Expert Report (1987) — Old Bridge

1987

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ENVIRONMENTAL POLICY ANALYSIS OF THE REPORT ENTITLED "ENVIRONMENTAL LIMITATIONS AND THEIR IMPACT ON OLYMPIA & YORK AND WOODHAVEN VILLAGES"

Prepared for:

O&Y Old Bridge Development Corp.
760 Highway 18
East Brunswick, NJ 08816

Prepared by:
Reilly Land & Environment, Inc.
1314 Hooper Avenue
Toms River, NJ 08753

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EXHIBITS

I. INTRODUCTION

I have been retained by O&Y Old Bridge Development Corp. to review and respond to a report prepared by Carl Hintz of Hintz, Nelessen Associates, P.C., (hereinafter HNA), prepared at the request of Old Bridge Township. This report is entitled "Environmental Limitations and Their Impact on Olympia & York and Woodhaven Villages", and was dated May 1987.

O&Y Old Bridge Development Corp. (O&Y) has retained me in my capacity as environmental policy expert. In preparation for this assignment, I reviewed data supplied by O&Y and have made extensive use of reports and memoranda prepared by specific subject matter experts. I have attached to this report specific affidavits and reports prepared by three subject matter consultants.

My responsibilities were to analyze the environmental issues raised by HNA and to examine the data and specific responses prepared by O&Y's experts so as to provide an opinion as to the overall merits of the concerns raised by HNA as they relate to the protection of environmental resources.

HNA raised four environmental/natural resource management issues specific to the design of any large-scale developmental project in this portion of Middlesex County. The issues raised included: wetlands and buffers, seasonal high water table, floodplains, and slope. These are typical areas of concern in any large development and would ordinarily have been addressed by the applicant at the Planning Board level. In this case, HNA has taken these legitimate concerns and presented them in a way which appears to make the project unbuildable for anything other than very low density development. For the reasons presented herein, it is my opinion that HNA has overstated the environmental rationale for the proposed planned development and that the O&Y land holdings which I have examined can be developed at moderate densities (up to 8 dus per acre) without significant environmental damage.

II. WETLANDS DELINEATION AND BUFFERS

A. Wetlands Delineation

In Section 2.1 of the report, HNA appears to raise concerns respecting the wetlands delineation and protection. The O&Y wetlands have been mapped by an expert consultant (Amy Greene), and the delineation developed by Ms. Greene has been confirmed by the only existing agency with wetlands regulatory power -- the United States Army Corps of Engineers (USACE). Attached hereto is the letter/report (Exhibit A) prepared by Amy Greene, Environmental Consultant, and the delineation confirmation letter of the USACE.

No other governmental unit -- Old Bridge Township, Middlesex County, the State of New Jersey -- presently has the authority or expertise to map or approve the wetlands line on this project.

Conclusion

The wetlands on the O&Y site have been accurately mapped according to the laws and regulations. HNA's concern about the extent of the wetlands has been resolved by the approval of wetlands line by the USACE (see attached letter from USACE, dated June 4, 1987 [Exhibit B]).

B. Fill in Wetlands

Fill in waters and wetlands of the United States requires either a general or individual permit from the USACE. The general permit is for minor fill activities, such as road crossings and less than 1 acre of fill in small headwaters drainage basins or isolated wetlands. The individual permit is for fill in excess of 1 acre or any fill in non-headwaters areas.

The revised environmental cluster residential development proposal of O&Y proposes no fill in wetlands, even for road crossings.

The commercial portion of the development will require an USACE Individual permit.

This non-water dependent type of project will have to pass two essential tests in order to obtain an USACE individual wetlands fill permit:

1) The scope and nature of the project must have no "practicable" alternative which would have a less adverse impact on the wetlands ecosystem.

2) That the proposed fill has been kept to the minimum amount necessary in order to accommodate the proposed activity.

The project alternatives analysis is currently underway in order to comply with the USACE requirements to demonstrate that no alternative site is available.

C. Wetlands Buffers

HNA, at Page 10, indicates that wetlands buffers "should be considered".

First, there are no local, state, county or federal laws in place at present which would require buffers for the project. The New Jersey Freshwater Wetlands Protection Act does not impose a buffer requirement until July 1, 1989, and explicitly prohibits municipalities imposing buffers until that time.

Secondly, the desirability of buffering wetlands is a function of the quality of wetlands; and, a large part, the federally regulated wetlands on O&Y's site are not of the environmental quality (i.e., swails) for which buffering would be required.

Thirdly, specific site plans, when submitted, will address buffering issues, if desirable, at the time of submission. At the present time, there is no feasible way to address specific amounts or locations of buffering those few areas of high quality wetlands which may exist on the O&Y site.

Conclusion

There is no legal requirement for buffering on the O&Y site, and there is no environmental rationale for a generalized buffer requirement.

III. DEPTH TO SEASONAL HIGH WATER TABLE

HNA (Section 2.2, Page 11) raises the issues of depth to seasonal high water table, specifically indicating that there are site development problems in areas with a seasonal high water table of 0-1 feet.

In response, it must be noted that:

1. There is currently no municipal, county, state or federal law which regulates the use of lands with respect to the single parameter of depth to seasonal high water table.

2. Lands with a seasonal high water table of 0-1 feet are generally wetlands, as defined by the USACE when combined with a vegetative analysis; and this has been done on this project.

3. The issue of depth to seasonal high water table on the O&Y site has been addressed by Amy Greene in her wetlands delineation report.

4. By USACE definition, wetlands include virtually all lands on the O&Y site with a high water table of 0-1 feet.

5. HNA did not perform any on-site inspections but used the generalized guide of the soil survey to develop his conclusion on the extent of seasonal high water tables.

While it is expected that virtually all areas of seasonal high water table of 0-1 feet are included with the wetlands on site, the type of development proposed by O&Y would not be affected by the development constraints set forth in the HNA report. The engineering issue of structural stability of foundations has been addressed (see affidavit of Gary Salzman [Exhibit C]), and O&Y does not intend to use septic systems in the project (see memorandum, James Coe, Elson T. Killam Associates, Inc. [Exhibit D]).

CONCLUSIONS

HNA used general soils data to make site specific conclusions without site specific investigations, a practice discouraged by regulatory agencies due to the potential inaccuracy of the data on any specific site.

Further, HNA overstates the impact of areas with seasonal high water tables by setting forth that concern separately from the wetlands concern. In point of fact, on the O&Y site, the areas of high seasonal water table are almost always included with wetlands.

