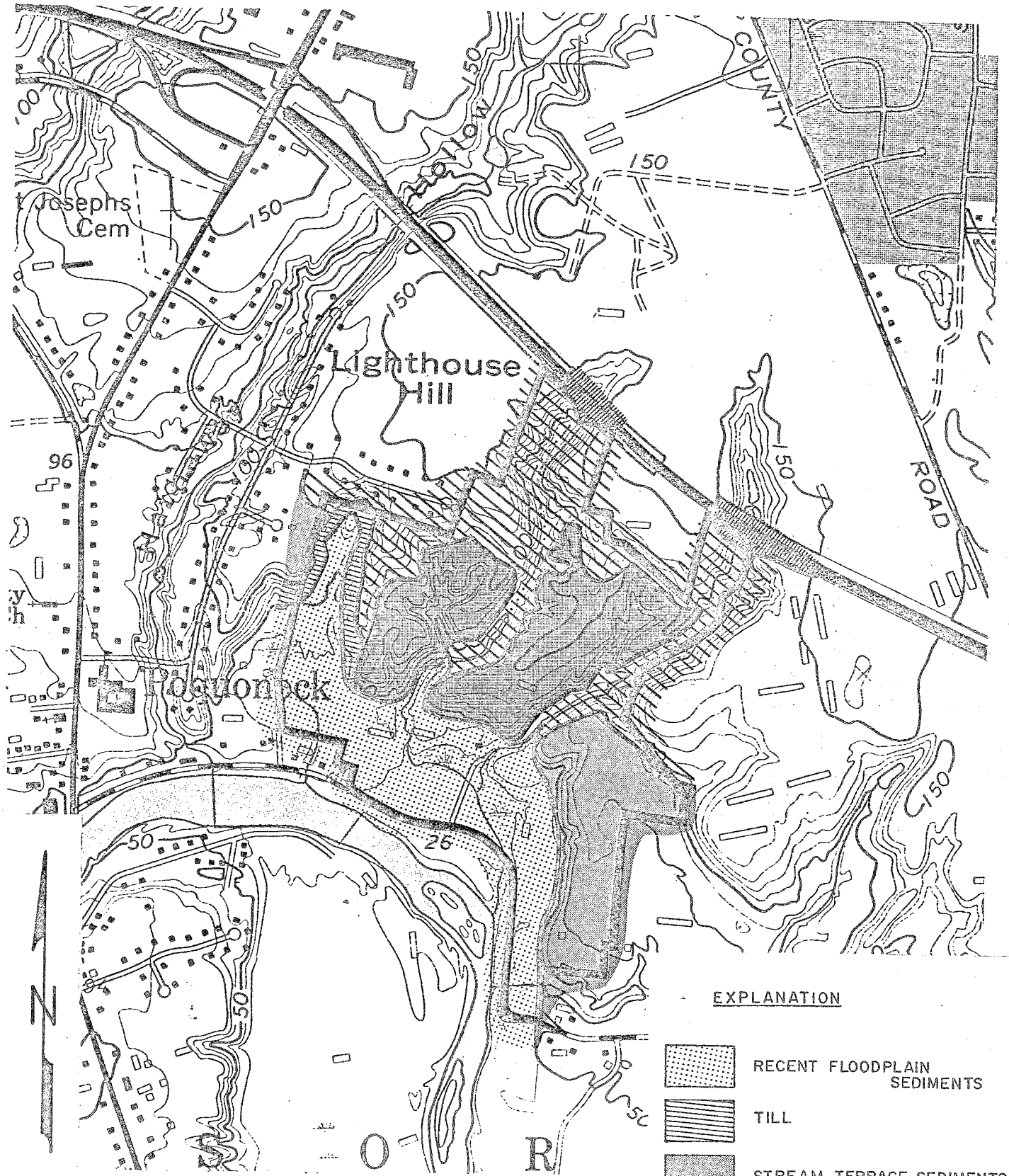
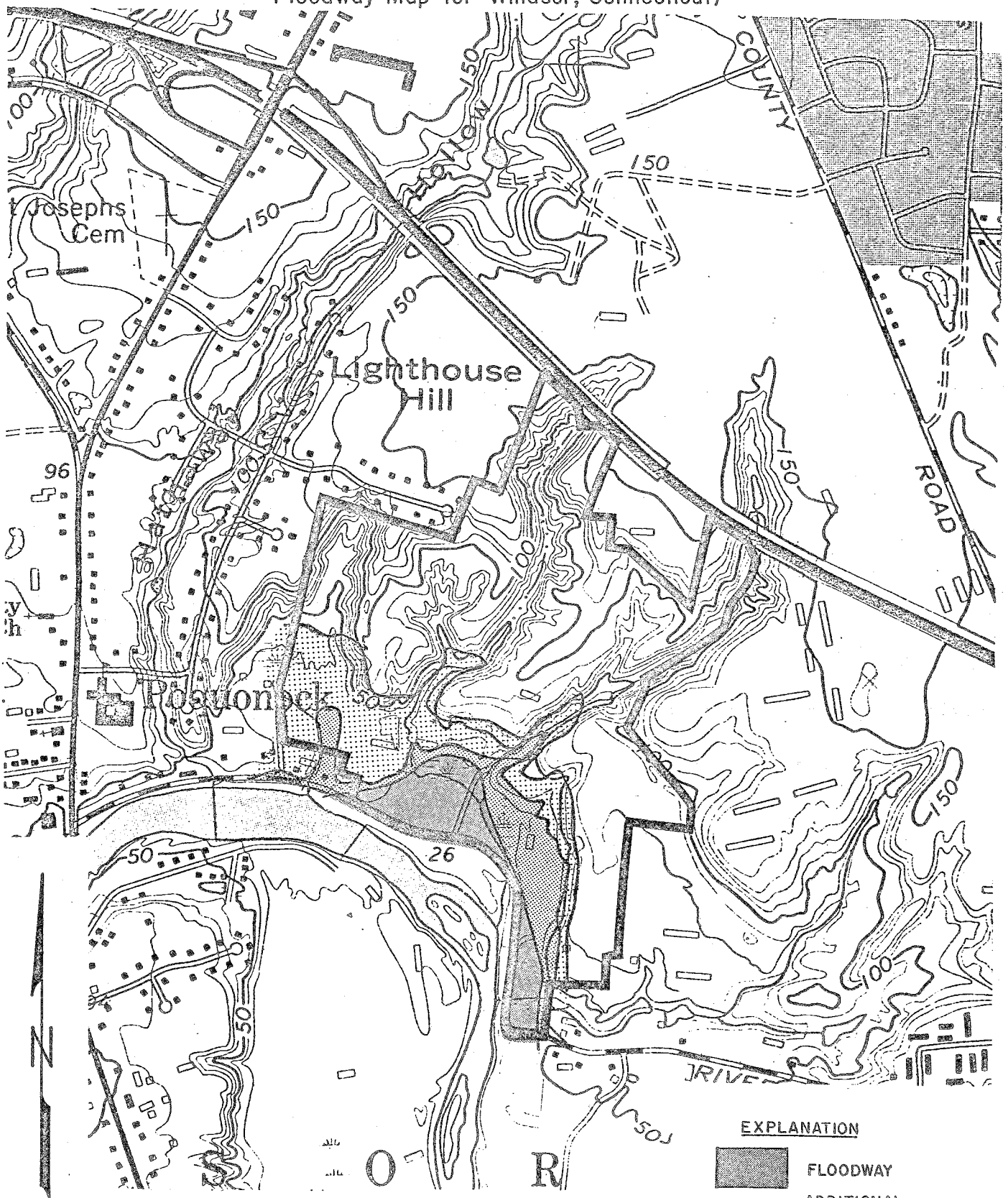


