

KING'S MARK ENVIRONMENTAL REVIEW TEAM

REPORT FOR



GILBERT AND BENNETT

RENOVATIONS

REDDING, CONNECTICUT

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

GILBERT AND BENNETT RENOVATIONS

REDDING, CONNECTICUT

Environmental Review Team Report

Prepared by the King's Mark Environmental Review Team
of the King's Mark Resource Conservation
and Development Area, Inc.

Wallingford, Connecticut

for the

Redding Conservation Commissions

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

DECEMBER 1988

ACKNOWLEDGMENTS

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

- * William Warzecha, Hydrogeologist
Department of Environmental Protection - Natural Resource Center
- * David Thompson, District Conservationist
USDA - Soil Conservation Service
- * Arthur Mauger, River Specialist
Department of Environmental Protection - Water Compliance Unit
- * Jay Northrup, Flood Specialist
Department of Environmental Protection - Water Resources Unit
- * Jonathan Chew, Regional Planner
Housatonic Valley Council of Elected Officials
- * Richard Carpenter, Executive Director
South Western Regional Planning Agency

I would also like to thank Susan Anderson, Secretary of the King's Mark Environmental Review Team for assisting in the completion of this report.

Finally, special thanks to Reeve Biggers of the Redding Conservation Commission, Felix Charney, F.T. Charney & Company, developer, David Beem, Ferris Architects, architect for the developer, Anthony Russo and John Isbister, Malcolm Pirnie, Inc., engineer for the developer, and John Martin, David Geeza and Alan Kocenko, Gilbert and Bennett, for their cooperation and assistance during this environmental review.

EXECUTIVE SUMMARY

Introduction

The Redding Conservation Commission has requested that an environmental review be conducted on the renovations for Gilbert and Bennett (G&B), an industrial site proposed for commercial and residential development. The site is located in the southwest corner of Town near Ridgefield, Wilton and Weston. The approximately 52-acre site is bisected by the Norwalk River and the Factory Pond impoundment. The site contains many buildings and warehouses, some of which lie close to the river. The G&B factory is a wire mill and includes many buildings with historical value. The surrounding area is the historic district of Redding. Uses of the site have included industrial processing and storage.

The proposed renovations would encompass approximately 335 dwelling units, 229,850 square feet of retail/commercial space, 30 units of elderly housing, associated parking spaces and garages and a sewage treatment plant. Several new roads and road extensions are proposed to serve the development. The developer plans to renovate the historic sections of the factory and add new buildings with the same character.

The primary goal of this ERT is to inventory and assess existing resources occurring on the site and to provide planning information. The Town is looking for an overview of the project and areas which need more research.

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

Setting and Land Use

The site is located in the southwest corner of Redding. The factory is presently a wire mill. Present plans are to convert the existing industrial land to mixed use. Surrounding land uses include industrial, commercial and residential.

Topography

The main topographic features of the site are the Norwalk River and Factory Pond. The slopes are flat to gentle with a cut area near the eastern limits of the site.

Geology

The bedrock on the site is identified as Harrison Gneiss. The depth to bedrock averages 10 feet or less. The site is located near several faults in the bedrock. These faults are no longer experiencing active movement. Because the site is to be served by

sewer and water, bedrock is not expected to pose any problems. Some blasting may be needed in the eastern limits.

The site is covered by stratified drift, which consists of sand and gravel deposits laid down by meltwater streams. Artificial fill covers the southern portions of the site. Borings should be done to test the loading capabilities of the soil and to test for toxic materials.

Hydrology

The site is located within the Norwalk River drainage area. Surface waters are Class B as a result of failing septic systems and industrial discharges. Changing the site from industrial use to mixed uses should decrease this threat to the river. Paved areas will decrease and vegetated areas will increase. The land uses would be cleaner with less industrial runoff. The extension of a sewer line will also decrease the potential for groundwater contamination. Because of the major land disturbance, a detailed erosion and sediment control plan should be designed and enforced to protect the river.

Soil Resources

The site is occupied by Hinckley sandy gravelly loam soils. Hinckley can pose a water quality for on-site discharges because of the rapid permeability, but sewage treatment and stormwater management are proposed. Standard erosion and sediment controls should protect the river and pond from most of the construction. Special precautions will be needed for those buildings spanning the river. The removal of the buildings, the renovation of Factory Pond and the channel work should all occur at the same time, preferably in mid summer. Raising the flood-prone areas is also a concern. The erosion and sediment control narrative must address these areas in detail.

Water Quality

The upper Norwalk River receives discharges from two sewage treatment plants. The Town is currently trying to upgrade these plants to meet the DEP guidelines for water quality. Further down river, the river recovers its diverse biologic community. At the G&B factory, the diversity again diminishes. The Norwalk River is a coldwater fishery which is stocked by the DEP with brown, brook and rainbow trout.

A waste water treatment plant is proposed to serve the site and downtown Georgetown. A waste allocation analysis is needed to predict the maximum amount of waste that can be put into the river without affecting the water quality standards. A worst case scenario, summer drought, is used for the analysis. If the stringent effluent limits are maintained, there should be no significant lowering of water quality downstream of the discharge. Also the industrial wastewater discharge will be eliminated. The flows downstream of the factory must be maintained for the dilution of wastewater.

Stormwater runoff may contain contaminants. The DEP is currently writing stormwater discharge regulations. Some Best Management Practices might include gross particle separators, retention ponds and catchbasins with sumps. At present G&B does not provide stormwater treatment.

Flooding Considerations

The Redding Flood Safety Regulations are more stringent than the National Flood Insurance Program regulations. The regulations for the Town require filling and buildings to be above the Base Flood Elevation (BFE). The line shown on the plan is the 500-year floodplain and not the 100-year. Elements of the plan that might need permits are the lowest floor of the parking garage of the west residences, the renovated structures just below the dam (can be exempt if on the historic register), the "saw-toothed" building, the large building on North Main Street, the culvert under the bridge and the river corridor, any fill below the BFE and any bridges or structural spans over the river.

Where alterations are proposed for the watercourse, it is important that existing and proposed hydraulics calculations are done. Expansion of the banks may reduce flood heights. If this is the case, the Town will have to request a revision of the study. The presence of Stream Channel Encroachment Lines may require permits from the Town, State and Federal Governments.

According to the the DEP Dam Safety Unit, the dam is considered the highest hazard designation. The condition of the dam is good. The high hazard designation means that if it were to fail, the damage could include probable loss of life, major damage to habitable structures, damage to major highways and great economic loss. If the dam is to be altered in any way a permit from the DEP is required.

Threatened and Endangered Plant and Animal Species

According to the DEP - Natural Diversity Database, there are no "Species of Special Concern" or federally listed Endangered Species found in the area.

Planning Considerations

The Towns of Redding, Ridgefield, Wilton and Weston have a strong interest in the coordinated development of Georgetown. The Redding portion of Georgetown is classified as an "Urban Conservation " area by the HVCEO. A minimum of 3 dwelling units per acre is called for to insure residential land is used efficiently. This is denser than the Wilton and Weston portions, but this area contains the denser central sections. At a future date, the SWRPA may rethink its policy, but will consider the available sewer service and the water quality to be important. A scale offered by the HVCEO for maximum density is 8 units per acre.

According to the HVCEO, Georgetown's commercial function is that of a regional retail area. SWRPA recognizes it as a Neighborhood and Area Center. A key to density is the availability of public water and sewer. HVCEO and SWRPA have

different plans for the extension of utilities from the south, but both urge that the wastewater limitations of the Norwalk River be evaluated in cooperation with the DEP. A maximum capacity is suggested for any sewer system in Georgetown. One sewage treatment plant under government control is suggested, rather than one or more under private control. The extension of the water line from Wilton is of concern because it is a regional policy to control development north of Wilton Center.

Since higher densities are needed to allow affordable housing, Redding might consider this need in its plan for Georgetown. A percentage of affordable houses as well as elderly housing could be requested in return for zoning bonuses. This is being considered by the developer and should be encouraged. The development plan should project the future traffic patterns. The traffic analysis should be made regarding the effect of traffic generators on roads and intersections of regional significance.

As the open space component of the Georgetown Plan is formulated, particular attention should be focused upon the future of Factory Pond. What constitutes a reasonable level of public use must be determined, as well as the extent of Norwalk River bank preservation.

