

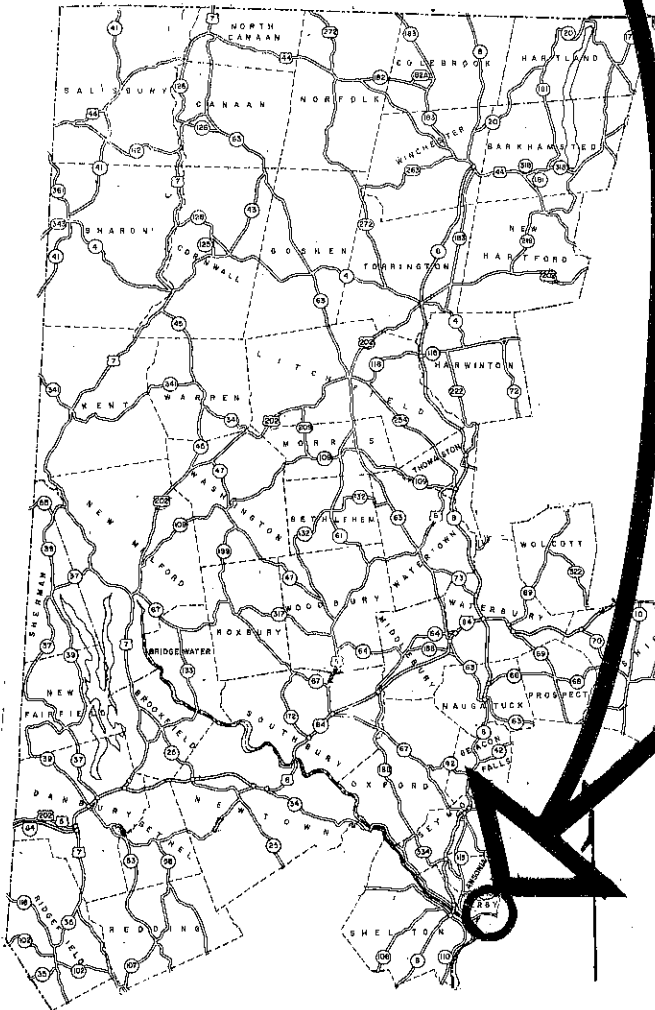
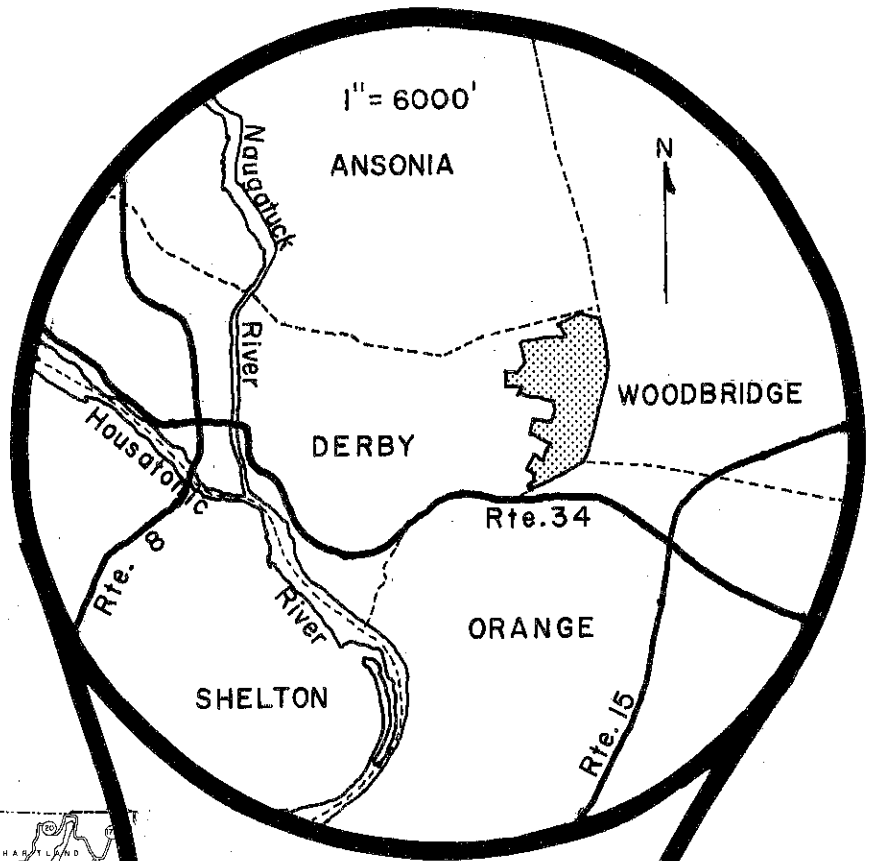
**KING'S MARK
ENVIRONMENTAL REVIEW TEAM REPORT**
on the
**EAST DERBY INDUSTRIAL PARK
DERBY, CONNECTICUT
JUNE 1976**

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King's Mark Resource Conservation
and Development Project (RC&D)
Environmental Review Team
P. O. Box 30
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LOCATION OF STUDY SITE

EAST DERBY INDUSTRIAL PARK



ENVIRONMENTAL REVIEW TEAM REPORT
ON THE PROPOSED
EAST DERBY INDUSTRIAL PARK
DERBY, CONNECTICUT

This report is an outgrowth of a request from the Valley Regional Planning Agency, Ansonia, on behalf of the Conservation Commission and Mayor of the City of Derby to the New Haven County Soil and Water Conservation District (S&WCD). The S&WCD referred this request to the King's Mark Resource Conservation and Development (RC&D) Project Executive Committee for their consideration and approval as a project measure. The request was approved and the measure reviewed by the King's Mark Environmental Review Team (ERT).

