Pennsylvania W.P. TC 328 .M3 75 1989 c.1

Marina Feasibility Study

RIDLEY TOWNSHIP, PA.

TC
328
.M375
1989

MENTED BY THE PA. DEPT. OF ENVIRONMENTAL RESOURCES
NDER THE PA. COASTAL ZONE MANAGEMENT PROGRAM
RECTION ASSOCIATES....CONSULTANTS....SPRING HOUSE, PA....JULY 1981

MARINA FEASIBILITY STUDY

RIDLEY TOWNSHIP,

DELAWARE COUNTY, PENNSYLVANIA

DIRECTION ASSOCIATES, INC.

PLANNING CONSULTANTS

H. GILROY DAMON ASSOCIATES, INC.

CONSULTING ENGINEERS

Funding for this study is provided by the Federal Government through the office of Coastal Zone Management, National Oceanic and Atmospheric administration under Section 305 of the Coastal Zone Management Act of 1972 (P.L. 92-583) acting through the Pennsylvania Department of Environmental Resources, Office of Resources Management.

RIDLEY TOWNSHIP

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Ridley Township, Anne E. Howanski, Township Manager.

Delaware County Planning Department, Lois Binder, Planner.

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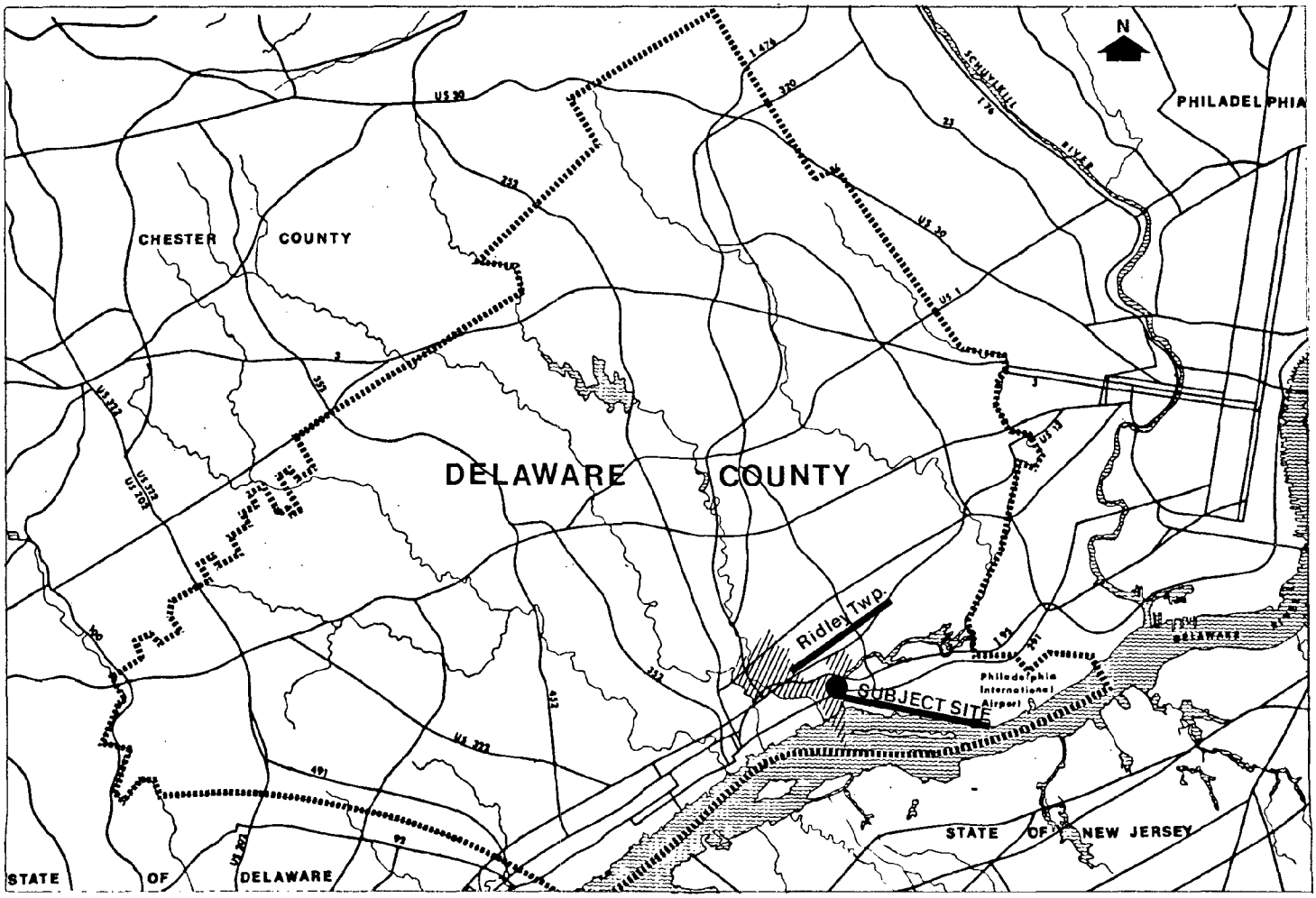
Regional Location Map



INTRODUCTION

Ridley Township is one of several communities that have been awarded a grant to conduct a planning study of a proposed project within the Coastal Zone of the Delaware River. These grant funds are Federal funds that have been appropriated by Congress for distribution to Coastal Zone states under the Coastal Zone Management Act of 1972. In the State of Pennsylvania, these funds are administered by the Pennsylvania Department of Environmental Resources.

The Coastal Zone Management Act states, as a general goal, a national policy to preserve, protect, develop, and, where possible, to restore or enhance the resources of the Coastal Zone. The funds appropriated are to be used to develop specific Coastal Zone policies, objectives and goals within each state and to conduct planning studies for projects that are consistent with these policies, objectives, and goals.

The planning grant awarded to Ridley Township is to be used to conduct a feasibility study for a site located along Darby Creek, near the intersection of Sellers Avenue and the Industrial Highway, to determine the potential for its development as a marina/boat ramp/recreation area. This study is consistent with the Commonwealth's goals of: improving public access for recreation opportunities within the Coastal Zone, and encouraging planning and development in the flood plains which is consistent with sound land use practices.

The first public meeting conducted under this study resulted in significant public comment (See Appendix II, Minutes of Public Meetings). Principal among these comments was a questioning of the need for an additional marina in this area rather than another type of recreation/water access facility. As a result, the Township Commissioners, after conferring with the Delaware Valley Regional Planning Commission, The Pennsylvania Department of Environmental Resources and the Delaware County Planning Commission, requested that the planning consultant, Direction Associates, Inc., revise the focus of the study to an analysis of the feasibility of developing the site as a public boat ramp/passive recreation area.

The following report has responded to this request. While reading this report, it is important to remember that this study is "site specific," i.e., the report analyzes the feasibility of developing a particular use on a particular site. Alternative sites are not considered in this report.

Prior to the availability of planning grants under the Coastal Zone Management Program, Ridley Township sought funding for the acquisition of this site from the Pennsylvania Department of Community Affairs, Bureau of Recreation and Conservation. This was prompted by the fact that the owner, The Boeing-Vertol Company, had listed the property for sale. When the Township was not successful in securing such funding, it availed itself of the opportunity provided by the Coastal Zone Management Program.

GENERAL SITE DESCRIPTION

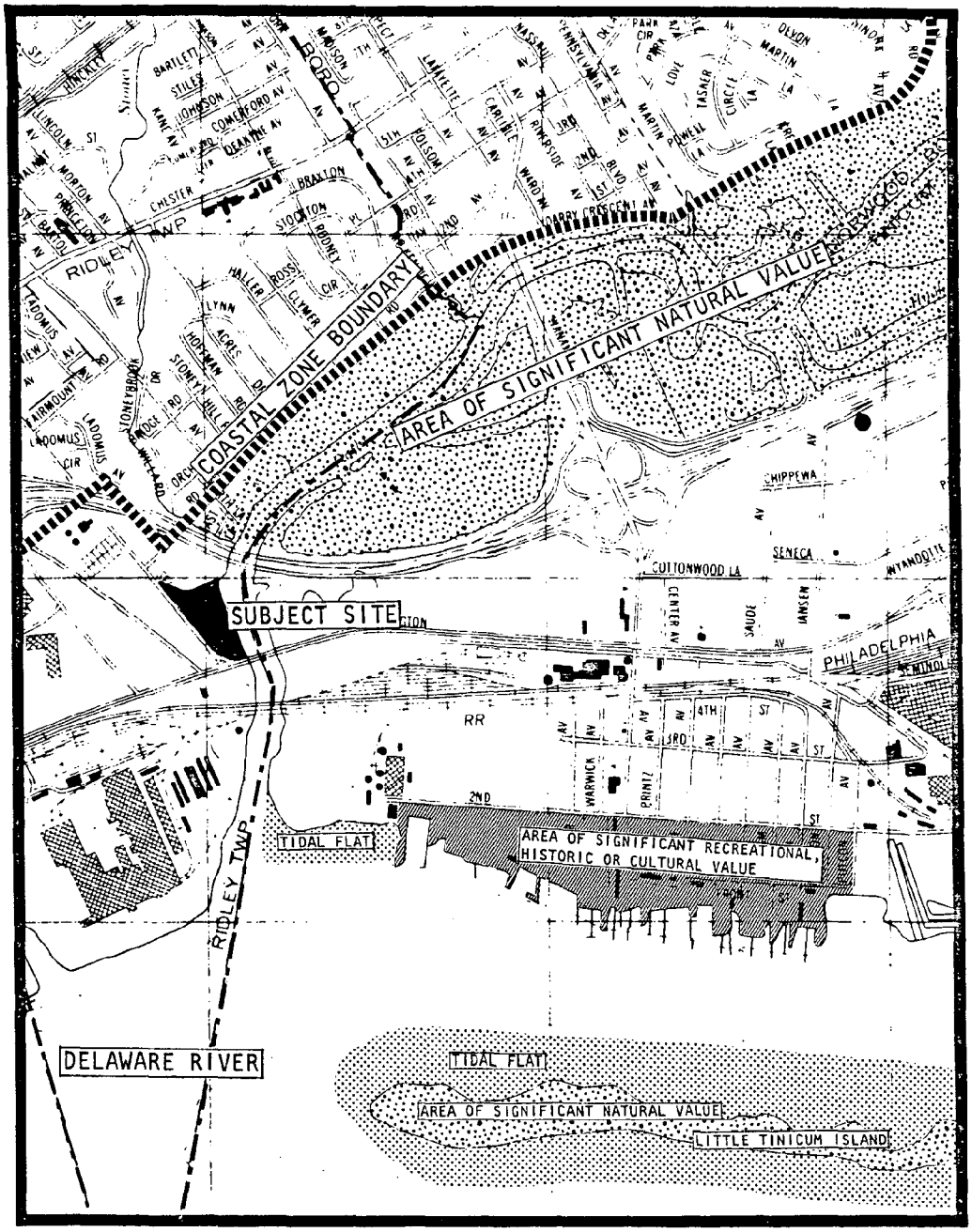
The map, Coastal Zone, identifies the land area in Ridley Township that lies within the Coastal Zone and the relationship of the site to the boundary of the Coastal Zone. The site is one of two (2) undeveloped areas with water frontage in the Coastal Zone in Ridley Township. To the south and west of the site, the Township's Coastal Zone area is developed for industrial use (Boeing-Vertol). This includes land area fronting on the Delaware River. North and east of the site, land area along Darby Creek includes commercial (The Ponderosa Restaurant and Morrow's Marina) and public recreational use (Leedom Estates Park). The second undeveloped area lies between these two (2) land uses.

The land use pattern found within Ridley Township's Coastal Zone area is consistent with the following statements describing development in the Delaware Estuary presented in the Pennsylvania Coastal Zone Management Program Technical Record (p. 5-18):

> "Along the Delaware Estuary most of the shorefront is occupied by intensive industry, port facilities, utilities, and urban uses. Relatively few areas have been developed for public access and some of these have been allowed to deteriorate and become unattractive or unsafe."

The Sellers Avenue site selected for this study is one of the few remaining areas of vacant land that provides the opportunity for public access to Darby Creek and the Delaware River.

The site selected for analysis is a 5.7 acre tract of land located on the northeast corner of the intersection of Sellers Avenue and Route 291, the Industrial Highway. The site lies on the western bank of Darby Creek, between the Route 291 bridge and the I-95 bridge. It is approximately ½ mile north of the mouth of the Delaware River.



Coastal Zone

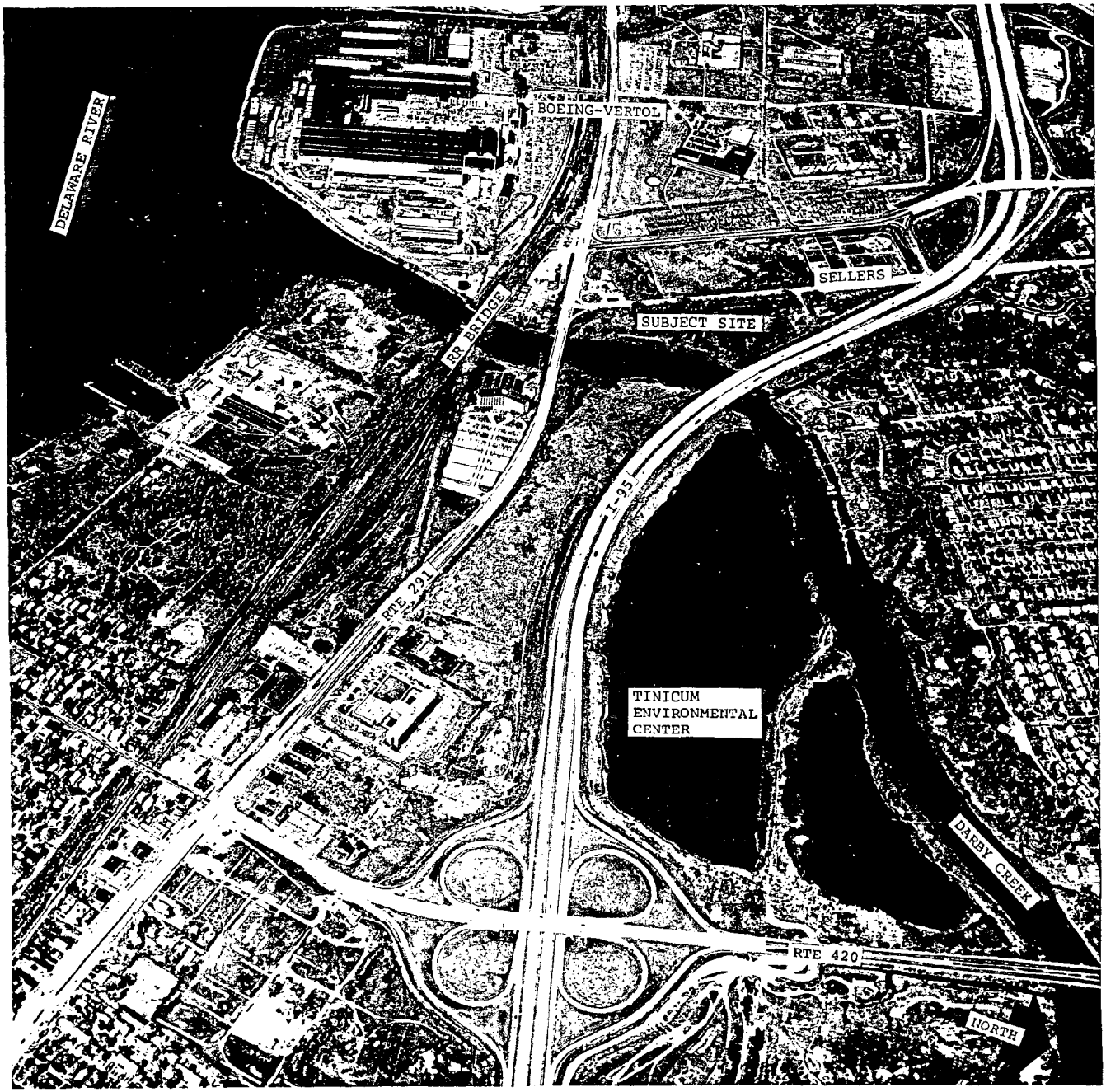
MARINA FEASIBILITY STUDY
Ridley Township, Pa.

0 2000'
1000' 3000'

N

Direction Associates, Inc..... Consultants..... Spring House, Pa.

The site is presently owned by the Boeing-Vertol Company. Several years ago, the site, which is vacant, was advertised for sale. The site remains available for sale and the Township has expressed its interest in the property to Boeing-Vertol. During the course of this study, the Philadelphia Electric Company approached the Boeing-Vertol Company to pursue the conveyance of an easement across a portion of the site. Such easement is presently being negotiated. The easement involves .284 acres which traverses the width of the site in its extreme southern portion. It is anticipated that the easement will be used for the placement of an aerial tower to carry PECO transmission lines across Darby Creek.



Stephenson Air Photos, Mount Laurel, New Jersey.

PHYSICAL CHARACTERISTICS

TOPOGRAPHY

The map, Topography, defines elevations on the site at one (1) foot intervals; cross section profiles are provided in Appendix I. Using Sellers Avenue as a point of reference at elevation 10 feet, the site drops abruptly from the roadway to an elevation of 7 feet, and 6 feet. As Sellers Avenue approaches the Industrial Highway, this descent becomes more severe with Sellers Avenue rising to meet the Industrial Highway at elevation 25 feet.

After the initial drop from Sellers Avenue, the site slopes gently to Darby Creek. The middle portion of the site maintains an elevation of approximately 8 feet. In the north, the elevation descends to 2 feet and 3 feet in the areas adjoining Stony Creek, a tributary of Darby Creek. In the southern portion of the site, an elevation of 6 feet is generally maintained.

The elevations identified on the site all fall below the elevation of 10 feet. The Flood Insurance Rate Map indicates that elevation 10 feet defines Zone A4 the 100 year flood plain

A considerable area beyond the site is included within the 100 year flood plain. It should be noted that a floodway is not defined for this portion of Darby Creek. A floodway is an area in riverine situations which includes the channel and overbank areas that must be kept free of encrouchment to allow for the 100 year flood to be carried without substantial increases in flood heights. However, this concept applies only to fluvial flooding; backwater computation to determine floodway limits are not appropriate.* This area of Darby Creek is tidal; flooding is produced by storm tides in the Delaware River that result from prolonged high winds from the east. **

* Flood Insurance Study, Township of Ridley, Pennsylvania, U.S. Department of Housing and Urban Development, Federal Insurance Administration, May 25, 1981. p.15

**The Natural Features of Tinicum Marsh with Particular Emphasis on the Vegetation. Jack McCormick, Academy of Natural Sciences of Philadelphia, p. 21.

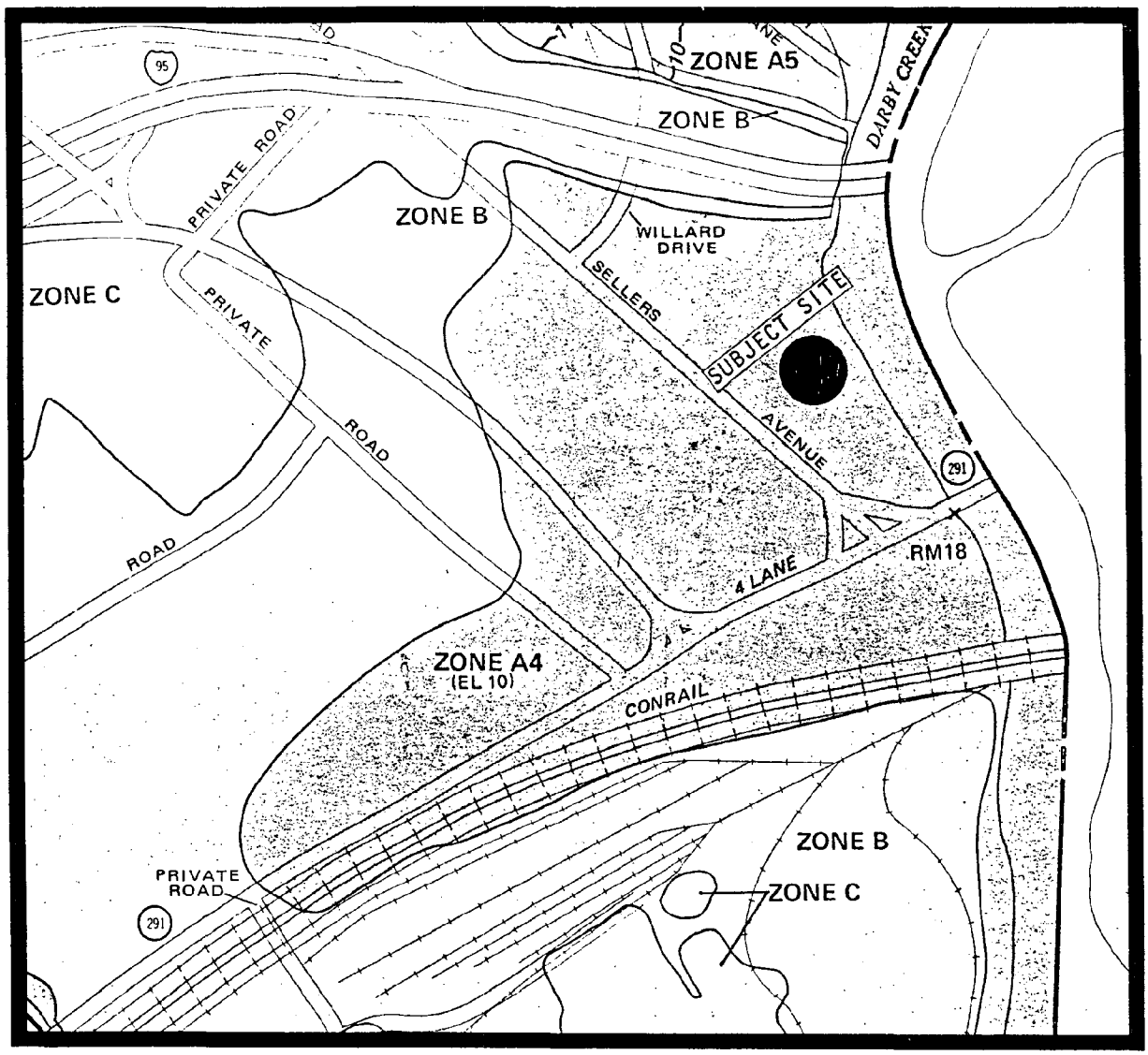
Topography

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

50 0 50 100 150 200

N

Direction Associates, Inc..... Consultants..... Spring House, Pa.



Flood Insurance Rate Map

Revised Preliminary/ May28,1981

ZONE A

Areas of 100-year flood; base flood elevations and flood hazard factors not determined.

ZONE B

Areas between limits of the 100-year flood and 500-year flood; or certain areas subject to 100-year flooding with average depths less than one (1) foot or where the contributing drainage area is less than one square mile; or areas protected by levees from the base flood.