Therefore, the HNA conclusion as to the non-developable lands on the O&Y site depicted on Plate/Map 19 of the HNA report is grossly in error in its inclusion of the "Depth to Seasonal High Water Table" (severe 0-1 foot) parameter as a constraint which exists outside the wetlands (Exhibit G)

Finally, even if there are any areas outside the wetlands boundary which have a high seasonal water table of 1 foot or less, there is no engineering impact, inasmuch as the soils can be developed with appropriate foundations and no septic systems are to be included on site.

IV. FLOOD HAZARD

HNA indicates that there are floodplains on site. This does not appear to be a separate and distinct environmental issue on this site, inasmuch as the floodplains are generally subsumed within the wetlands on the O&Y site (see Plate/Map 19, HNA report [Exhibit G).

The management of floodplains is not as much undertaken as an environmental issue in New Jersey as an engineering issue, and this has been addressed by the applicant's engineer, Elson T. Killiam Associates, Inc., (Exhibit E), according to the New Jersey Flood Hazard Area Act.

According to Mr. Hintz' report on Page 19, only a few acres of floodplain may overlap the wetlands. This confirms the fact that there will be little or no additional loss of buildable land beyond the footprint outlined by the wetlands on this site.

According to the attached reports/affidavits of Messrs. Coe and Salzman, the floodplains have been recognized and analyzed from the outset of the project's design; and no buildings have been planned to be built within the flood zone.

CONCLUSION

The floodplains on the O&Y site do not, except in one yet to be confirmed minor area, flow outside the wetlands on site. Therefore, there will be little or no loss of additional buildable land due to this natural resource constraint.

V. SLOPE

HNA indicates that the lack of slope on the site is a constraint to development. There are no municipal, county, state or federal laws

which regulate slope on this land. There are no standards, prepared by agencies or organizations with which I am familiar, which indicate that flat or gently sloping land are down rated for development purposes. There is no supportable basis for indicating that slopes of 0-2 percent are an environmental constraint of any significance.

As to the sewage issues, Mr. Coe, in his attached affidavit, indicates that there are fundamental errors in the logic presented by HNA. Mr. Coe indicates there are no engineering constraints posed by the development of this relatively flat site.

CONCLUSION

Slopes on this site of 0-2 percent are not an environmental issue of any merit. Map/Plate 7 in the HNA report (Exhibit F) is misleading, since it apparently displays this flat site as having severe/moderate slope management issues. As a result of being flat, the implication that the site is somehow less developable is totally fallacious.

VI. OVERALL CONCLUSIONS

HNA indicates that the O&Y site is principally constrained by wetlands, floodplains and seasonal high water tables of 0-1 feet, and areas of gentle or minimal slope. HNA then calculates remaining developable land, based on generalized data, and indicates that the combination of these four features portrays an environmentally sensitive land inadequate for any type of intensive large-scale development proposed by O&Y. This is a gross overstatement of environmental issues which has the affect of double and triple count areas which are already included within a federal delineated wetlands or which can be developed at minimal cost with proper engineering and design.

VII. ENVIRONMENTAL ISSUES AND THEIR IMPACT ON PROJECT LAYOUT AND DESIGN

O&Y proposes to cluster housing with open spaces in between. These open spaces consist of wooded, palustrine wetlands. Generally, this would mean that, for most of the year and certainly for the warm weather months, these areas will be "dry" and will be available as passive recreation areas. These strips of woodlands will provide a fundamentally pleasing environmental buffer breaking up the development pattern and providing noise buffers, stormwater buffers, wildlife habitat and air quality buffers (see photograph, Exhibit H).

It has generally been a sound and acceptable and, indeed, encouraged environmental management policy to cluster development to higher density strips or clusters in order to save more open space and provide vegetative buffers which convey a variety of benefit for wildlife, recreation, and human aesthetic value.

The density of development on upland parcels has negligible impact on wetlands/stream corridors where stormwater is properly managed and the development is served by public sewer and water supplies.

The proposal for higher intensity development, coupled with vegetative interstices is entirely consistent with sound environmental policy for integrating development into existing natural constraints of the land.

AMY S. GREENE

Environmental Consultant

One Village Court
Flemington, New Jersey 08822
201-788-9676

MEMORANDUM

DATE June 24, 1987

TO Mr. Lloyd Brown
O & Y
Old Bridge Development Corp.
760 Highway 18
East Brunswick, NJ 08816

FROM AG Amy Greene, Wetlands Ecologist
Amy S. Greene Environmental Consultants

SUBJECT Review of the Following Report:
"Environmental Limitations and Their Impact on Olympia and York and Woodhaven Villages"
Prepared by: Carl E. Hintz, PP,AICP,CLA May 1987
Prepared for: Old Bridge Township Planning Board

I have reviewed the above referenced document and have found several inaccuracies in regard to wetlands and the definition of "major environmental limitations". The Hintz report identifies three (3) areas as "major environmental limitations" (Page 4) as follows:

1) Wetlands
2) Areas of high seasonal water tables (0 to 1 feet from surface)
3) Stream corridors presenting flood hazard potential

Separation of these features is inaccurate in that wetlands and areas of high seasonal water tables coincide and that wetlands also usually include flood hazard areas.

The U.S. Army Corps of Engineers (Federal Register 1982) and the U.S. Environmental Protection Agency (Federal Register 1980) jointly define wetlands as:

> Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support and that under normal circumstances do support a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs in similar areas.

EXHIBIT A

Consistent with this definition, the U.S. Army Corps of Engineers, in their Wetlands Delineation Manual (Environmental Laboratory, 1987), has established criteria for the identification and delineation of wetlands areas. This methodology requires that positive indicators of wetland adapted vegetation, hydric soil and wetlands hydrology be present for an area to be defined as wetlands. In substantially unaltered areas within New Jersey the presence of hydric soils can be reliably used to delineate the wetlands/upland boundary.

A "hydric soil" is a soil that is saturated, flooded or ponded long enough to develop anaerobic conditions that form the growth and regeneration of hydrophytic vegetation (Environmental Laboratory, 1987). Hydric soils are further defined to include poorly drained or very poorly drained soils that have either:

a) a water table at less than 1.0 ft from the surface for a significant period (usually a week or more) during the growing season if permeability is equal to or greater than 6.0 in/hr in all layers within 20 inches (sandy soils); or
b) a water table at less than 1.5 ft from the surface for a significant period (usually a week or more) during the growing season if permeability is less than 6.0 in/hr in any layer within 20 inches (finer textured soils).