TABLE OF CONTENTS

ACKNOWLEDGMENTS	ii
EXECUTIVE SUMMARY	iii
LIST OF FIGURES	viii

INTRODUCTION

Introduction	1
The ERT Process	2

PHYSICAL CHARACTERISTICS

Setting and Land Use	6
Topography	6
Geology	7
Hydrology	10
Soil Resources	13
Soil Conditions	13
Erosion and Sediment Control	13
Water Quality	14
Existing Water Quality Data	14
Streamflow Characteristics	16
Waste Allocation - Norwalk River	17
Stormwater Management	21
Flooding Considerations	22
Threatened and Endangered Plant and Animal Species	26

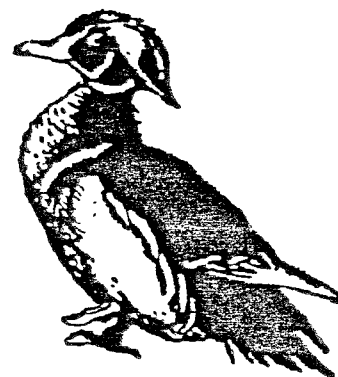
LAND USE AND PLANNING CONSIDERATIONS

Planning Considerations	28
Residential Density	28
Commercial Area Designation	29
Utility Service	30
Affordable Housing Opportunity	31
Roadway Circulation	31
Open Space	32

LIST OF FIGURES

1. Location of Study Site	4
2. Proposed Site Plan	5
3. Topography	8
4. Bedrock Geology	9
5. Surficial Geology	12
6. Wastewater Discharges	15
7. Norwalk River Wilton 7Q10	18
8. Flood Profiles - Norwalk River	25

INTRODUCTION



- 3) Discussion of soil erosion and sedimentation concerns;
- 4) Assessment of the impact of the development on the river and water quality;
- 5) Assessment of the flood potentials of the site and methods to mitigate any potential hazards;
- 6) Assessment of the air quality of the site and potential impacts of the development; and
- 7) Assessment of planning and land use issues, including open space, traffic and access.

THE ERT PROCESS

Through the efforts of the Redding Conservation Commission, the developer's representative and the King's Mark ERT, this environmental review and report was prepared for the Town. This report primarily provides a description of on-site natural resources, and presents planning and land use guidelines.

The review process consisted of four phases:

- 1) Inventory of the site's natural resources (collection of data);
- 2) Assessment of these resources (analysis of data);
- 3) Identification of resource problem areas; and
- 4) Presentation of planning and land use guidelines.

The data collection phase involved both literature and field research. The ERT field review took place on October 24, 1988. Field review and inspection of the proposed development site proved to be a most valuable component of this phase. The emphasis of the field review was on the exchange of ideas, concerns or alternatives.

Mapped data or technical reports were also perused and specific information concerning the site was collected. Being on site also allowed Team members to check and confirm mapped information and identify other resources.

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

Figure 1

LOCATION OF STUDY SITE

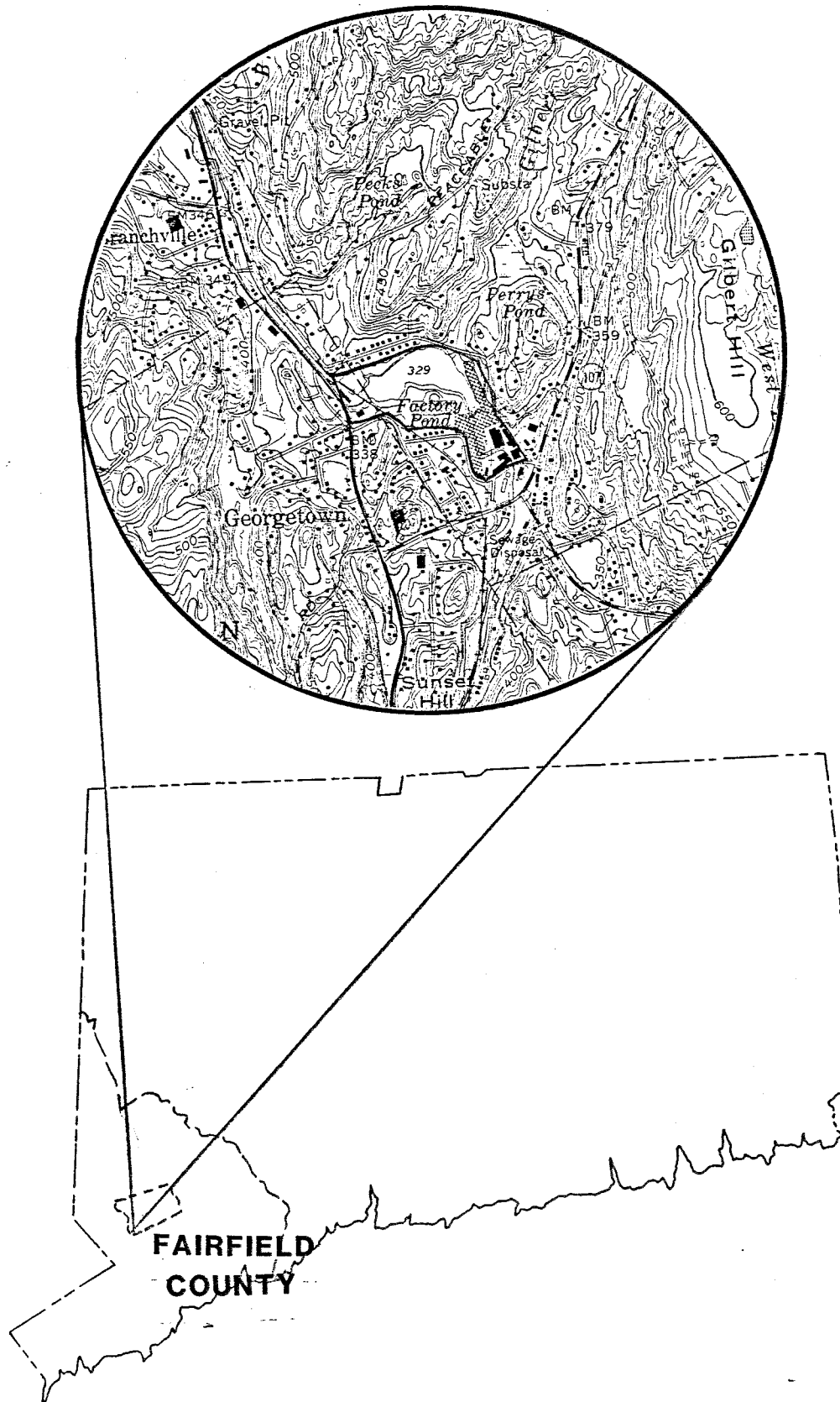
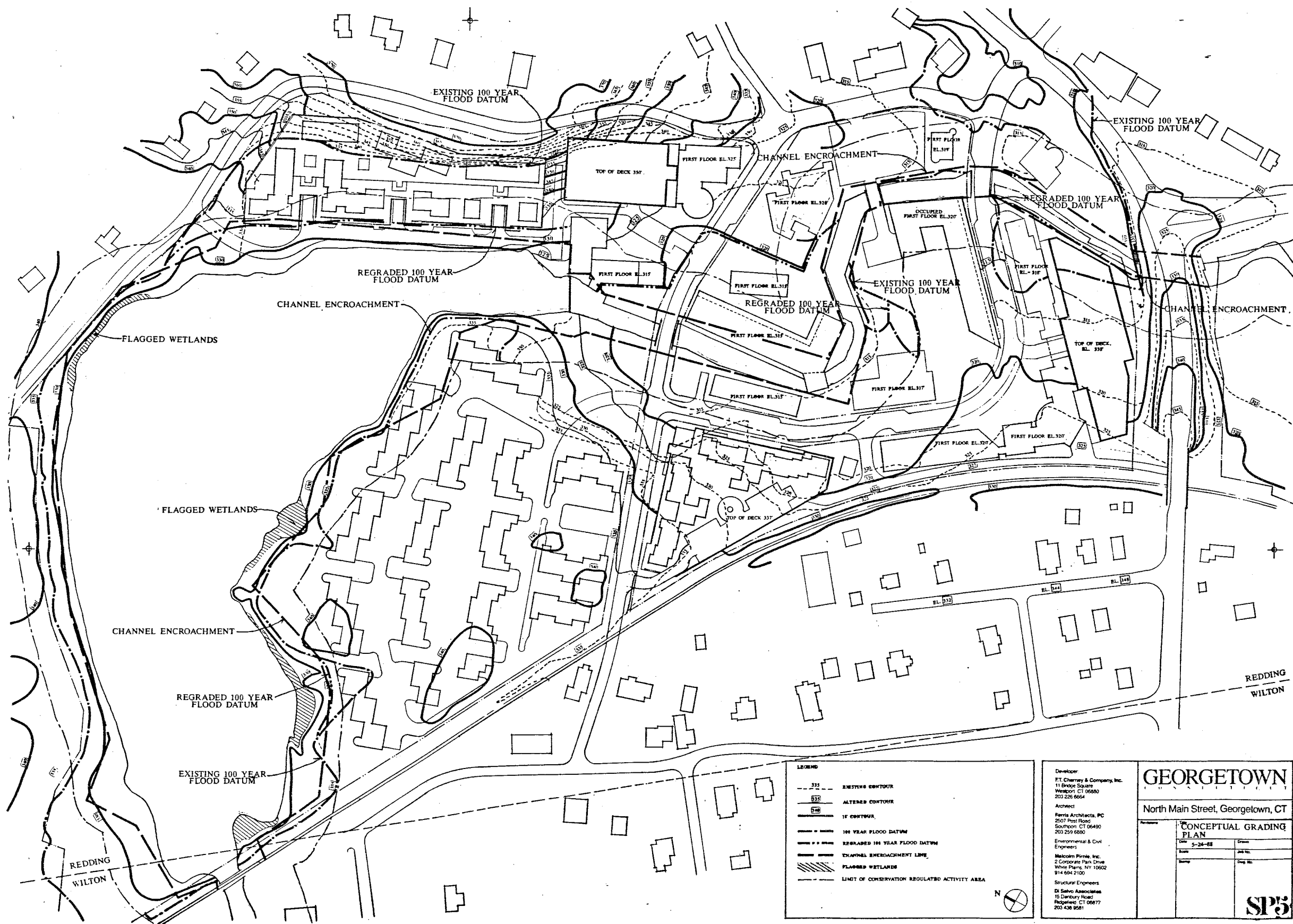