The Environmental Review Team draws together a range of professionals in the fields of natural resources, engineering and planning, who, based upon existing available data and field investigation, formulate an analysis of a proposed land use activity.

The soils of the site were mapped by a soil scientist of the United States Department of Agriculture (USDA) Soil Conservation Service (SCS). Reproductions of the soil survey, a table of soils limitations for certain land uses, and a topographic map showing the industrial park boundaries were forwarded to all Team members prior to their field review of the site.

The members of the Environmental Review Team consisted of the following: Frank Indorf, Jr., District Conservationist, SCS; Charles Reynolds, Soil Scientist, SCS; Timothy Dodge, Biologist, SCS; Leon Gardner, Civil Engineer, SCS; Martin Drobney, Hydraulic Engineer, SCS; Richard Hyde, Geologist, Connecticut Department of Environmental Protection (DEP); Howard Gates, Forester, DEP; David Miller, Climatologist, University of Connecticut Cooperative Extension Service (EXT); Mallory Gilbert, Agricultural Agent, EXT; Brian Coss, Regional Planner, Valley Regional Planning Agency; Carol Youell, ERT Coordinator, King's Mark RC&D Project.

The Team met and field reviewed the site on Wednesday, March 31, 1976. Reports from each Team member were sent to the ERT Coordinator for review and summarization for this final report.

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 both the City of Derby and the developer. The results of this Team action are oriented toward the development of a better environmental quality and the long-term economics of the land use.

The King's Mark RC&D Project Executive Committee hopes this report will be of value and assistance in making decisions on this particular site.

If any additional information is required, please contact: Carol E. Youell, Environmental Review Team Coordinator, King's Mark Resource Conservation and Development Project, P. O. Box 30, Warren, Connecticut, 06754, 868-7342.

INTRODUCTION

The Derby Economic Development Commission proposes to develop an industrial park on a 226 acre tract of land located in the eastern extremity of the City of Derby. The project area adjoins the Town of Orange and Route 34 on the south, the Town of Woodbridge on the east, the City of Ansonia on the north, and the Marshall Lane residential area of Derby on the west.

The site largely encompasses land now or in the past used for agriculture. There is a major stream, Twomile Brook, and associated wetlands which meander throughout the parcel. There are gravel excavation areas which have been worked in the past. The City of Derby owns a section of about 58 acres at the northwest corner of the parcel, of which half is currently used for a sanitary landfill operation. (Only those portions of the landfill not in use are proposed for immediate inclusion in the development.) Considerable disturbance of the site has already occurred in conjunction with the sanitary landfill operations, installation of a sewer line and gas pipeline, and filling of wetlands.

The Environmental Review Team field-reviewed the site relative to the proposal to create an industrial park. The area has been subject to extensive preliminary work by Robert S. Bryan and Associates of Fairfield, who are serving as consultants to the Derby Economic Development Commission. Detailed site plans, maps and reports were examined by the Team.

The plans indicated that of the 226 acres studied for inclusion in the project, about 186 acres were deemed appropriate for immediate acquisition and development as follows:

130 acres for industrial site use (70%)
35 acres for open space and wetlands (19%)
<u>21</u> acres for streets and municipal purposes (11%)
186 acres total

The remaining 40 acres is proposed to continue in use for sanitary landfill, for dwelling purposes, and for existing active farm operations. These acres may be affected in the future by potential expansion of the industrial park. It is anticipated that the site will attract light industry. Permitted uses proposed for the park include: research laboratories and offices; manufacture, processing and assembling of goods; warehousing and wholesale business, and associated (minor) trucking and retail business.

This report will present a general description of the topography, geology, soils, wildlife, and other natural characteristics of the property, followed by an evaluation of the different aspects of the development as they relate to the natural resources. Hopefully, this report will be of assistance in determining the ultimate development of the land. Comments or recommendations made within the report are presented for consideration by all parties, and should not be viewed as mandatory or regulatory in nature.

TOPOGRAPHY

Topographically and materially the site is quite diverse, ranging from irregular till hills with steep slopes in the northern and eastern portions of the property to flat lowlying landforms of stratified sand and gravel deposits in the western and southern portions of the property. Twomile Brook enters along the northern border just east of Chestnut Drive and flows south, separating the two major till uplands to the northeast and northwest. Moving south, Twomile Brook spreads out into a low, fairly broad swampy area underlain by ice-contact stratified drift deposits. On the day the Team viewed the site, stream flow was at a sufficient height to cause difficulty in locating the main channel in the region and the flow gave the appearance of being braided. (A braided stream or channel is characterized by an intricate network of smaller interlacing channels that repeatedly merge and separate.) This may be the natural condition at this time of year, or it may be the result of land disturbances created when the sewer, gas pipeline and preliminary road network were installed. From this point, Twomile Brook swings eastward to the property boundary, shifts south again, running parallel to Baldwin Road, and in the southeastern corner it meanders westward to exit the property toward Sodom Lane (see Topography and Drainage Area Map).

Land surface elevations are highest in the northeast, reaching approximately 320 feet above mean sea level with the lowest elevation around 195 feet above mean sea level at the point where Twomile Brook exits the property in the southwestern corner.

The total drainage area of Twomile Brook, as indicated in the "Gazetteer of Natural Drainage Areas of Streams and Water Bodies within the State of Connecticut", DEP Bulletin No. 1, is 3.12 square miles.