Also included as hydric are soils that are "frequently flooded for a long duration or a very long duration during the growing season" (Environmental Laboratory, 1987).

Furthermore, the term "wetlands hydrology" encompasses all hydrologic characteristics of areas that are periodically inundated or have soils saturated to the surface at some time during the growing season.

To clarify, soils can be saturated to the surface with depth to seasonal high water table of 0 to 1 ft or 0 to 1 1/2 ft, depending on the soil texture, due to the extension of the capillary fringe to the surface.

Therefore, by definition, lands with depths to seasonal high water table of 0 to 1 ft and in some instances 0 to 1 1/2 ft are included in the the delineation of wetlands.

Amy S. Greene Environmental Consultants have performed a detailed delineation of the wetlands/uplands boundary at the O & Y development site. This delineation has been reviewed in the field by representatives from the U.S. Army Corps of Engineers, U.S. Environmental Protection Agency and U.S. Fish and Wildlife Service. The U.S. Army Corps of Engineers, in a letter dated June 4, 1987, has confirmed the accuracy of this delineation. This delineation is, in effect, a detailed mapping of the extent of poorly drained and very poorly drained soils at the site with seasonal high water tables at 0 to 1 ft and, in some areas, 0 to 1 1/2 ft from the surface.

The U.S. Department of Agriculture Soil Conservation Service, in the Soil Survey of Middlesex County, New Jersey (Powley, 1987), has mapped the soils at the site. This soils map displays mapping units which consist of a predominance of one soil type, but may contain inclusions of other soil types with similar or contrasting characteristics. While these maps are useful for general planning purposes, "on site investigation is needed to plan intensive uses in small areas" (Powley, 1987).

The results of the wetlands delineation performed by Amy S. Greene Environmental Consultants correspond quite closely to the Soil Conservation Service mapping of poorly drained and very poorly drained soils (0 to 1 ft depths to seasonal high water table). The variation between the two mappings is attributable to the scale at which the Soil Conservation Service maps are prepared and the level of effort expended. The results of our delineation is much more site specific and accurate due to the marking and surveying of the exact boundaries and of the extensive level of effort expended.

I assume that in the Hintz report the 0 to 1 ft depth to seasonal high water tables map is derived from the Soil Conservation Service mapping. For the reasons stated above the concept expressed in the Hintz report that there are areas of 0 to 1 ft depth to seasonal high water tables that extend beyond the limits of delineated wetland areas is erroneous.

I would like to clarify a reference made on Page 13 of Mr. Hintz's report to "official wetlands maps". I assume this is a reference to the U.S. Fish and Wildlife Service National Wetlands Inventory maps. The U.S. Fish and Wildlife Service wetlands maps are not regulated maps. These maps were prepared using high altitude aerial photography with limited field checking. The only regulated wetland mapping for the Olympia & York property is now the wetlands delineation performed by our firm and approved by the U.S. Army Corps of Engineers.

DEPARTMENT OF THE ARMY
NEW YORK DISTRICT, CORPS OF ENGINEERS
26 FEDERAL PLAZA
NEW YORK, N.Y. 10278

June 4, 1987

REPLY TO
ATTENTION OF:
Regulatory Branch
Western Permits Section

SUBJECT: Request for determination of jurisdiction, Olympia & York Old Bridge Development Corporation

Steven R. Gray, Esq.
Waters, McPherson, NcNeill
Attorneys at Law
400 Plaza Drive
Secaucus, New Jersey 07094

Dear Mr. Gray:

Reference is made to your request for a determination of Department of the Army jurisdiction regarding certain roadway and other infrastructural improvements associated with a proposed 5,000-unit residential development to be constructed on upland portions of a 2,640-acre site drained by several tributaries of the South River at the Township of Old Bridge, Middlesex County, New Jersey. You have also requested a confirmation of the wetland delineation as performed by Amy S. Greene, Environmental Consultant.

Based upon our review of the following documents:

1) Wetlands Delineation Report, prepared by Amy S. Greene, dated February 1987;

2) Wetlands Location and Survey Maps prepared by Taylor, Wiseman & Taylor, dated September 5, 1986 and revised March 25, 1987 (at one inch=600 feet scale) and dated October, 1985, revised March 24, 1987 (at one inch=200 feet scale);

3) TAMS Engineers report dated April 7, 1987, including Figures 1 through 11 which show wetlands adjacent or proximate to existing roadways which may require widening;

4) Sullivan Associates Development Plan, dated April 8, 1987, showing locations of proposed new and improved roadways;

the delineation of wetlands shown on these documents appears accurate. A Department of the Army permit, in accordance with 33 CFR 320-330, will not be required provided no fill is placed into waters of the United States, including waterbodies and wetlands.

EXHIBIT B

We have also reviewed the Conceptual Site Plan prepared by Sullican & Associates, dated April 6, 1987, identifying certain roadway and other infrastructural improvements associated with the residential development. The road improvements are more particularly identified on Plates B, C, and D of the aforementioned TAMS report, and the detention basin construction in wetlands is more particularly shown on the General Plan and Typical Details enclosed with an April 6, 1987 letter from Elson T. Killam Associates addressed to Mr. Lloyd Brown of Olympia & York Old Bridge Development Corporation. It is our understanding that the applicant intends to undertake these improvements without placement of fill in waters of the United States using the methods illustrated on these plans or in some other manner not involving fill placement into waters of the United States regulated by the Department of the Army. Based upon our review of these drawings, a Department of the Army permit will not be required for these improvements since no fill would be placed in waters of the United States.

Care should be taken so that any fill or construction materials, including debris, do not enter any waterway to become a drift or pollution hazard. You are to contact appropriate State and local government officials to ensure that the subject work is performed in compliance with their regulations.