Figure 2



Information from F.T. Charney & Company
Conceptual Grading Plan

GILBERT AND BENNETT
RENOVATIONS

REDDING, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 200'

Proposed Site Plan

LEGEND

- 325 EXISTING CONTOUR
- 320 ALTERED CONTOUR
- IF CONTOUR
- 100 YEAR FLOOD DATUM
- REGRADED 100 YEAR FLOOD DATUM
- CHANNEL ENCROACHMENT LINE
- FLAGGED WETLANDS
- LIMIT OF CONSERVATION REGULATED ACTIVITY AREA

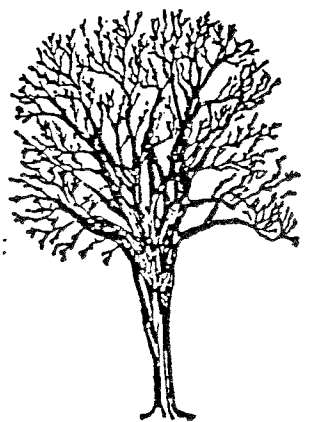
GEORGETOWN
North Main Street, Georgetown, CT

CONCEPTUAL GRADING PLAN

Date: 5-24-88
Scale: 1" = 200'

SP3

PHYSICAL CHARACTERISTICS



SETTING AND LAND USE

The site, approximately 52 acres in size, is located in the southwest corner of Redding near Ridgefield, Wilton and Weston. It is encompassed by the village of Georgetown. The site is bounded on the south and east by Portland Avenue, on the west by North Main Street and Church Street and on the north by Route 7. The G&B site is presently a wire mill and is characterized by numerous factory buildings that date back to the mid 1800s. Present plans are to convert the site from the existing industrial land use to a mixed-use zone, which would include commercial and residential development.

The proposed renovations would encompass dwelling units, retail/commercial space, elderly housing, associated parking spaces and garages and a sewage treatment plant. A public water supply main made available by Bridgeport Hydraulic Company will be extended to serve the site. Several new roads and road extensions are proposed to serve the development. The developer plans to renovate the historic sections of the factory and add new buildings with the same character.

The site and vicinity is characterized by mixed land uses that include industrial, residential and commercial.

TOPOGRAPHY

The major topographical feature of the site includes the Norwalk River, which bisects the site, and Factory Pond, a Norwalk River impoundment. Water in Factory Pond has been used for industrial purposes by the G&B Factory. A ten-foot waterfall is visible in the central parts of the site.

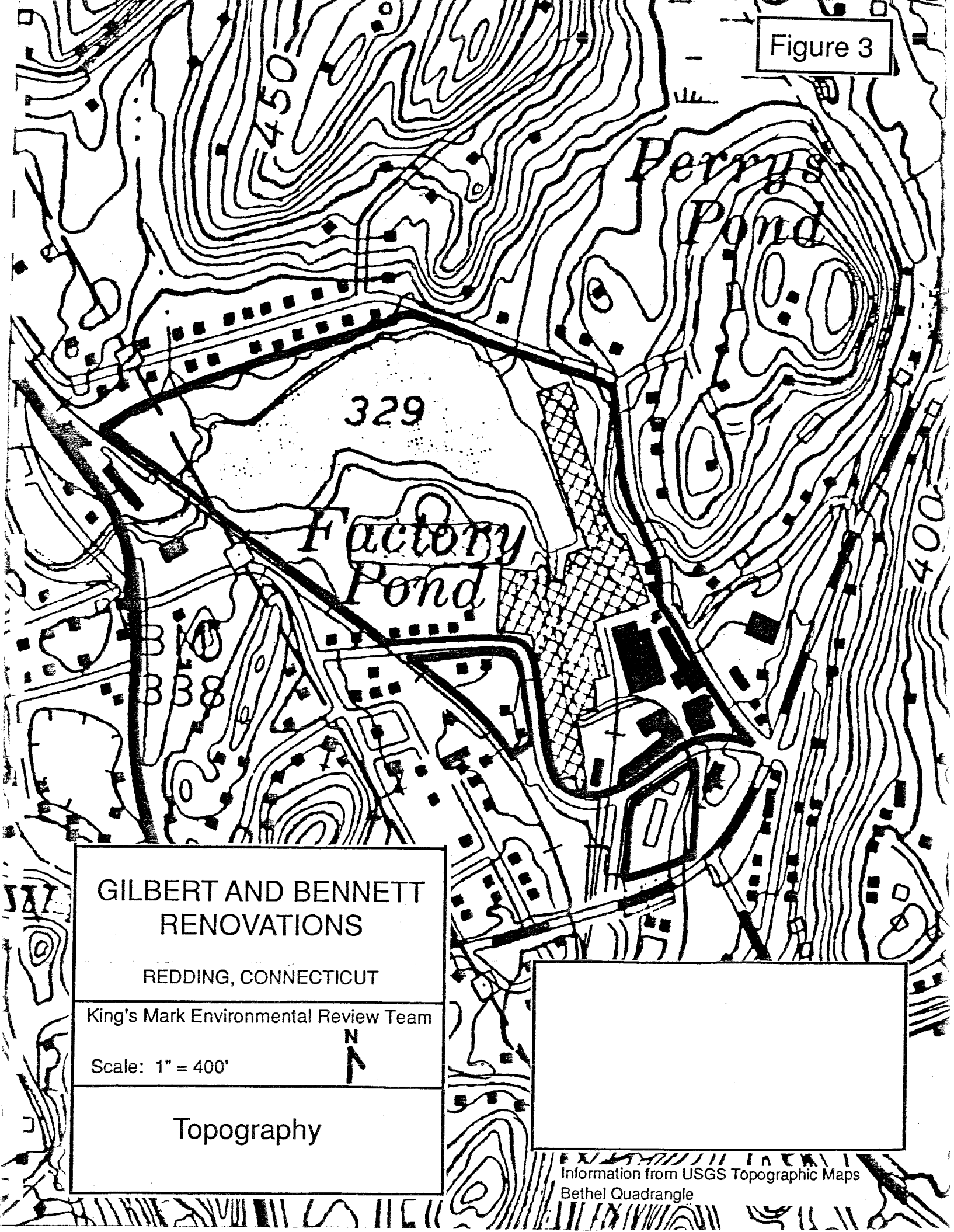
The site is characterized by slopes that are flat to gentle (see Figure 3). The steepest slopes, which are associated with a cut area, occur at the eastern limits of the site.