ZONE C

Areas of minimal flooding.

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

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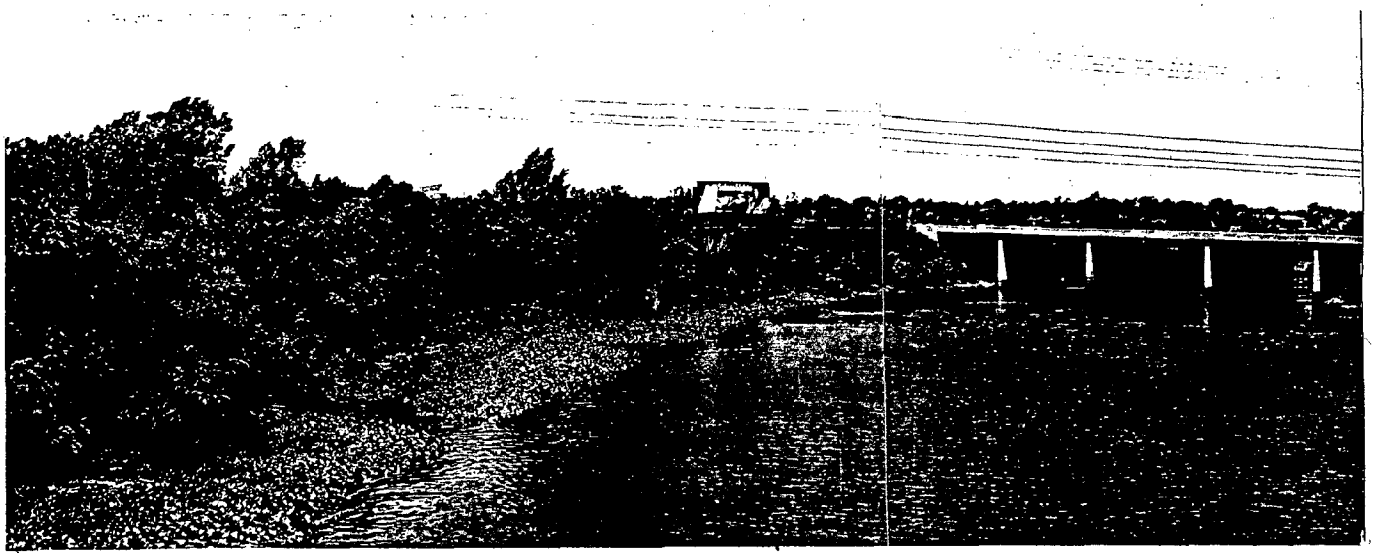
ON-SITE VEGETATION

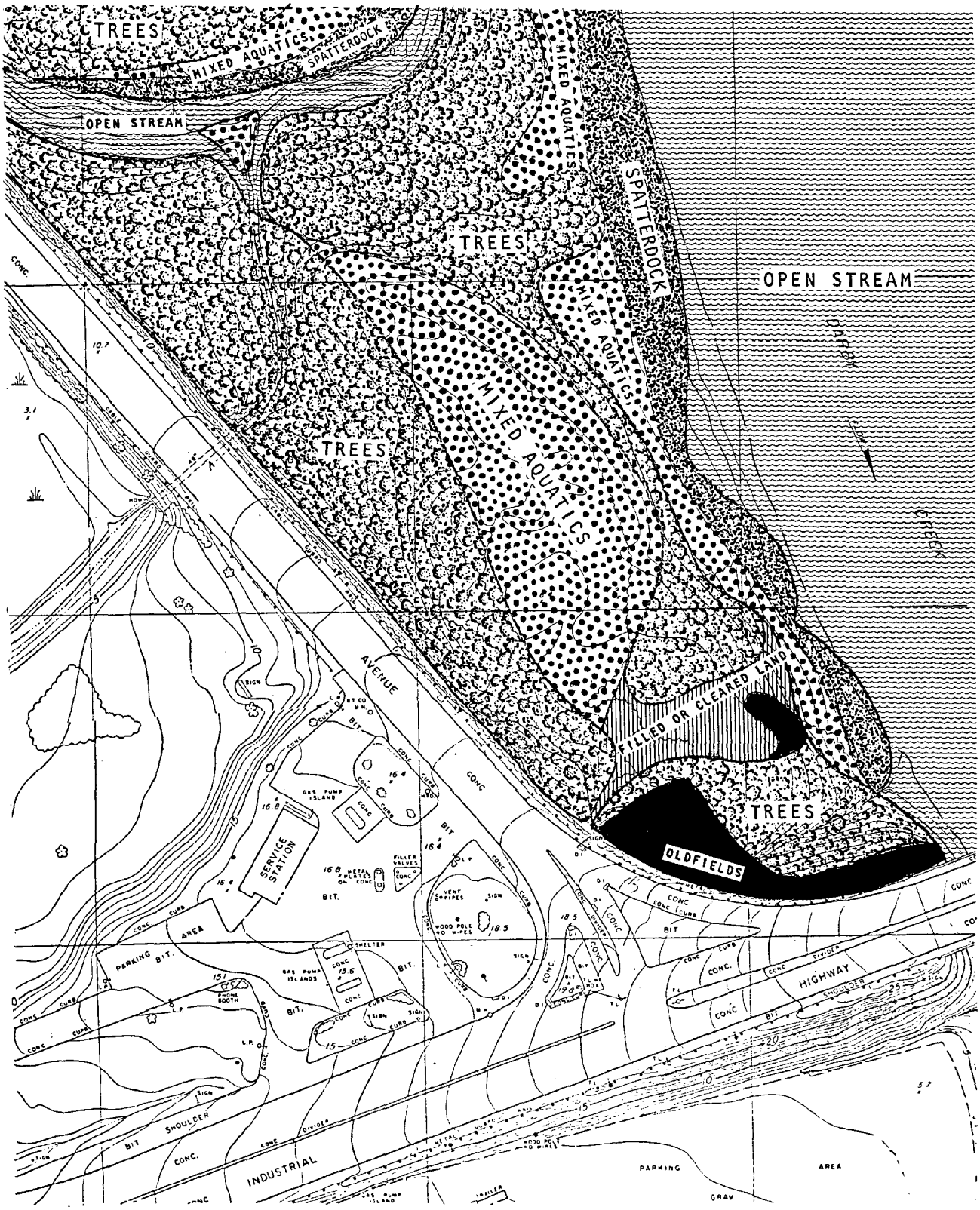
The maps, On-Site Vegetation and Topography, indicate that dense trees occupy a substantial portion of the site. This is apparent in the photograph presented below. Also apparent in the photograph is the existence of spatterdock and mixed aquatic vegetation along the bank of Darby Creek.



A view of the water frontage of the Sellers Avenue site. This photograph was taken from the Route 291 Bridge looking north on Darby Creek to the I-95 bridge.

The spatterdock and acquatic vegetation occur within the area subject to tidal influence. The mean high tide in this section of Darby Creek reaches an elevation of 3.5 feet. A comparison of the On-Site Vegetation Map with the Topography Map supports this relationship.

Such vegetation occurs within wetlands and flood plain areas. In 1973, the Academy of Natural Sciences conducted the Delaware River Estuarine Marsh Survey in which they defined wetland areas. This information was used in the preparation of the Pennsylvania Coastal Zone Management Program Technical Record. In this survey, the subject site was not identified as a wetland area; it is identified only as flood plain in the Technical Record.



On-Site Vegetation

SOURCE: TWO STUDIES OF TINICUM MARSH, THE CONSERVATION FOUNDATION, 1970

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

50 0 50 100 150 200

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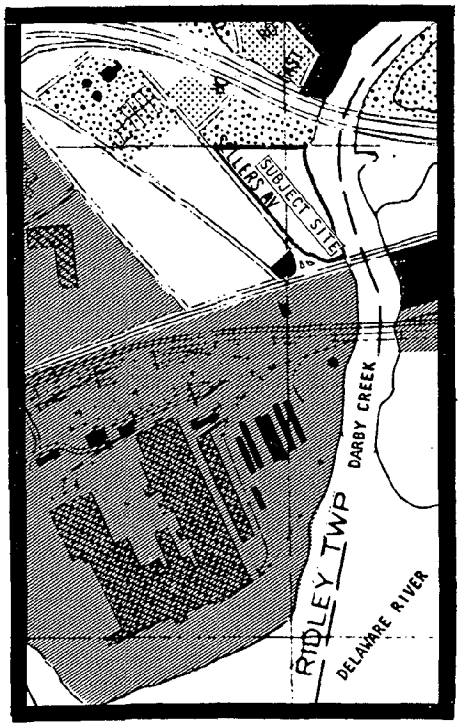
Direction Associates, Inc..... Consultants..... Spring House, Pa.

LAND USE PATTERNS

The site is entirely vacant at present. However, there are remnants of one or two buildings which area residents say were once dwellings. It is likely that these dwellings were damaged or destroyed in flood waters and were subsequently abandoned.

Immediately to the north of the site, on the opposite side of Stony Creek, a new sanitary sewage pumping station has been constructed. This pumping station is part of the DELCORA system; it discharges into Darby Creek adjacent to the pumping station. North of the site there are also two isolated dwellings. The I-95 bridge crossing Darby Creek adjoins the residences and the pumping station. On the northern side of the bridge, commercial uses (a restaurant and a private marina) occupy the waterfront area. Adjoining these commercial uses on the west or inland side is a densely developed residential area.

Land area on the opposite side of Sellers Avenue (the western side) is mostly undeveloped. This land is part of the holdings of the Boeing-Vertol Company whose principal facilities lie farther to the west and south. Immediately north and south of this vacant land area are two developed land uses, public and commercial. The public development is an old sanitary sewage treatment plant that has been phased out of use with the construction of the new pumping station. The commercial development occurs in the form of a gas station at the corner of Sellers Avenue and the Industrial Highway.



Generalized Land Use

- RESIDENTIAL
- COMMERCIAL
- PUBLIC
- INDUSTRIAL
- VACANT LAND

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

N

The balance of land area on the western bank (Ridley Township) of Darby Creek is owned and has been developed by the Boeing-Vertol Company for industrial use. This includes all of the land area between the site and the mouth of the Delaware River. The Delaware River frontage illustrated on the Generalized Land Use Map is the only river frontage within Ridley Township. All of this river frontage has been developed for industrial use.

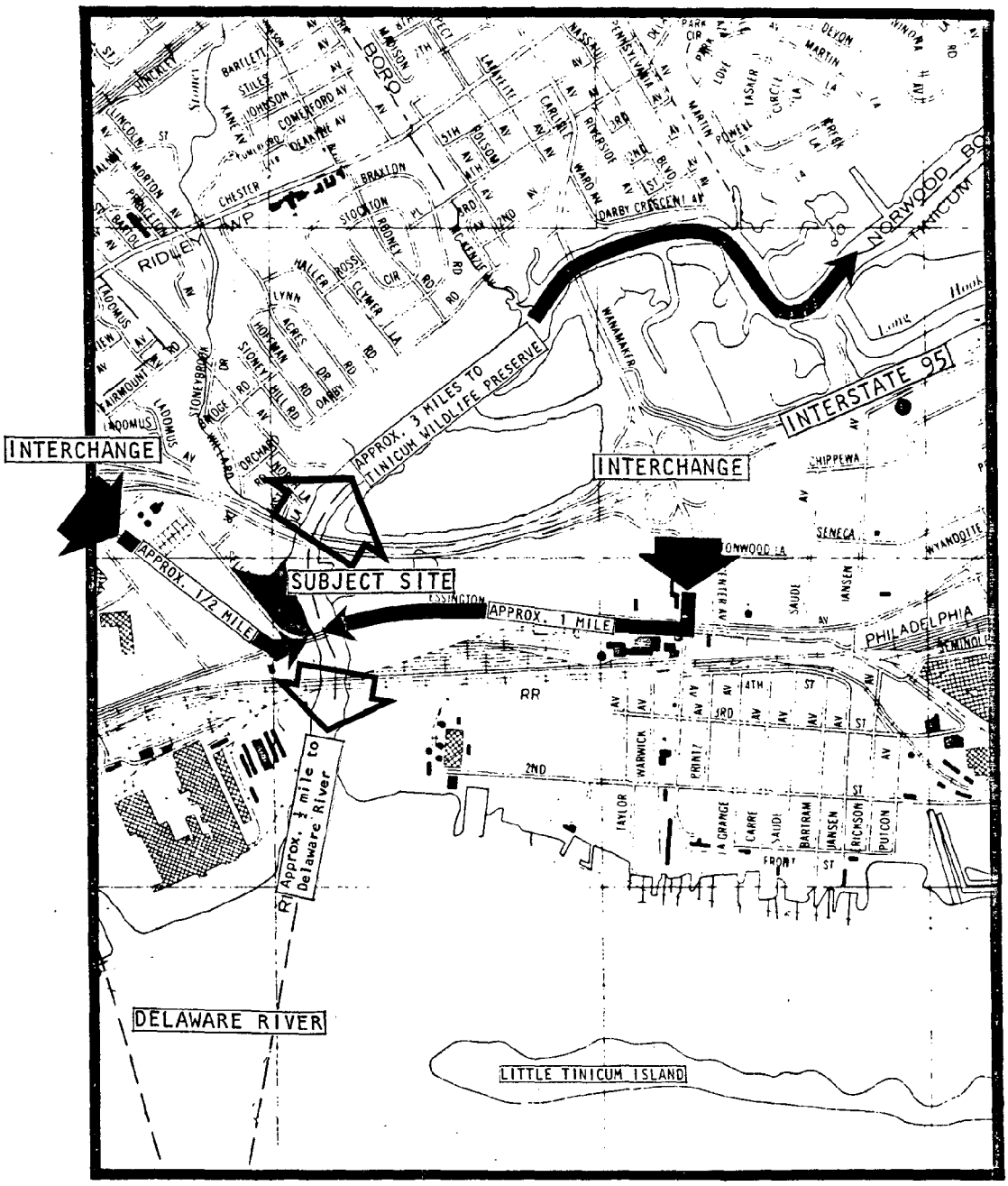
Land uses on the eastern bank of Darby Creek lie within Tinicum Township. The area on the opposite bank of the Creek, between I-95 and the Industrial Highway, is shown as vacant land. As is the case with the subject site, this land area is not identified as a wetlands area, but rather as a flood plain area. Immediately to the north of I-95 we find a public land use. This is the beginning of the 1,200 acre tract of the Tinicum National Environmental Center. To the south of the Industrial Highway there is a commercial use, the tract of the Ramada Inn. Farther south, industrial use identifies the railroad right-of-way. Between the railroad right-of-way and the mouth of the Delaware, the land on the eastern bank of Darby Creek is undeveloped.

SITE ACCESSIBILITY

A very important consideration in the analysis of a site for public access to water resources is the ease of access to the site. In reviewing accessibility there are several points of concern: are there adequate roadways to the site; will the traffic generated by the use of the site adversely affect sensitive uses along these roadways, and; is the site easily accessible from the water resource? The map, Site Accessibility, summarizes the conditions of access to the site from the existing road system and water resources.

HIGHWAY

The site is visible and accessible from two (2) of the most heavily traveled roads in the region, I-95 and the Industrial Highway. Sellers Avenue intersects the Industrial Highway adjacent to the site. Sellers Avenue also intersects Chester Pike northwest of the site. A major interchange for I-95 is located approximately ½ mile from the site. Finally, the intersection of the Industrial Highway and Route 420 (Wanamaker Avenue) is approximately 1 mile from the site. Route 420 is an important north-south route which, at this location, also forms part of the second major interchange in the immediate area for I-95.



Site Accessibility

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

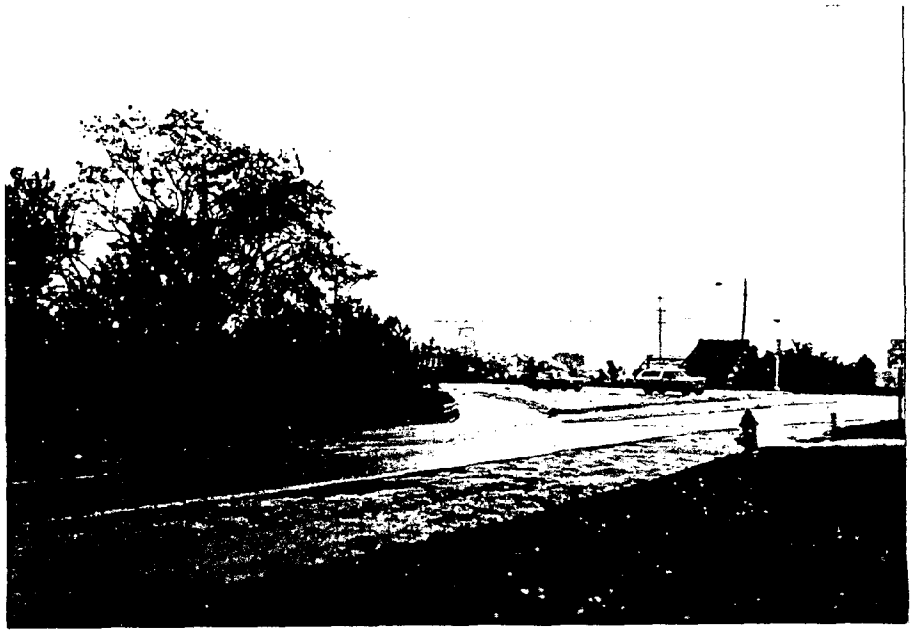
0 1000' 2000' 3000'

N

Direction Associates, Inc..... Consultants..... Spring House, Pa.

This photograph was taken from the gas station at the intersection of Sellers Avenue and the Industrial Highway looking north on Sellers Ave. The subject site is the densely wooded area

This photograph was taken from the same location looking south on Sellers Avenue to its intersection with the Industrial Highway. The subject site is the densely wooded area on the left.



Sellers Avenue maintains a 36 foot cartway within a 56 foot right-of-way. This allows for two (2) traffic lanes south and one (1) traffic lane north. This is more than adequate for a Collector or a Local street. Because of the steep drop from the roadway to the site, there is little usable shoulder area and a metal guard rail has been provided. There is presently no access road from Sellers Avenue into the site. The Sellers Avenue intersection with the Industrial Highway provides for free flow right-hand turning movements from the Industrial Highway west to Sellers Avenue north, and from Sellers Avenue south to the Industrial Highway west.

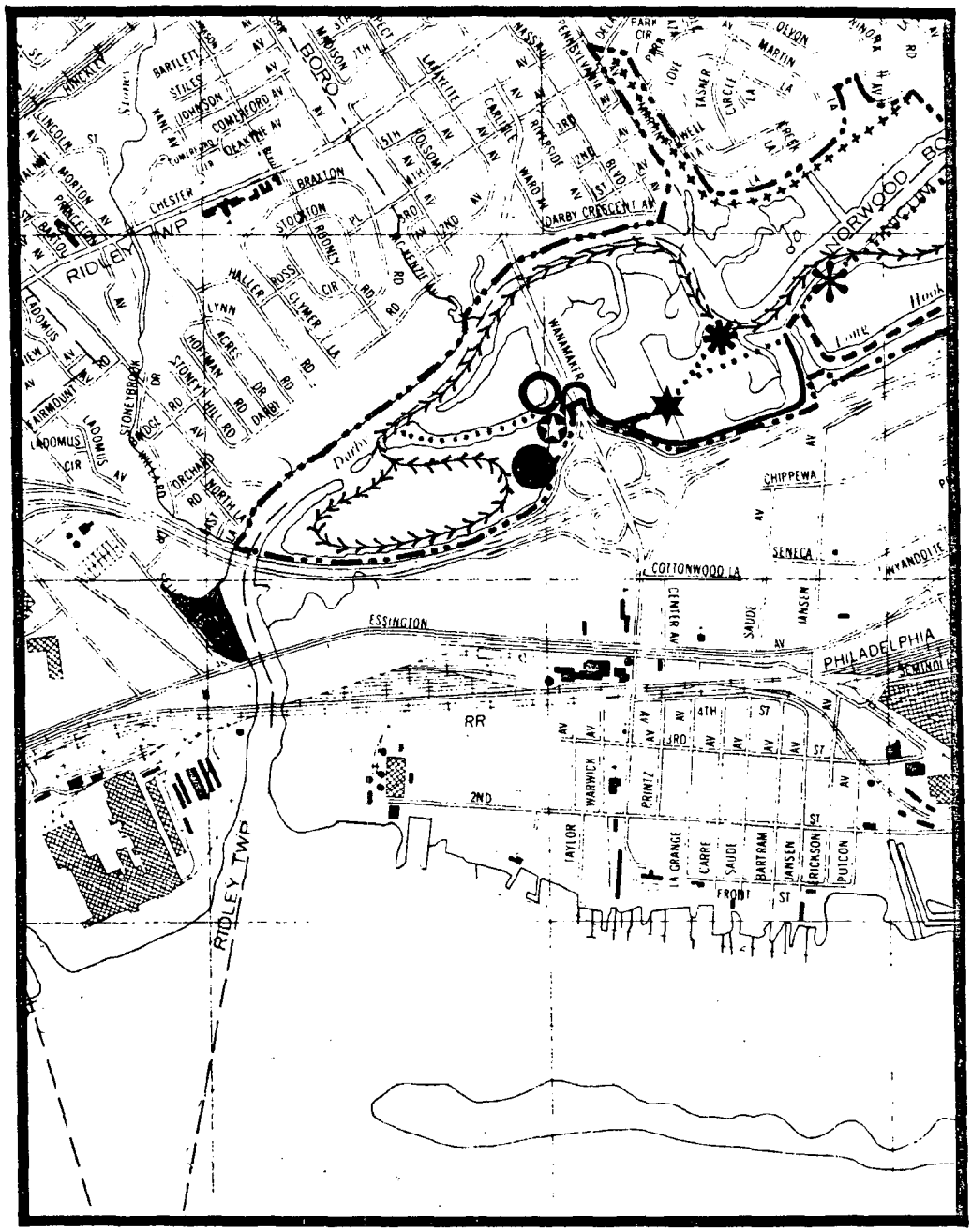
The 1974 Comprehensive Plan for Ridley Township classified highways by their function in the circulation system. I-95 was identified as a Principal Arterial Highway; the Industrial Highway as a Minor Arterial Highway, and; Sellers Avenue as a Collector. Prior to the opening of I-95, traffic in this area of the Industrial Highway was heavy (36,800 ADT in 1972). Accordingly, traffic on Sellers Avenue, a Collector which feeds the Industrial Highway, was also relatively heavy (12,700 ADT in 1972). One of the products of this heavy flow of traffic was the listing of the Sellers Avenue and Industrial Highway intersection as one of a number of "hazardous intersections" in the Township.

Subsequently, Route I-95 was opened to traffic in this area with the anticipated result that traffic volumes on both the Industrial Highway and Sellers Avenue will decline. With reduced traffic volumes, it is also assumed that traffic accidents will decline, removing the Sellers Avenue/Industrial Highway intersection from the list of "hazardous intersections". Further improvements in traffic flow are anticipated when the final section of I-95 near the Philadelphia Airport is completed. As a result, the Major Thoroughfare Plan in the Comprehensive Plan reduces the function of Sellers Avenue from a Collector to a Local street.