Sincerely,

Richard L Tomer

Richard L. Tomer
Chief, Western Permits Section

BRENER WALLACK & HILL
210 Carnegie Center
Princeton, New Jersey 08543
(609) 924-0808
Attorneys for Plaintiff

HANNOCH WEISMAN, P.C
4 Becker Farm Road
Roseland, New Jersey 07068
(201) 531-5300
Co-Counsel for Plaintiff

URBAN LEAGUE OF GREATER NEW BRUNSWICK, et al.,	SUPERIOR COURT OF NEW JERSEY CHANCERY DIVISION MIDDLESEX COUNTY
Plaintiffs,	
v.	DOCKET NO. C-4122-73
THE MAYOR AND COUNCIL of the BOROUGH OF CARTERET, et al.,	
Defendants,	
and	
O&Y OLD BRIDGE DEVELOPMENT CORPORATION, a Delaware Corporation,	SUPERIOR COURT OF NEW JERSEY LAW DIVISION MIDDLESEX COUNTY/ OCEAN COUNTY (Mount Laurel II)
Plaintiff,	
v.	DOCKET NO. L-009837-84 P.W.
THE TOWNSHIP OF OLD BRIDGE in the COUNTY OF MIDDLESEX, a Municipal Corporation of the State of New Jersey, THE TOWNSHIP COUNCIL OF THE TOWNSHIP OF OLD BRIDGE, THE MUNICIPAL UTILITIES AUTHORITY OF THE TOWNSHIP OF OLD BRIDGE, THE SEWERAGE AUTHORITY OF THE TOWNSHIP OF OLD BRIDGE and THE PLANNING BOARD OF THE TOWNSHIP OF OLD BRIDGE,	Civil Action AFFIDAVIT OF GARY S. SALZMAN
Defendants.	

EXHIBIT C

Gary S. Salzman, of full age being sworn on his oath says and deposes:

1. I am a licensed professional engineer in the State of New Jersey. I received my Bachelor of Science in Civil Engineering from the Cooper Union in 1958 and a Master of Science in Geotechnical Engineering from the University of Illinois in 1959. I am currently Vice President of Converse Consultants East, Consulting Geotechnical Engineers and Hydrogeologists, with principal offices in Caldwell, New Jersey.

2. I am familiar with the O&Y site in Old Bridge, New Jersey and have investigated soil, water, and slope conditions on the site, from a geotechnical engineering view point.

3. I have had the opportunity to review a report prepared by Carl Hintz, dated May, 1987, and make the following observations.

a. Mr. Hintz includes a very high seasonal water table, flood hazard potential, and shallow slopes as additional factors, other than wetlands, as environmental factors on the site.

b. His report then uses these factors to allege that there would be problems with constructing foundations, septic systems, and provision of utility services.

c. The implication is that if construction occurs on land with a shallow water table, dire consequences will result, such as settled and damaged buildings, utilities and roads.

4. My company evaluated subsurface conditions from a geotechnical perspective, and have determined that conventional building foundations can be used on this site.

5. Septic systems are not part of the project design, and therefore that comment is irrelevant to the project.

6. Appropriately designed utility systems, including public sewer and water systems, are not affected by the conditions on-site, as alleged by Mr. Hintz.

7. Mr. Hintz is mistaken and has no geotechnical engineering basis for his conclusions. A shallow water table may impact construction systems, but does not adversely impact the performance of properly constructed facilities.

8. Therefore, a shallow water table does not adversely impact the technical feasibility of development of a project such as the one being considered, and a satisfactory performance of buildings, utilities, and roads is anticipated.

I certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements made by me are willfully false, I am subject to punishment.

Dated: 5 August 1987

Evangeline E. Graff

EVANGELINE E. GRAFF
Notary Public of New Jersey
Commission Expires April 17, 1990

Elson T. Killam Associates, Inc.

27 Bleeker Street, P.O. Box 1008, Millburn, NJ 07041
☐Tel. 201/379-3400 ☐Telex 642-057 ☐Telecopier 201/376-1072

Environmental and Hydraulic Engineers

James G. Coe, P.E.
Vice President

MEMORANDUM

Technical Review of report by Carl E. Hintz, P.P., A.I.C.P., C.L.A., entitled "Environmental Limitations and Their Impact on Olympia & York and Woodhaven Villages" dated May, 1987.

Sanitary Sewer Service Implications

The Hintz report asserts that "As referred to previously, low lying areas with minimal slopes cannot take advantage of gravity flows in sewage disposal." The report goes on to state that a 1.5% to 2% grade is desirable for sewer service, and that flat terrain requires pumping stations. The Hintz report expands upon these inaccurate engineering principles to come to the opinion that development of the site will require numerous scattered pumping stations, and the conclusion that "A system of scattered pumping stations indicates a lack of coordinated planning." This conclusion is as inaccurate as the principles it was based upon.

In fact, NJDEP regulations permit 0.4% slope for the smallest sanitary sewers, not the 1.5% to 2% suggested within the Hintz report. Accordingly, property having a relatively gentle slope of 0.4% can be served by nominal depth sewers of approximately 6' to 8' in depth. In areas where flatter terrain prevails, it would be necessary to continue the sewer slope at the 0.4% despite the flat terrain slope resulting in sewers being gradually deeper. However, most frequently, the flat areas only continue for a short distance and it is rarely necessary to construct pumping stations because of flat terrain. Flat terrain would not result in pumping stations on tracts having topography similar to that of the O & Y and Woodhaven Village Developments. Larger sewer pipes can be installed at lesser slopes, therefore having the capability of traversing portions of the development which have little or no slope, without requiring excessive sewer depth or pumping stations.

An overall sewer master plan was developed in conjunction with the Old Bridge Sewerage Authority, to service the southwest portion of Old Bridge Township, including the Olympia & York and Woodhaven Village Developments. This master plan requires the construction of only three (3) pumping stations as follows:

1. The Iresick Brook Regional Pumping Station, which is necessary to provide a means of bypassing flow from the Iresick Brook Interceptor sewer, and avoiding the need to construct a new gravity sewer through highly developed portions of the Township.

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EXHIBIT D

2. The Matchaponix Brook Pumping Station, which is proposed to convey flow to the Iresick Brook Pumping Station, thereby avoiding the need to continue gravity sewer through Duhernal Watershed property and other developed portions of the Township.

3. The Deep Run Pumping Station, which is proposed to convey flow from the Deep Run drainage basin into the Iresick Brook drainage basin.

It is noted that none of these pumping stations are the result of flat slopes, but rather are required to transfer flow from one drainage basin to another drainage basin. This is the typical reason for pumping stations-not flat terrain.

The Hintz report contains comments relative to the unsuitability of portions of the site for septic systems and suggests that this limitation adversely affects the developability of the property and creates the "danger of groundwater pollution." The fact is, it has never been proposed that the Olympia & York or Woodhaven Village Developments would rely on septic systems for sewage disposal. It has been recognized from the outset that a comprehensive sanitary sewer system connecting to the Middlesex County Utility Authority Treatment Plant via the Old Bridge Sewerage Authority (MUA) system, would be necessary. In view of these facts, it is grossly misleading for the Hintz report to reference septic systems and raise the spector of groundwater pollution.