GEOLOGY

The only bedrock exposure visible during the field review is near the major cut area at the eastern limits. Rodgers (1985) identifies the bedrock underlying the site as Ordovician-aged (485-505 million years old) Harrison Gneiss (see Figure 4). It is classified as an interlayered dark and light gray, medium-grained foliated gneiss. No subsurface data (i.e., deep test holes) were available on the review day. Hydrogeologic data suggests that depth to the bedrock surface is generally 10 feet or less in most places on the site. It ranges from zero in the eastern limits where it is exposed to probably 39 feet or less in a small area at the western limits.

Based on report entitled "Hydrogeologic Overview of Gilbert and Bennett Property and Surrounding Region" (Malcom Pirnie, February 1988), the site is located within a syncline (fold). Additionally, two north-south trending fault zones and one northwest-southeast trending fault zone have been identified in the area of the site. The major fault is aligned with the Norwalk River. The two smaller fault zones are located southeast and northwest of the site and were determined by fracture trace analysis. It is expected that the upper few hundred feet of bedrock underlying the site is fractured and slightly to moderately weathered because of its close proximity to the faults. The fault zones recognized by geologists are structural features that formed during the geologic past and are no longer experiencing active movement.

Figure 3



GILBERT AND BENNETT RENOVATIONS

REDDING, CONNECTICUT

King's Mark Environmental Review Team

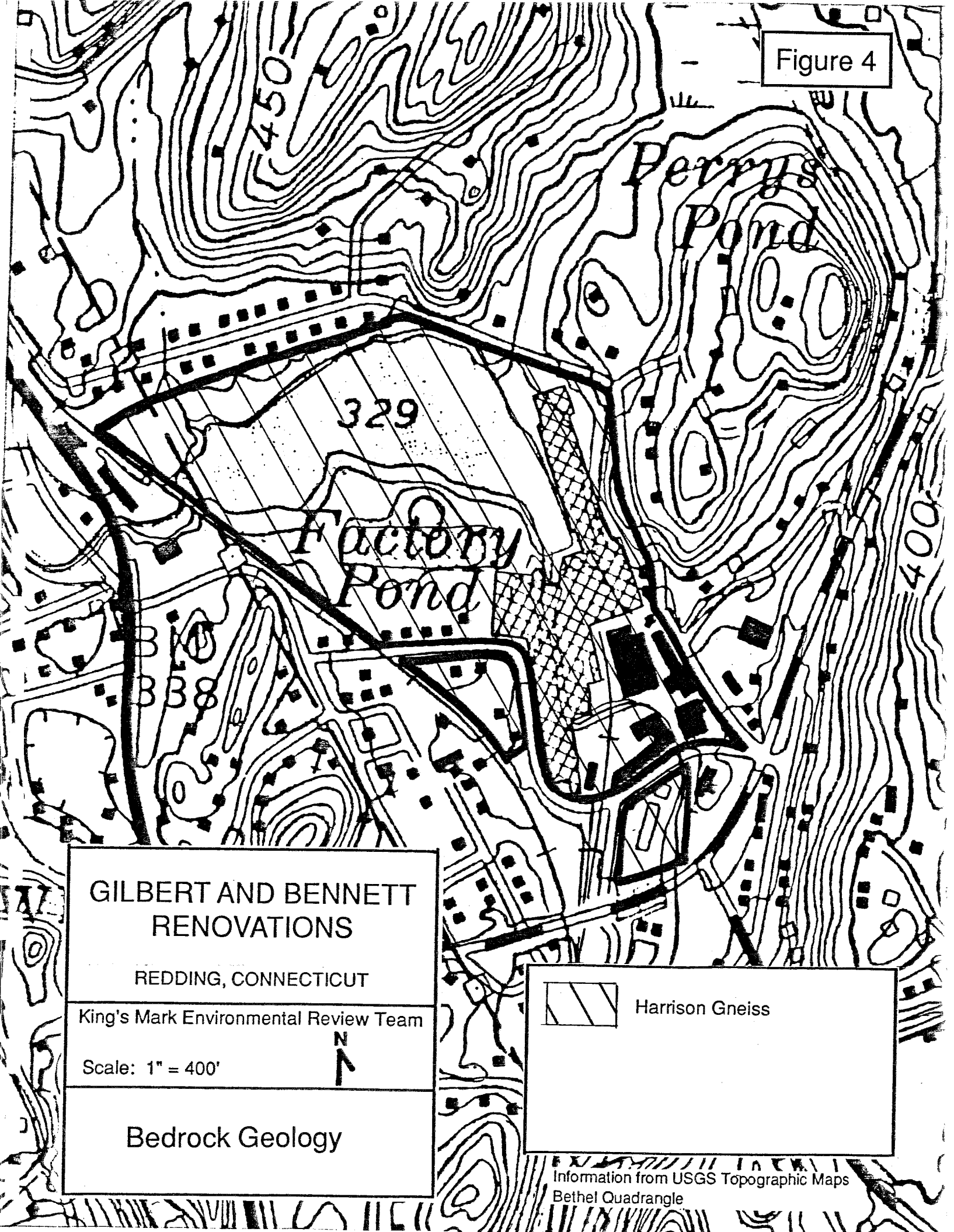
Scale: 1" = 400'



Topography

Information from USGS Topographic Maps
Bethel Quadrangle

Figure 4



GILBERT AND BENNETT RENOVATIONS

REDDING, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 400'



Bedrock Geology



Harrison Gneiss

Information from USGS Topographic Maps
Bethel Quadrangle

Because the site will be served by public sewers and water mains, the bedrock is not expected to pose any major problems in terms of the proposed development. If bedrock is encountered at the eastern limits, blasting may be necessary. As a precautionary measure, borings or deep test holes could be done in this area to determine depth to bedrock.

The site is covered by a glacial deposit known as stratified drift (see Figure 5). Stratified drift deposits, consisting mainly of sand and gravel, were laid down by glacial meltwater streams. The thickness of sand and gravel on the site probably ranges between a few feet to not more than 39 feet. The sand and gravel deposits covering the site are well-sorted to poorly sorted and are highly permeable. Artificial fill material, composed of earth materials or man-made materials that have been deposited by man, cover the southern portions of the mill. It is not known if the fill material was deposited in other areas of the site. Because of the site's industrial past, soil borings should be done in selected areas of the parcel to determine the nature and loading capabilities of the fill material, particularly in areas of new building. The soil should also be tested for toxic materials before residences are permitted for the site.

There may also be a need to further stabilize the very steep slopes in the eastern parts of the site, especially if buildings are constructed as close as the existing mill buildings.

HYDROLOGY

The entire site is located within the Norwalk River drainage area. Precipitation falling on the site either runs directly off the paved areas or buildings into the river or Factory Pond or is absorbed by the permeable sand and gravels that cover the site. If it is absorbed by the sand and gravel, it percolates downward until it reaches the