Each of the roadways identified provides the potential for access to the site on a regional, as well as local, level. It is important to note that traffic generated by the development of the site should not adversely affect traffic flows on these roadways.

WATER

The subject site is located on the western bank of Darby Creek approximately ½ mile north of the mouth of the Delaware River, Immediately to the north of the site, upstream on Darby Creek, boating activities lead to the Tinicum National Environmental Center. At the present time, there is only one water access facility, a canoe landing, in the Environmental Center. This facility is in the northeastern portion of the Center in Philadelphia. The stream at this location is not navigable at low tide. Future plans for the Environmental Center include the development of a canoe landing area in the tidal lagoon west of Wanamaker Avenue (Route 420). This new facility will offer canoe rentals.



Future Development
Tinicum Nat'l Environmental Center

- PARKING/COMFORT STATION
- VISITOR CONTACT STATION
- REST AREA
- OBSERVATION BLIND
- CANOE LANDING
- FISHING DOCK
- PUBLIC ACCESS
- SERVICE & PEDESTRIAN ACCESS
- BICYCLE TRAIL
- WETLAND BOARDWALK
- CANOE TRAIL
- BOUNDARY

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

0 1000' 2000' 3000'

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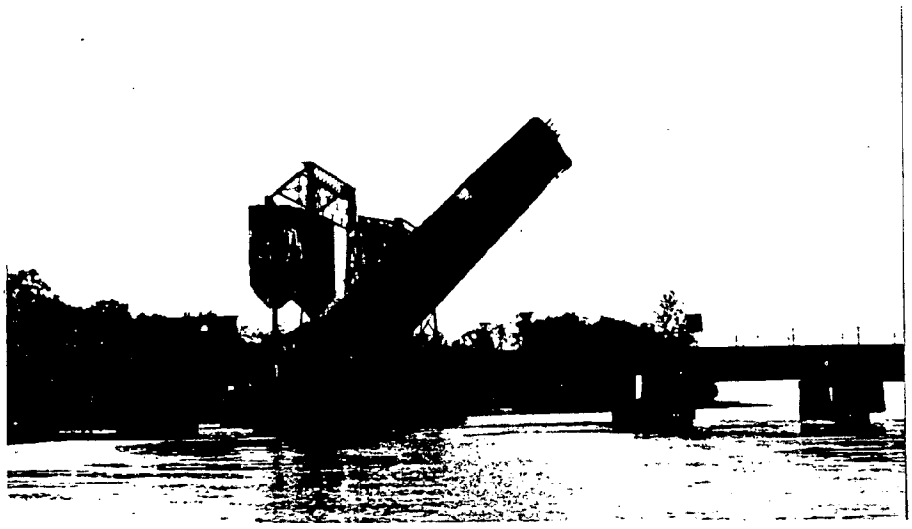
Direction Associates, Inc..... Consultants.....Spring House, Pa.

The subject site provides convenient access to the Tinicum National Environmental Center; particularly for motorboats. However, motorboats must regulate their speed in the Environmental Center so as not to produce a wake. Canoes and sailboats may also launch from the subject site for access to the Environmental Center. However, the narrowness of the stream and the strength of the tidal current suggest that the proposed canoe landing in the tidal lagoon is a more likely location for the use of these types of boats.

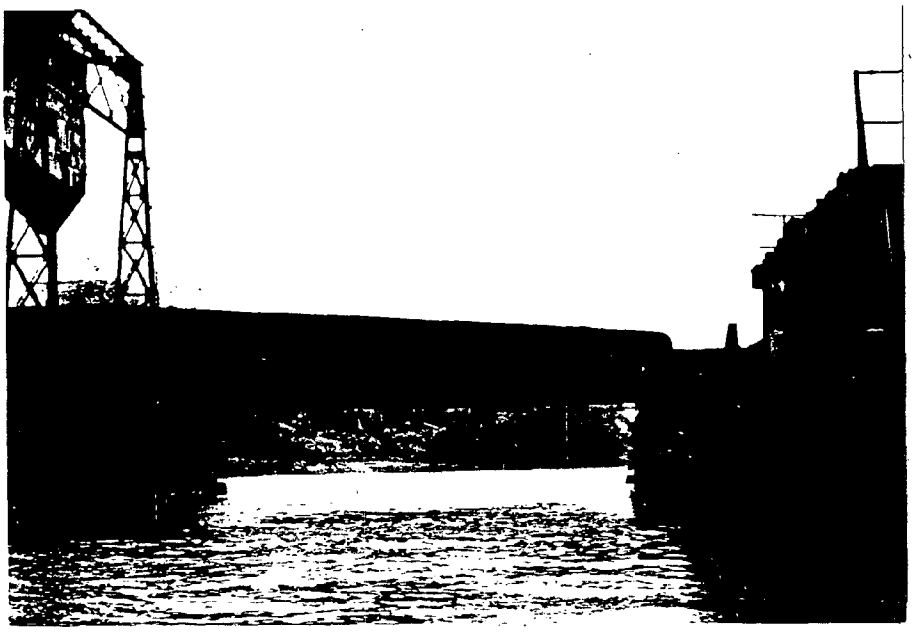
It is anticipated that the principal type of boat using a facility at the subject site will be a motorboat. It is also anticipated that the majority of these boats will seek access to the Delaware River. In doing so, there is an important factor that requires discussion.

The passage from the site to the Delaware River requires a boat to pass under three (3) bridges, the Industrial Highway Bridge and the former Pennsylvania Railroad and Reading Company railroad bridges. The Industrial Highway bridge is high enough and the supports are wide enough so as not to present difficulty for boats. However, the railroad bridges are very low, making passage impossible at high tide. To overcome this problem, the railroads constructed drawbridges which can be raised for the passage of boats. The regulations governing the use of these drawbridges are presented in Exhibit I.

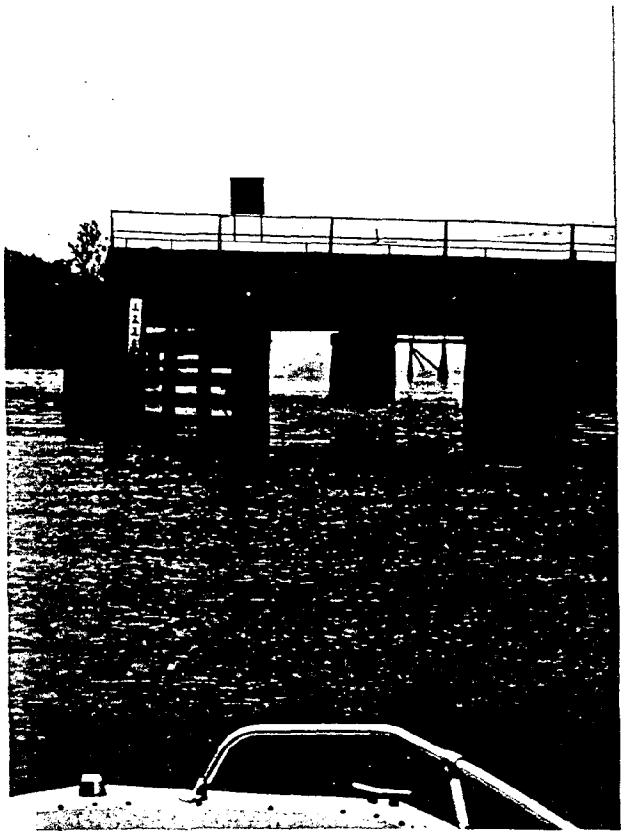
The provision which raises immediate concern is the stipulation that draw tenders need not be in constant attendance. However, the regulations proceed to require that the drawbridges be opened at specified times of the day during the boating season (May 15 to October 15) and "at other times on signal during these hours", (7:00 a.m. to 11:00 p.m.). No complaints were noted concerning the operation of these drawbridges.



On June 4, 1981, a site visit was conducted using a boat. This photograph, and those on the following page, were taken during the site visit. The site visit was conducted at low tide. This photograph was taken as the boat traveled south on Darby Creek towards the Delaware River. The raised railroad bridge remained in this position during the site visit.



This photograph was taken as the boat passed under the raised bridge and approached the second bridge fixed in its lowered position.



The markers on the railroad bridge indicate the clearance. It appears that there is less than a 5 foot clearance at high tide.

EXHIBIT I

CODE OF FEDERAL REGULATIONS

TITLE 33 - NAVIGATION AND NAVIGABLE WATERS

CHAPTER 1 - COAST GUARD, DEPARTMENT OF TRANSPORTATION

§117.228 Darby Creek, Pennsylvania. The Pennsylvania Railroad Company and Reading Company bridges near Essington.

(a) The owners of or agencies controlling these bridges will not be required to keep draw tenders in constant attendance.

(b) Between 11:00 p.m. and 7:00 a.m. each day from May 15 to October 15 inclusive, the draws of these bridges need not be opened for the passage of vessels.

(c) Between 7:00 a.m. and 11:00 p.m. each day from May 15 to October 15, inclusive, the bridges will be opened upon signal from an approaching vessel or vessels at 7:15 a.m., 10:30 a.m., 1:00 p.m., 3:00 p.m., 7:30 p.m., and 10:30 p.m. and at other times on signal during these hours if such openings will not unduly delay railroad operations. Any vessel which may have passed through one of these bridges shall be passed through the draw of the other bridge without delay. When once opened for the passage of any vessel or craft the said bridges shall remain opened sufficiently long to permit the passage through both bridges of all vessels or craft which may be engaged in passing and all accumulated vessels presenting themselves for passage.

(d) From October 16 to May 14, inclusive, whenever a vessel unable to pass under the closed bridges desires to pass through the draws, 24 hours advance notice of the time opening is required must be given to the authorized representative of the owner or agency controlling each of the bridges to insure prompt opening thereof at the time required. On receipt of such advance notice the authorized representative, in compliance therein, shall arrange for the prompt opening of the draw on proper signal at approximately the time specified in the notice.

(e) In an emergency, the drawspans of these bridges will be opened as soon as possible after notification.

(f) The owners of or agencies controlling these bridges shall provide and keep in good legible condition two board gages of a type to be approved by the Commandant to indicate the controlling minimum vertical clearance under both closed drawspans at all stages of the tide. These gages shall be so placed on the upstream and downstream ends of the right channel drawspan piers or fenders so that they will be plainly visible to the navigators approaching from either direction.

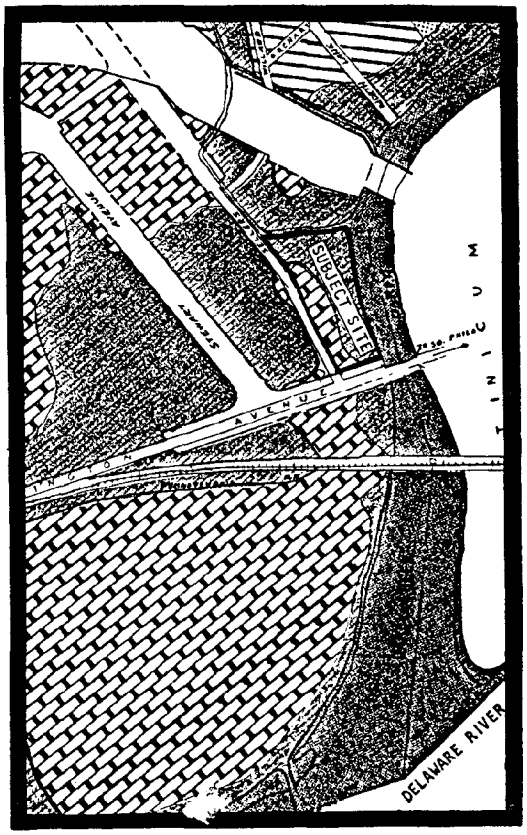
(g) The owner of or agency controlling each bridge shall keep conspicuously posted on both the upstream and downstream sides thereof, in such manner that it can easily be read at any time, a copy of the regulations in this section together with information as to whom notice should be given, as specified in paragraphs (d) and (e) of this section, when it is desired that the bridge be opened and directions for communicating with such person by telephone or otherwise.

(h) The operating machinery of the draws shall be maintained in a serviceable condition, and the draws shall be opened and closed at intervals frequent enough to make certain that the machinery is in proper order for satisfactory operation.

ZONING

The Zoning Map for Ridley Township, May 25, 1977, defines two (2) zoning districts on the subject site; these are "I" Industrial and "FP" Flood Plain.

The area zoned Industrial includes a portion of the site that fronts on Sellers Avenue; the balance of the site is zoned Flood Plain. A variety of manufacturing and related uses are permitted in the Industrial Zoning District. While public recreational facilities are not included in the list of permitted uses, "transportation facilities" are permitted. It is possible that a marina or a boat ramp might be considered to be such a transportation facility. That judgement must be made by the Zoning Officer. However, district regulations also allow the Zoning Hearing Board to permit "uses which are of the same general character as those listed as permitted uses and which will not be detrimental to the intended purpose of the district." It is likely that a decision on either of these issues would allow the construction of a marina or boating access facility thereby avoiding the need for a zoning change.



Existing District Zoning

- "C" RESIDENTIAL
- COMMERCIAL - 1
- INDUSTRIAL
- FLOOD PLAIN

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

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Direction Associates, Inc.....Consultants.....Spring House, Pa.

The regulations for the Flood Plain Zoning District govern the major portion of the site. These regulations are provided in Appendix III. However, it is important to note that any building that would be proposed for construction in the portion of the site zoned Industrial, would also fall under the provision of the Flood Plain District which states that development or construction within 100 feet of the flood plain requires approval by the Township Commissioners as a Conditional Use (Section 10.203, Requirements).

There are no specific uses listed as permitted uses in the Flood Plain District. The district regulations state objectives that should be considered in reviewing proposals for development. All such proposals are reviewed under the Conditional Use procedure. The objectives relate to the flow of flood waters and compatibility with the preservation of natural conditions. A properly designed marina, boat ramp or recreation area should be able to meet these requirements.

MARKET ANALYSIS

The project, as now proposed, calls for the development of a boat ramp and a passive recreation area. Such facilities usually do not produce income. As a result, it is not necessary to determine that there will be a certain number of people using the facility producing income sufficient to meet expenses. However, the expenditure of public funds for such facilities requires an assurance that the facilities are needed. As a result, it is necessary to examine boating access and recreational facilities, and to define, at least generally, the existing and potential demand for such facilities.

As an opening comment, it must be stated that there are presently no public boating access facilities to the Delaware River in Delaware County; those which exist are privately owned and operated. The following is a list of these marinas and the launching facilities they provide.

TABLE I
DELAWARE COUNTY
COASTAL ZONE BOAT LAUNCHING FACILITIES

Delaware River	Ramp	Ramp Fee	Railway	Boat Lift	Crane
Anchorage Marina	-	-	20 Ton	13 Ton	-
Fox Grove Marina	-	-	-	-	-
Tinicum Yacht Yard	-	-	2/25 Ton/40'	-	-
Rosse Boat Repair and Storage Yard	-	-	3/30 Ton/50'	-	-
Philadelphia Seaplane Base, Marine Division	16'	$4.00	15 Ton/45'	25 Ton	12 Ton 25 Ton
Riverside Yacht Club	NOT IN OPERATION				
Governor Printz Marina	NOT IN OPERATION				
Corinthian Yacht Club	PRIVATE CLUB - ALL FACILITIES - AVAILABLE ONLY TO CLUB MEMBERS.				
Darby Creek					
Morrow's Marina	30'	$4.00	-	-	-
Prospect Park Marina	30'	$3.00	-	-	-
Ponderosa	DOCKING FACILITY ONLY.				

Source: Boating Almanac, 1981; Boating Guide to Pennsylvania Waters.

Of the eight (8) marinas located on the Delaware River, only two (2) have boat ramps, one of which is restricted to club members. The facilities available at the four (4) operating marinas which lack ramps are the type used to place large vessels in the water for the boating season. These facilities are not intended to service the smaller vessels (less than 26 feet) which are carried by trailer for weekend use and are stored on the trailer usually in the owner's yard rather than at a marina.

On Darby Creek there are two (2) additional marinas, both of which have ramps; a third location has a docking facility, but no ramp. As a result, there are four ramps available to boaters in Delaware County for access to the Delaware River, one of which is operated by a private club for club members only. To determine if this number is sufficient, it is helpful to examine characteristics of the population and boating registration.

In Pennsylvania, all boats operated by propelling machinery (motorboats) must be registered. Sailing vessels, canoes, etc., need not be registered. A motorboat must be registered in the state in which the boat is principally used. If the boat is waterborne in Pennsylvania waters more times than it is on waters of another state, it must be registered in Pennsylvania, regardless of where the owner lives. Boats registered in other states are granted reciprocal privileges in Pennsylvania for a period of sixty (60) days.

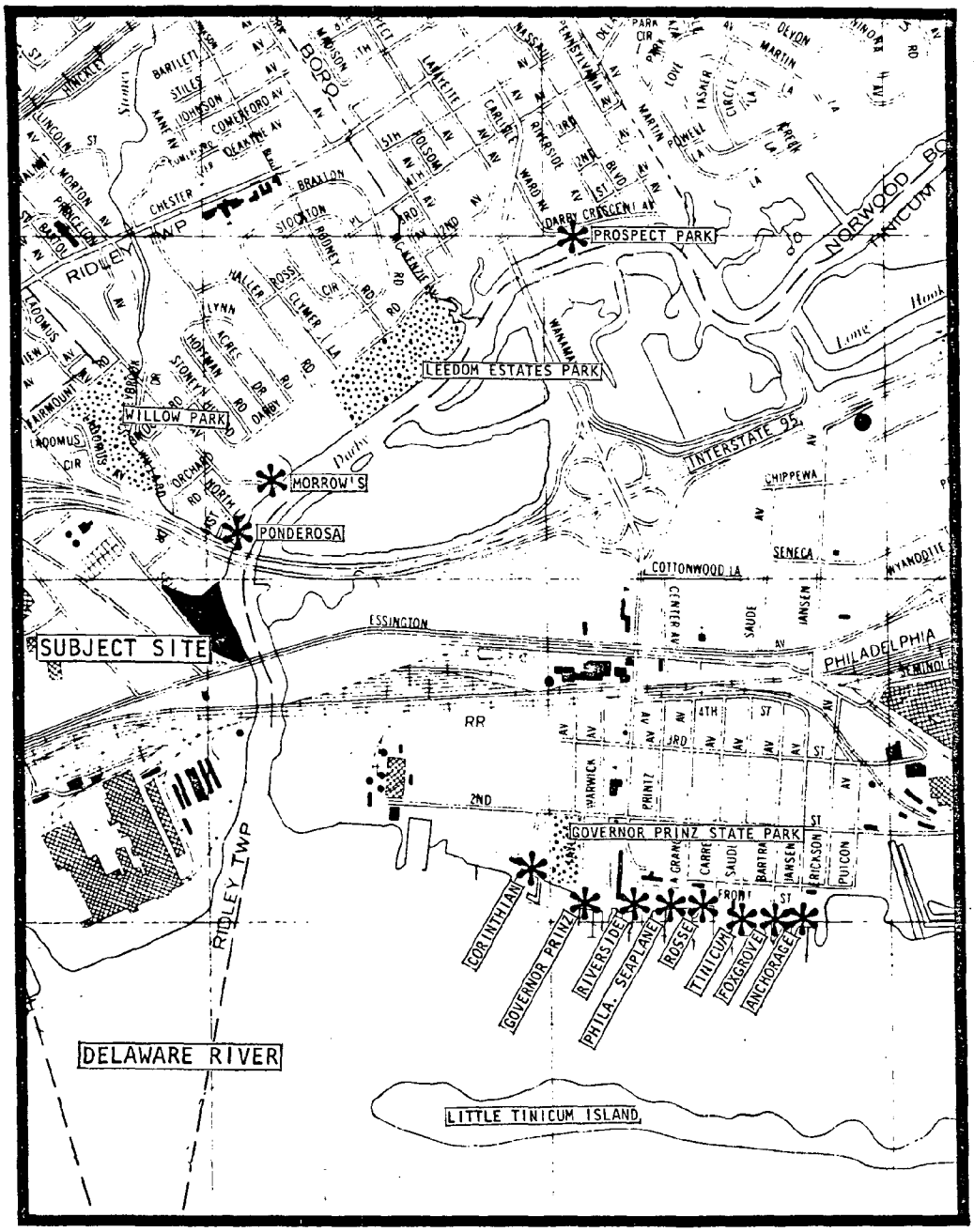
The table presented below provides data for boat registration in Pennsylvania.

TABLE II

REGISTERED MACHINERY-DRIVEN PLEASURE BOATS

County	1972	1980	Change	Percent Change	1980 Population	Percent Change
Bucks	4,512	7,598	3,086	+68.4	479,211	+15.0
Chester	1,348	2,511	1,163	+86.3	316,660	+14.0
Delaware	3,021	3,051	30	+ 1.0	555,007	- 8.0
Montgomery	4,102	5,993	1,891	+46.1	643,621	+ 3.1
Philadelphia	3,666	4,209	543	+14.8	1,688,210	-13.4
Total	16,649	23,362	6,713	+40.3	3,682,709	
Allegheny	15,202	21,584	6,382	+41.9	1,450,085	- 9.7

Source: Pennsylvania Fish Commission/Boat Registration Division.



Marina Facilities

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

0 2000'
1000' 3000'

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Direction Associates, Inc..... Consultants.....Spring House, Pa.

Morrow's Marina is the only boating access facility in Ridley Township. It is located just north of the subject site. The photograph on the right shows the entrance drive to Morrow's Marina. Swarthmore Avenue deadends into the marina access drive. Swarthmore Avenue is a densely developed residential area. Traffic generated by the marina has a negative impact on this residential neighborhood.

The photograph above was taken from Swarthmore Avenue, looking into the marina. Dry storage areas are on the right and the left of the access drive. The access drive leads to the boat ramp.

The photograph on the right is a waterfront view of Morrow's Marina looking north on Darby Creek.

The Table, Registered Machinery-Driven Pleasure Boats, provides data for counties in the Philadelphia area, including Delaware County, in which Ridley Township is located. Data is also provided for Allegheny County. The purpose is to provide comparative data for an area which lacks competing water resources. All of the counties in the Philadelphia area are relatively close to boating access facilities on the New Jersey shore, Chesapeake Bay, and the State of Delaware. This enables residents of the Philadelphia area to use and register their boats in other states. Allegheny County is significantly more distant from such competing water resources, while having substantial water resources of its own in the Ohio, Monongahela, and Allegheny Rivers.

The result is a significant difference in boat registration. With a population of almost a quarter of a million less than Philadelphia County, there are five times more boats registered by Allegheny County residents. In fact, there are nearly as many boats registered to Allegheny County residents as there are to the residents in Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties combined, an area with more than twice the population of Allegheny County.