FIGURE 4.

FLOOD HAZARD ZONES

(Adapted from HUD Flood Boundary and Floodway Map for Windsor, Connecticut)



the floodway concept and since the relocation would be necessary only to provide River Street access to the proposed subdivision (other River Street properties could be reached by alternate, albeit possibly longer, routes during floods), the Town should seriously consider this aspect of the proposal.

The change in land usage accompanying development of the site will lead to an increase in the surface runoff generated during periods of precipitation. This increase would result from the removal of vegetation and from the covering of soils with impermeable surfaces. The magnitude of the increase would depend upon the extent to which the land is affected. Because the typical soils on the site are highly permeable, the runoff increase will be greater on this parcel of land than it would be in many other areas. However, these soils lend themselves to greater flexibility in dealing with the increases.

The developers have proposed a storm drainage system wherein catch basins would be connected to dry wells. Such a system would counter part of the effect of the impermeable surfaces by returning surface runoff directly to the ground. The layout of the proposed subdivision, however, will prevent the system from handling all runoff from the subdivision. The basic problem is that the subdivision roads tend to follow the crests of the dissected terraces with lot boundaries extending back toward the ravines. Hence, natural drainage from the major portions of most lots would be toward the rear of the lots rather than toward the road and the storm drainage system. This situation would very likely lead to new gullying and soil instability on the slopes of the ravines. To counter this effect, the houses should have driveways and storm gutters that are either directly connected to separate dry wells or the storm drainage system in the roads. If connected to the roads, the lot topography must be changed so that the driveways and homesites slope toward the road. Under this alternative, houses should be kept as close to the road as possible to minimize the necessary grading. Under either alternative, the rear portions of lots should be left alone as much as possible.