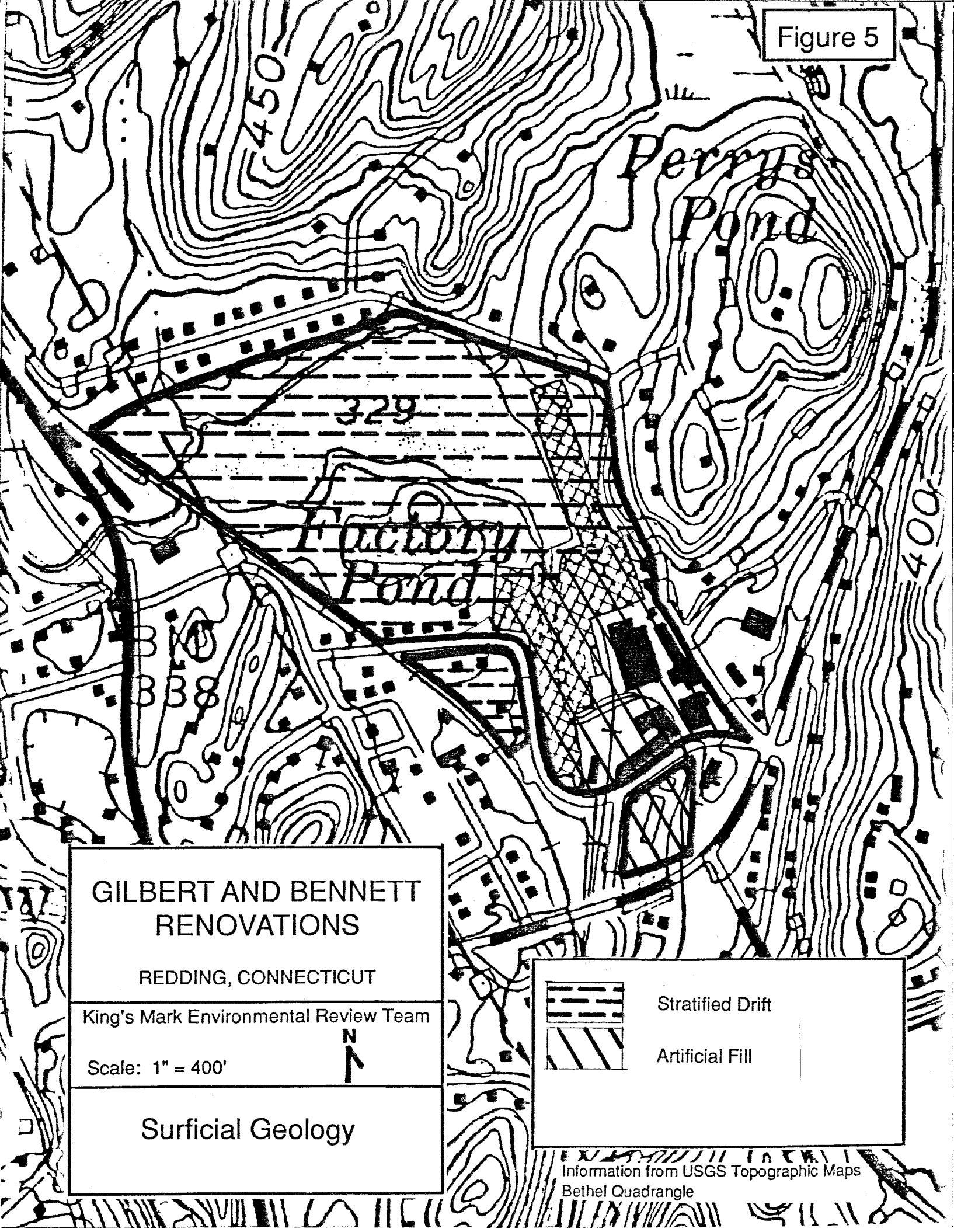
water table and is then pulled by the force of gravity to the river. From the outlet of Factory Pond, the Norwalk River drains an area of 12.5 square miles or about 8,000 acres. An unnamed streamcourse enters Factory Pond on the east side. The streamcourse originates in a wetland area near Perry's Pond to the east.

According to the Water Quality Classification Map of Connecticut (Murphy, 1985), surface waters (Factory Pond and Norwalk River) within the parcel are classified as Class B. This means they are suitable for bathing, other recreational purposes (boating), agricultural uses, certain industrial processes and cooling; excellent fish and wildlife habitat; and good aesthetic value. The water has been degraded from Class A to B as a result of contamination by failing septic systems, industrial discharges, etc.

If the site changes from an industrial use to the proposed mixed-use, there should be a decrease in paved areas and an increase in vegetative coverage. This would be preferable from an environmental standpoint and pose less threat to the river. Additionally, the change in land use would be cleaner, creating less industrial runoff. The extension of a sewer line will also help to significantly lower the risk for groundwater contamination problems on the site.

Because there is a need for major land disturbances (i.e., removal of paved areas, demolition of factory buildings, etc.) and because the site is close to the river and Factory Pond, a detailed erosion and sediment control plan should be designed and enforced through all phases of the project. Every effort should be made to protect Norwalk River and Factory Pond.

Figure 5



GILBERT AND BENNETT RENOVATIONS

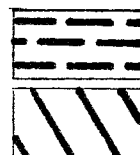
REDDING, CONNECTICUT

King's Mark Environmental Review Team

Scale: 1" = 400'



Surficial Geology



Stratified Drift

Artificial Fill

Information from USGS Topographic Maps
Bethel Quadrangle

The only other large scale earth disturbance will occur as flood-prone areas are raised. Fabric sediment barriers can provide temporary protection along the river until the storm drains are functional, the fill slopes are riprapped and the raised areas are built on or paved.

The erosion and sediment control narrative must address these critical elements in precise detail.

WATER QUALITY

Existing Water Quality Data

Extensive water quality and biological data is available on the upper Norwalk River (above Factory Pond) from the following studies:

"Norwalk Regional Facilities Plan Study of Water Quality Effects" (Raytheon, 1979)

"Norwalk River Intensive Survey - June 6-7, 1979" (CT DEP, 1979)

"Quality of Surface Waters in Wilton, CT" (U.S. Geological Survey, 1982) (82-260)

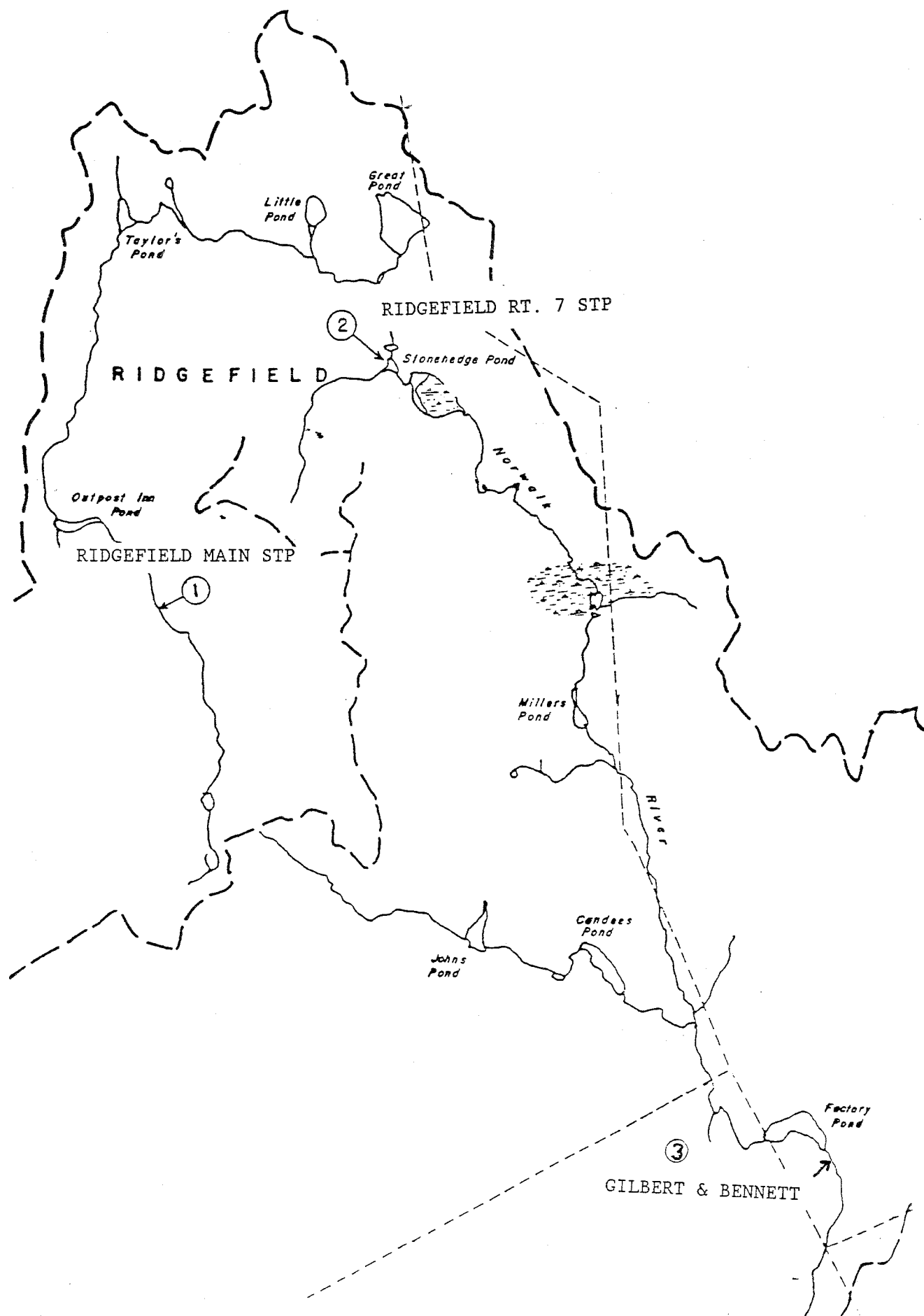
"Derivation of Site-Specific Water Quality Criteria for the Norwalk River at Georgetown, CT" (CT DEP, 1982)

The upper Norwalk River presently receives discharges from two municipal sewage treatment facilities owned by the Town of Ridgefield (see Figure 6). From the Ridgefield Main sewage treatment plant outfall to the outlet of Taylor's Pond, the river is classified C/B indicating unacceptable water quality. The Town of Ridgefield is currently under order by the Department of Environmental Protection (DEP) to upgrade the facility to advanced wastewater treatment to correct this water quality problem. From Stonehenge Pond to Georgetown, the river has been shown to have excellent water quality reflected in an abundant and diverse biological community.