SURFICIAL GEOLOGY

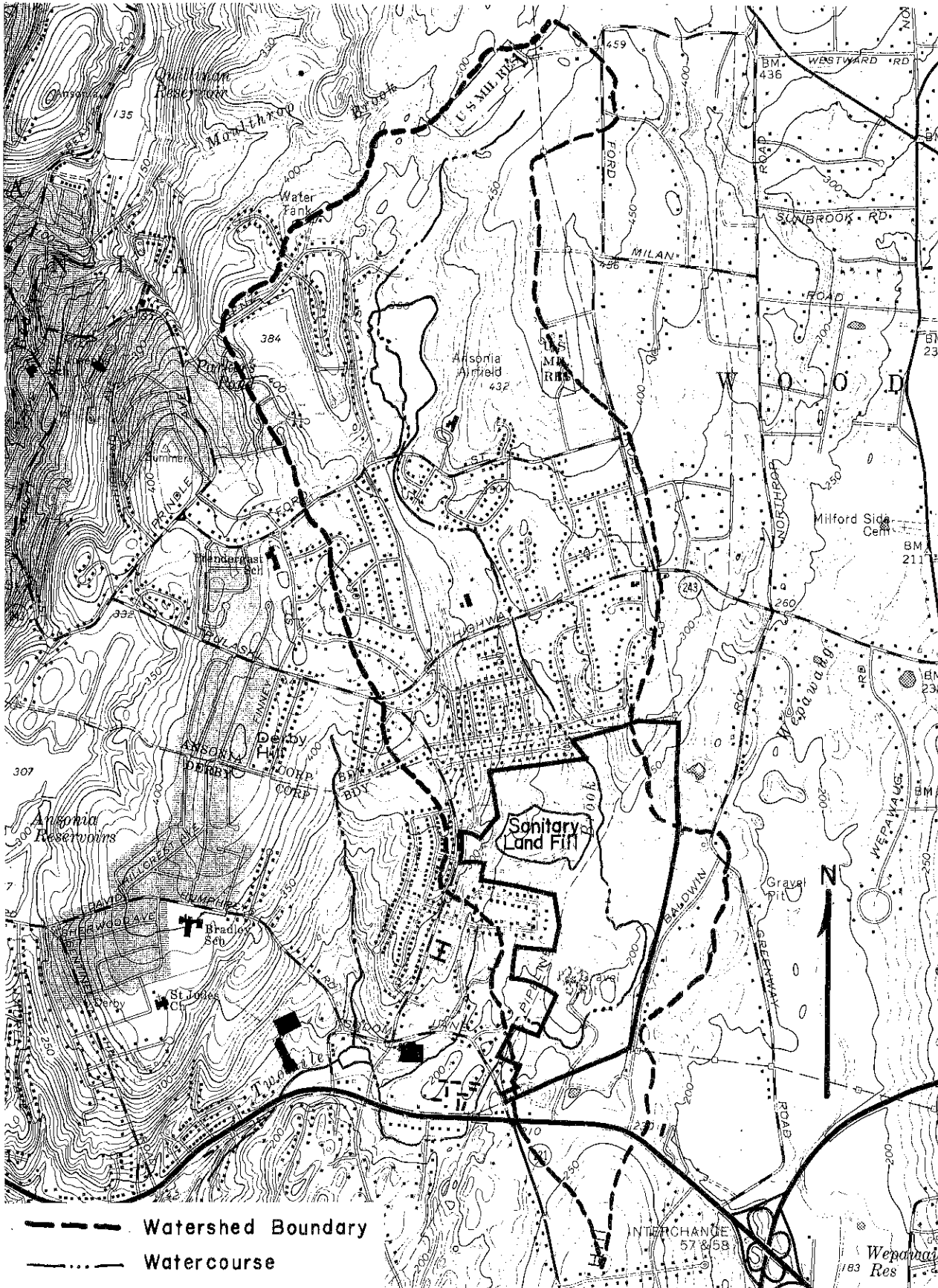
The surficial geologist is concerned with the primary overburden, unconsolidated deposits, lying on top of the solid bedrock that have been relatively unaltered by the weathering process. The bedrock geologist is interested in the solid bedrock, its structure and composition; while the soil scientist deals with the weathered zone of the surficial deposits, the upper 3 to 5 feet below the land surface.

The unconsolidated earth deposits lying on top of the bedrock surface on the proposed East Derby Industrial Park site may be differentiated into two basic types -- till and ice-contact glacial drift (see Surficial Geology Map).

Till is the geologist's terminology for the predominant overburden material found in Connecticut, although only a little more than half of the property in question has till as a covering. "Hardpan" or "boulder clay" are words more commonly used by the non-geologist. Till is simply, that mass of materials carried on, within or under the glacial ice, that remained in place after all of the ice had melted. The glacial lag deposit may be described as a heterogeneous material composed of various mixtures of boulders, gravel, sand, silt and clay particles, none of which are significantly sorted or stratified according to particle grain sizes, as is the case with waterlain or windblown deposits.