The Team must emphasize that the drainage measures discussed above are seen not simply as helpful suggestions for this site; rather, the measures may have critical importance in the prevention of serious erosion problems or other hazards. In addition, the Team suggests that any lots in which houses would be placed immediately at the edge of a ravine be reevaluated: serious erosion of the slopes and possible soil slumping could occur during periods of heavy rainfall when the storm gutters of the houses are overtaxed and runoff is directed down the slopes. The Team wishes to note that the developers idea of reserving much of the land area of the site by conservation easements, deeding to the Town, or other devices is excellent; providing the conservative regulations involved can be effectively enforced.

IV. SOILS

A soils map of the subject site is presented in the Appendix of this report. The Appendix also contains a soils limitation chart which identifies limiting factors for various land uses on individual soil types. By comparing the soils map with the soils limitation chart, one can gain an appreciation of the suitability of this site for residential development according to Soil Conservation Service criteria.

Basically, the River Street site consists of two types of soils: the upland soils which have a contrasting topography interrupted by frequent natural drainage courses, and the lowland soils which are nearly flat and located alongside the Farmington River.

The upland soils are deep and excessively drained. These soils are generally suitable for residential development except where steep slopes present a problem. Care must be taken during the excavation of these soils to avoid cave-ins.

The lowland soils consist predominantly of wetland and/or floodplain soils. These soils therefore have limited land use potential. Building construction in these soils should be excluded to minimize problems; there is some potential for recreational use and wildlife use of these soils.

In general, the site plan layout is sensitive to soil limitations. Most significantly, the subdivision plans show the wetland and floodplain soils being disturbed as little as possible. Care should be taken to avoid the encroachment of house lots into floodplain and wetland areas. This will help ensure the preservation and protection of these soil areas.

Engineering Considerations

The runoff flows on this parcel can generally be divided into three subwatersheds that empty into the Farmington River. Roads of the subdivision are proposed to cross the brook areas of these watersheds at five different points. When passing across the ravines with at least two of the crossings, substantial fill material will be needed unless road cuts are made on each bank to allow the roads to be installed at a lower elevation. A good example in Windsor of what the proposed ravine crossings will "look like" is provided by the Pioneer Drive crossing of Hollow Brook. It would be desirable to slope the proposed road banks at River Street subdivision more gently than those on Pioneer Drive to avoid erosion problems. Sideslopes of the bank should be at least 2:1 and preferably 3:1 to allow reasonable mowing and maintenance. Seeding of gentle slopes would be more desirable than rip-rapping steeper slopes. If the sideslopes are seeded, a minimum of 4 inches of topsoil should be placed over the fill material. Regardless of the design of the ravine crossings, it will be very important to plan for the effective control of erosion and sedimentation both during and after construction.

The proposed re-routing of River Street will pass over floodplain and inland-wetland soils. The proposed re-routing will entail three brook crossings within the floodplain area. When crossing the brooks, it will be important to install culverts under the roads at the brook crossings that are properly sized to handle storm water runoff during peak storms assuming full development of the total watershed acreage.

Roads will need to be elevated high enough from the wetlands to allow good road drainage. All unstable material, such as topsoil, should be removed before any fill material for the road is brought in. The chance of road wash out always exists if a major flood of the Farmington River occurs.

If additional runoff waters flow into the watercourses as a result of the development, consideration should be given to rock riprapping the watercourse bottoms and sideslopes, especially on the steeper grades.

All storm drains with surface outlets should have adequate controls such as energy dissipaters to decrease erosion at the outlets.

Erosion and Sediment Control

A complete erosion and sediment control plan should be prepared prior to construction to ensure that the erosion and sedimentation generated with development of this site is minimized.

Techniques for effective erosion and sediment control are presented in the "Erosion and Sediment Control Handbook - Connecticut" (U.S.D.A. Soil Conservation Service, 1976) available from the Hartford County Soil and Water Conservation District office in Windsor.

In the preparation of this plan, consideration should be given to the following:

- Homes and roads should be constructed in phases. In this way, each phase could be protected from erosion and sedimentation losses before moving to the next phase.

- Emphasis should be given to planning preventative measures for sediment losses at each site. If structural and vegetative measures are provided at each site as needed, it will then be easier to manage downstream sediment losses.

- It may be necessary to install one or more properly located sediment basins to collect sediment deposits during construction, especially if sediment losses are not kept to a minimum at each site.

- Disturbed areas should be regraded and revegetated as soon as possible. It should be noted that the droughty soils on the uplands of this property will limit the choice of trees, shrubs, and grasses to plant (i.e. drought resistent species should be favored).