O & Y's planner has advised that the development plan will be revised to omit the development of any wetland areas. The construction of sanitary sewer lines within wetlands is permitted by the Army Corps of Engineers and DEP under current regulations and Olympia & York has obtained a stream encroachment permit for the Iresick Brook Interceptor Sewer from DEP, which included a thorough review of the impact of this sewer on the wetlands, culminating in the issuance of a permit which contained provisions providing adequate assurance that the wetlands would be protected and restored. The development of the Olympia & York and Woodhaven properties can proceed based upon the Master Plan developed with the Old Bridge Sewerage Authority (MUA), and it will not be necessary to construct additional pumping stations to provide adequate sanitary sewer service. The Hintz report is an inaccurate representation of sanitary engineering principles, reflecting little, if any, expertise in sanitary or hydraulic engineering.

JGC/leh

Elson T. Killam Associates, Inc.

27 Bleeker Street, P.O. Box 1008, Millburn, NJ 07041
☐Tel. 201/379-3400 ☐Telex 642-057 ☐Telecopier 201/376-1072

Environmental and Hydraulic Engineers

James G. Coe, P.E.
Vice President

MEMORANDUM

Technical review of report by Carl E. Hintz, P.P., A.I.C.P., C.L.A. entitled "Environmental Limitations and Their Impact on Olympia & York and Woodhaven Villages" dated May, 1987.

Storm Water Management Implications

The above referenced report has been reviewed in its entirety and it is noted that certain statements are made within the report which concern storm water management, including both the general principles of storm water management and assertions by the author that flood related conditions exist that will seriously constrain the development of the site.

Section 2.3 "Flood Hazard" of the Hintz report, contains a grossly inaccurate discussion of certain storm water management concepts. Contrary to the Hintz report, flood hazard areas are mapped by the Flood Emergency Management Agency during the preparation of flood insurance studies. This agency is the recognized authority regarding flood hazards. These studies only take into account real flood hazards, as are caused by runoff and the conditions where the level of stream or river flow rises above the level of the ground. The Hintz report indicates that the definition of flooding also includes a rise in the groundwater table to some higher subsurface level. It is incorrect to include such occurrences, to the extent they might exist, in the definition of flooding. Possibly, such conditions have some agricultural significance to the U. S. Department of Agriculture, but this agency is not the recognized authority with regard to municipal flood hazard.

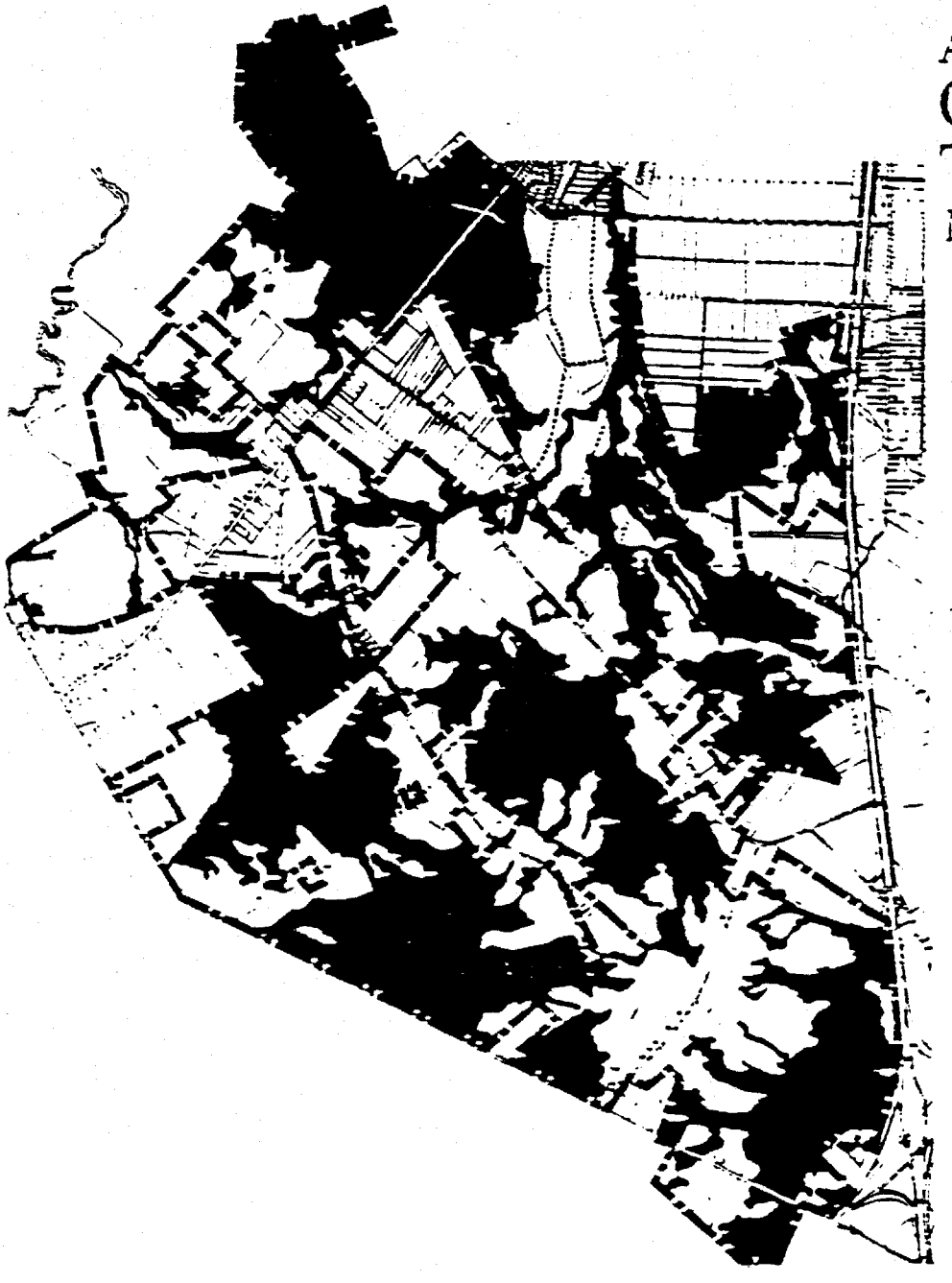
The Hintz report gets closer to the mark when it begins to discuss flood hazards as caused and determined by storm events, but Hintz's discussion is, for the most part, technically inaccurate. Basically, a flood hazard area is the area that would be inundated by stream flow 25% higher than the stream flow which will occur at least once every 100 years. This is an important distinction, since the Hintz report refers to storms (rainfall events) which, in themselves, do not take into account important other antecedent conditions, such as snow melt, frozen ground, and antecedent rainfall. The Hintz report uses its inaccurate discussion of flood hazard to assert the opinion that the existence of stream corridors has a negative effect on the development. (See Page 4, first paragraph: "In addition, the occurrence of areas of very high seasonal water table (0-1 feet from sur-