TOPOGRAPHY & DRAINAGE AREA

EAST DERBY INDUSTRIAL PARK



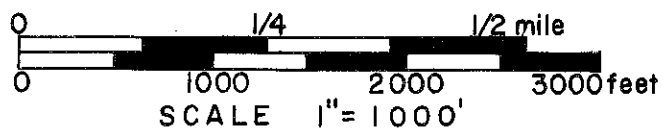
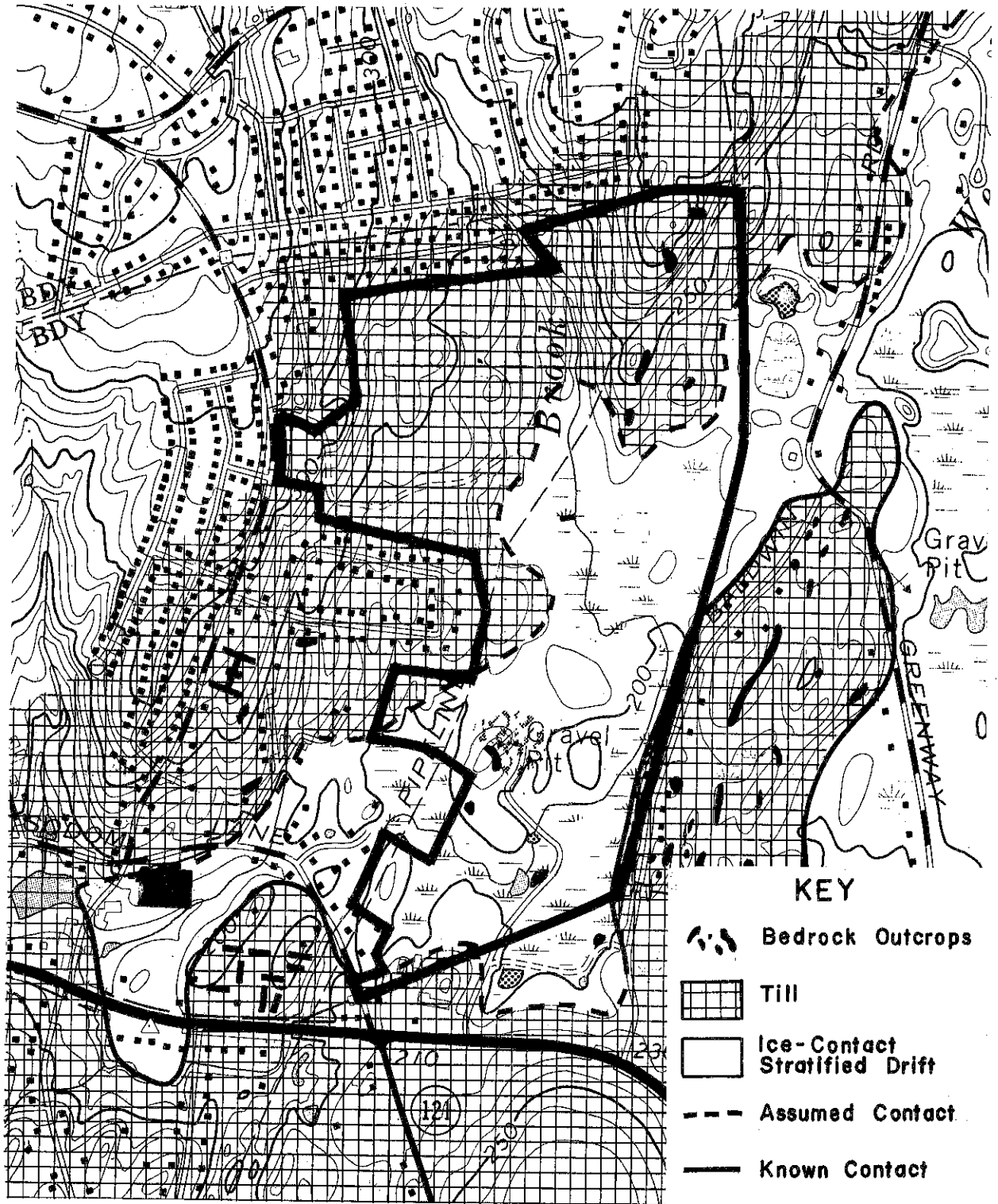
- Watershed Boundary
- Watercourse

SCALE 1" = 2000'

0 2000 4000 ft.

SURFICIAL GEOLOGY MAP

EAST DERBY INDUSTRIAL PARK



The thickness of till lying on top of the bedrock surface varies from place to place, but in general, it is very thin in the northeast and southwest. Bedrock exposures are quite evident in the northeast with several scattered outcrops visible just off the property in the southwest. Where bedrock outcrops appear, it is a sure sign that overburden cover is extremely thin in that general area, and therefore, the condition will have a strong impact on the type and method of development. See Surficial Geology Map for outcrop distribution.

Between outcrops, overburden thicknesses may reach 10 feet in pockets, but in the northeast thicknesses probably on the average are approximately 5 feet or less. This would certainly make any on-site septic systems difficult to locate. Moving to the northwestern portion of the property, till thicknesses increase and outcrops were not observed. Overburden thicknesses range from 10 to 15 feet within this area, decreasing slightly moving southward along the western border.

The second type of overburden material, as mapped by Richard Foster Flint in his "Surficial Geology Map of the Ansonia Quadrangle, Connecticut", Quadrangle Report No. 23, is classified as ice-contact stratified drift. Such deposits are characterized by deformed layers of sand, gravel, silt and clay which are poorly sorted in places and exhibit abrupt changes in grain sizes; all of which are the result of variable melting of glacial ice.

In the region of Twomile Brook, the stratified sand and gravel deposits are fairly thin and most of the materials are below the water table making commercial extraction not very appealing or economical. Bedrock exposures were noted on the southern flank of the small knoll and within the abandoned gravel pit in the southcentral section of the property. This indicates the deposits are probably only a thin veneer over the bedrock surface. In fact, the shallow bedrock surface throughout the site probably is the reason swamp and wetlands are so prominent within the stratified drift area. Any aggravation of this condition by natural drainage blockage will only create more swamp and wetland areas.