Figure 6

Wastewater Discharges

UPPER NORWALK RIVER DRAINAGE BASIN



Norwalk River at G&B:
 Total drainage area = 12.5 square miles
 Stratified drift area = 2.39 square miles

Norwalk River at South Wilton (USGS gage):
 Total drainage area = 30.0 square miles
 Stratified drift area = 4.47 square miles

Ratio of total drainage areas = $12.5/30.0 = 0.42$
 Ratio of stratified drift areas = $2.39/4.47 = 0.53$

Average flow = 57.4 cfs (cubic feet per second) at South Wilton
 = 24.1 cfs at G&B (estimate)

7 Day 10 Year Low Flow (7Q10): Connecticut's Water Quality Standards require that the minimum average daily flow that can be expected to occur in ten years under natural conditions (7Q10) be used for waste assimilation analysis. The 7Q10 flows for the USGS gage at South Wilton and the estimated 7Q10 flows at G&B are as follows (see Figure 7):

Month	7Q10 at South Wilton	7Q10 at G&B
January	10.1	5.4
February	13.0	7.0
March	24.2	12.9
April	27.4	14.7
May	15.3	8.2
June	6.4	3.4
July	2.9	1.6
August	1.9	1.0
September	1.4	0.75
October	2.2	1.2
November	5.8	3.1
December	10.5	5.6

Waste Load Allocation - Norwalk River

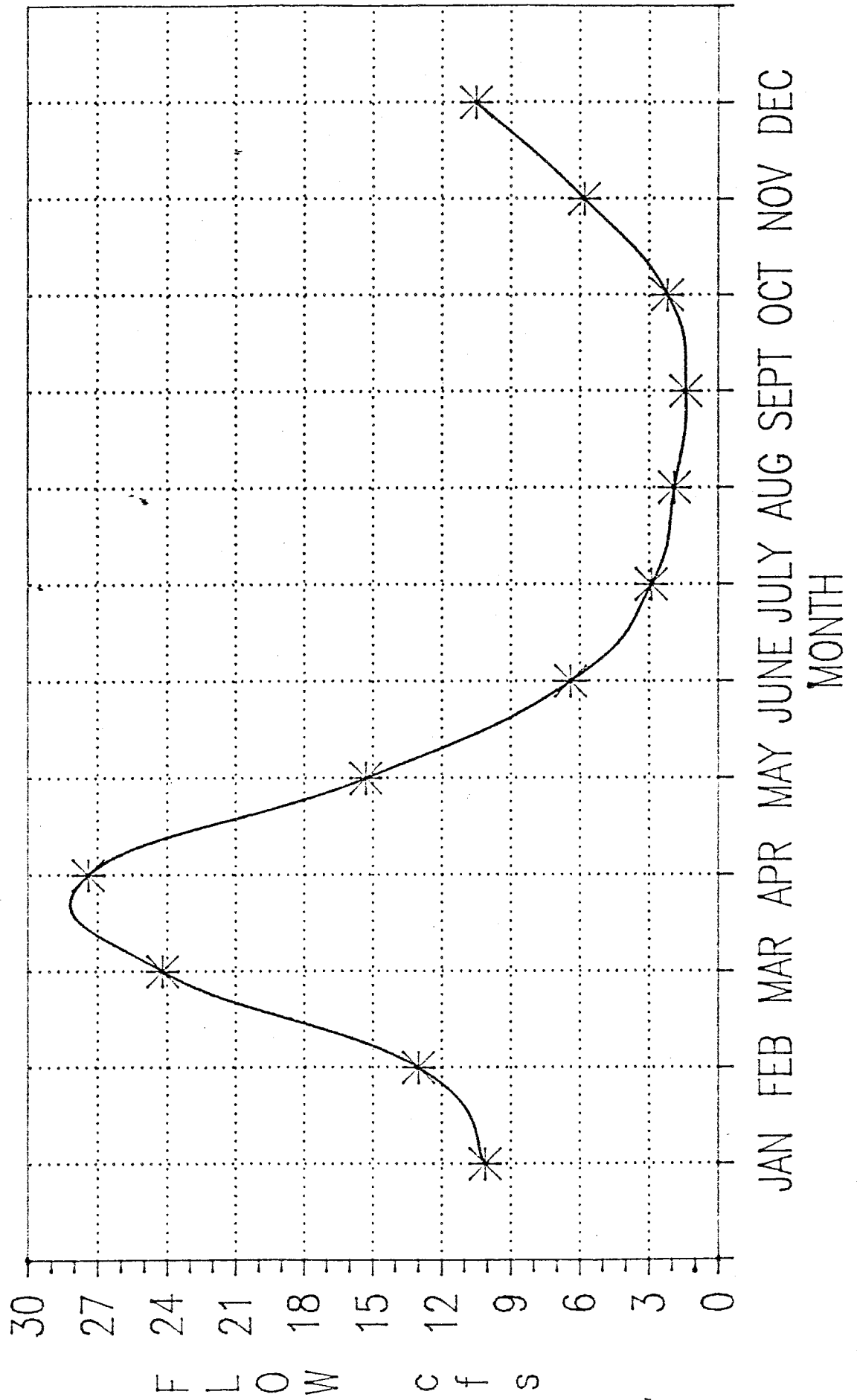
The applicant has proposed that a wastewater treatment plant be constructed to process domestic wastewater from both the G&B development project and downtown Georgetown. It is estimated that the total flow from the facility would be 182,000 gpd

Figure 7

NORWALK RIVER

WILTON 7Q10

* FLOW



conservative analysis. An ultimate oxygen demand (UOD) of 25 mg/l typical of plants which nitrify was used in the analysis with an effluent flow of 0.2 million gallons per day. The model predicted that no DO sag would occur downstream of the plant and that the lowest DO value would occur immediately after mixing. Since the discharge point would be directly below a dam, it was assumed that upstream DO concentrations would be at or near saturation values (8.3 mg/l at 25° C.). This would result in a minimum DO of approximately 7.3 mg/l at 7Q10 conditions which is well in excess of the minimum 5.0 mg/l standard.

Another consideration for high quality Class B streams such as the Norwalk River is Connecticut's "anti-degradation" policy. This policy is stated as follows in Connecticut's Water Quality Standards:

"Surface waters with a classification goal of B or SB and with existing quality better than established standards for that class will be maintained at their existing high quality. The Commissioner may require of discharge permit applicants a minimum level of treatment exceeding the applicable standards of performance for new sources promulgated pursuant to the federal Clean Water Act as well as sections 22a-430 and 22a-436 of the Connecticut General Statutes or other special treatment requirements deemed necessary to prevent pollution and which will maintain existing uses made of, or presently possible in such waters."

In light of this policy, the DEP will require effluent polishing by sand filtration in order to improve the aesthetic quality of the effluent and insure that the high quality of the Norwalk River is maintained. An effluent limit of 10 mg/l limits for BOD₅ and suspended solids reflects the need for sand filters.

Effluent disinfection prior to discharge is usually accomplished by chlorination. However, chlorine may have toxic effects on fish and aquatic life. The effluent chlorine limit would be 0.04 mg/l based on EPA toxicity criteria. The applicant has proposed to use ultraviolet light for disinfection in order to avoid any potential for toxic effects on fish and aquatic life downstream.

To summarize, the effluent limits proposed by the DEP are as follows:

BOD ₅	10 mg/l
Total Suspended Solids	10 mg/l
Ammonia	2 mg/l (seasonal)

Standard secondary treatment provided at most plants in Connecticut have effluent limits of 30 mg/l for BOD and suspended solids and 20 mg/l for ammonia. The treatment plant proposed by the applicant with nitrification, sand filtration and ultraviolet irradiation for disinfection reflects "state-of-the-art" tertiary treatment. If the stringent effluent limits listed above are maintained, no significant lowering of water quality should occur downstream of the proposed discharge.

Also, the present wastewater discharge from G&B of 57,600 gpd of treated process water containing heavy metals (zinc, iron and lead) will be eliminated if the proposed residential/commercial project is built.

Implicit in this discussion is the maintenance of downstream flows below Factory Pond. In the past, G&B has altered river flows by withdrawing cooling and process water from the impoundment and manipulating flashboards on the dam. Correspondence indicates a minimum streamflow requirement of 1,000 gallons per minute from this facility. The dam should be operated to provide run-of river operation. Simply stated, incoming flow to Factory Pond should be released immediately from the dam for the dilution of wastewater downstream.