V. VEGETATION

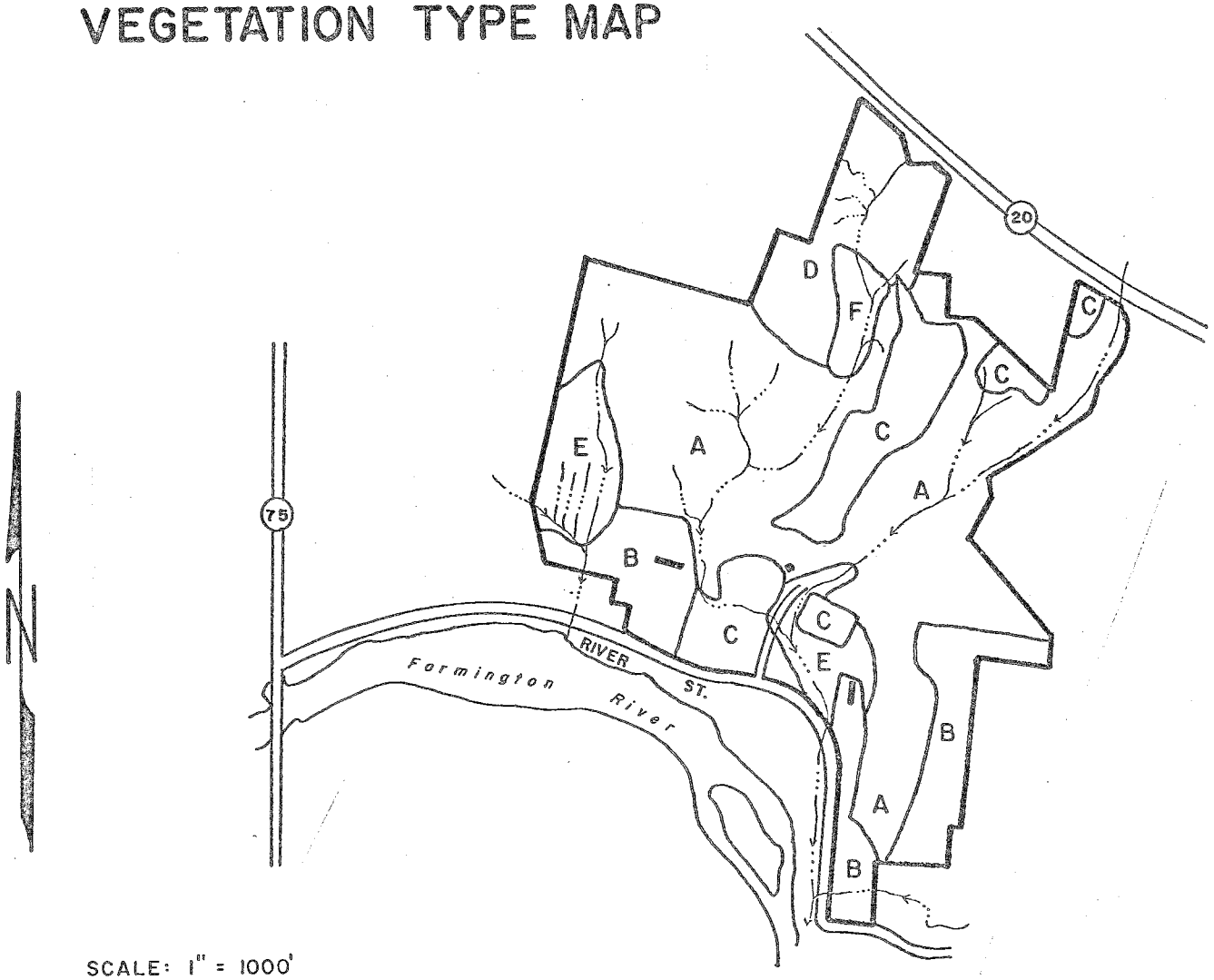
The 155± acre tract being proposed for development may be divided into six vegetation types. These include: two mixed hardwood stands totaling 93± acres; Agricultural land, 24± acres; old field, 22± acres; hardwood swamp, 12± acres; and a hemlock stand totaling 4± acres. Figure 5 shows the location of these vegetation types.

Vegetation damage caused by the 1979 tornado is widespread throughout this tract. As a result of this widespread damage, trees which are undamaged and healthy have unusually high aesthetic value and should be retained if possible.

Salvage of the damaged trees should take place as soon as possible and preferably prior to development. Clearing in ravine areas should be avoided to limit chances of water quality degradation.

FIGURE 5.

VEGETATION TYPE MAP



SCALE: 1" = 1000'

0 1/4 1/2 mile

0 1000' 2000' 3000'

LEGEND

ROAD

PROPERTY BOUNDARY

VEGETATION TYPE BOUNDARY

STREAM

BUILDING

VEGETATION TYPE DESCRIPTIONS*

TYPE A Mixed hardwoods, 76 acres, tornado damage widespread, understocked, pole to sawtimber size.

TYPE B Agricultural land, 24 acres.

TYPE C Old field, 22 acres, brush species

TYPE D Mixed hardwoods, 17 acres, fully stocked, pole to sawtimber size.

TYPE E Hardwood swamp, 12 acres, some tornado damage, stocking variable, sapling to pole size.

TYPE F Hemlock, 4 acres, fully stocked, pole to sawtimber size.