SOILS

The physical characteristics of the site together with the natural processes operating within an area, create situations which can be beneficial or problematic to the proposed development. In addition to the geologic data, soil classifications provide a good indicator of the suitability of an area for development.

A very detailed Soils Map of the property is given in the Appendix to this report along with a Soils Limitations Chart. The map is the result of a more detailed on-site survey done at a 1"=500' scale using the original soil survey map (1"=1320' scale) as a basis. The Soils Limitations Chart indicates the probable limitations for each of the soils for various urban uses including: on-site sewage disposal, buildings with basements, landscaping, and streets and parking lots. An explanation of the numbered ratings for urban uses is provided on the last page of the Appendix.

As shown in the chart, a number of the soils on the site present severe limitations for development. Limitations are imposed by such factors as: high water table, flood hazard, organic material, stoniness, shallow depths to bedrock, and steep slopes. Also, many of the soils on the site are very

erosive when cleared of vegetation and not revegetated as soon as possible. Therefore, many problems with sedimentation, siltation and erosion can occur if these soils remain open for any length of time.

In order to minimize severe soil limitations, the following general recommendations are made:

1. Establish a streambelt or environmental corridor through the area on either side of the stream.
2. Maintain poorly and very poorly drained areas as wetlands and tie in with environmental corridors where possible.
3. Install silt traps where needed to control siltation and sedimentation during construction.
4. Revegetate areas as soon as possible, keeping as small an area as possible open at any time.
5. Install curtain drains around buildings in moderately well drained soil areas.
6. If streets and parking lots are constructed in moderately well or poorly drained areas, underdrains should be installed to prevent heaving due to freezing and thawing and hydrostatic pressure.

AESTHETICS AND PRESERVATION

Forestry

Vegetation on the site is characterized by second growth hardwoods and wooded wetlands. Exceptions to this include the sanitary landfill area in the northwest portion, and the agricultural areas in the northeast and southern portions.

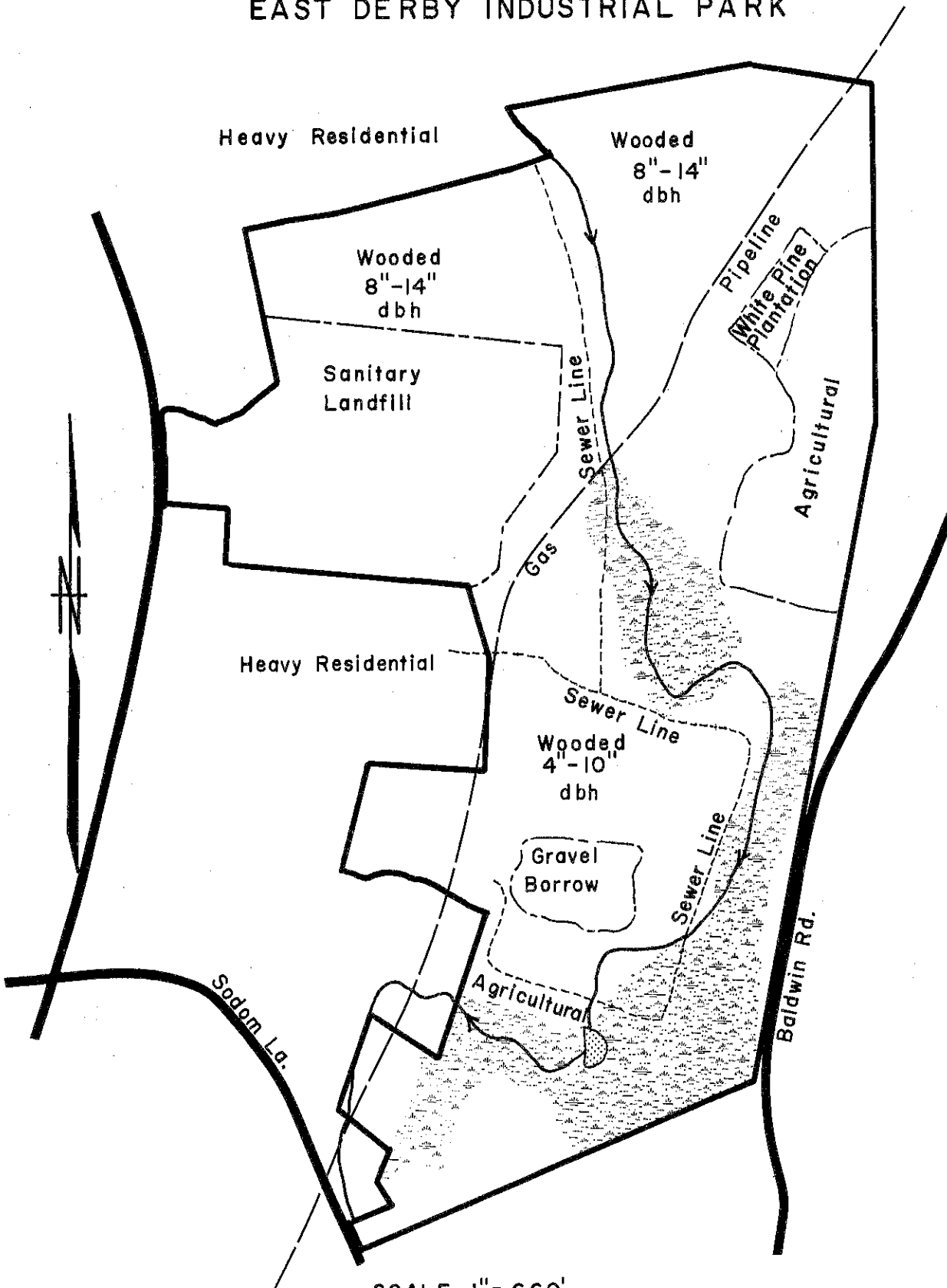
Potential uses in forestry are limited on the site; however, the wooded areas do serve valuable ecological functions in maintaining soil stability and acting as a buffer to pollutants. The wooded area bordering Twomile Brook is desirable, but more area should be set aside to offer protection to the watercourse. The sewer and gas line crossing the property are constructed such that some otherwise healthy forest stands in flatter areas are becoming immersed in too much water and are dying off. This problem could mean that many of the trees to be left on the site according to the developer's plans will be dead or dying, and therefore no protective zone will exist.