Our basic assumption is that there are a large number of residents of the Philadelphia area who have boats registered in other states. There are several reasons for believing that this has occurred. First, competing water resources are relatively accessible. Second, there are not sufficient boating access facilities in the Philadelphia area to encourage people to use their boats principally in the waters of Pennsylvania. As we have stated, there are only four (4) ramps in Delaware County; there are 19 in Allegheny County. Finally, there is a known practice in Pennsylvania and other states on the Eastern Seaboard, of selling boats in one state, to be technically "delivered" and registered in the State of Delaware to avoid the sales or property taxes that are normally levied on the sale of boats. Delaware levies neither of these taxes.

To further support this assumption, it is helpful to examine trends in participation in boating activities. One means of doing this is to use data assembled in The 1970 Survey of Outdoor Recreation Activities, presented below.

TABLE III
PARTICIPATION IN BOATING

Income Range (1970)	Participation Rate
Under $5,000	10.0%
$ 5,000-$ 7,499	20.5%
$ 7,500-$ 9,999	24.5%
$10,000-$14,999	33.0%
$15,000 and Over	29.8%

Source: The 1970 Survey of Outdoor Recreation Activities, Preliminary Report 1972.

This table provides an indication of participation in boating activities by income for the nation as a whole. Basically, the higher the income group, the larger the percentage of that income group participating in boating activities. This is principally due to the greater amount of disposable income available for expenditure for boating as a source of recreation. To provide us with some idea of the potential demand for boating facilities, it is helpful to correlate these participation rates with the population of Ridley Township and Delaware County.

TABLE IV
POTENTIAL BOATING PARTICIPATION

1970 Income	Population Ridley	Population Delaware	Participation Rate	Potential Boating Participation Ridley	Potential Boating Participation Delaware
Under $5,000	808	15,272	10.0%	81	1,527
$ 5,000 to $ 7,499	985	16,847	20.5%	202	3,454
$ 7,500 to $ 9,999	1,747	23,760	24.5%	428	5,521
$10,000 to $14,999	3,951	49,247	33.0%	1,304	16,252
Greater than $15,000	2,546	46,843	39.8%	1,013	18,643
TOTAL:				3,028	45,697

This same methodology produces the sum of 125,618 persons participating in boating in Allegheny County. Using 1972 boat registration, this results in 8 persons per boat registered in Allegheny County. Applying this same ratio, there would appear to be a potential for 5,712 boats to be registered to Delaware County residents, and 378 boats registered to Ridley Township residents. The actual registration for the County was far below this number; data for communities is not available.

If we assume that such potential boat registration exists, the next question is whether there are sufficient boating facilities to attract and serve these boats. As an initial comment, the lack of any public access facility in this area would, in and of itself, appear to justify the existence of at least one such facility. However, how much of a potential demand exists? Using 1970/1972 statistics, we can attempt to reach some concept of whether existing facilities are adequate.

The 1970 Survey of Outdoor Recreation Activities found that the average number of days of participation in boating was 10.3 days/year per person. For discussion purposes, we will estimate that the 15,202 boats in Allegheny County in 1972 were used for a total of 156,580 boat/days; in Delaware County the total use of the potential boat registration would have been 58,834 boat/days. The boating season, May 15 through October 15, contains 150 days. As a result, there was an average of 1,043 boats in use a day in Allegheny County and

392 in Delaware County. The daily ratio of boats to access facility for Allegheny County (19) was 55; for Delaware County (4), it was 98.

While there are many problems with this methodology (example: boat registration by class, i.e., size is not available — the larger boats do not use ramps) it is at least an attempt to provide a feel for the situation. Similarly, information resulting from a recent survey (although it had a limited response) is helpful in assessing the situation. The survey was conducted by the League of Womeon Voters of Pennsyvlania; the subject was "Demand for Recreation Access to the Lower Delaware". The survey was conducted in 1980.

A total of 175 people responded to the questionnaire; 45% of those responding were residents of Delaware County. The following statements were included in the findings of the survey:

- Boating is the most popular form of recreation along the river, but viewing the river is as important as fishing and other forms of active recreation.

- Boaters are dissatisfied with the present facilities and complain about crowded and poorly maintained facilities.

- Although the question of ramp condition was not included in the survey, a significant number of boaters wrote in that launching ramps are in poor condition.

- Fishing in the Delaware River is hindered by the lack of boat launching areas.

Our analysis suggests that there is a strong latent demand for boating access facilities in Delaware County. By providing new ramp facilities, it is hoped that residents who register their boats and use these boats in other states will be attracted back to Pennsylvania for a part of their boating activities. It is also possible that residents who have been considering the purchase of a boat will be encouraged to do so by the existence of new facilities. While rising energy costs would seem to work against such trends, they might, in fact, support them as people choose to eliminate the long and costly drives to the New Jersey shore, the Chesapeake and Delaware because of the availability of nearby boating access facilities.

In 1974 Ridley Township prepared a Recreation and Park Study to assess the needs for recreation in the community. Included in this study was a survey questionnaire which was distributed to students in the high school and junior high schools, and to Township residents at random. The results of the survey showed "boating" as one of the top ten recreational activity choices of the students (8). As a result, the Study recommended that increased emphasis be placed on boating activities in the Township's recreation programs.

The Study also included an assessment of existing recreational facilities conducted on a Township-wide and neighborhood level. The subject site was included in the Leedom Neighborhood. This neighborhood is a very densely developed area with little open space other than that found along Darby Creek. Existing recreation facilities include the Leedom Elementary School, Stony Hill Road Park, Taylor Drive Park, Willow Park, Leedom Estates Park, and Morrow's Marina. The Study recommended that an additional recreation area be developed along Darby Creek between Morrow's Marina and Leedom Estates Park. The site which is the subject of this Study was identified as an industrial area; it was assumed that industrial use would continue. However, this assumption was not maintained in the Comprehensive Plan prepared in the same year. The land use proposed for the subject site in the Comprehensive Plan is "Open Space".

The adequacy of the site recommended as a "waterfront recreation area" in the Recreation and Park Study did not include an assessment of the site as a boat launching area. In recent years, the residents of the Leedom Neighborhood, particularly those on Swarthmore Avenue, have complained of the heavy traffic related to Morrow's Marina. Access to the site proposed in the Recreation and Park Study is possible only through the same residential area. As a result, its development as an additional boat launch area would generate increased conflict with area residents.

Despite this problem, the conclusions of the Recreation and Park Study generally support the proposed project. It identifies a need for the development of increased waterfront recreation areas, open space and boating activities in Ridley Township, and in the Leedom Neighborhood.

SITE SUITABILITY AND DEVELOPMENT PROPOSALS

Earlier sections of this study have described the physical characteristics of the subject site. We must now review these physical features to determine if the development of a boat ramp/passive recreation area is advisable on this site.

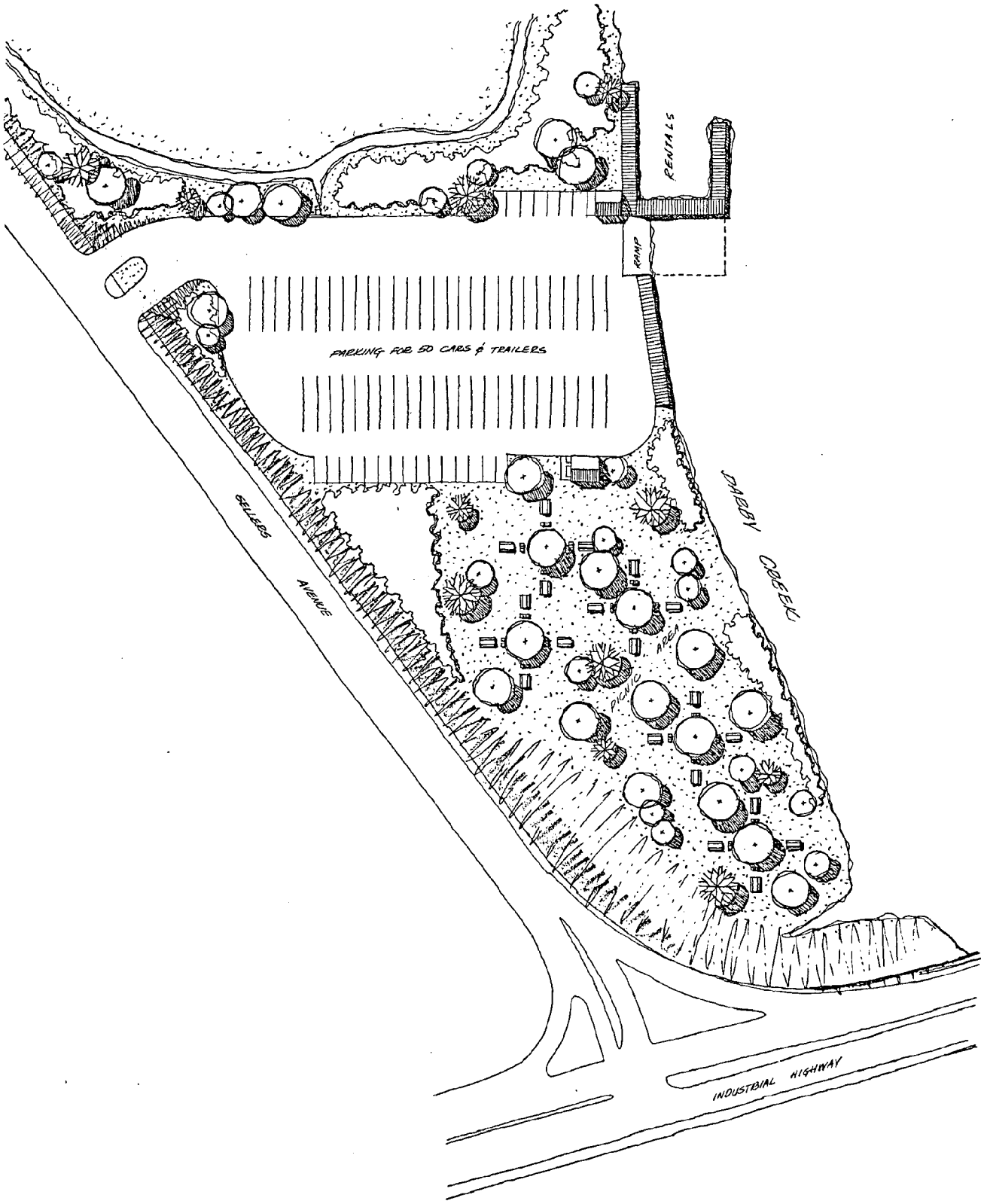
One of the primary criteria established by the Township was an assurance that the development of a boat ramp facility would not adversely affect "Local" streets in residential areas. It is important to note that Sellers Avenue has not served as a "Local" street in the Township's thoroughfare system. It has been a "Collector" whose function has been to carry substantially higher volumes of traffic than "Local" streets. While this was expected to change as a result of the opening of I-95, Sellers Avenue remains physically capable of carrying higher volumes of traffic.

Equally important are the probable routes of access to Sellers Avenue. It has been noted that there are several major highways in the immediate area which provide convenient access to Sellers Avenue (Routes 291, 420, and I-95). These highways would most likely carry residents of other communities in Delaware County to the facility. As a result, there is no need for persons, other than Ridley Township residents, to travel on "Local" streets through residential neighborhoods to gain access to the site.

This first criterion having been satisfied, we are now able to continue to more specific elements of the site. The topography of the site proves to be the most critical physical factor related to site suitability. Here we find that the entire site lies below the elevation of the 100 year flood plain. Also, the difference in the elevation of Sellers Avenue and that of the site requires that the site be filled to provide an appropriate access drive and parking area. As a result, an additional criterion for assessing the development potential of the site includes minimizing the amount of fill material. This will reduce the cost of development and will reduce the potential impact upon the elevation of the 100 year flood plain.

In preparing design alternatives, it is also necessary to develop a facility which will meet the minimum requirements of potential funding sources. One such source is the Municipal Lease Program of the Pennsylvania Fish Commission. This program requires a minimum of 50 parking spaces for cars and boat trailers for boat ramp facilities.

With these criteria in mind, we have prepared three (3) design alternatives for the site: Scheme 1, Scheme 2, and Scheme 3. In each of these Schemes, it is assumed that the Township gains control of the entire 5.7 acres, with the exception of the proposed PECO easement.



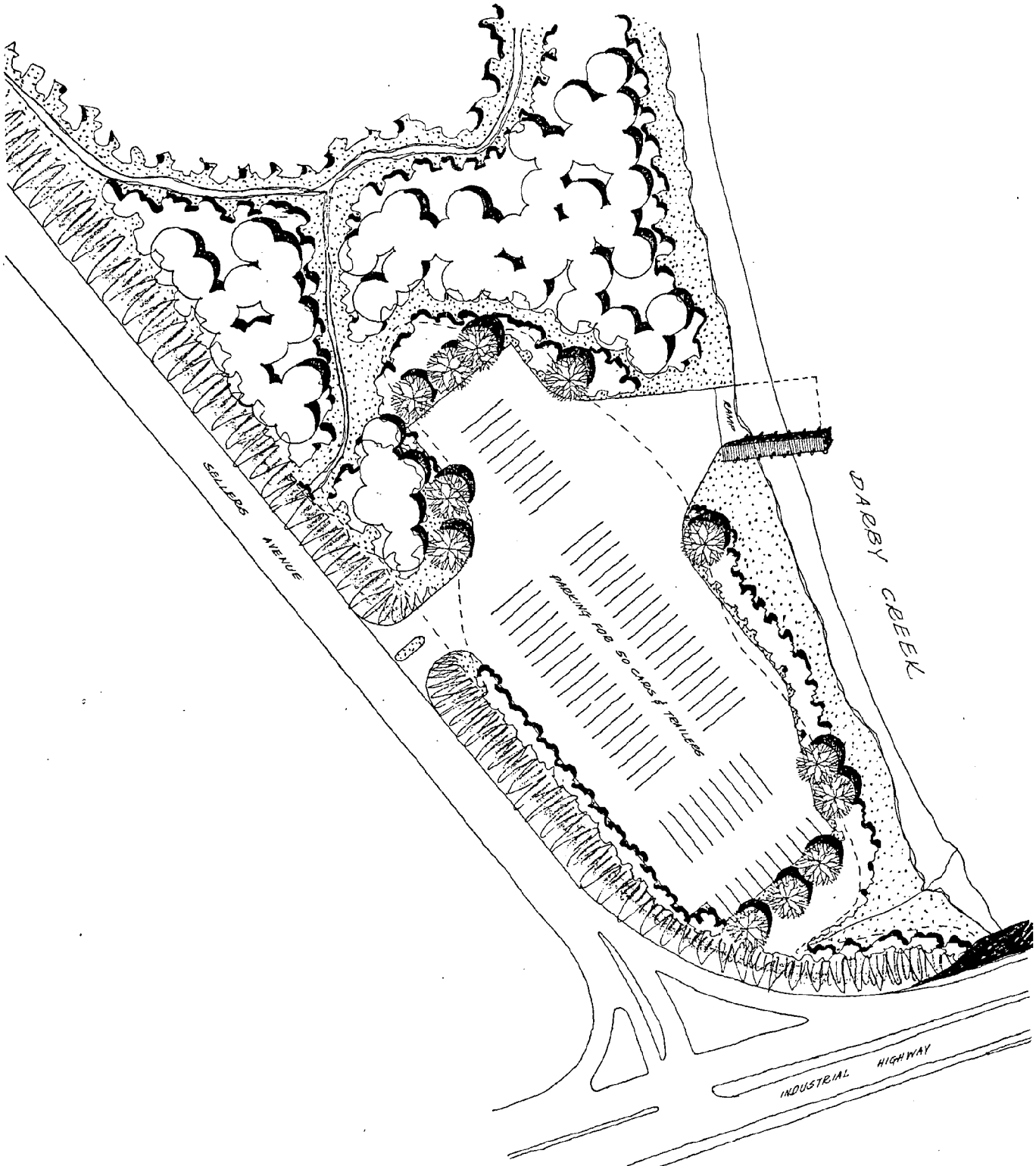
Scheme 1
Illustrative Site Plan

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

0 50 100 150 200

N

Direction Associates, Inc..... Consultants..... Spring House, Pa.



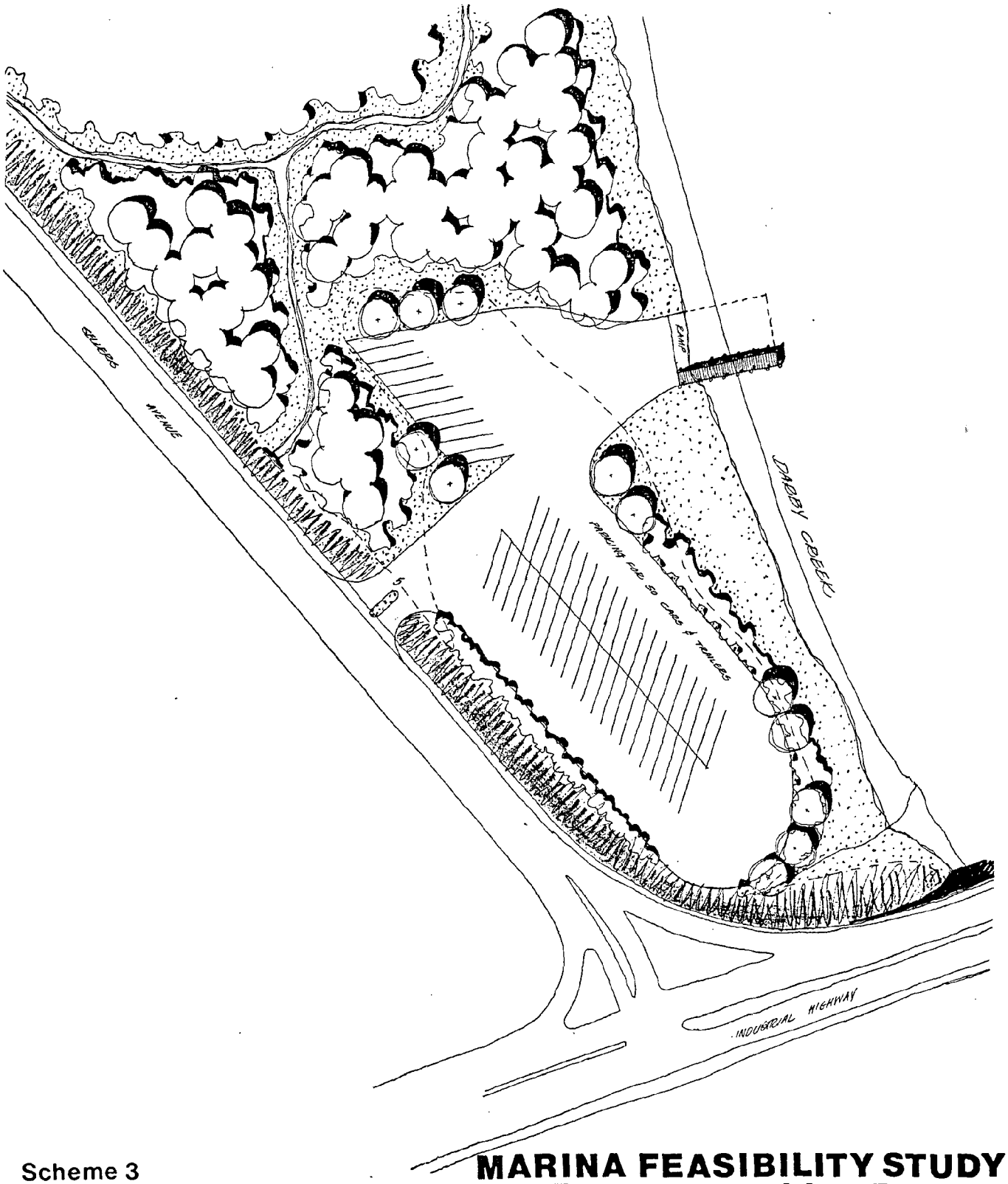
Scheme 2
Illustrative Site Plan

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

0 50 100 150 200

N

Direction Associates, Inc.....Consultants.....Spring House, Pa.



Scheme 3
Illustrative Site Plan

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

0 50 100 150 200

N

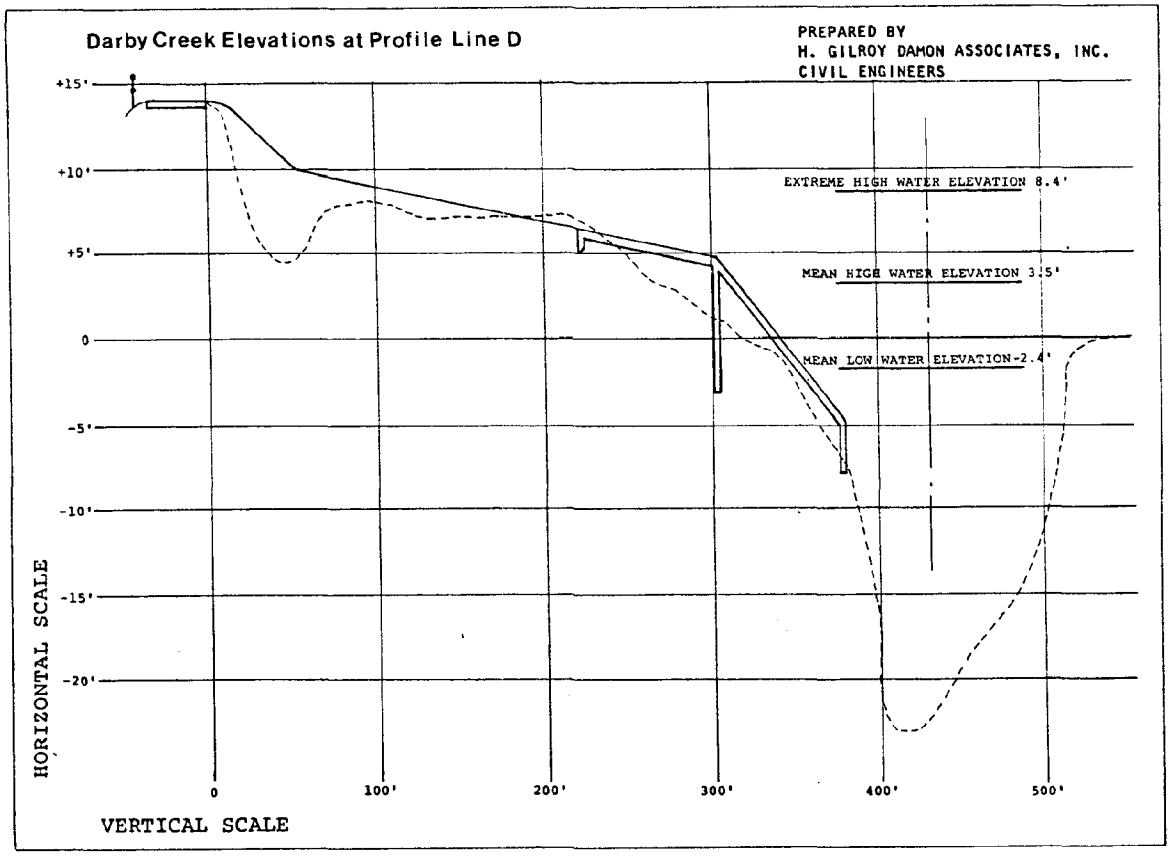
Direction Associates, Inc..... Consultants.....Spring House, Pa.