* Seedling size - trees less than 1 inch in diameter at 4½ feet above the ground (D.B.H.)
Sapling size - trees 1 to 5 inches in D.B.H.
Pole size - trees 5 to 11 inches in D.B.H.
Sawtimber size - trees 11 inches and greater in D.B.H.

Vegetation Type Descriptions (refer to Figure 5)

TYPE A. Mixed Hardwoods. Tornado damage is widespread in this 76± acre stand. The vegetation on the more exposed areas along hilltops has for the most part been leveled into a tangle of downed trees. Over all, this stand is understocked with pole to sawtimber-size red oak, black oak, white oak, black birch, shagbark hickory and red maple. The understory is made up of witch hazel, black birch seedlings, hemlock seedlings, flowering dogwood, mountain laurel and mapleleaved viburnum. Spice bush, American elm and arrowwood are present in close proximity to the ravines which pass through this stand. Ground cover consists of grasses, club moss, Virginia creeper, hay scented fern, Christmas fern, and wild saspa-rilla. Cinnamon fern, sensitive fern, horsetails, jewelweed, skunk cabbage and false hellebore are abundant in the ravines.

TYPE B. Agricultural Land. Approximately 24 acres of this tract are at present cultivated with vegetable and tobacco crops.

TYPE C. Old Fields. Old fields totaling 22± acres are scattered throughout this property. Shrub species including gray stemmed dogwood, multiflora rose, arrow-wood, maleberry and highbush blueberry are present. The following is a partial list of wildflowers and weed species observed during the field investigation:

Asiatic dayweed	false Solomon's seal	pokeweed
bittersweet night shade	fleabane	Queen Anne's lace
blue curls	goldenrod	raspberry
blue vervain	great ragweed	round-headed bush clover
boneset	groundnut	self-heal
bouncing bet	hawkweed	Solomon's seal
chicory	horse balm	steeple bush
common mullien	Joe-pye weed	touch-me-not
cow vetch	knotweed	white snakeroot
deer tongue	milkweed	whorled loosestrife
dog bane	morning glory	wild cucumber
elderberry	New York ironweed	wild sensitive plant
enchanters night shade	pale leaved sunflower	wild strawberry
evening primrose	pale touch-me-not	yarrow

TYPE D. Mixed Hardwoods. Healthy, pole to sawtimber-size red oak, black birch, paper birch and occasional American beech, white ash and black cherry are pre-sent in this 17± acre fully-stocked stand. The understory is dominated by maple-leaved viburnum, hardwood tree seedlings and scattered patches of mountain laurel. Ground cover is made up of sedges, club moss, Indian cucumber root, Virginia creeper, Solomon's seal and Canada mayflower.

TYPE E. Hardwood Swamp. This 12± acre area has been damaged by the tornado. In places, windthrow of the larger trees is complete. At present, stocking is extremely variable. It ranges from over-stocked in places untouched by the tornado to under-stocked where windthrow is extensive. Sapling to pole-size red maple are present with scattered white ash. Spice bush and red maple sprouts are becoming dense. Skunk cabbage, sedges and false hellebore form the ground cover in this area.

TYPE F. Hemlock. Pole to sawtimber-size hemlock and scattered hardwoods in-cluding black birch, black oak and red maple are present in this 4± acre fully-stocked stand. Hemlock seedlings, hardwood tree seedlings, witch hazel and

patches of mountain laurel make up the understory in this stand. Ground cover vegetation is sparse, however patches of Christmas fern and Canada mayflower are present.

Forest Management

Tornado damage over much of this tract (especially in vegetation type A), has severely reduced the aesthetic value of the majority of the trees. The large, healthy trees in vegetation type A which have not been damaged by the tornado should be retained to the greatest extent possible for their high aesthetic and shade value.

The trees which are to be retained for their aesthetic value should be temporarily but clearly marked so that they can be more easily avoided during construction practices. Special care should be taken near the hemlock trees (vegetation type F) because of their shallow root systems and high susceptibility to sunscald.

Trees in general are very sensitive to the condition of the soil within the entire area under their crowns. Development practices near trees, such as excavating, filling and grading for construction of roadways and buildings, may disturb the balance between soil aeration, soil moisture level and soil composition. These disturbances may cause a decline in tree health and vigor, potentially resulting in tree mortality within three to five years. Mechanical injury to trees may cause the same results. Dead and damaged trees reduce the aesthetic quality of an area, and may become hazardous and expensive to remove if near buildings, roadways or utility lines.

A commercial salvage operation to remove the tangle of damaged and down trees should be implemented as soon as possible. This salvage operation will improve the over-all aesthetics of the areas damaged by the tornado. It will also reduce the potential hazard of damaged trees and branches falling. This operation will produce between 8 and 12 cords of fuelwood per acre where damage has occurred. Main haul roads for this operation should be laid out to coincide with future development roads.