In the lower (southern) half of the site are some fair to poor growth trees (4-10 inches in diameter at breast height - dbh) which are not of any commercial value. A gravel pit is in this area and the lower south section is quite wet. This wet zone should be protected.

Better growing trees are found in the northern section of the property with 8"-14" dbh trees the general rule. One area in particular that should be preserved is a white pine plantation as located on the Existing Land Use Map. No work needs to be performed on this plantation at this time. It has already been thinned and pruned.

EXISTING LAND USE

EAST DERBY INDUSTRIAL PARK



SCALE 1" = 660'



It is recommended that the proposed industrial use be made to blend in with the site and leave as much forest land as possible. Wood that is removed could be used to meet the firewood needs of the people in the surrounding area.

Wildlife

Wildlife habitat is provided by the stream wetland complex to waterfowl, songbirds and small mammals. Additional habitat is provided by the wooded areas, with "edge" benefits from access roads, field borders, transmission lines and weedy, brushy areas.

Wetland wildlife including black and mallard ducks are currently using the stream and wetland area. Also, Twomile Brook has in past years been stocked with trout downstream from the site in the vicinity of Orange. Consequently, stream water quality should be protected from pollutants and excess runoff in order to maintain at least present water quality (which generally appears to be good). Development of the site should not encourage plans to reroute the main stream channel for road development. Instead, the roadway should curve around the stream. Also, setting aside a 150 foot strip of undeveloped land as a streambelt adjacent to the wetland boundary would help preserve wildlife habitat values and water quality in the stream wetland system.

Wildlife habitat in wooded areas is provided by a mix of tree and shrub species including silky dogwood, red maple, birches, pussy willow, red oak, American beech, sweet pepperbush and green briar. Brushy weedy spots include thistle, pigweed, soft stem bullrush, cattails and other grasses. Disturbance to wildlife by man and his domestic pets is high. The primary users of this habitat include songbirds, woodpeckers, gray squirrel, racoon, cottontail rabbit, mourning dove, skunk, mice and other small mammals.

Development plans should encourage leaving areas for wildlife where management such as planting fruiting shrubs and vines can be accomplished. Also, making these areas connect with wetland habitat via brushy "corridors" will help increase their value to wildlife.

Development of the area for industrial uses will increase disturbance factors, reduce desirable vegetation, and ultimately reduce both quality and quantity of the wildlife habitat.

Agriculture

As a whole, the site presently holds little promise for profitable commercial agriculture. Cost of clearing and cropping those areas which could support agriculture would be too high to make such a venture feasible. The cultivated fields which are presently part of the tract (used for the production of silage corn) have moderate crop production potential, but comprise a small percentage of the total site acreage. This parcel of land is presently of most value to the surrounding area as a watershed. Proposed development of this area would have negligible effects on surrounding agricultural operations.

HYDROLOGY

The Topography and Drainage Area Map delineates the drainage area, or watershed of Twomile Brook from its headwaters down to the point where it leaves the property near Sodom Lane. It does not depict the stream's total drainage area. The map was developed from the contour lines as they appear

on the 1:24,000 scale topographic map. Therefore, it does not take into account minor fluctuations in land elevation not depicted on the original base map, or any changes in land surface drainage patterns created by the many roads in the area.

The watershed of Twomile Brook has a drainage area of about 1,100 acres at Sodom Lane, East Derby (see map). It is estimated that a 100-year 24-hour Type II storm will produce a peak discharge of 1,100 cubic feet per second and a 10-year storm about 620 cubic feet per second at this location.

The lower (southern) portion of the site contains a natural water storage area which undisturbed affords some flood water storage capacity. The installation of the sewer line and other unrelated earth moving activities have resulted in a loss of storage capacity, on one hand, and have inadvertently created severe channel restrictions which result in greater ponding depths than would normally occur here.

Residential development along Baldwin Road just east of this storage area restricts development of this site for additional flood storage capacity. Commencing at a constriction about 600 feet upstream of Sodom Lane, the 200 foot contour encompasses an area of about 50 acres. At this elevation, storage capacity would be about 15 to 20 acre-feet.

Industrial development of this site will result in increased storm water runoff. In view of this, the following suggestions are made which may help minimize this hazard:

1. A determination should be made of channel capacity and potential flood damage downstream of the proposed site. An increase in storm runoff upstream may result in an increase in frequency of flooding and severity of flooding downstream. In the event a potential flood hazard area exists, storm water management measures should be incorporated that would eliminate any increase in storm peak discharge resulting from the proposed development.
2. A 100-year storm water surface profile should be computed for the Twomile Brook through the project area to assure adequate flowage at an acceptable elevation. Computation of water surface profiles should commence far enough downstream to account for back water resulting from culverts below Sodom Lane.

CLIMATOLOGY

An industrial park, per se, in the area will have little effect on the general climate of the area and the climate poses no severe limitations on the proposed land use. The general climate is mild and is summarized below with data taken from The Climate of Connecticut, Connecticut Geological and Natural History Survey, Bulletin 99, 1965.