Scheme 1 includes a parking area for 50 cars and trailers, additional parking for cars, a boat ramp, a dock for rental canoes, a service building for canoe rentals, and a passive recreation area with picnic tables and landscaping. This scheme proposes that the parking lot and access drive be constructed in the lowest area of the site and that the passive recreation area be developed on a relatively flat, higher area near Route 291. To accomplish this, it is proposed that the access drive be constructed over a tributary to Stony Creek. This requires the piping of the tributary.

While Scheme 1 provides for all of the uses requested, i.e., boat ramp, parking area and passive recreation area, it raises several problems. There are a number of negative aspects related to the piping of the stream. It requires that the site be filled to a higher elevation to provide adequate cover for the pipe, and; piping in a tidal area requires constant maintenance to remove silt from the pipe. The location of the passive recreation area is also questionable. The high traffic volumes on Route 291 produce noise levels and air quality that are not desirable in passive recreational areas. Also, the flood plain status of the site limits the desired development of facilities and equipment in the recreation area. All equipment should be anchored, and buildings, such as the service building shown, should be eliminated. The storage of rental canoes in the flood plain is also not desirable.

Recognizing these problems, we have designed Schemes 2 and 3 which alter the location of the access drive, boat ramp, and parking area, and eliminates the service building. By moving the access drive and parking area to the southern portion of the site, we can reduce our requirements for filling the site. In the new location, the access drive no longer passes over the stream, eliminating the need to pipe the stream and the fill requirement that relates to providing adequate cover for the pipe. In Schemes 2 and 3, we are also eliminating the need to fill the lowest lying areas of the site. We do so, however, at the loss of a passive recreation area with landscaping and equipment. Schemes 2 and 3 propose that the lowest lying areas be preserved in their natural state as public open space.

A more detailed analysis of the development proposed in Scheme 2 is provided by the cross section profiles presented in Appendix 1. Cross section profile elevations of the existing site and the proposed fill and grading were taken every 50 feet. The cross section profile elevations from Sellers Avenue, across the access drive and parking lot, up to and including the boat ramp, is presented on the following page.



(The vertical scale is 10 times the horizontal scale.)

The proposed access drive will be constructed at a 6% grade from Sellers Avenue to the edge of the parking lot. The parking lot will have a gradual slope of 1-1/2% as it drops from an elevation of 10 feet to an elevation of 6 feet at the edge of the boat ramp. The ramp will be constructed with a grade of 13%.

The fill proposed in all of the schemes will leave the site below the elevation of the 100 year flood plain (10 feet). As indicated in cross section profile, line D., a 100 year flood will cover the boat ramp and the entire parking area; the access drive to Sellers Avenue will be above the 100 year flood. This proposal is compatible with the flood plain environment as the amount of fill material is minimized, reducing the potential effect upon the elevation of the 100 year flood. The calculations for the excavation and fill required for Scheme 2 are presented below:

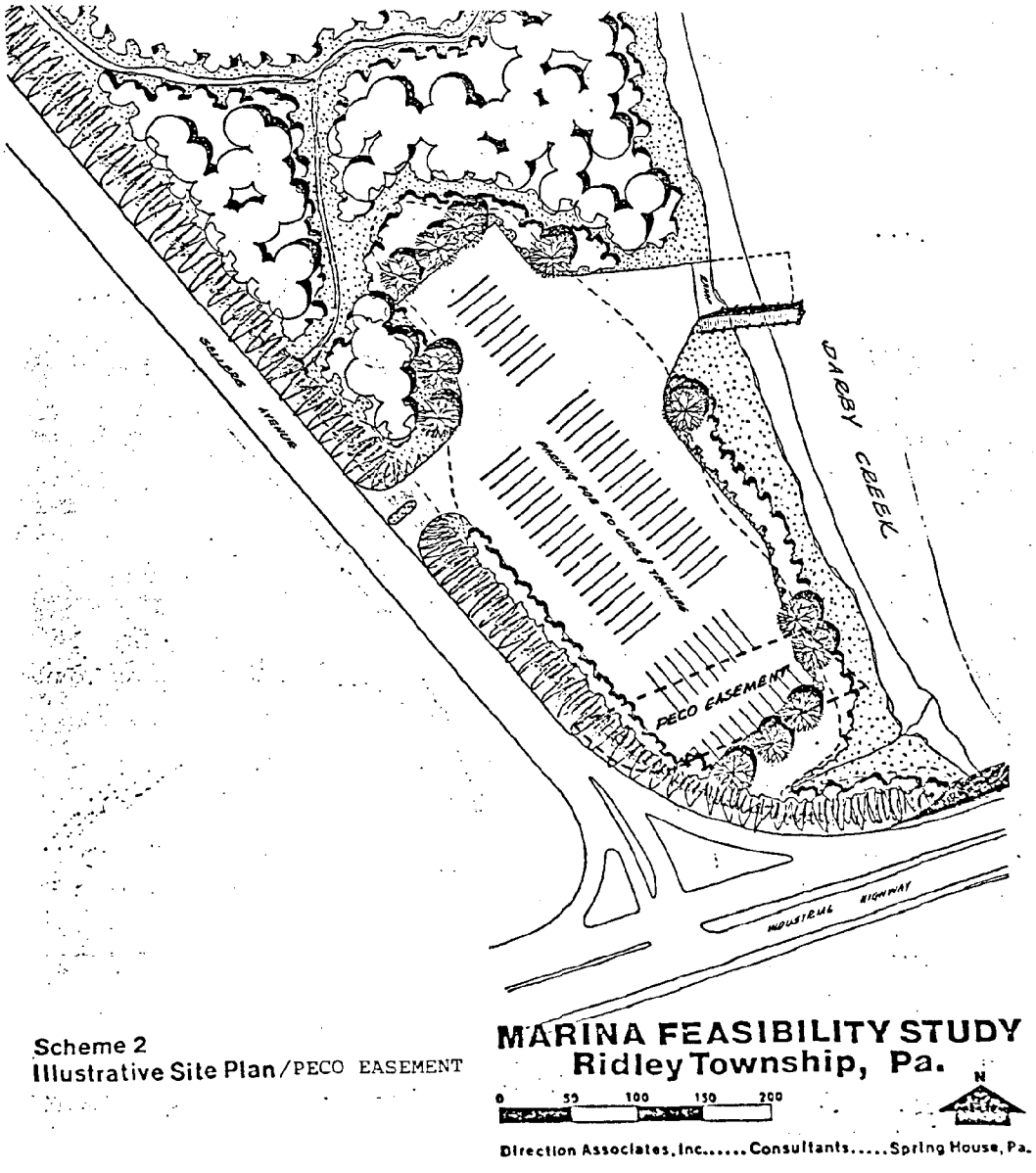
Parking Area and Roadway:		
Excavation	(7,000)	cubic yards
Fill	10,400	cubic yards
Ramp/Access Drive:		
Excavation	(700)	cubic yards
Fill	800	cubic yards
Net Fill	2,700	cubic yards

Source: H. Gilroy Damon Associates, Consulting Engineers.

Based upon the limitations imposed by the flood plain environment, and a desire to keep the costs of the development of this facility at a reasonable level, it is recommended that Scheme 2 be the selected design for the site.

Scheme 2 was developed prior to the notice of negotiation of an easement for the Philadelphia Electric Company. As a result, there is a need to determine the potential impact of the PECO easement on this design alternative.

In the map below, the PECO easement has been placed upon the Illustrative Site Plan for Scheme 2. The easement includes an area used for 8 car/boat trailer parking spaces needed to meet the 50 space minimum; additional spaces shown are extra spaces for cars only. Parking is generally permitted by PECO within such easements. As a result, it appears that the 8 car/boat trailer spaces can be provided, while it is expected that most of the extra spaces will be lost.



Scheme 2
Illustrative Site Plan/PECO EASEMENT

ESTIMATED SITE DEVELOPMENT COSTS

The costs associated with the development of Scheme 2 have been prepared by H. Gilroy Damon and Associates, and are presented in Table V below. It should be stated that the same cost would apply to the development of Scheme 3. Costs for Scheme 1 have not been estimated, as this design alternative was not recommended. However it can be stated that Scheme 1 would be more costly due to the provision of piping, additional fill, a service building, and the landscaping and development of a passive recreation area:

TABLE V
COST ESTIMATE
SCHEME 2

Parking Area and Roadway:				
Excavation -	7,000 cu.yds.	@ $ 4.00	=	$ 28,000
Fill and Grading -	10,400 cu.yds.	@ $ 13.50	=	$140,400
Ramp:				
Excavation -	700 cu.yds.	@ $ 16.00	=	$ 11,200
Fill -	800 cu.yds.	@ $ 13.50	=	$ 10,800
Ramp and Apron:				
Reinforced Concrete -	230 cu.yds.	@ $130.00	=	$ 29,900
Parking Area and Roadway:				
Paving -	7,700 cu.yds.	@ $ 15.00	=	$115,500
				$335,800
Plus Fees and Contingencies	-	@ 15%	=	$ 50,370
TOTAL:				$386,170

Source: H. Gilroy Damon & Associates, Inc.

In addition to the development costs, there is a need for the Township to gain control of the site. This may be accomplished by acquisition, or long term lease. It is recommended that the Township pursue the acquisition of the site. Accordingly, an appraisal of the site has been prepared in conjunction with this study. The appraisal is included in Appendix IV. The appraisal finds the site to be valued at $59,850. As a result, total costs for acquisition and development are $446,020.

TABLE VI

Land Acquisition	$ 59,850
Development	386,170
Total Cost	$446,020

The operation of this facility requires a minimum of maintenance. However, there is a cost associated with such maintenance, whether it is borne by the Township or another body or agency. Typical maintenance costs for a boat ramp facility of this type range from $2,500 to $4,000 per year.

FUNDING SOURCES AND PROJECT IMPLEMENTATION

There are a number of potential funding sources which can be employed in order to implement the recommendations detailed in the Development Plan. Many of the funding programs which have been traditionally used to construct park, recreation, boat launch and other passive recreation facilities are in a major state of transition at the present time. The Federal government has numerous programs which have, in the past, provided funding components for projects involving the types of activities proposed in this plan. However, a number of the programs have been eliminated; and almost all of the remaining programs have been severely reduced in terms of the magnitude of funds available; and a backlog of projects is building up which have already been submitted requesting Federal funds.

Similarly, the Commonwealth of Pennsylvania's program of providing grant funds for recreational facilities is declining. This is occurring for two reasons: the first is that State agencies frequently process Federal funds which are now declining in the amount of money available, and secondly, because less money has been made available in the State budget for 1981-1982 for park and recreation facilities. Therefore, it is important to identify programs that exist now and will continue to exist in the future and set forth a realistic strategy for implementing this plan.

As a Coastal Zone community, it was originally hoped that funding sources specifically designated for such communities would be available to Ridley Township. Prior to the implementation of this study, the Township investigated the potential for including this project in the Coastal Energy Impact Program. It was found that various program criteria eliminated this project from funding consideration.

Another source of Federal funds that was considered was the Coastal Zone Management Program's Section 306 Program for the development of recreational opportunities. However, while this project was certainly eligible for funding, the program has been one of the Federal programs most affected by the recent budget cuts. As a result, there are no funds available under this program for fiscal 1982.

A final source of Federal funds is the Community Development Block Grant Program. Ridley Township receives funds from this program as a participant in Delaware County's Community Development Program. However, the use of the funds is restricted to the pursuit of two (2) fundamental objectives: the removal of slums and blight, and projects principally benefiting low and moderate income persons. It does not appear to be likely that this project can

be funded under these criteria. However, proposed changes in the eligibility standards for this program suggest that it may eventually be a source of funding for this project.

There are two (2) funding sources available from the State that the Township has already approached. These are the Pennsylvania Fish Commission's Municipal Lease Program and the Bureau of Recreation and Conservation of the Department of Community Affairs.

The Township has learned that the Pennsylvania Fish Commission has, in the past, considered the subject site for the development of a boat ramp facility. As a result, the Township has submitted a request to the Pennsylvania Fish Commission for "site approval" under its Municipal Lease Program. The Township is presently awaiting a response.

Should "site approval" be granted, the Township would be eligible for consideration in the awarding of a grant to develop the site. An important element of this consideration is the ability of the community to control the site. The most desirable situation is where the community owns the site; however, the Fish Commission may also fund development on sites where the community has a long-term lease (50 years minimum). Under the most optimistic circumstances, site approval would be granted and the Township would be awarded funding to cover the development of the site in fiscal 1982, contingent upon the Township's acquisition of the site or the negotiation of a long-term lease.

The second Commonwealth funding source, while administered by the Pennsylvania Department of Community Affairs, is directly dependent upon funding available from the Federal Land and Water Conservation Fund. Ridley Township has submitted a letter of intent to the Department of Community Affairs for funding under this program. If it is successful, it will receive 50% of the acquisition costs of the site. No response has been received from the Department of Community Affairs concerning the status of the Township or the program.

The Consultant has assisted the Township in pursuing these funding sources. At this point in time, it is a matter of waiting for responses to determine the next course of action.

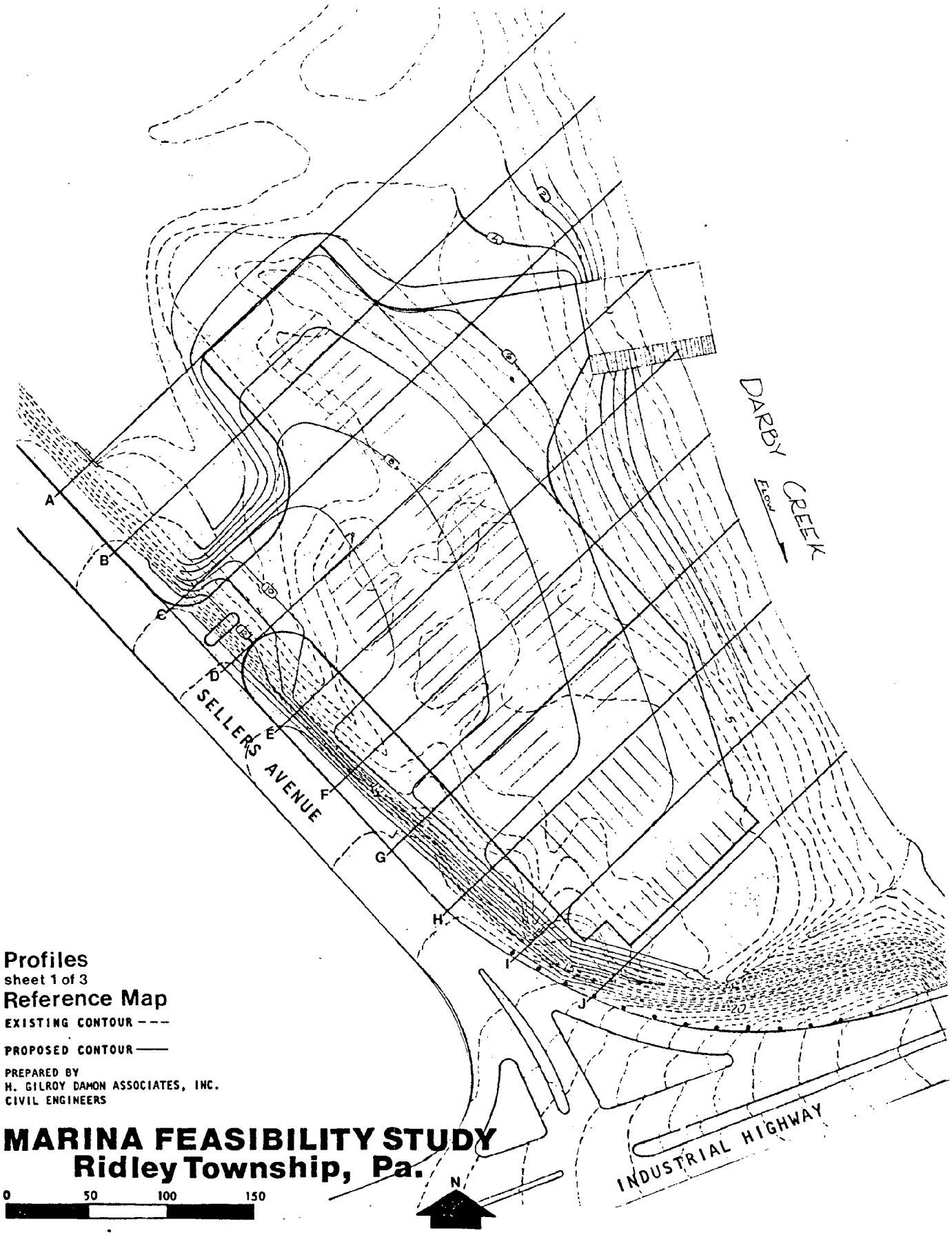
If the Township is successful with its applications to the Pennsylvania Fish Commission and the Pennsylvania Department of Community Affairs, it will still be necessary for the Township to provide approximately $30,000 towards the acquisition of the site. This assumes that the Boeing-Vertol Company would be willing to sell the site at the appraised price. The local share

of the acquisition ocsts must either be provided from the Township's general fund, or if the regulations change, from the funds available to the Township under the Community Development Program.

Given the indefinite status of funding for this project, the preparation of a timetable is of questionable value. However, it should be stated that construction activities would appear to be the least time-consuming of the necessary actions; construction is estimated at less than six months. As an initial course of action, following the review of this report the Township should approach the Boeing-Vertol Company to discuss the acquisition of the site. During this period, it is expected that the Pennsylvania Fish Commission will respond to the request for a determination of "site approval". If this is granted, it will be necessary to negotiate with Boeing-Vertol and the Pennsylvania Fish Commission over the option of acquiring the site versus leasing the land, as this could be an important factor in the Township's competitive rating for funding under the Municipal Lease Program.

APPENDIX I

CROSS-SECTION PROFILES



Profiles
sheet 1 of 3

Reference Map

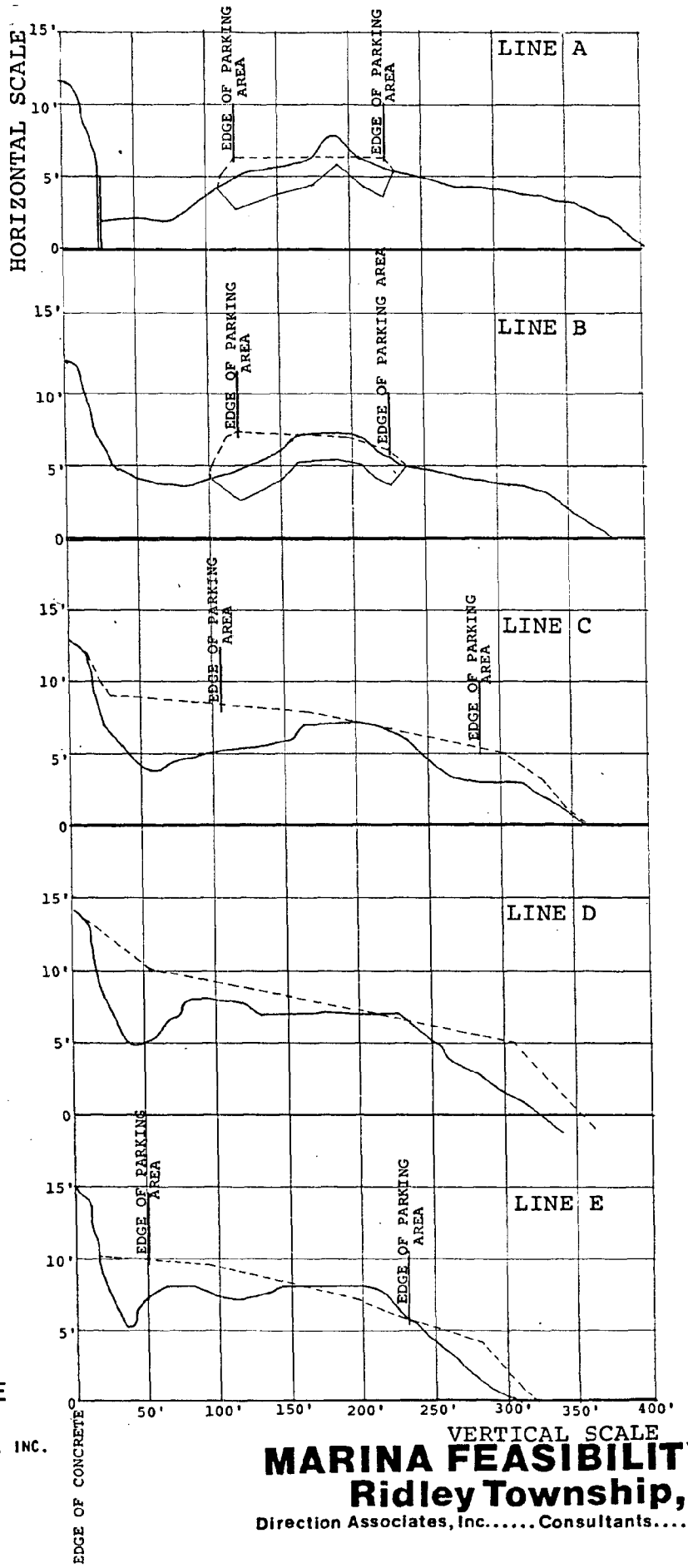
EXISTING CONTOUR - - -

PROPOSED CONTOUR ——

PREPARED BY
H. GILROY DAMON ASSOCIATES, INC.
CIVIL ENGINEERS

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

Direction Associates, Inc..... Consultants..... Spring House, Pa.