Clearing of vegetation in the steeply sloped ravines on this tract has potential to cause severe erosion problems, which may in turn lower the water quality of the tract's streams. At present the undisturbed vegetative cover and litter in these areas are able to adequately hold the soil and effectively reduce overland transport. Once the vegetative cover is disturbed (usually as a result of the access roads which are built to remove the vegetation) the soil is no longer held by the vegetation, and surface runoff may start the erosion process. The steep slopes and highly erodible nature of the soils in the ravine area make avoidance of vegetation clearing in this area desirable.

The clearing of vegetation in the less steep areas of this property should have a much lower potential to accelerate erosion. Revegetation of cleared areas as soon as possible with grasses will help to lessen potential erosion problems.

VI. WILDLIFE

Wildlife habitats on this property include open fields at high elevation, open fields within the floodplain, wetlands, and woodlands.

Open fields at high elevation: Currently these fields are not exceptional as wildlife habitat. A good variety of fall and summer foods exist in the area, however, winter foods are limited. These areas receive considerable use from deer. Former use of these areas as agricultural fields provided substantially more food sources. The area has good potential for wildlife management.

Open fields in floodplain: Excellent wildlife habitat is provided by this area with ample food and cover for a great variety of wildlife. Tangles of grape, false climbing bunch wheat, and other vines provide excellent cover.

Wetlands: Good interspersion of wetlands in the floodplain areas provide some additional wildlife habitat variety. The value of wetlands would be increased with the addition of open water.

Woodlands: Woodlands at high elevations are on very sandy soils. Sandy soils are dry and are generally not highly productive from a wildlife standpoint. The small stream valleys have considerably more moisture and wildlife possibilities. These valleys also provide access to most areas of the property for wildlife. Thus some of the best food and cover may be in the floodplain and valleys, but when food supplies or weather warrents movement into the field or woodlands at higher elevations, access in good cover is available.

Effect of proposed development: If the proposed open space is not developed and activities are restricted to control soil erosion, wildlife would be minimally affected by this project. Sufficient open space is available in the desired locations to provide good habitat for wildlife. The increase in human activity however, will have its effects in the developed areas. With an increase in human activity comes a decrease in wildlife use.

Alternative Management: From the wildlife standpoint a decrease in the number of units would be desirable. Planting in conservation open space areas for wildlife could increase songbird use. Developing lawns or maintaining those areas now in dry old pasture would be desirable. Conservation easements or town ownership areas should not completely restrict the cutting of trees; this will prevent desirable woodland and wildlife management. The open space in the floodplain areas should not be allowed to grow up to total woodland; the overgrown fields now present are much more desirable wildlife habitat.

VII. FISHERIES

Located within the proposed River Street Subdivision are two small brooks that join just above River Street. A very small brook is also located in the southwestern corner of the property. The brooks have sandy bottoms, which would be lacking in fish food organisms. No species of fish were observed in the brooks. Therefore, they have rather limited fisheries value. The primary importance of the brooks is that they provide cool water to the lower Farmington River during the summer. This addition of cool water would benefit cold water

species of fish, such as trout and Atlantic salmon. The surrounding areas of the brook mouths may provide microhabitats for these cold water species, when water temperatures in the lower Farmington River exceed their upper tolerance limits. Stocked trout, which have moved down river, sea-run brown trout, and returning adult Atlantic salmon would likely hold in these cool water zones, during periods of hot weather.

Considering the great value of even one adult Atlantic salmon, the brooks should be protected from alterations that would cause their waters to become warmed during the summer. Therefore, it is recommended that no ponds be built on the brooks, rip-rap be limited to only where it is essential, and shade from a green belt of natural vegetation be maintained.

VIII. RECREATION

Most of the open space designated in this subdivision consists of steeply sloping land, wetlands, and floodplain areas. In general, these areas have very limited recreational use potential. They do however provide some opportunities for passive recreation (birdwatching, hiking, etc.).

There are two areas in the designated open space land which do have potential for active recreational development. These areas are identified as NsA on the soils map (see Appendix). Although these soil areas have a seasonally high water table, the soils are nonetheless suitable for a wide range of recreational activities including ballfields, playgrounds, picnic areas, community gardens. Drainage may be necessary to develop these areas for hard-surface courts (tennis, basketball courts) and to construct any buildings.

It would be desirable to maintain access to the Farmington River along this section of River Street to allow use of the existing canoe launch area.