EXHIBIT E

face), as well as stream corridors presenting flood hazard potential, further constrains development potential.") In fact, the existence of stream corridors improves the development potential for the sites in question. The stream corridors provide a means by which the site can be drained. It is recognized that encroachment on stream corridors is regulated by the New Jersey Department of Environmental Protection and other municipal standards. All development planning, from the onset, has taken the stream corridors into account. The existence of stream corridors and their effect upon the developability of the property, has been well known for years. It has been intended to utilize these streams in conjunction with storm water management facilities to adequately drain the developed portions of the site while maintaining existing peak retention rates of runoff. Detention facilities will eliminate any possibility that development of the site would aggravate existing or cause new flooding problems downstream. This is a basic storm water management principle and requirement of State and municipal regulation which the Hintz report ignores.

The Hintz report mistates storm water management principles, in order to provide a basis of an opinion, that the development sites are adversely affected by stream corridors. This condition is unsupported by engineering principles of storm water managements and appears to be the position of one having no professional background in this field.

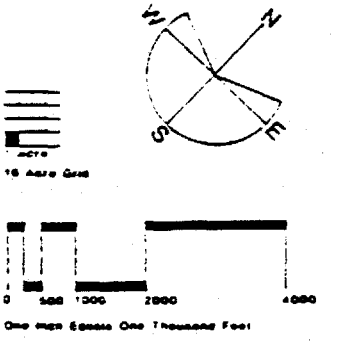
JGC/leh



A Portion of:

OLD BRIDGE TOWNSHIP

Middlesex County, N.J.



HINTZ / NELESSEN ASSOCIATES, P.C.

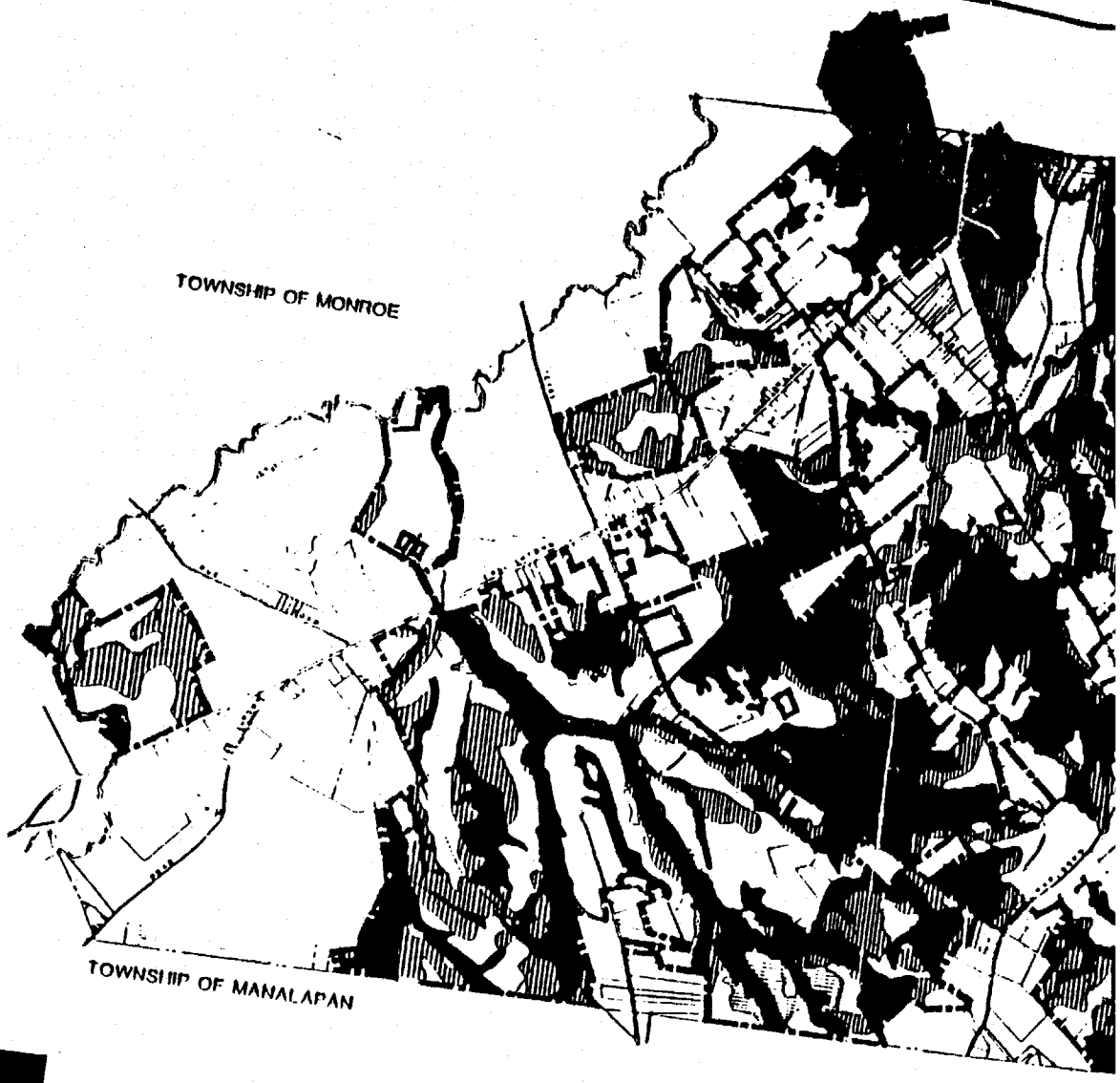
Pennington, N.J.

FIELD VERIFICATION OF WETLANDS

WETLANDS FOR OLYMPIA & YORK TRACT

EXHIBIT F

SOURCES



Wetlands

Depth to Seasonal High Water Table (Severe)

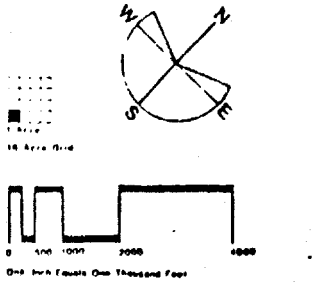
100 Year Flood Boundary

NON-

A Portion of:

OLD BRIDGE TOWNSHIP

Middlesex County, N.J.