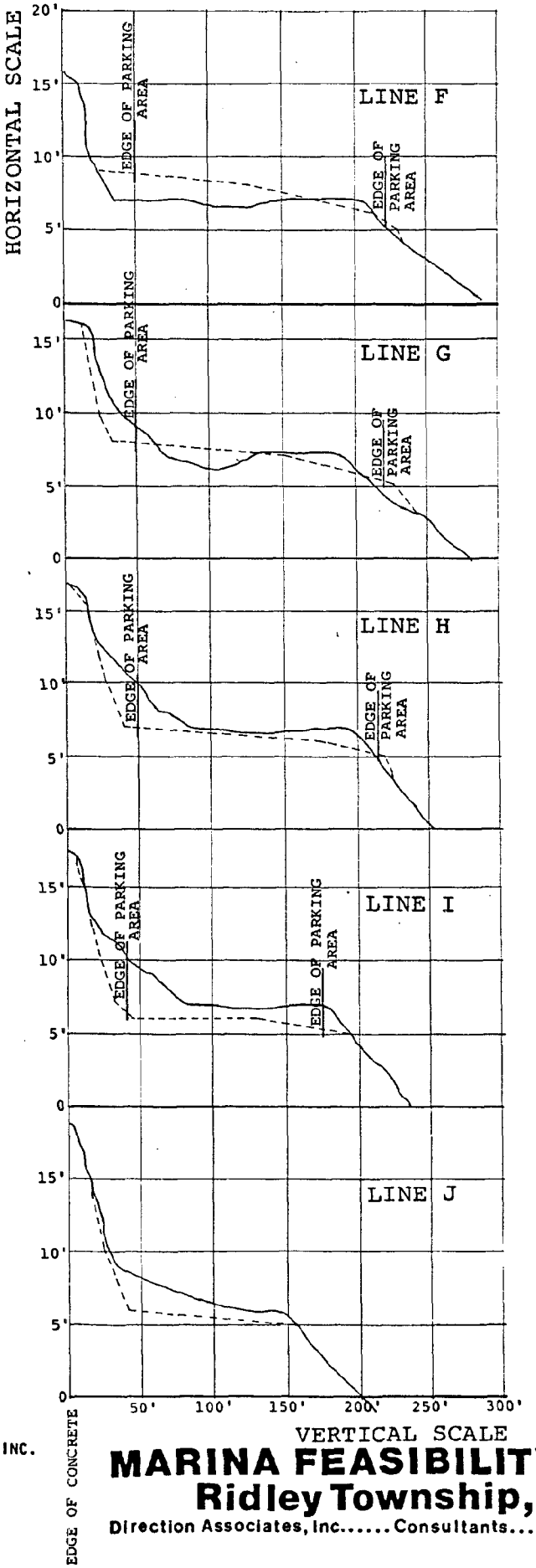


Profiles
sheet 2 of 3
Line A thru E

PREPARED BY
H. GILROY DAMON ASSOCIATES, INC.
CIVIL ENGINEERS

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

Direction Associates, Inc.....Consultants.....Spring House, Pa.



Profiles
sheet 3 of 3
Line F thru J

PREPARED BY
H. GILROY DAMON ASSOCIATES, INC.
CIVIL ENGINEERS

MARINA FEASIBILITY STUDY
Ridley Township, Pa.

Direction Associates, Inc.....Consultants.....Spring House, Pa.

APPENDIX II

MINUTES OF PUBLIC MEETINGS

DIRECTION ASSOCIATES, INC.

MEMORANDUM

TO: Files

FROM: Direction Associates, Inc.

DATE: June 8, 1981

SUBJECT: Ridley Township Coastal Zone Management Program
Marina/Recreation Feasibility Study

The first public meeting for the Ridley Township Marina/Recreation Area Feasibility Study was held before the regular meeting of the Recreation Board at 7:30 p.m., June 8, 1981.

The meeting had been advertised in the newspaper and the notices were sent to persons and organizations indicated at the end of this memorandum.

The purpose of the meeting was to advise the public of the study which was being initiated by Ridley Township and its consultants, Direction Associates, Inc., and H. Gilroy Damon Associates, Inc. It was hoped that public comments would be received concerning the concept of a marina facility and a recreation area for the subject site on land owned by Boeing-Vertol Company, located at the northeast corner of Sellers Avenue and the Industrial Highway.

Mr. Robert Kelly of Direction Associates introduced the study by explaining the Coastal Zone Management Program and funds provided by the study under this program. He then proceeded to identify the location of the site to be studied and briefly explained the scope of the study. He indicated that there would be a review of the physical feasibility of developing a recreation/marina facility on the site, as well as an anlaysis of the financial feasibility of such a proposal. He concluded by stating that the study had not yet commenced and that this evening's meeting was, in fact, the initiation of the study.

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The meeting was then turned over to Mr. Timothy J. Murtaugh, Ridley Township Commissioner and Chairman of the Recreation Board. The following is a list of comments received during the public session.

1. There was some concern raised with respect to the market demand for a marina facility in this area. One commenter believed that there were five marinas along the Delaware River that had been shut down. He did not see the need for a publicly owned marina constructed with public funds immediately adjacent to an operating marina, Morrow's Marina.

   Also, concern was raised over the fact that a public marina was being constructed while a proposal to develop a privately owned marina had been denied (i.e., a proposal by Mr. Richard Belk).

2. Mr. Morrow of Morrow's Marina suggested that the Township consider purchasing his marina, rather than constructing a new one, or opening a new access to his marina to enable people using his facility to avoid using Swarthmore Avenue. The residents of Swarthmore Avenue have expressed displeasure with the volume of traffic generated by the marina, particularly vehicles towing boats on trailers. A new access would overcome this objection to his operation.

3. Concern was raised over the railroad bridges which cross Darby Creek. These bridges must be raised for a vessel to pass under it. It was noted that there was no permanent operator controlling the bridges.

4. One member of the audience noted that a marina would be a facility most likely used by those of higher income, and that the development would have little benefit to those of low and moderate income. The Township residents of the

immediate area (i.e., Sixth Ward), in this person's opinion, would not benefit from such a facility. It was his opinion that Federal or State funds, if available, should be used for a recreation facility which would benefit the residents of the immediate area.

5. There was some discussion with respect to the manner in which such a project would be funded. It was noted that a municipal bond issue was one means of funding a public marina. There were various opinions on this subject. One individual felt that it would be best to pay for such a facility with a municipal bond issue to retain local control of the project. Another individual strongly opposed the use of local tax-payers' money to develop a project when funds might be provided by the State or Federal government.

6. The question of a marina versus a boat ramp facility was raised. In one commenter's opinion, it was felt that a marina was not financially feasible, whereas, a boat ramp would be financially feasible and would meet an existing demand for such a facility in this area.

   At the present time there is no public boat ramp/boating access facility to the Delaware River. The marinas located along the Delaware River in Essington require the use of travel lifts and cranes to place boats in the river. These are expensive to use and are only practical for the larger vessels. A boat ramp for smaller out-board vessels would be heavily used in this area. As an example, the individual noted the heavy use of the Linden Avenue boat ramp in Philadelphia .

7. A question of the interest in boating in the area and the status of the marinas along the Delaware River was commented upon by a Vessel Examination Officer. It was his belief that there is a strong interest in boating in this area. He noted that the only marina that was closed was the Governor Printz which was closed two years ago.

The Philadelphia Seaplane Base, Rosse's, Tinicum, Foxgrove, Anchorage, and Harbor Light were all operating marinas. The individual further commented on the drawbridge for the railroad bridge. It was his understanding that the bridge required a twenty-four hour notice to be raised.

8. Concern was raised with respect to the cost of providing navigational bouys on the river side of the railroad bridge. The individual commenting believed that such bouys were necessary and that they would impose an additional cost upon the project which would most likely be paid for by local tax-payers.

9. Another individual commented upon the demand for public boat ramps. He stated that this would be an ideal development and that we should provide a three-boat access ramp and a large parking lot. His experience with a boat ramp facility in Reading was that it often filled a parking lot on weekends which provided parking for approximately 100 cars and boat trailers.

10. It was noted that Morrow's Marina had a ramp for which a fee was paid. There was some discussion with respect to the ramp. One individual felt that the slope was too steep and that it was not in good condition, and that he had experienced damage in using the ramp. Mr. Morrow disagreed. Mr. Morrow indicated that the development of a public boat ramp would result in loss of income to him.

    Mr. Morrow suggested that the Township consider acquiring only his ramp and that it be made into a public ramp, and that development funds be directed towards a new access to his facility. It was his belief that the cost of constructing a road and acquiring his boat ramp would be much less than the cost of developing a new marina.

11. It was indicated by one member of the audience that if the Township developed a marina facility, it might be wise to lease the operation and management of the facility to a private developer.

12. Another individual further supported comments concerning market and demand for boating access areas. This individual stated that there was a National shortage of boating access areas and dock space.

13. Concern was raised with respect to the fact that the study was only concerned with the development of the site for a marina. The individual commenting believed there should be a study of the recreational needs of the entire community and possibly another use was more appropriate for this site. He further stated that if a marina or a boat ramp were constructed on the site, the provision of boats for rent would make the facility useful for persons who did not own a boat.

    Mr. Kelly responded to the fact that the funds provided for this study were provided under the Coastal Zone Management Program. The purpose of the Coastal Zone Management Program planning funds was to provide for the study of increased public use and accessibility to the water resources of the Delaware River. As a result, only sites within the defined coastal zone could be considered. Also, the specific site had been selected for study by the Township. Finally, the Township has already prepared a recreation study which reviewed the Township's recreational needs in all areas.

Mr. Murtaugh closed the public comment session of the meeting by indicating that a second public meeting would be held on June 17, 1981, at which time the consultant would provide answers to some of the questions raised this evening. He restated the position that the Township was neutral with respect to the development of a marina or recreation facility on this site, and that they would rely heavily on the results of the feasibility study and public input before determining in favor or against the project.

DIRECTION ASSOCIATES, INC.

MEMORANDUM

TO: Files

FROM: Direction Associates, Inc.

DATE: June 17, 1981

SUBJECT: Ridley Township Coastal Zone Management Program
Marina/Recreation Feasibility Study

The second public meeting for the Ridley Township Marina/Recreation Area Feasibility Study was held before the regular monthly meeting of the Township Supervisors. As a result, in addition to the public in attendance, the meeting was also aired on cable TV. Mr. Timothy J. Murtaugh opened the meeting and introduced Mr. Robert M. Kelly to present findings of the Feasibility Study.

Mr. Kelly's initial comments were directed to a handout that had been provided which explained the Coastal Zone Management Program and the planning grant awarded to Ridley Township. Mr. Kelly then proceeded to advise the public of a change in the future funding available under the Coastal Zone Management Program which affected the proposed project. Under the original concept, a planning grant might be expected to be followed by a grant of funds to develop a project, should the project prove feasible. However, the budget cuts proposed for the new Federal budget included the elimination of funds for development grants under the Coastal Zone Management Program. As a result, it appeared that development funds could not be expected for this project should it prove feasible.

Based upon this loss of a potential funding source and substantial public comment at the first public meeting in support of a boat ramp facility, Mr. Kelly explained that the Township, the Pennsylvania Department of Environmental Resources, and the Delaware Valley Regional Planning Commission will agree to revise the scope of the Feasibility Study. The new scope would limit the Feasibility Study to the determination of the use of the site for a public boat ramp and adjoining recreation area.

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Mr. Kelly then proceeded to present three potential development schemes for the site which include, in scheme 1 a boat ramp, parking area, and passive recreation area, and in schemes 2 and 3, a boat ramp and parking area only. Mr. Kelly indicated that H. Gilroy Damon Associates, Inc., engineering consultants, were in the process of analyzing the physical problems of developing these facilities on the site and the results would be reported at a later meeting.

Mr. Kelly then presented information concerning marketability. He confirmed that the Governor Printz Marina was definitely no longer operating, but that the nine remaining marinas in the area were in operation. He then proceeded to explain that statistics for boat registration by county were perhaps misleading for Delaware County. In a chart outlining boat registration for Bucks, Chester, Delaware, Montgomery, and Philadelphia Counties, Mr. Kelly indicated that Delaware County had the least growth in boat registration in the last eight years of all 5 counties. He also stated that total registration for the five county area was disappointingly low, suggesting that there was not much market for a boating facility. This information was then compared with the boat registration for a single county in the western part of the State, Allegheny County. While Allegheny County contained a population of less than one-half that of the five county area, it had almost an equal number of boats registered to its residents. The explanation appears to be that people in the five county area have relatively easy access to boating facilities along the New Jersey shore and in Maryland and Delaware.

As a result, many people with boats in this area will register them in the State in which they use them or store them to take advantage of a reduced boat ramp fee, marina charges, and sales tax. This leads one to believe that there is a hidden market of boat owners residing in Delaware County which would make substantial use of any boating access facility that would be provided in this area.

Mr. Kelly then proceeded to provide a slide presentation of boat ramp facilities in Bucks and Philadelphia Counties. He noted that many of the boat ramp facilities in Bucks County had

been constructed in the period between 1982 and 1980. He then referenced the boat registration statistics previously presented and indicated that there was a substantial increase in boat registration in Bucks County in this period, suggesting that the provision of such facilities contributed to this increase. Following the slide presentation, Mr. Kelly turned the meeting back over the Mr. Murtaugh for public comment.

The first individual to speak was one who had spoken at the first public meeting in opposition to a marina facility. He now stated that the revision of the project to a boat ramp/ recreation area facility was in line with what he felt was necessary for the site, and complemented those responsible for the decision to change the project.

A member of the Board of Supervisors commented that the loss of funds for the development costs for such projects is not yet certain and could, in fact, be over-turned in a future Federal budget.

An additional comment concerning the marina facility was made by Mr. Belk of Belk's Marine Supply, who suggested that comments concerning the financial feasibility of a marina were incorrect. Such comments made by Mr. Kelly had alluded to the fact that prior feasibility studies suggested that a marina facility of the type envisioned was not financial feasible without a grant of some form to subsidize the project. Mr. Belk stated that he had investigated the financial feasibility of marinas and it was his opinion that such a facility could operate at a profit.

Mr. Murtaugh closed the public comment session by advising the public that a third public meeting would be held at a date yet to be determined, at which time information concerning the cost of the project would be presented.

DIRECTION ASSOCIATES, INC.

MEMORANDUM

TO: Files

FROM: Direction Associates, Inc.

DATE: August 10, 1981

SUBJECT: Ridley Township Coastal Zone Management Program
Marina/Recreation Feasibility Study

The third public meeting for the Ridley Township Marina/Recreation Area Feasibility Study was held before the regular meeting of the Recreation Board at 7:30 p.m., August 10, 1981.

Mr. Timothy J. Murtaugh, Ridley Township Commissioner and Chairman of the Recreation Board, opened the meeting advising the public that there would be a presentation of project findings, followed by a period open to public comment. Mr. Murtaugh then turned the meeting over to Mr. Kelly of Direction Associates.

Mr. Kelly provided a brief review of the information concerning the Coastal Zone Management Program, site location, market information, site accessibility and preliminary site plans. He then provided more detailed information concerning the flood plain status of the site, the oridinance regulating the Conrail Railroad drawbridges, and the development costs of the site.

Mr. Kelly identified the site as falling within the 100 year flood plain of Darby Creek as determined by the Flood Insurance Rate Map, dated May 28, 1981. He indicated that the site development proposals would be subject to the Township's Zoning Ordinance, which included a flood plain zoning district and the provisions of the Federal Flood Insurance Program. He went on to state that the potential flooding of this site had an impact upon the development proposals, which he would present later.

The ordinance regulating the Conrail drawbridge was presented by Mr. Kelly. It was stated that while there was no provision that the drawbridge be permanently manned, the ordinance provided that the drawbridges be raised at specific hours during the prime boating season (May 15 through October 15). While this suggests that the bridges be manned during this period, the ordinance specifically states that the owners of these bridges will not be required to keep draw attendees in constant attention.

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Between 7:00 a.m. and 10:00 p.m. each day from May 15 through October 15. The bridges will be opened upon signal from an approaching vessel or vessels, at 7:15 a.m., 10:30 a.m., 1:00 p.m., 3:00 p.m., 7:30 p.m., and 10:30 p.m., and at other times upon signal during these hours if such openings will not unduly delay railroad operations. During the period October 16 through May 14, it is necessary for those requesting the bridges to be opened to provide 24 hours advance notice.

Mr. Kelly then proceeded to review the three alternative site plans and the development costs from the recommended site plan. Scheme 1, included a boat ramp facility, parking area, and passive recreation area. However, it was determined that this proposal would be the most costly and prone to damage in the passive recreation area as a result of flooding. This proposal would require a culvert to be constructed for Stony Creek and increased fill to be placed on the site to allow for an appropriate cover and entrance drive slope into the site.

Schemes 2 and 3 were presented as being less costly than scheme 1 in that they eliminate the passive recreation area and move the entrance drive to a location below Stony Creek, eliminating the need for a culvert. As a result, less fill is needed on-site and the potential for damage from flooding is reduced.

Mr. Kelly then presented the results of the engineering analysis prepared by H. Gilroy Damon Associates and the accompanying estimate of development costs. Based upon a proposal to develop scheme 2, the total development cost would be $386,170, which would include the cost of excavation, fill, grading, paving the parking area, and the construction of a concrete boat ramp facility.

Mr. Kelly reported that a portion of the site was presently being negotiated for purchase as an easement by the Philadelphia Electric Company. At first there was fear that this would have a significant negative effect upon development potential of the site, however, in placing the easement over the development plan for scheme 2, it appears that the potential effect is to include a small portion of the parking area in the easement near the intersection of Sellers Avenue and the Industrial Highway. Mr. Kelly reported that if an aerial tower is constructed in such an easement, parking is normally permitted within the easement. As a result, it is believed that the easement will not have a significant negative effect upon the project.

Mr. Kelly indicated that the site had been reviewed for consideration by the Pennsylvania Fish Commission at a prior time as a boating access area. Based upon this earlier review, the Fish Commission indicated that the site appeared to be eligible for development funds under its Municipal Lease Program. Mr. Kelly recommended that the Township submit a formal request for site approval for consideration for funding under this program. One element of the Municipal Lease Program which needs to be resolved is the ownership of the site. Mr. Kelly indicated that the Township could secure development funds if they owned the site or if they entered into a long-term lease for the site. However, he suggested that the project would be more competitive if the Township owned the site. He went on to explain that there are several sites being considered for funding under this program, including a site in Marcus Hook. Finally, Mr. Kelly indicated that the Pennsylvania Fish Commission requires that the community pay for the operating and maintenance costs of such a facility. These costs average approximately $2,500 per year.

Mr. Kelly also indicated that acquisition costs for the site might be secured through a grant from the Department of Community Affairs. He stated that the Township was presently preparing a Letter of Intent for such funds which would be submitted at the end of August. However, he also stated that it was not certain that funds would be available under this grant program. He recommended that the Township use a portion of its Coastal Zone Management Program planning funds to secure an appraisal of the site.

Mr. Kelly then turned the meeting over to Mr. Murtaugh, who opened the meeting for public comment.

There was general approval of the boat ramp proposal expressed by the public, along with disappointment that the passive recreation area was not included. One commenter noted that the project costs appeared a bit low, and in examining the proposal, suggested that this was because there was no bulkheading proposed for the project. Mr. Kelly and Mr. Damon both indicated that bulkheading would raise the cost of the project considerably and that it did not appear to be necessary at this point in time. Mr. Wolf of the Delaware Valley Regional Planning Commission commented that the flood plain status of the site and the development of the parking lot on a slope to encourage the return of any flood waters to the creek appear to reduce the need for bulkheading.

Another commenter opposed the expenditure of Township funds to pay for the operation and maintenance of the site. It was indicated by this individual that there were numerous facilities in Pennsylvania that were operated and maintained by the Fish Commission, and that this should be requested in addition to the development funds for the site.

At an earlier meeting there had been some interest expressed in developing a boat rental facility on the site. There had also been expressed an interest to encourage the use of the site as an access point to the Tinicum Environmental Center, particularly through the use of canoes. Mr. Kelly responded that he had met with the manager of the Tinicum Environmental Center and had reviewed the master plan for the center. The master plan included several canoe launch areas, one of which occurred in a lagoon just north of the I-95 bridge. Because of the proposal to develop such facilities, and because of the flood plain problem with respect to constructing buildings, it was recommended that boat rental facilities not be included in the final design of the project.

Mr. Murtaugh closed the meeting to public comment, indicating that he was pleased with the detailed information provided by the consultants. He then stated that the Township still had not taken a position on the project, and that any future decisions concerning the project would occur at regular meetings of the Township Board of Supervisors.

APPENDIX III

RIDLEY TOWNSHIP ZONING ORDINANCE:

SECTION 10.200 "FP" FLOOD PLAIN DISTRICTS

10.200 "FP" Flood Plain Districts.

10.201 INTENDED PURPOSE: These districts are intended to provide suitable controls for the use of flood plains and wetlands and to protect areas subject to and necessary for flood waters and tide waters. The special provisions contained herein shall apply to flood plain and wetland areas (the term flood plain as used hereinafter shall be construed to mean both flood plain and wetland) in order to:

10.201.1 Combine with present zoning requirements, certain restrictions made necessary for the flood plains to promote the general health, welfare and safety of the Township.

10.201.2 Prevent the erection of structures in areas unfit for human usage by reason of danger from flooding, unsanitary conditions or other hazard.

10.201.3 Minimize danger to public health by protecting the water supply and promoting safe and sanitary drainage.

10.201.4 Reduce the financial burdens imposed on the Township, its governmental units and its individuals by frequent and periodic floods and overflow of lands.

10.201.5 Permit certain uses which can be appropriately located in the flood plain as herein defined and which will not impede the flow of flood waters, or otherwise cause danger to life and property at or above or below their locations with the flood plains.

10.201.6 To permit only those uses in the flood plain compatible with the preservation of natural conditions which are conducive to the maintenance of constant rates of water-flow throughout the year.

10.201.7 Provide sufficient drainage courses to carry abnormal flows of stormwater in periods of heavy precipitation.

10.202 DELINEATION OF FLOOD PLAIN: The limits of the flood plain as indicated on the Zoning Map include the following:

10.202.1 Areas subject to Standard Project Flood as defined by the Corps of Engineers.

10.202.2 Data based on alluvial soils information as defined in the "Soil Survey of Chester and Delaware Counties," produced by the U.S. Department of Agriculture, Soil Conservation Service in 1963.

10.203 REQUIREMENTS: No development or construction within 100 feet from the flood plain and no change to topography of the area within 100 feet from the flood plain whether by removal, addition or rearrangement of soil or material, shall be commenced unless approval is granted by the Township Commissioners through a Conditional Use.

10.203.1 The Township Commissioners shall grant a Conditional Use for development and/or construction within the flood plain (based upon the recommendations and comments received from the Township Planning Commission, Township Engineer and the Zoning Hearing Board) having determined that such development or change is in compliance with the objectives set forth in this Ordinance and in the Ridley Township Comprehensive Plan.

10.203.2 If development and/or construction within the flood plain is given approval by the Township Commissioners, the following conditions apply:

10.203.2.1 Building Elevation:

- No building or any portion thereof shall be erected unless the finished surface of the ground is higher than or raised by filling to an elevation of at least one (1) foot above the elevation of the outer limits of the flood plain as herein defined, except as provided in sub-section 10.203.2.5 below.

- No first, basement or cellar floor of any building shall be constructed at an elevation of less than one (1) foot above the elevation of the outer limits of the flood plain as herein defined.

10.203.2.2 Structure Anchoring: Any structure placed in the flood plain shall be firmly anchored to prevent flood waters from carrying it downstream. Such anchoring shall be sufficient to withstand a flood velocity of six (6) feet per second. The Zoning Officer shall require the applicant to submit the written opinion of a registered professional engineer that the proposed structural design meets this standard. Such anchoring shall be subject to the approval of the Township Engineer at the cost of the applicant.