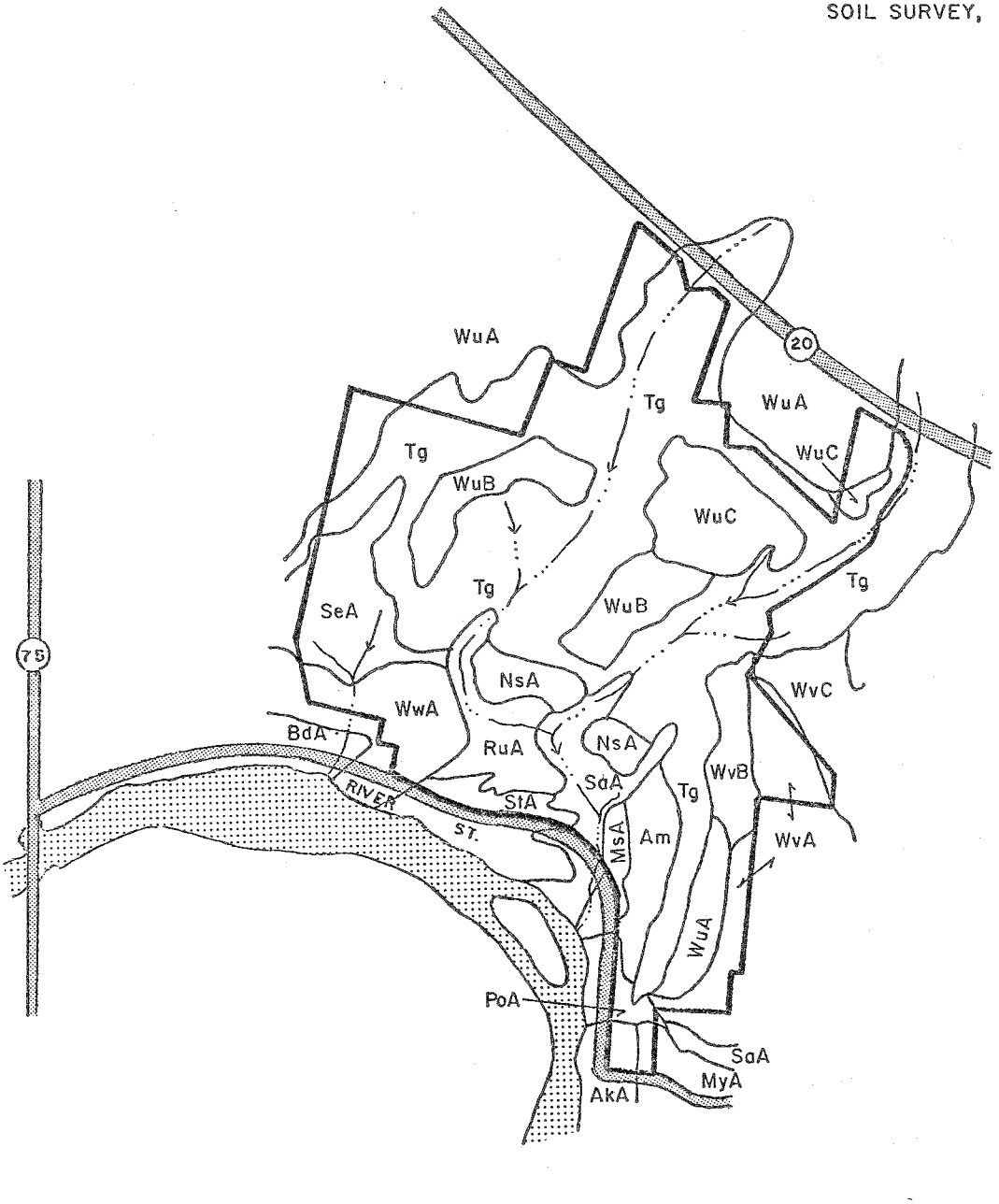
The steep banks of the ravines on this property may become serious erosion problem areas, even if left in woodland and restricted to open space use. The resident population, especially children, will be drawn to the brooks and ravines as a play area. This may cause steep erosion gullies due to the nature of the soil and the steep topography. One way to control this potential problem would be to fence the back of those housing units near the steep ravines. Alternately, definite walkways could be installed following the contours etc. and residents of the subdivision could be encouraged to utilize these trails to minimize erosion and sediment problems.

* * * * *

IX. APPENDIX

SOILS MAP

ADAPTED FROM HARTFORD COUNTY
SOIL SURVEY, U.S.D.A. - S.C.S.



SCALE: 1" = 1000'

0 1/4 1/2 mile
0 1000' 2000' 3000'