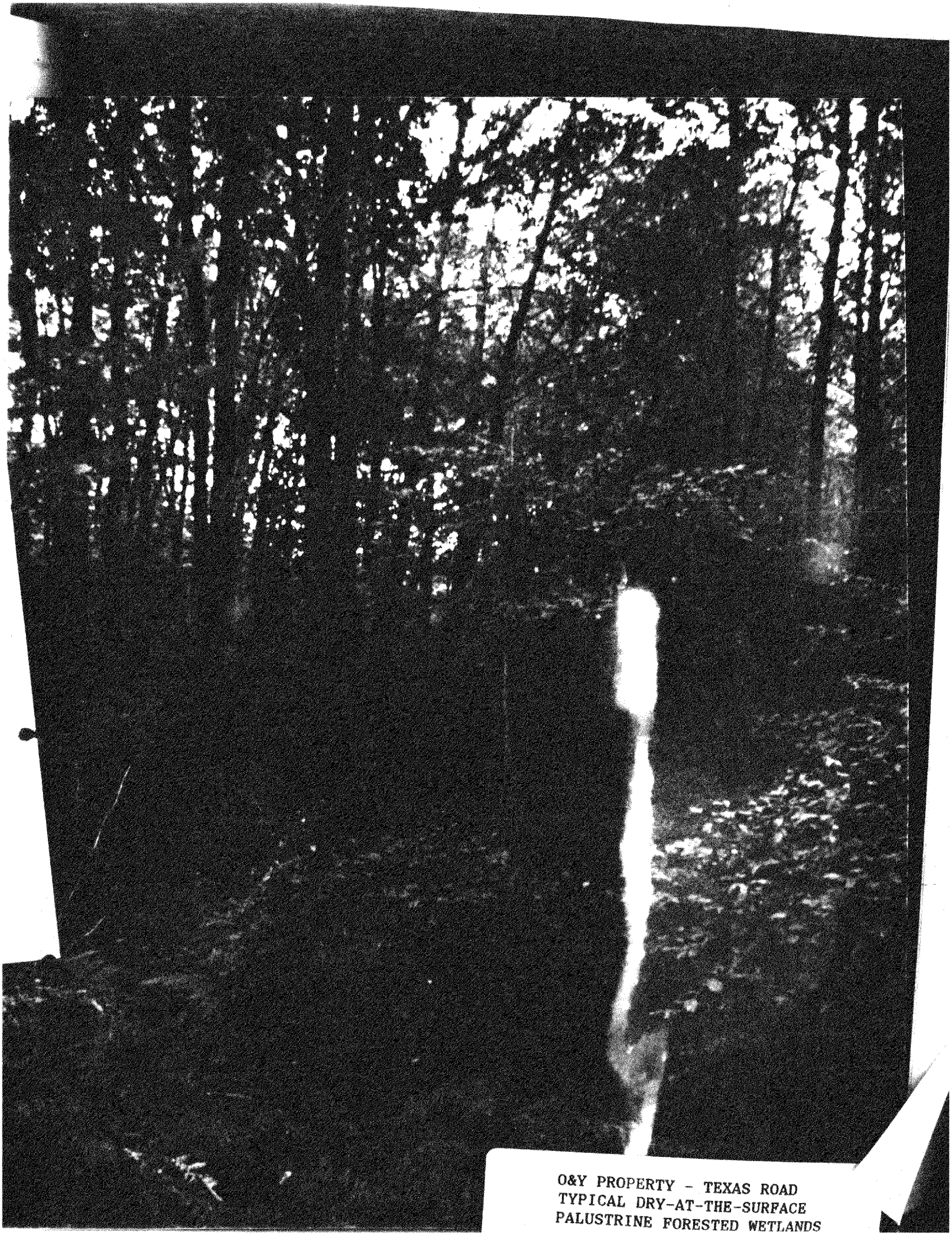


HINTZ / NELESSEN ASSOCIATES, P.C.
Pennington, N.J.

r Table (Severe)

EXHIBIT G

NON-DEVELOPABLE LANDS



O&Y PROPERTY - TEXAS ROAD
TYPICAL DRY-AT-THE-SURFACE
PALUSTRINE FORESTED WETLANDS

Reilly Land & Environment, Inc.
ENVIRONMENTAL EVALUATION OF REAL ESTATE

1314 Hooper Ave., Toms River, NJ 08753
201-244-8470

BIOGRAPHY

SEAN M. REILLY, SR.

Sean M. Reilly Sr., is President of Reilly Land & Environment, Inc. Reilly Land & Environment, Inc., is a firm specializing in providing environmental regulation information for clients involved in real estate development. The firm obtains its strength from the 16 years of experience of Sean M. Reilly, Sr., in local, regional and statewide environmental issues in both the private and public sectors.

Reilly Land & Environment, Inc., conducts environmental permit and wetlands analyses for clients interested in land development potential. This unique service quickly analyzes the effective policies and regulations and informs a client if there are existing environmental factors or regulatory programs which would pose significant impediments to future development.

Mr. Reilly has been called upon to provide these services for such clients as U.S. Home Corporation, Orleans Developers, Linpro Company, Oxford Development Company, Leisure Technology, Toll Bros., and National Business Parks.

Mr. Reilly has prepared several video documentaries on freshwater wetlands identification and management in the State of New Jersey. These videos have received wide exposure throughout the State legislature and on area television networks.

Mr. Reilly also serves as environmental regulations consultant to the Builders League of South Jersey. The League is the principal building industry trade association in Southern New Jersey. In this capacity, Mr. Reilly examines legislative and regulatory initiatives and directs the dialogue with legislators and program administrators to resolve conflicts.

Prior to starting his own practice, Mr. Reilly held the position of Special Consultant to the Commissioner of the New Jersey Department of Environmental Protection. Mr. Reilly's role was to advise the Commissioner on all regulatory and legislative aspects of the Pinelands Protection Program.

EXHIBIT I

Mr. Reilly was responsible for coordinating the multiple administrative, legislative and regulatory efforts of the state and federal government to establish a 1,100,000 acre Pinelands Protection Area.

Before being invited by the Commissioner to join the Department of Environmental Protection, Mr. Reilly served, with distinction, for five years as the Executive Director of the South Branch Watershed Association. The Association is a private environmental organization concerned with the water resources management in the vitally important potable water supply watershed of the South Branch of the Raritan River.