Stormwater Management

Stormwater runoff may contain pollutants such as suspended solids, oil and grease, bacteria and heavy metals. Connecticut's Water Quality Standards require that "Best Management Practices" (BMP's) be used for non-point source runoff to minimize water quality impacts. At present, DEP is in the process of writing

stormwater discharge regulations. BMP's have not yet been defined but might include:

- 1) Gross particle separators with skimming;
- 2) Retention ponds with skimming; and/or
- 3) Installation of catch basins with sumps for particle settling and hooded outlets for skimming.

The objective of stormwater treatment facilities is to settle out sand and grit and skim floating oil and litter.

At present, the G&B industrial facility does not provide stormwater treatment.

FLOODING CONSIDERATIONS

The Redding "Flood Safety" Regulations, Section 5.4.5., are more stringent than the federal National Flood Insurance Program (NFIP) Regulations, 44 CFR. The regulations for the Town require filling and buildings to be above the Base Flood Elevation (BFE).

Residential development is required to have the lowest floor (including basements) and house mechanicals 2 feet above the BFE. The structure must have fill to 1 foot above BFE, and it must extend beyond the footprint of the building at least 5 feet on all sides.

Non-residential structures, which include institutional, commercial, office and industrial, must be floodproofed to the BFE. Floodproofed means it is substantially waterproof and anchored so that it resists floatation, collapse and lateral movement. Floodproofing must be certified by a registered engineer. All storage, building access and accessory buildings must also be anchored. They do not necessarily have to meet the elevation requirements

The Redding Regulations also have the added protection of requiring any occupied floors in a non-residential structure to be elevated 2 feet above the BFE. The mechanical systems for the building must also be elevated to the same height.

The line shown on the plan is the 500-year floodplain not the 100-year. Determining what needs a permit is difficult because there is no good map of existing topography. The following are potential elements of the plan that might require Flood Safety (5.4.5.) Permits:

- 1) If the lowest floor of the parking garage of the west pond bank residences is not above approximately 334.75 NGVD then it will need a permit. If the design is for parking below the BFE then it will require a variance because the Redding Regulations do not have provisions for Fully Enclosed Areas Below Base Flood Elevations. The standards stated in the CFR 44, 60.3 (c)(5) should be the least required as any conditions for a variance approval.
- 2) The renovated structures just below the G&B Factory Dam should have the lowest occupied floor above approximately 321.5 NGVD (2 feet above BFE) and should be floodproofed to the BFE. However, the building could be exempt from all flood regulations if it is on the State or Federal register of historic places.
- 3) The same is true of the "saw tooth" building which also is planned for commercial use. The elevation for the lowest occupied floor for it would be approximately 319.5 to 321.5 NGVD.
- 4) The large building on the existing North Main Street could also be exempt because it is on a register. It is proposed to be converted to residential units. It would have to have the lowest floor elevated to approximately 315.25 NGVD. Floodproofing of the area below BFE would require a variance. Floodproofing of residential structures is not allowed under the Redding Flood Safety Regulations or the NFIP.
- 5) There are several complications along the river corridor:
 - a) The plan does not delineate the NFIP regulatory floodway. It is not the same as the Stream Channel Encroachment Line which is on the plan.

- b) The culvert under the existing factory building is sufficient to carry the 100-year flows, any alteration to it could be considered an alteration to the floodway. Therefore, the landscape work proposed here will require detailed hydraulics and hydrology to prove there will be no increase in floodway heights in the area. The plans as drawn may actually improve (or reduce levels of) flooding in the area. However, this should not be taken for granted. A detailed study will act as documentaion of the resultant conditions.
- 6) No fill is proposed below the BFE. Should any be proposed within the boundaries of the 100-year floodplain, then it will require a permit. Again, the 500-year floodplain is on the drawing, not the 100-year.
- 7) Any bridges or structural spans over the watercourses will require a permit. It will also be necessary to prove that the encroachments will not increase floodway (the central regulatory corridor) flood elevations. This is another part of the back water analysis necessary for this proposal to proceed.

Where such drastic alterations are proposed for the watercourse channel, it is very important that both existing and proposed condition hydraulics calculations are done. Expansion of the banks will quite possibly reduce flood heights. If this is the case and it is decided that final plans would be designed to the new elevation, then the Town will have to be willing to request a revision to their study. This process normally takes a minimum of six months.

The discussion on the re-landscaping of the watercourse suggests that the bank treatment considered is primarily rip-rap. The hydraulic study will give an indication of the velocities in the channel. It may be possible to use vegetative or other more aesthetic treatments. This may especially be true if the alterations have the effect of reducing flooding conditions. Any treatment however, will be a factor that will have to be accounted for in the proposed conditions. It will show up in the friction factors for the channel, if not in other ways too.

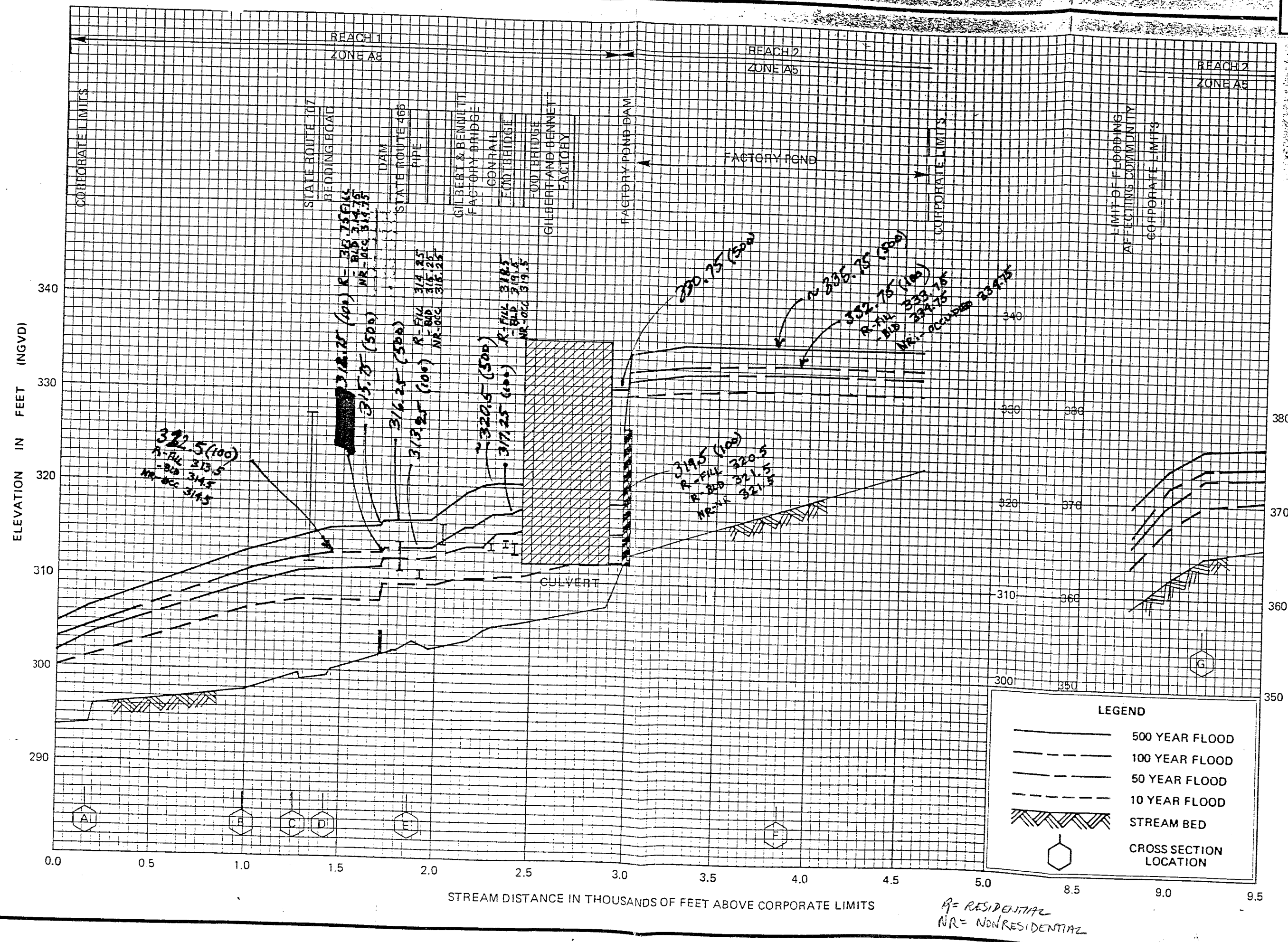
The presence of Stream Channel Encroachment Lines (SCEL) implies another flood management permit authority and process. The activities within these lines require a State permit. There are a number of places where activities are proposed.