Mean Annual Precipitation	48 inches
Mean Annual Temperature	50°F
Average date of last occurrence of 32°F temp in Spring	April 30
Average date of first occurrence of 32°F temp in Fall	October 10
Average winter wind velocity and direction	9.5 mph from the North
Average summer wind velocity and direction	7.5 mph from the South
Average heating degree days	6000

The wetland area is a frost pocket due to the relatively steep surrounding topography. Therefore, it will be slightly cooler with a higher heating demand than is suggested by the average figures above.

Development on the south facing slopes at the north end of the site will have several advantages. The solar radiation load will be approximately 30 percent higher in the winter thus reducing winter heat demand. Also, it will be the most likely spot to receive cooling summer winds.

WATER SUPPLY

Municipal

It was indicated that municipal water sources (Ansonia-Derby Water Company) are available and may be capable of servicing the proposed development. Adequacy of service will depend upon the type of industry allowed and fire protection required. High water users should consult with the local water works for adequacy of the needed supply. The water company should work closely with the industrial park developers to insure adequate future supply is available for expansion.

On-site

If later it is determined on-site sources must instead be utilized, then the only reliable source will have to be the bedrock aquifer or possibly the stratified sands and gravels.

The bedrock throughout the area is relatively hard, dense crystalline rock composed of tightly interlocked mineral grains which make passage of water through the intergranular openings extremely slow and difficult. However, most bedrock groundwater flows along the cracks or joints within the rock and these, based on extensive geologic investigation, are found to be larger and more numerous within the 200 to 250 feet of bedrock closest to the land's surface. Statistically, crystalline bedrock wells in this zone will yield at least 3.5 gallons of water per minute in 75 percent of the cases.

The other potential on-site source of water may be the ice-contact sand and gravel deposits, although a test drilling program to assess the potential would have to be undertaken. Based on the surface topography and the location of outcrops, it would appear this source may not prove to be much better in terms of long-term yield and quality than use of the bedrock aquifer.

WASTE DISPOSAL

There is a new sewer line through the site which is an extension of the City sewage system. It may or may not be large enough depending upon the kinds of industries allowed on the site and the kinds of materials discharged. Derby's new Secondary Sewage Treatment Plant is expected to be operating at close to its 3.5 million gallons per day capacity in the very near future. The anticipated quantity and quality of the wastes emitted from each proposed industry should be viewed to insure that adequate treatment can be made.

Consideration should be given to the types of solid wastes to be generated, and where and how they will be disposed of, or recycled if possible. It has been suggested that the nearby landfill may have the capacity to absorb some of the wastes.

FOUNDATION DEVELOPMENT AND GRADED CONDITIONS

There does not appear to be any major problem with soil support. The present wet areas supported sizeable trees before being flooded by the diking caused by installing the present sewer line. The remaining upland portions are of rocky soil, and slopes in the areas to be utilized can be classified as slight to moderate. For the most part, the area falls into the 3-15 percent slope range and is well suited for the proposed development with moderate cuts and fills necessary. (It is assumed development will not occur in poorly drained areas.)

Plans for controlling erosion and sediment should be incorporated into the construction plans and implemented prior to the start of the construction. It is suggested that runoff detention pools be planned for the area as sites are developed. These may be planned as temporary structures or made as permanent features to protect downstream areas.

ROADS AND UTILITIES

At present there are no formal roads on the site other than old farm roads and roads used to haul out the gravel. All roads that will be required in a plan will have to be designed from the beginning with the developed watershed in mind. The Team was told that trucking terminals would probably not be allowed, therefore, most roads on the site with careful investigation of foundation should not be a problem. There are several surrounding streets to make connections with interior roads a very small problem, especially if the northern most portion of the property is not developed. Entrance from the east side of the site would be more difficult because the road along this area is in another town. Precautions should be taken so that residents in the immediate area are not subjected to heavy traffic flows from the industrial park.

MAN-INDUCED HAZARDS

When man's development requirements and practices of land use diverge from the natural state, they often cause significant alterations to the hydrologic system. Twomile Brook's natural condition is presently being aggravated by upstream development and on-site drainage restrictions. As a result, the water table fluctuates close to the land's surface throughout the year in flat low-lying areas, and the stream is being laden with sediment. Further aggravation of this condition could cause on-site and downstream flooding as previously discussed.

On the day of the Team's visit to the site, it was noted that leachate from the town's landfill was being carried directly into Twomile Brook by an intermittent stream. The stream flows from the northwest, past the toe of the filled area where the leachate was most evident. At this point, Twomile Brook was also overflowing its natural channel and crossing the gas pipeline right-of-way to mix with the intermittent stream water and leachate. The mixture eventually joined the main stream system to the south. Consideration should be given to methods and possibilities of moving the proposed street "A" closer to the toe of the landfill, and bypassing the intermittent stream directly to Twomile Brook before it flows past the toe of the landfill. This should help to prevent direct leachate flow into the surface water system as the road will act as a barrier through which leachate will have to pass. Thereby, the waters will receive greater renovation than is obviously occurring under present conditions.

Any air pollutants generated in the industrial park will be transported over heavily populated areas before dispersing. The proximity of the area to Route 34 means that any air emissions generated in the industrial park will mix with the already heavy auto emissions from the highway. The possibility of a synergistic effect of the mixing exists. Therefore, care should be taken to insure that the industrial park will not add to the air pollution load in the area.