"RIVER STREET SUBDIVISION" - SOILS LIMITATION CHART

MAP SYMBOL	SOIL NAME	SHALLOW EXCAVATIONS	DWELLINGS W/ BASEMENTS	ROADS OR DRIVEWAYS	LAWNS & LANDSCAPING
AKA	Agawam very fine sandy loam, overflow, 0-3% slopes	Slight	Slight	Slight	Slight
Am*	Alluvial land, 0-3% slopes	Severe; Floods, Wetness	Severe; Floods, Wetness	Severe; Floods, Wetness	Severe; Floods, Wetness
BdA*	Bermudian sandy loam, 0-3% slopes	Severe; Floods	Severe; Floods	Severe; Floods	Moderate; Floods
MsA	Merrimac fine sandy loam, overflow, 0-3% slopes	Severe; Cutbacks cave	Slight	Slight	Slight
MyA	Merrimac sandy loam, 0-3% slopes	Severe; Cutbacks cave	Slight	Slight	Slight
NsA	Ninigret very fine sandy loam, 0-3% slopes	Severe; Wetness	Severe; Wetness	Moderate; Frost action	Slight
PoA*	Podunk sandy loam, 0-3% slopes	Severe; Floods, Wetness	Severe; Floods, Wetness	Severe; Floods	Severe; Floods
RuA*	Rumney sandy loam, 0-3% slopes	Severe; Floods, Wetness, Cutbacks cave	Severe; Floods, Wetness	Severe; Floods, Wetness, Frost action	Severe; Floods, Wetness
SaA*	Saco sandy loam, 0-3% slopes	Severe; Floods, Wetness, Cutbacks cave	Severe; Floods, Wetness	Severe; Floods, Wetness, Frost action	Severe; Floods, Wetness

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MAP SYMBOL	SOIL NAME	SHALLOW EXCAVATIONS	DWELLINGS W/ BASEMENTS	ROADS OR DRIVEWAYS	LAWNS & LANDSCAPING
SeA*	Scarboro loam, 0-3% slopes	Severe; Wetness	Severe; Wetness	Severe; Wetness	Severe; Wetness
StA*	Suncook loamy sand, 0-3% slopes	Severe; Floods, Cutbacks cave	Severe; Floods	Severe; Floods	Moderate; Too sandy
Tg	Terrace escarpments, sand and gravel	Severe; Slope, Cutbacks cave	Severe; Slope	Severe; Slope	Severe; Slope
WuA	Windsor loamy coarse sand, 0-3% slopes	Severe; Cutbacks cave	Slight	Slight	Moderate; Droughty
WuB	Windsor loamy coarse sand, 3-8% slopes	Severe; Cutbacks cave	Slight	Slight	Moderate; Droughty
WuC	Windsor loamy coarse sand, 8-15% slopes	Severe; Cutbacks cave	Moderate; Slope	Moderate; Slope	Moderate; Slope, Droughty
WvA	Windsor loamy fine sand, 0-3% slopes	Severe; Cutbacks cave	Slight	Slight	Moderate; Droughty
WvB	Windsor loamy fine sand, 3-8% slopes	Severe; Cutbacks cave	Slight	Slight	Moderate; Droughty
WvC	Windsor loamy fine sand, 8-15% slopes	Severe; Cutbacks cave	Moderate; Slope	Moderate; Slope	Moderate; Slope, Droughty

"RIVER STREET SUBDIVISION" - SOILS LIMITATION CHART

MAP SYMBOL	SOIL NAME	SHALLOW EXCAVATIONS	DWELLINGS W/ BASEMENTS	ROADS OR DRIVEWAYS	LAWNS & LANDSCAPING
WwA*	Winooski silt loam, 0-3% slopes	Severe; Floods	Severe; Floods	Moderate; Floods	Moderate; Floods

* Inland Wetlands Soils

EXPLANATION OF RATING SYSTEM

1. SLIGHT LIMITATION: indicates that any property of the soil affecting use of the soil is relatively unimportant and can be overcome at little expense.
2. MODERATE LIMITATION: indicates that any property of the soil affecting use can be overcome at a somewhat higher expense.
3. SEVERE LIMITATION: indicates that the use of the soil is seriously limited by hazards or restrictions that require extensive and costly measures to overcome.

NOTE: Limitation Ratings Based Upon U.S.D.A. Soil Conservation Service Criteria.

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, foresters, climatologists, soil scientists, landscape architects, recreation specialists, engineers, and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - a 47 town area in western Connecticut.

As a public service activity, the team is available to serve towns and developers within the King's Mark Area --- free of charge.

PURPOSE OF THE TEAM

The Environmental Review Team is available to help towns and developers in the review of sites proposed for major land use activities. To date, the ERT has been involved in the review of a wide range of significant activities including subdivisions, sanitary landfills, commercial and industrical 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 project site and highlighting opportunities and limitations for the proposed land use.

REQUESTING A REVIEW

Environmental Reviews may be requested by the chief elected official of a municipality or the chairman of an administration agency such as planning and zoning, conservation, or inland wetlands. Requests for reviews should be directed to the Chairman of your local Soil and Water Conservation District. This request letter must include a summary of the proposed project, a location map of the project site, written permission from the landowner/developer allowing the team to enter the property for purposes of review, and a statement identifying the specific areas of concern the team should address. When this request is approved by the local Soil and Water Conservation District and the King's Mark RC&D Executive Committee, the team will undertake the review. At present, the ERT can undertake two reviews per month.

For additional information regarding the Environmental Review Team, please contact your local Soil Conservation District Office or Richard Lynn (868-7342), Environmental Review Team Coordinator, King's Mark RC&D Area, P.O. Box 30, Warren, Connecticut 06754.