Figure 8

FLOOD PROFILES
NORWALK RIVER

FEDERAL EMERGENCY MANAGEMENT AGENCY

TOWN OF REDDING, CT
(FAIRFIELD CO.)



Some of them are the same as have already been mentioned. These areas will require permits from both government levels, if not also from the federal government (Corps of Engineers 404 and 401 permits).

The criteria for SCEL are similar to the local regulations, but not the same. Steven Derby of the DEP Water Resources Unit, Inland Wetlands should be contacted at 566-7280 for details on the program. The plan for the proposal titled "Conceptual Grading Plan" depicts several buildings, fill and bridges all within the SCEL.

According to the DEP Dam Safety Section, the dam is already considered the highest hazard designation. Placing more residential and commercial structures may add to the risk of loss of life or property should the dam fail.

Records indicate that the overall condition of the dam is good. The only deficiencies found in the recent past were minor maintenance items. The dam is classified as high hazard, which means if it were to fail, any of the following would result:

- 1) Probable loss of life;
- 2) Major damage to habitable structures, residences, hospitals, convalescent homes, schools, etc.;
- 3) Damage to main highways (greater than 1500 ADT); and
- 4) Great economic loss.

If the owner of this structure wishes to alter this dam in any way, a permit from the DEP is required.

THREATENED AND ENDANGERED PLANT AND ANIMAL SPECIES

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

the study area. The Natural Diversity Data Base contains the most current biologic data concerning endangered or threatened plant or animal species. On-going research continues to locate additional populations of species or locations of habitats of concern as well as updating existing data.

LAND USE AND PLANNING CONSIDERATIONS



Concerning the Redding portion of Georgetown, the HVCEO plan has classified it as an "Urban Conservation" area. This means it is considered to be at least 80% built up, an appropriate location for the recycling of aged buildings and suitable for some "intensification."

HVCEO calls for a minimum of 3 dwelling units per acre to insure that residential land in this relatively central location is used efficiently. This is significantly denser than the SWRPA's suggested maximum of 1.9 dwelling units per acre for the Wilton and Weston portions of Georgetown. Because Redding contains the denser central portion of Georgetown, the two regional agencies address slightly different neighborhoods and are not necessarily in conflict.

At a future date, SWRPA may rethink its density policy in the Georgetown vicinity. However, this would be tied to the ability of future sewer service to discharge without violating water quality limits in the Norwalk River.

The HVCEO policy offers a minimum but no maximum residential density. While Georgetown obtains an urban designation in the HVCEO plan, the area so designated is small, keeping with the limited scale of this community. Also, density at the edges of the Georgetown area taper off rapidly into low density suburban residential countryside. Considering these circumstances and using the average maximum density of new housing usually found in other urban sections of the Housatonic Valley Planning Region as a guide, a maximum residential density of 8 dwelling units per acre is approximately the "scale" for the Redding portion of Georgetown.

Commercial Area Designation

Georgetown's retail function for the adjacent communities is recognized in the HVCEO plan, where it is classified as one of the Region's twelve retail areas. The SWRPA plan is more specific concerning its policies for retail function. The Georgetown area of Wilton and Weston in the SWRPA plan is designated a

"Neighborhood and Area Center - Service Commercial Center." As such, commercial development is designated to satisfy the convenience needs of the neighborhood, but not to attract a wider clientele.

Utility Service

A key to density is the availability of public water and sewer service. According to the HVCEO plan, the Redding, but not the Ridgefield portion, of Georgetown is eligible for the introduction of these utilities. The maximum service area envisioned by HVCEO is very limited, extending from the eastern end of Highland Avenue near the Weston Town Line north-northwestly to the eastern end of Brookside Avenue, then curving to the west and generally following Portland Avenue.

HVCEO acknowledges the logic of providing these utilities to Georgetown from the south, noting how state plans propose that "a corridor of urban growth should eventually be developed along the new Route 7 from Norwalk northward through Wilton to the Redding Town Line." The SWRPA plan does not agree with this view. Rather, it proposes utility service only as far north as Wilton Center. Both agencies strongly urge that the wastewater discharge limitations of the Norwalk River be evaluated comprehensively, in cooperation with the DEP, in determining the potentials for sewerage Georgetown. In any planning scenario involving the introduction of either water or sewer from Wilton, the Town of Wilton should determine if these extensions are in its own best interest.

In any sewer system planning for Georgetown, a very specific maximum capacity should be built into the treatment plant. This action, in conjunction with allocation of all capacity to specific parcels, will serve to effectively resist pressures for the unplanned spreading of sewer service and resulting disruption of planning policy. One sewage treatment plant, under the control of a governmental entity, might be considered to address development needs and the resolution of water quality problems, rather than multiple treatment plants, one or more under private control.

The proposed plan for the G&B property to secure water via a pipeline northward from the Cannondale area of Wilton is under review by Wilton. In SWRPA's view, a legitimate local and regional concern is the impact of this line on the long standing local and regional land use policy to limit more intensive growth to the Route 7 corridor from South Wilton to Wilton Center and to discourage development north of that area.

It is also SWRPA's view that the Towns concerned should direct an official question to the DEP as to the water quality and other environmental limitations on the size of a future sewage treatment plant in Georgetown and whether there is a limit on the use of the Canpondale Aquifer for additional water supply purposes considering its environmental relationship to the Norwalk River.

Affordable Housing Opportunity

Since densities greater than one dwelling unit per acre are usually needed to allow subsidized housing affordability, the development plan for Georgetown should consider this pressing municipal, regional and state need. The technique would be to request that a percentage of affordable as well as elderly units be included in larger residential proposals, such as the G&B redevelopment, in return for zoning bonuses. This zoning technique has been used successfully elsewhere. It is being considered by the developer and should be encouraged.

Roadway Circulation

A development plan in preparation locally should project future traffic volumes inherent in the land uses and intensities proposed by the plan. This analysis should resolve whether or not a major change in circulation pattern for the area, such as the proposed new grade separated crossing of the rail line or relocation of an at grade crossing to better distribute total traffic, is warranted. A traffic projection should be made regarding the effect of traffic generators on roads and intersections of regional significance (i.e., the intersection of Route 7 and Route 107 and Routes 57 and 107). It

should also incorporate community aesthetics and quality of life values. It is important to include factors related to zoning capacity from the four Towns.

Open Space

As the open space component of the Georgetown Plan is formulated, particular attention should be focused upon the future of Factory Pond. What constitutes a reasonable level of public use must be determined, as well as the extent of Norwalk River bank preservation.

NOTES

ABOUT THE TEAM

The King's Mark Environmental Review Team (ERT) is a group of environmental professionals drawn together from a variety of federal, state and regional agencies. Specialists on the Team include geologists, biologists, soil scientists, foresters, climatologists, landscape architects, recreational specialists, engineers and planners. The ERT operates with state funding under the aegis of the King's Mark Resource Conservation and Development (RC&D) Area - an 83-town area serving western Connecticut.

As a public service activity, the Team is available to serve towns and/or developers within the King's Mark RC&D Area - free of charge.

Purpose of the Environmental Review Team

The Environmental Review Team is available to assist towns and/or developers in the review of sites proposed for major land use activities. For example, the ERT has been involved in the review of a wide range of significant land use activities including subdivisions, sanitary landfills, commercial and industrial developments and recreational/open space projects.

Reviews are conducted in the interest of providing information and analysis that will assist towns and developers in environmentally sound decision-making. This is done through identifying the natural resource base of the site and highlighting opportunities and limitations for the proposed land use.

Requesting an Environmental Review

Environmental Reviews may be requested by the chief elected official of a municipality or the chairman of an administrative agency such as planning and zoning, conservation or inland wetlands. Environmental Review Request Forms are available at your local Soil and Water Conservation District and through the King's Mark ERT Coordinator. This request form must include a summary of the proposed project, a location map of the project site, written permission from the land owner/developer allowing the Team to enter the property for purposes of review and a statement identifying the specific areas of concern the Team should investigate. When this request is approved by the local Soil and Water Conservation District and King's Mark RC&D Executive Committee, the Team will undertake the review. At present, the ERT can undertake approximately two (2) reviews per month.

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