10.203.2.3 Private Sewage Disposal Systems: No part of any private sewage disposal system shall be constructed within the flood plain as herein defined, unless approved by the Department of Environmental Resources of the Commonwealth of Pennsylvania.

10.203.2.4 Storage of Materials: No materials that can float, are explosive or are toxic to humans, animals or vegetation shall be stored in the flood plain.

10.203.2.5 When permitted as a Conditional Use by the Township Commissioners, any building within the flood plain at the time of enactment of this Ordinance may be altered or extended, provided:

- The alteration or extension conforms with all applicable regulations of this Ordinance.

- Any increase in volume or area shall not exceed an aggregate of more than 25 percent of such volume or area during the life of the structure.

- An increase of any on-lot sewer system presently located either wholly or partially in the flood plain shall be required.

10.203.2.6 Installation of Fill Materials: Fill may be placed within the outer limits of the flood plain only when allowed as a Conditional Use by the Township Commissioners, and by the Department of Environmental Resources of the Commonwealth of Pennsylvania. Detailed plans shall be submitted showing existing and proposed conditions. If a structure is to be placed on the fill, the plans shall show the structure as well. In considering the application for a Conditional use, the

Township Commissioners shall base its decision on the recommendations and comment of the Township Planning Commission, Township Engineer, the Zoning Hearing Board and the objectives established in this Ordinance and in the Ridley Township Comprehensive Plan.

10.203.2.6.1 The following additional standards:

- Fill shall consist of soil or rock materials only; sanitary landfills shall not be permitted in the flood plain.

- The cross-sectional area of the flood plain shall not be reduced by more than 3 percent on either side of the centerline of the water-course.

- The Township Commissioners shall require written evidence of approval of the proposed fill by the Division of Dams and Encroachment of the Water and Power Resources Board of the Pennsylvania Department of Environmental Resources.

APPENDIX IV

SITE APPRAISAL, RICHARD G. deGROUCHY

PENNSYLVANIA DEPARTMENT OF COMMUNITY AFFAIRS
Bureau of Recreation and Conservation
Land Acquisition Assistance Program
APPRAISAL REPORT

Numbers:
Project -
Area -
Lot -

Legal Name of Applicant:

TITLE DATA

1. Owner: Boeing Company
2. Property Address: Industrial Highway
Eddystone, PA 19013
3. Date Acquired: 3-31-60 DBV 2014 Page 344
Consideration or Revenue Stamps:
$41,000. Penna. Stamps

4. PURPOSE: The purpose of this Appraisal is to estimate the market value of the fee simple interest of the property herein described. Market Value is defined as the highest price in money which a property will bring if exposed for sale in the open market allowing a reasonable time to find a purchaser who buys with knowledge of all the uses to which it is adapted and for which it is capable of being used.

SUMMARY

5. Type of Property: Unimproved land in flood plain
Date, Value Estimate Applies: 10/7/81
6. Current Use: undeveloped
7. Plot Size - Whole: 5.70 acres ±
Taking: 5.70 acres ± Remainder: None
(Attach plat map or sketch with dimensions and bldg. locations)
8. Zoning: Industrial & Flood Plain as shown on Ridley Twp. Zoning Map
Which Allows: see attached pages from zoning book.
9. Street Improvements: Concrete 2 lane
Utilities at Site: All public utilities are available to the site.
10. Highest and Best Use:
(See explanation in Appraisal Guide)
11. Indicated Value Estimates:
By Replacement Cost Approach $ Not applicable
By Market Data Approach $ 68,400.
By Income Approach $ Not applicable
12. Correlation:

	Land	Buildings	Total
"Before" value	$59,850.	none	$59,850.
"After" value	None	none	none
Damages	$59,850.	none	$59,850.

Appraiser Richard C. deGrouchy
(Typed) Richard C. deGrouchy

(Appraiser should read the Department's "Appraisal Guide" prior to completing this form.)

Assessment Data -

Land: Buildings: Total:

Annual Taxes:

Easements or Use Restrictions: Flood plain and Phila. Electric Co. easement

Description of City, Borough, Township, or County:
(Industrial types, commercial, residential, educational, growth pattern)

See pages 2A - B - C - D.

Description of Neighborhood: (Land Use, Facilities, Schools, Recreation)

See page 2E.

Description of Property:
(Topography, terrain, streams, vegetation, road frontage, proximity of development. List approximate acreage for each use. Give size, description, use and condition of buildings. Attach photos of land and buildings. Aerial photos desirable.)

See page 2F -

Reproduction Cost and Depreciation: (If not applicable, so state)

BUILDING: SF-CF @ $ $

Less Depreciation:

Physical Not applicable - unimproved land -

Functional

Economic

Depreciated Value of Bldg.: _____

Depreciated Value of Aux. Bldg.(s): _____

LAND: FF-SF-Acre @ $ _____

Indicated Value - Cost Approach $ _____

Explain various items of depreciation - Additional sheets as required)

DELAWARE COUNTY

Delaware County is located in the very southeast corner of the Commonwealth of Oennsylvania. It is bounded on the north by Montgomery County, on the east by the City of Philadelphia, on the south by the Delaware River and State of Delaware, and on the west by Chester County.

The County is the third smallest in Pennsylvania, but fourth largest in population. Since the 1920's it has rapidly expanded and is now equal to or greater than nearly half of the 100 largest SMSA's (Standard Metropolitan Statistical Area) in the United States. It is comprised of 185 square miles and has a population of 726,800 for the year 1980.

Delaware County is one of the most affluent counties in the SMSA, second only to Montgomery County. The median income for the United States was $8,861. and the comparable figure for the County was $11,822.

The leading industry is manufacturing, which in 1973, employment ranked 11th in the state with the value of production ranking 11th in the State. Also contributing to the economy of the County were sales realized from wholesale-retail trade outlets. Agriculture is also an important industry despite the dense population and the fact that the County is the third smallest in the State. There are approximately 120 working

farms with the principle products being ham, grain, fruit, and cut flowers.

The County is served by a far-reaching transportation complex that keeps industry close to raw materials and markets. I-95 links Philadelphia to Wilmington and also Con-Rail, B & O Railroad, and Amtrack along with passenger commuter service to Philadelphia and Wilmington. There are 1,600 miles of highways, six heliports for private use and the Philadelphia International Airport and Greater Wilmington Airport are only minutes away. SEPTA Red Arrow division and Greyhound serve as bus lines.

Electric power and gas are abailable from the Philadelphia Electric Company and water is available from various companies getting their supply from the Octoraro Creek, Susquehanna River, wells, creeks, springs, and rural streams. At the present time there are 13 sewer authorities in the County.

Sources: Delaware County Land Use Plan 2000, Delaware County Planning Commission, January 1976.

Delaware County Water Supply, Delaware County Planning Commission, 1974.

The PENJERDEL location and market guide, The Greater Philadelphia Chamber of Commerce, 1978, pp. 267-270.

AREA DESCRIPTION

The subject property is situated in the industrial section of lower Delaware County between the City of Philadelphia and the City of Chester, this industrial area extends along the north and south sides of the Industrial Highway, Pa. Route #291. Major industrial and commercial complexes in this area consist of the Philadelphia International Airport, the Folcroft Industrial Park, Westinghouse plan in Lester, Boeing Company, Philadelphia Electric Company plant in Eddystone, Sun Ship, Scott Paper Company, Sun Oil Company, British Petroleum Company, etc. As you leave Delaware County and go eastward toward Philadelphia along the Industrial Highway you enter into the large industrial area of southwest Philadelphia, this includes large refineries, large industrial plants and the Philadelphia Naval Ship Yard. As you leave Delaware County from the west end of the Industrial Highway you enter the industrial area of Claymont, Delaware.

This industrial area of lower Delaware County borders the north and south sides of the Industrial Highway.and just north of, and roughly paralling it, is Interstate Highway 95. There is a 4 way interchange at I-95 within ½ mile of the subject. Other major highways that influence this

area are the Schuylkill Expressway in Philadelphia, the Walt Whitman Bridge, Pa. Route #420 which connects the Industrial Highway at Essington with the Baltimore Pike at Springfield, Pa. Route #320 which connects the City of Chester with the Baltimore Pike at Springfield, Pa. Route #352 which connects the City of Chester with the Baltimore Pike at Middletown Township, Pa. Route #452 which connects the industrial area of Marcus Hook with the Baltimore Pike at Lima and U.S.Route #322 which connects the City of Chester with the Baltimore Pike near U.S. Route #202. Generally bordering the south side of the Industrial Highway you have the tracks of the Penn-Central Railroad, in the area you also have the tracks of the Reading Railroad and the Baltimore & Ohio. Another major influence in the area is the close proximity to the Philadelphia International Airport.

There is a good supply of skilled and semi-skilled labor in the area due to the close proximity to the City of Philadelphia and also due to the good highway pattern which enables this area to draw from New Jersey and Delaware. The industrial plants in the general area have not been prospering over the past 10 years and there has been a sizeable reduction in the labor force. Upon completion of the

enlargement of the International Airport and the completion of the proposed highway development in the area, it is expected that this industrial area of Delaware County will expand and increase its labor force. This is one of the few areas remaining where you still have some large land holdings and the zoning is very favorable.

DESCRIPTION OF TOWNSHIP

Ridley Township became a first-class township in 1906 and contains an area of 5.8 square miles and a population of about 32,500. The township abutts Springfield Township, Swarthmore Boro and Morton Boro to the north, Upper Darby Township, Darby Township and Glenolden Boro to the east, Darby Creek, Prospect Park Boro and Norwood Boro to the south, and Eddystone Boro, City of Chester and Nether Providence Township to the west. The Boro of Ridley Park lies between the northerly and southerly sections of Ridley Township, this can be seen on the attached plan.

The township has a wide and varied range of industrial and commercial uses. The range would run from Boeing Co., a large employer in the aircraft industry, to small industrial shops. The heaviest concentration of industrial uses would be along Chester Pike and the Industrial Highway. The main arteries of commercial development are MacDade Boulevard, Chester Pike, Fairview Road and Kedron Avenue. The uses range from the MacDade Mall to small owner-operated stores.

Ridley Township is a desirable residential community, essentially a township of single family dwellings with a price range of $50,000. to $75,000. There is little

residential land left for development, this is also true of industrial and commercial land.

The educational system in the Ridley School District is highly regarded and considered to be one of the best in Delaware County. In addition to the academic and secretarial courses, Ridley Township uses the Voc-Tech school which is highly regarded.

DESCRIPTION OF NEIGHBORHOOD

The subject property is in an industrial-commercial area dominated by the large Boeing Co. plant. This plant is on the north and south sides of the Industrial Highway in the immediate area of the subject. Further to the west, and along the Delaware River, is the Philadelphia Electric Plant. To the east is Tinicum Township and the Westinghouse Electric Co. plant, and east of this is the Philadelphia International Airport.

All public utilities are generally available in this area, the exception is lack of public sewers in part of Tinicum along the north side of the Industrial Highway. As described on the previous page, the schools are most desirable. Widener University is but 5 minutes away in the City of Chester, just off I-95.

Recreational facilities are considered fair to good in Ridley Township but there is a definite lack of facilities along Darby Creek. There is no available land along the Delaware River as all the frontage is owned by Boeing Company plus a small parcel owned by the Philadelphia Electric Company.

DESCRIPTION OF PROPERTY

The subject parcel contains 5.70 acres ± of generally low land at the northeast corner of Sellers Avenue and the Industrial Highway, PA Route 291. As can be noted from the attached plan, the subject parcel has 833.41'± along the east side of Sellers Avenue, 50' along the arc connecting Sellers Avenue and the Industrial Highway and an irregular frontage of 261.22' along the north side of the Industrial Highway. The easterly property line contains 810'± along the low water mark of Darby Creek and the northerly property line contains 790'± along the centerline of Stoney Creek.

The frontage along the Industrial Highway drops off sharply from the roadway down to Darby Creek, this is shown clearly in the pictures attached to this report. There is a guard rail along this road frontage.

At the north end of the frontage along Sellers Avenue the roadway is about 2' above the adjacent land, and then the land drops off to Darby Creek. As you go south along Sellers Avenue the drop off the road increases to about 10', then it becomes 6' at a point opposite the Exxon station. The drop off along the arc connecting the two roads is extremely sharp.

DESCRIPTION OF PROPERTY (cont'd.)

This land is subject to tidal flow as it is about 2,000' from the point where Darby Creek flows in and out the Delaware River. This is all low land and would be most difficult to develop commercially or industrially. The best use of the land would be for recreational purposes and its frontage on Darby Creek indicates a use for a marina.

This appraiser is aware that this property is encumbered with an easement to Philadelphia Electric Company. It is this appraiser's understanding that there is presently in progress a proposed agreement to relocate the easement for the convenience of Ridley Township.

Form BCP-70-8A

COMPARABLE SALES DATA

A minimum of three sales is generally desired, preferably in the same neighborhood of the subject. If not available, sales in similar neighborhoods may be used. At times, more than four may be required, particularly if portions of subject have different highest and best uses or different values. Comparables and subject must be indicated on an accompanying location map.

#1 Consideration $ 24,000.

Date of Transfer: 7-18-74 DBV 2514 Pg. 475

Plot Size: 3 acres

Address: N/S Darby Creek-W. of Wanamaker Ave., Ridley Township.

Unit Value: $8,000/ac. Zoning: C-Resid'l. and Flood Plain

Grantor: Leedom Fire Co. #1

Grantee: Richard S. Belk, etal

Location relative to subject: about 2000' NE of subject along Darby Creek

Highest & Best Use: Marina

Description of Buildings: Land only

#2 Consideration $ 950,000.

Date of Transfer: 11-10-78 DBV 2673 Pg. 540

Plot Size: 137.24 acres

Address: E of Wanamaker Ave., South side of Darby Creek, Tinicum Twp.

Unit Value: $6922/ac. Zoning: Special Use

Grantor: Westinghouse Electric Corp.

Grantee: United States of America

Location relative to subject: About 1¼ miles NE of subject along Darby Creek.

Highest & Best Use: Marina or Recreational

Description of Buildings: Land only

#3 Consideration $934,500.

Date of Transfer: 8/14/79 DBV 2706 Pg. 436

Plot Size: 78.4 acres

Address: W/S Wanamaker Ave., N or I-95, TInicum Township

Unit Value: $11,920/ac. Zoning: Special Use

Grantor: Layne Investment Corp.

Grantee: United States of America

Location relative to subject: About 1 mile NE of subject along Darby Creek.

Highest & Best Use: Marine or Recreational

Description of Buildings: Land only

#4 Consideration $ 84,013.

Date of Transfer: 6-15-76 DBV 2571 Pg. 748

Plot Size: 5.50 acres

Address: S of Darby Rd. at Hoffman Dr., along Darby Creek, Ridley Twp.

Unit Value: $15,275/ac.incl.bldg. Zoning: Comm'l.& Flood Plain

Grantor: John W.Taylor,Jr., Sheriff

Grantee: Morrow's Marina,Inc.

Location relative to subject: About 2000' NE of subject along Darby Creek.

Highest & Best Use: Marina

Description of Buildings: 2 story CB bldg.,unfinished-2800# boat ramp -
Land - $50,000. Improvements $34,013.
Land @ $9,100./acre.

ADJUSTMENT GRID FOR COMPARABLE SALES

The total consideration need not be allocated to land, buildings, and other, unless a portion less than the whole of the property is to be acquired, or if a comparison is to be made between land and land, or buildings and buildings, separately, rather than between the properties as a whole. Preferably, land adjustments should be made on a unit basis (acres, FF - SF).

Any adjustments required because of differences should be listed below, as either plus or minus dollar amounts. For example, if values have increased an average of 5% in the neighborhood, since the sale of the comparable, a + amount equal to 5% of the comparable's consideration, would be the adjustment.

Sale Number:	1	2	3	4 Land Allocation
CONSIDERATION	$24,000.	$950,000.	$934,500.	$ 50,000.
ALLOCATED TO LAND Per Acre, ~~FF,SF~~	$ $ 8,000.	$ $ 6,922.	$ $ 11,920.	$ $ 9,100.
BUILDINGS	$	$	$	$
OTHER	$	$	$	$
1. TIME ADJUSTMENTS	+0.35	+0.10	+0.10	+0.25
2. LOCATION - NEIGHBORHOOD				
3. TOPOGRAPHY	-0.20			-0.25
OTHER PHYSICAL CHARACTERISTICS:				
4. Access	+0.20	+0.25	-0.20	+0.10
5.				
6.				
NET ADJUSTMENTS	+0.35	+0.35	-0.10	+0.10
INDICATED VALUE OF SUBJECT (Unit)	$10,800/ac.	$9,345/ac.	$10,728.	$10,010.

FINAL MARKET DATA INDICATION $ 10,500. X 5.70acres (acres,FF,SF) = $59,850.

Buildings

Total $59,850.

EXPLANATION OF ADJUSTMENTS:

1. Real estate values have been rising in this area since 1968 and each sale was adjusted on its own merit.
3. This adjustment reflects the more desirable topography of the comparables due to more hard surface and useable area.
4. Sale #3 has good access off Wanamaker Ave., the other sales have limited or very poor access.

(Be sure to sign Certification on reverse hereof)

Form BCP-70-8
Attachment - BOR Application

Tabulation of History of Conveyance: (Property sales and transfers) Include parties to the transactions, dates of purchase, and amounts of consideration for at least 10 years prior to appraisal.

The subject 5.70 acres is part of a larger tract of 358.26 acres. On 3-31-60 Vertol Aircraft Corp. transferred to Boeing Airplane Co. 282.48 acres, more or less, for a consideration of $1.00 with $41,000. of Pa. stamps affixed. 37.05 acres of this was condemned by Penna. Dep't. of Transportation on 10/15/70 for a section of I-95. On 9/17/65 General Steel Industries, Inc. transferred to Boeing Co. 112.13 acres, more or less, for a consideration of $1,950,000. , being the tract south of the Industrial Highway. On May 3, 1961 the official name of the company was changed to Boeing Company.

Legal Description of Taking:

A legal description of the taking was not furnished to this appraiser. A copy of the take area is attached, this was secured from a plan prepared for Vertol Aircraft Corp. (see above conveyance) on 2/25/57 and last revised 12/14/59. This plan agrees with the tax maps of Delaware County and appears to agree with the plan designated Marina Feasibility Study.

CERTIFICATION OF APPRAISAL

I, the undersigned, do hereby declare that I have inspected the property described in this Appraisal Report on 9/15/81. In accordance with the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (P.L. 91-646) the property owner or a designated representative was given the opportunity to accompany me during this inspection.

That to the best of my knowledge and belief the statements contained in the appraisal herein set forth are true, and the information upon which the opinions are based is correct; subject to the limiting conditions therein set forth, and that I have viewed any comparable sales listed.

That neither my employment nor my compensation for making the appraisal and report are in any way contingent upon the value herein posted.

That I have no direct or indirect, present or contemplated personal interest in such property or in any benefit from the acquisition of such property appraised, whatsoever.

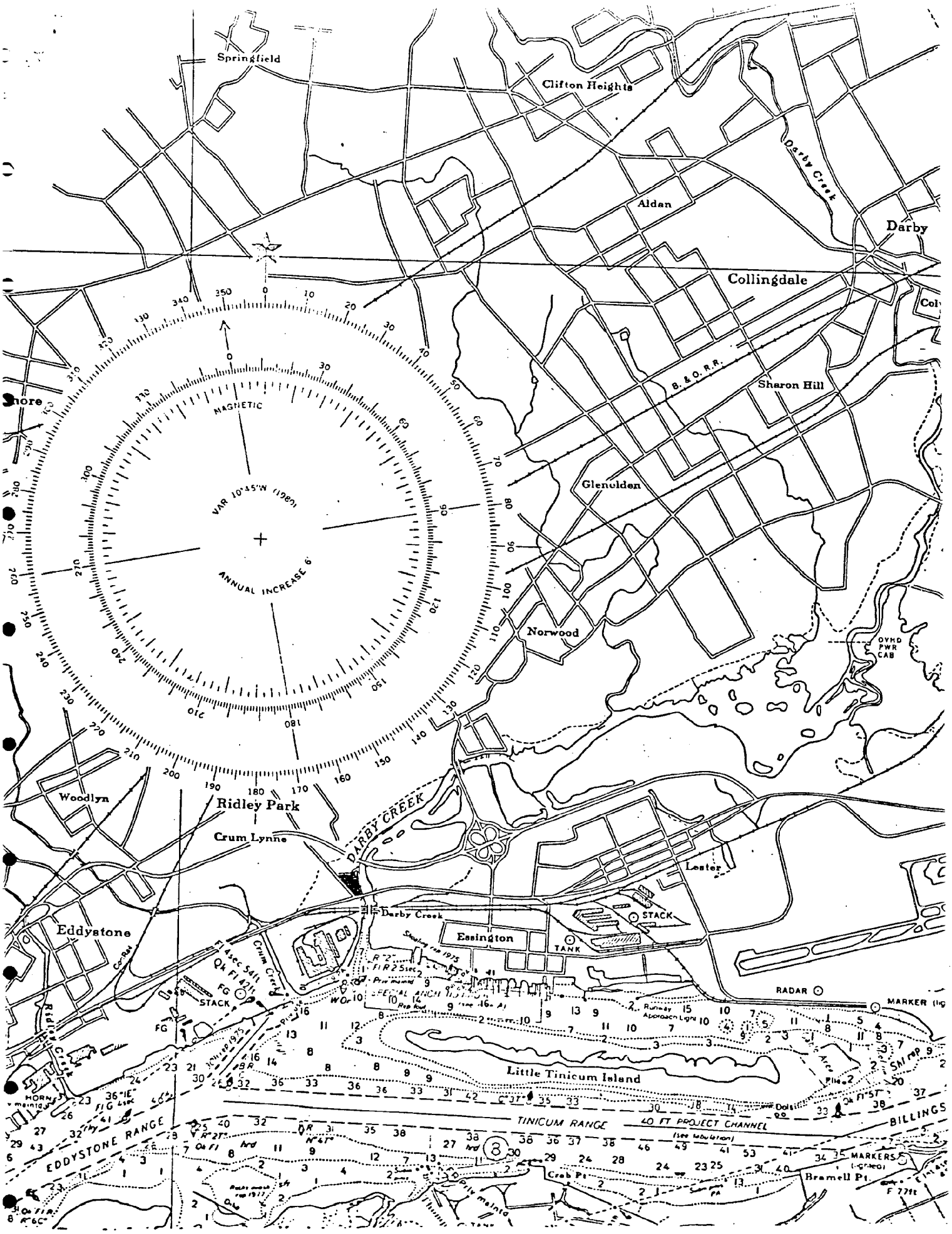
That I have not and will not reveal the findings and results of such appraisal to any one other than the proper official of the public body for whom this service is rendered, or until I am released from this obligation by having publicly testified as to such findings.