COMPATIBILITY OF SURROUNDING LAND USES

Existing land uses in the immediate area of the proposed industrial park are residential, agricultural and commercial. The site is surrounded by residential areas to the west and southwest in East Derby, to the north in Ansonia, and to the southeast in Woodbridge. Agricultural lands are found at the northeastern boundary of the site in Woodbridge and across the southern end of the site in Orange. A commercial area is located southwesterly of the site along Route 34.

Approximately three-quarters of the site is under an I-2 (Industrial) zoning classification. An industrial application may be approved by the Zoning Commission as a Special Exception, after certain specific criteria are satisfied. The I-2 zone is not exclusively for industrial activity, residential development is also permitted. If the City intends that this site should be reserved for industrial activity, the zoning regulations should be modified to permit only industrial activity.

Since the proposed use for industry is generally conflicting with residential and agricultural zones, the industrial park should be accomplished with minimal adverse environmental effect on the site itself and surrounding areas. Efforts should be made to provide adequate buffer screens around all development.

ALTERNATIVE LAND USES FOR THE AREA

The site does not appear to be suitable for intensive agricultural use, but it would make a good natural park or recreation area for the communities concentrated just north and west of the parcel. Potential uses include: picnicking, hiking, nature trails, and environmental study. The total site area may provide more land than would be needed for the number of people living in the area. The 35 acres of open space in the present plan is a commendable portion to reserve. It would be desirable if it were fairly accessible to area residents and concentrated into large enough portions for recreational use.

APPENDIX

SOILS LIMITATIONS CHART
East Derby Industrial Park

Limitation Ratings For:†

Natural Soil Group	Mapping Symbol	Slope %	Approx. Acres	Percent of Total Acres	On-site Sewage	Buildings with Basements	Land-scaping	Streets & Parking lots	Principal Limiting Factor(s)
A-1b	60B	3-8	3	1.3	1	1	3	2*	droughtiness *only slope
A-1b	60C	8-15	1	.4	2	2	3*	3	slope *also droughtiness
A-1d	65B	3-8	5	2.2	1	1	1	2	slope
A-2	45A	0-3	4	1.8	2	2	1	2	seasonal water table
A-3b	91	-	25	11.1	3	3	3	3	very high water table, organic material
A-3b	754	-	3	1.3	3	3	3	3	very high water table
B-1a	32B	3-8	24	10.6	1	1	1	2	slope
B-1a	32XB	3-8	37	16.3	1	2	2	2*	stoniness *slope
B-1b	32C	8-15	6	2.7	2	2	2	3	slope
B-1b	32XC	8-15	8	3.5	2	2*	2*	3	slope *also stoniness
B-1d	32D	15-25	3	1.3	3	3	3	3	slope
B-2a	41B	3-8	6	2.7	2	2	1	2*	seasonal water table *also slope
B-2b	41MA	0-3	1	.4	3	3	3*	3	stoniness, seasonal water table *only stoniness
B-3b	43M	0-5	9	4.0	3	3	3	3	very high water table, stoniness
D-1	17LC	3-15	16	7.1	3	3	3*	3*	shallowness *also slope
D-2	17LD	15-35	4	1.8	3	3	3	3	shallowness, slope
E-3a	853	-	12	5.3	3	3	3*	3	flood hazard, high water table *only high water table
G-3a	464	-	24	10.6	3	3	3	3	high water table
G-3a	790	-	2	.9	3	3	3	3	high water table
U	ML2	-	4	1.8	V	V	V	V	variable
U	ML3	-	13	5.8	V	V	V	V	variable
U	Landfill (ML1)	-	16	7.1	V	V	V	V	variable
Total			226	100.0					

† Limitation Ratings: 1 - slight, 2 - moderate, 3 - severe
U - Unclassified
V - Variable

ACREAGE SUMMARY OF SOILS LIMITATIONS
East Derby Industrial Park

Total Acres - 226	Slight		Moderate		Severe	
	Acres	%	Acres	%	Acres	%
On-site Sewage Disposal	69	30.6	25	11.1	99	43.8
Buildings with Basements	32	14.2	62	27.4	99	43.8
Landscaping	39	17.2	51	22.6	103	45.6
Streets & Parking Lots	0	0.0	79	35.0	114	50.4

SOIL INTERPRETATIONS FOR URBAN USES

The ratings of the soils for elements of urban uses consist of three degrees of "limitations"; slight or no limitations, moderate limitations, and severe limitations. In the interpretive scheme various physical properties are weighed before judging their relative severity of limitations.

The user is cautioned that the suitability ratings, degree of limitations and other interpretations are based on the typical soil in each mapping unit. At any given point the actual conditions may differ from the information presented here because of the inclusion of other soils which were impractical to map separately at the scale of mapping used. Detailed on-site investigations are suggested where the proposed soil use involves heavy loads, deep excavations, or high cost. Limitations, even though severe, do not always preclude the use of the land for development. If economics permit greater expenditures for land development and the intended use is consistent with the objectives of local or regional development, many soils and sites with difficult problems can be used.

1. Slight Limitations. Areas rated as slight have relatively few limitations in terms of soil suitability for a particular use. The degree of suitability is such that a minimum of time or cost would be needed to overcome minor soil limitations.
2. Moderate Limitations. In areas rated moderate, it is relatively more difficult and more costly to correct the natural limitations of the soil for certain uses than for soils rated as having slight limitations. The additional cost ranges from average to higher than average outlay when such areas are compared with areas rated as having slight limitations.
3. Severe Limitations. Areas designated as having severe limitations would require more extensive and more costly measures than soils rated with moderate limitations in order to overcome natural soil limitations. The soil may have more than one limiting characteristic causing it to be rated severe.