In his capacity as a natural resource management expert, Mr. Reilly has been called upon to lecture at Rutgers University and frequent statewide seminars. His "Regional Natural Resource Inventory," which highlights management techniques to reduce the water quality impacts of development, has been used as a text at Rutgers University.

Prior to joining the Watershed Association, Mr. Reilly was a science educator for five years in several innovative environmental education programs in New Jersey schools.

Mr. Reilly has also served on the Governor's Science Advisory Committee, Land Use Committee.

He holds B.S. and M.A. degrees in science and education.

ENVIRONMENTAL LIMITATIONS AND THEIR IMPACT ON OLYMPIA & YORK AND WOODHAVEN VILLAGES

Prepared By:

Carl E. Hintz, PP, AICP, CLA

May 1987

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LIST OF MAPS

Hintz/Nelessen Associates, P.C., Pennington, N.J.

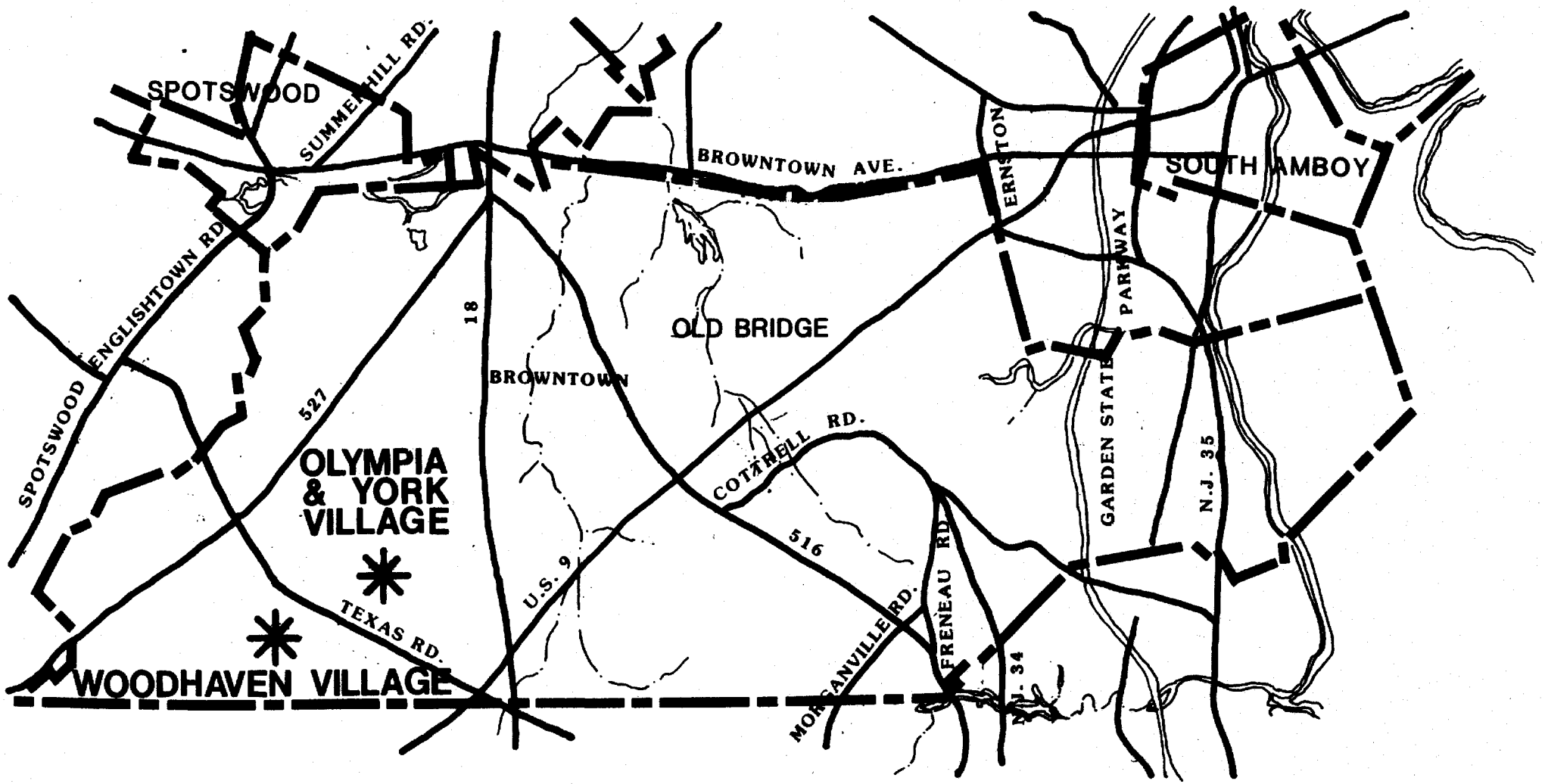
ENVIRONMENTAL LIMITATIONS AND THEIR IMPACT ON OLYMPIA & YORK AND WOODHAVEN VILLAGES

1. INTRODUCTION

New communities -- such as Reston, Columbia and Park Forest South -- have been built in the United States, ranging in size from 10,000 to 35,000 units. Typically, the developers have sought locations suitable for such large scale projects, avoiding environmentally-sensitive lands. This is not the case in Old Bridge Township, where Olympia and York (O&Y) and Woodhaven Village (WHV) have been proposed (see General Location and Land Holdings maps, pages 2 and 3).

The court settlement between O&Y, WHV, and Old Bridge Township determined for these developments a combined total of 16,380 residential units, equivalent to a population of approximately 42,000. Thus, O&Y would consist of 10,560 dwelling units organized in 5 villages, as well as a major employment center, a regional shopping center and several commercial subcenters, recreational areas and community facilities. WHV, on the other hand, would consist of 5,820 housing units, organized in 7 villages, as well as commercial space, community facilities, and recreation and open space. Development of this magnitude clearly places these two projects in the new town/planned unit development category. And this is precisely what Old Bridge Township expected would result from the court settlement, a new town with employment nodes, tax revenue generating facilities, a comprehensive road system, community facilities and public amenities.

However, both O&Y and WHV's sites contain several environmental features which severely constrain the development of these projects as originally



SCALE IN FEET
0 4000 8000 12000

SCALE IN KILOMETERS
0 1 2 3 4

SCALE IN MILES
0 1 2

N

Map prepared by the Middlesex County Planning Board, December 1976. 1000 meter Universal Transverse Mercator grid ticks and other base data obtained from 50% reduction of the corresponding 7½ Minute U.S.G.S. Quadrangles.

GENERAL LOCATION