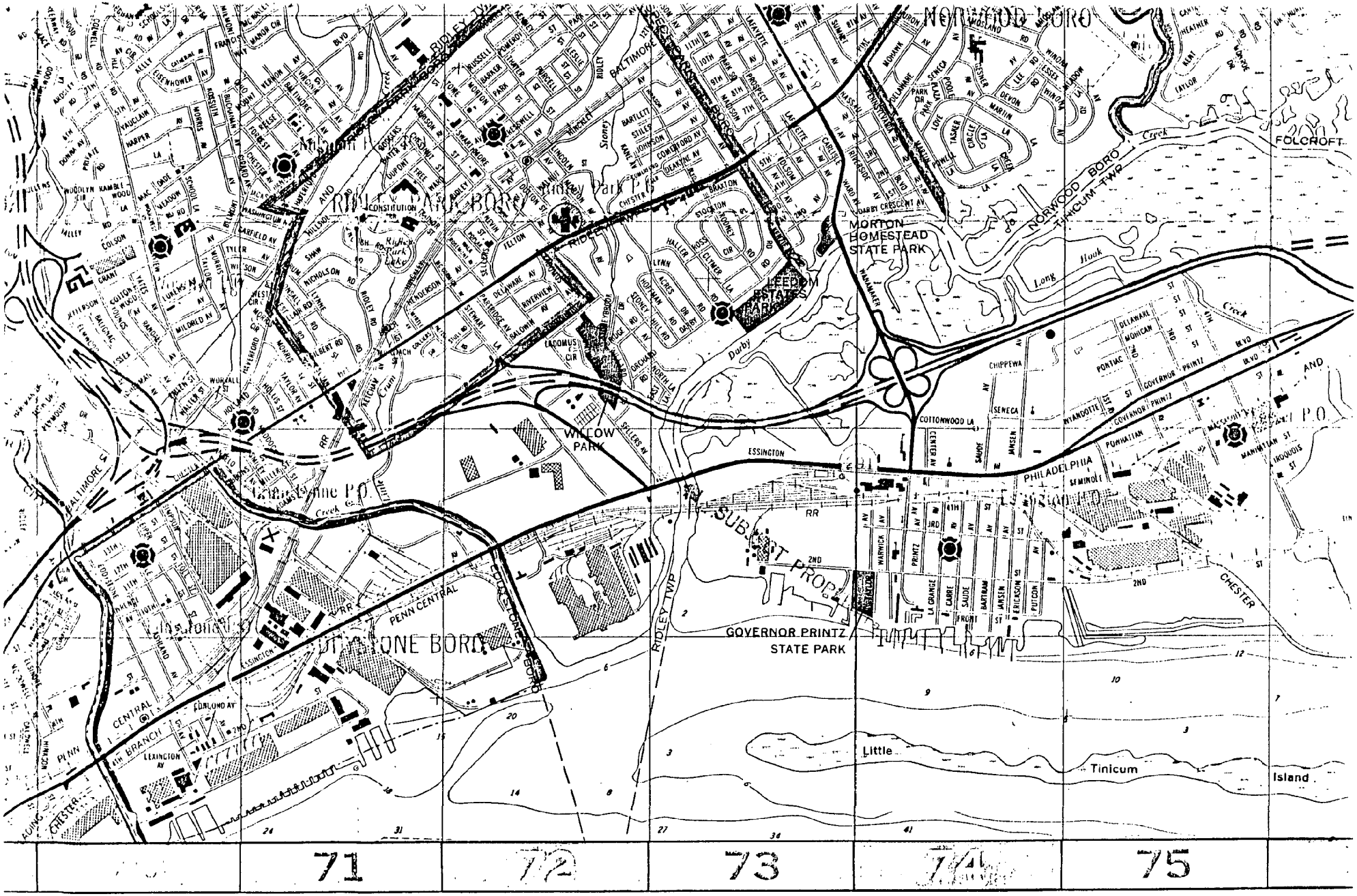
That my opinion of the value of the property appraised is in the amount as set forth herein.

10/8/81
Date

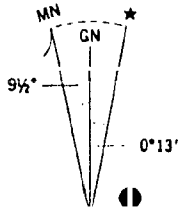
Appraiser

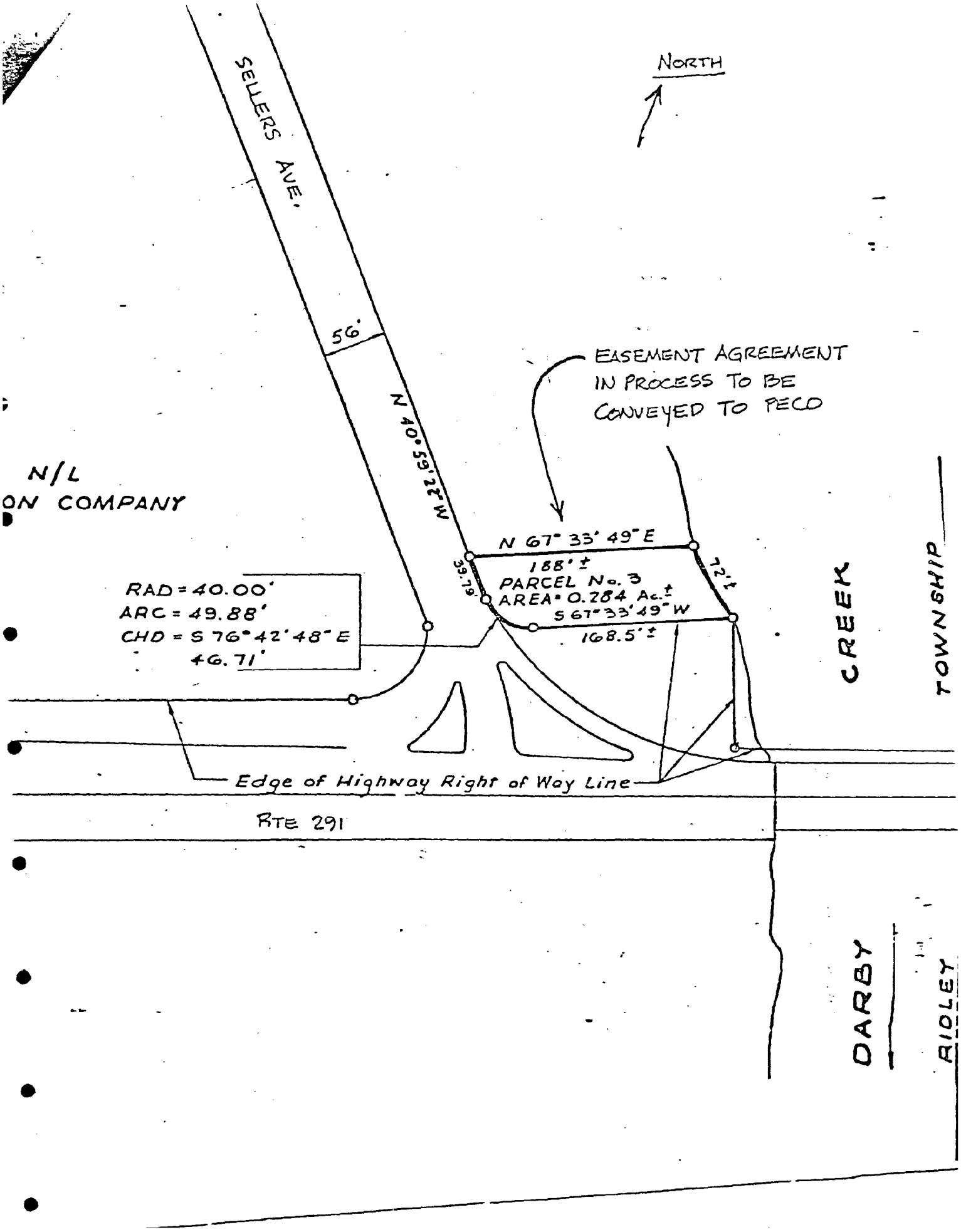
Richard G. deGrouchy
Richard G. deGrouchy Agency, Inc.

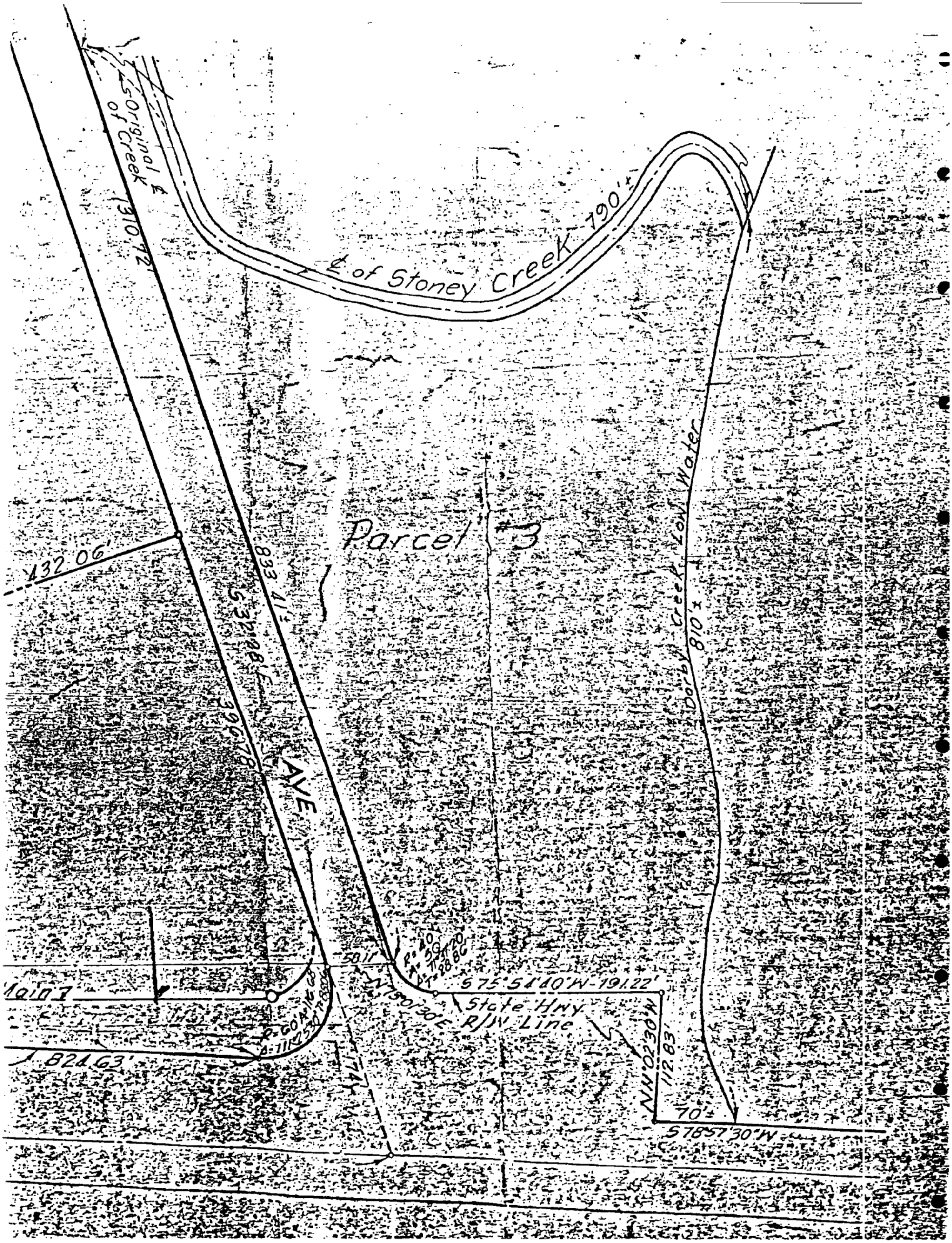

Springfield
Clifton Heights
Darby Creek
Aldan
Darby
Collingdale
B. & O. R.R.
Sharon Hill
Glenolden
Norwood
OVHD PWR CAB
MAGNETIC
VAR 10°45'W (1980)
ANNUAL INCREASE 6'
Woodlyn
Ridley Park
Crum Lynne
DARBY CREEK
Lester
Eddystone
Darby Creek
Essington
STACK
TANK
RADAR
MARKER
Little Tinicum Island
TINICUM RANGE
40 FT PROJECT CHANNEL
EDDYSTONE RANGE
BILLINGS
MARKERS
Crab Pt
Bramell Pt



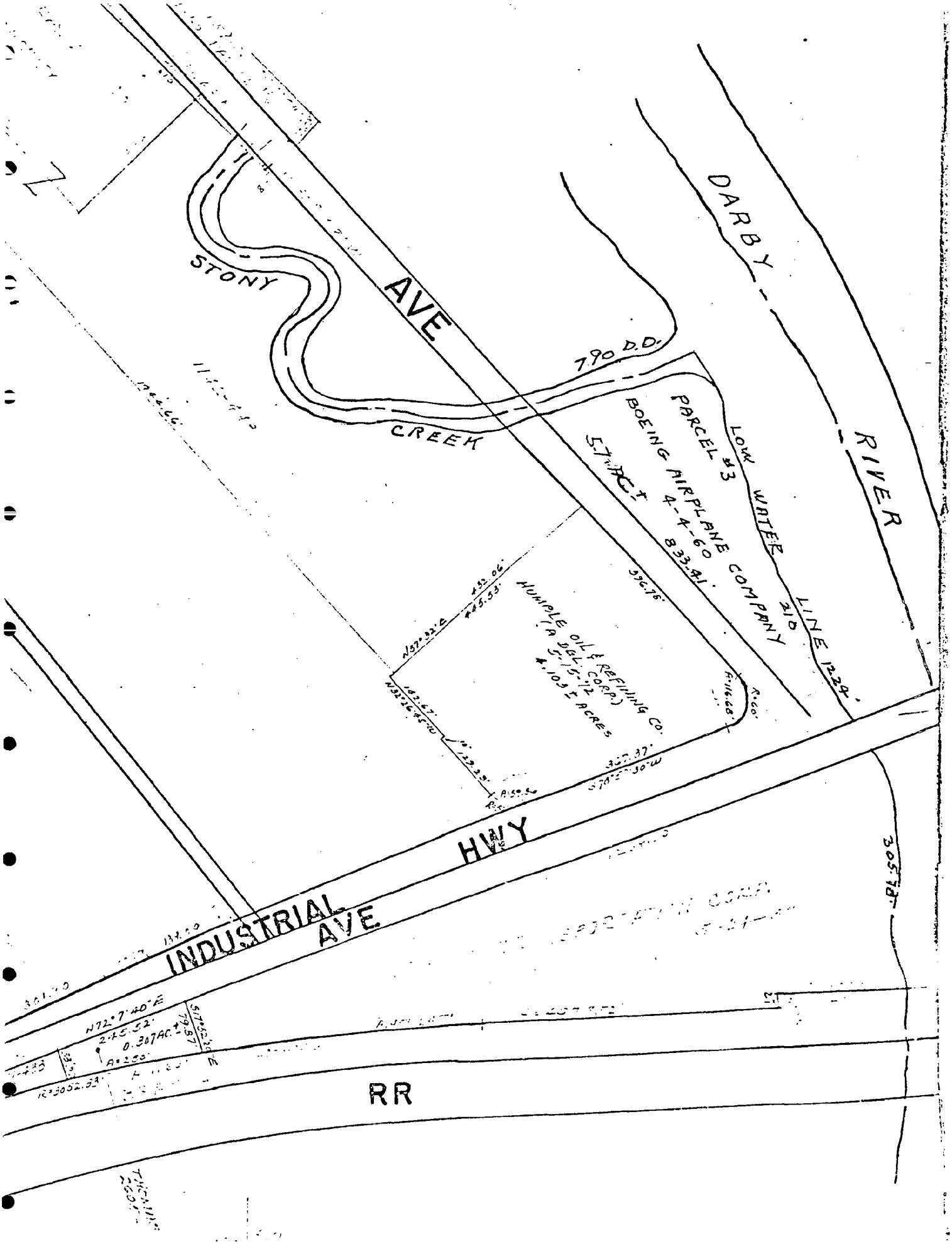
DELAWARE COUNTY




NORTH
SELLERS AVE.
56'
N 40°59'22" W
EASEMENT AGREEMENT
IN PROCESS TO BE
CONVEYED TO PECO
N/L
ON COMPANY
N 67° 33' 49" E
188' ±
PARCEL No. 3
AREA = 0.284 Ac. ±
S 67° 33' 49" W
168.5' ±
72' ±
39.79'
RAD = 40.00'
ARC = 49.88'
CHD = S 76° 42' 48" E
46.71'
CREEK
TOWNSHIP
Edge of Highway Right of Way Line
RTE 291
DARBY
RIDLEY

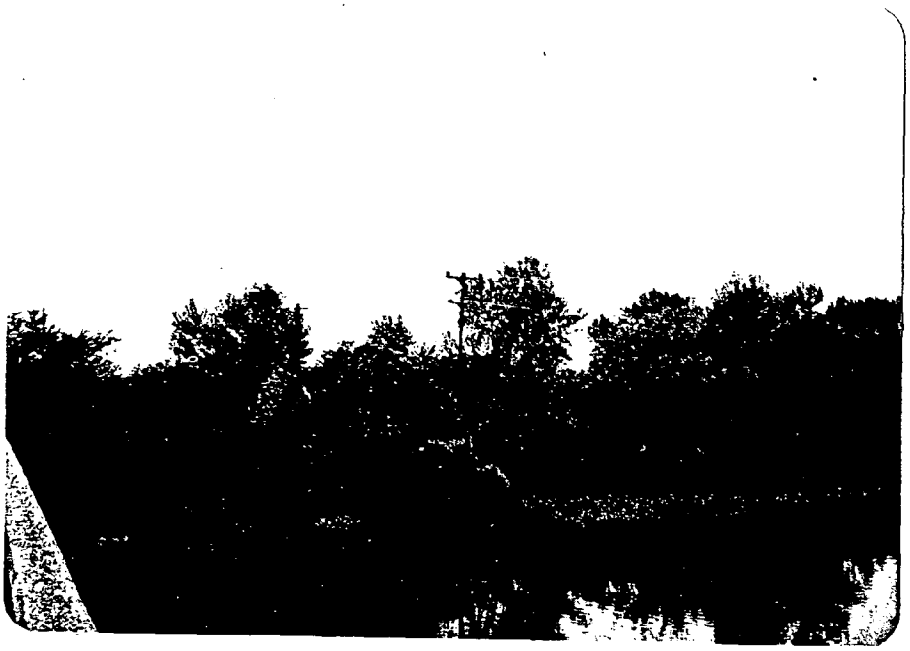


Original ℄ of Creek
1310.72'
℄ of Stoney Creek 790'±
Parcel #3
Dorby Creek Low Water
810'±
432.06'
833.41'±
S 32°28' E
396.78'
AVE
Main 7
824.63'
58.11'
S 75°54'40"W-191.22'
State Hwy. R/W Line
N 75°01'30"E
N 14°02'30"W
112.83'
70'±
S 78°57'30"W



DARBY
RIVER
STONY
AVE
CREEK
790 D.D.
PARCEL #3
BOEING AIRPLANE COMPANY
4-4-60
833.41
LOW WATER LINE 1229'
210
HUMPLE OIL & REFINING CO.
(A DEL. CORP.)
5-15-72
4.103± ACRES
396.76'
INDUSTRIAL
AVE
HWY
RR
305.78'
N72°7'40"E
245.52'
0.307AC.±

View looking west on Industrial Highway from the bridge over Darby Creek.



View of the subject site as seen from the bridge over Darby Creek.

View similar to #2.

View of the intersection of the Industrial Highway and Sellers Ave.

View looking north along the east side of Sellers Avenue, as seen from the Industrial Highway.

View looking south along Sellers Avenue towards the Industrial Highway.

Real Estate Appraisals

RICHARD G. deGROUCHY AGENCY, INC.

565-3390 9 WEST THIRD STREET MEDIA, PA. 19063

QUALIFICATIONS AS A REAL ESTATE APPRAISER

EDUCATION

B.S. in School of Business Administration, Lehigh University, 1947.

One year appraisal course, Wharton School, University of Pennsylvania, 1957.

Two year appraisal course, Philadelphia Board of Realtors, 1958 and 1959.

PROFESSIONAL SOCIETIES

Society of Real Estate Appraisers

American Right of Way Association, Senior Member
President (1979-80), Chapter 9.

American Society of Appraisers, Senior Member

Association of Delaware County Real Estate Appraisers

REAL ESTATE

Licensed as a Real Estate Broker, May 1, 1953.

Realtor Member of Delaware County Board of Realtors

Pennsylvania Realtors Association

National Association of Real Estate Boards

CONSTRUCTION

Residential and apartment house construction, experience in Chester and Delaware County. Residential land development in Chester County.

COURT EXPERIENCE

Court of Common Pleas and Boards of View in Delaware, Chester and Montgomery Counties. Boards of View in Philadelphia, Berks, Erie and Dauphin Counties. Court of Common Pleas in Allegheny County. United States District Court for the Eastern District of Penna.

CLIENTS

United States Department of the Interior

Commonwealth of Pennsylvania

Department of Transportation
Department of Forest and Waters
Department of Community Affairs
Department of Environmental Resources

County of:

Delaware and Chester

Townships of:

Chester, Concord, Darby, Ridley, Tinicum, Upper Darby, Haverford, Upper Chichester, Newtown, Marple, Nether Providence, Birmingham, Thornbury, East Marlborough.

Boroughs of:

Media, Sharon Hill, Norwood, Colwyn, Phoenixville, Eddystone, Ridley Park, Clifton Heights, Brookhaven, Collingdale, Lansdowne, Prospect Park, Rose Valley, Trainer, Upland, Darby, Swarthmore.

City of:

Chester

School Districts of:

Ridley, Upper Darby, William Penn, Penn-Delco, Interboro, Marple-Newtown, Rose Tree-Media, Southeast Delco, Wallingford-Swarthmore, Chester-Upland, Haverford, Downingtown Area, Chichester.

Redevelopment Authorities of:

Delaware County, Chester County and City of Chester

Parking Authority of:

Borough of Media, Borough of Norwood

Sewer Authorities:

Valley Forge, DELCORA, Central Delaware Co., Caln Twp., Municipal Authority, Oxford Municipal Authority.

CLIENTS (cont'd.)

Major Oil Companies:

Gulf, Mobil, Shell, American, Sun Oil, Exxon.

Pipeline Companies:

ARCO, Texas Eastern

Employee Relocations:

Homequity, Chrysler Corp., E.R.Squibb & Sons,Inc., Smith, Kline & French, Scott Paper Co., 3-M Company, Sperry Rand, Ticor Relocation Mgt., Employee Transfer Co.

Financial Institutions:

First Penna. Co., Girard Bank, Bryn Mawr Trust Co., Morgan Guaranty Trust Co., Erie County Savings Bank, Greater Delaware Valley S & L, Third Federal S & L of Phila., Community Federal S & L, Trevose S & L, First Federal S & L of Phila., Collingdale Federal S & L, Hamilton Federal S & L, Downingtown Federal S & L, Main Line Federal S & L, First Federal S & L of Pottstown, Title Abstract Co., Fireman's Fund Insurance Co., Colonial Mortgage Co. and Central Mortgage Co.

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