SCHOOR DEPALMA
Engineers and Design Professionals

ENVIRONMENTAL IMPACT STATEMENT

For

Ansuya Enterprise, LLC
Proposed Hotel and Conference Center

Block 18, Lots 2.04 and 6
Block 17, Lot 2

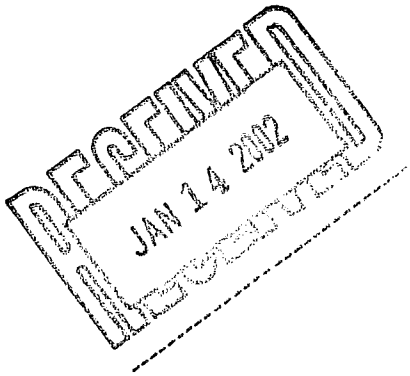
Situated in the

TOWN OF CLINTON
HUNTERDON COUNTY, NEW JERSEY

Prepared by

SCHOOR DEPALMA INC.
Justin Corporate Center
200 Route Nine North
Manalapan, New Jersey 07726

NOVEMBER, 2001
REVISED JANUARY 4, 2002



John E. Taikina, P.P., A.I.C.P.
Professional Planner, N.J. License # 05298

The original of this report was signed and sealed in accordance with N.J.S.A. 45:14A-12.

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1.0 INTRODUCTION

A. Scope of Environmental Impact Statement

This environmental impact statement will inventory the existing natural resources on the site and assess the potential for adverse environmental impacts resulting from the proposed project. In general, improvements to the site include the construction of a hotel and conference facility and associated parking and a stormwater management system including a water quality/detention basin.

The information used to prepare this document was obtained from on-site investigations, published information for the site and vicinity, and a review of the plans entitled "Preliminary Site Plan for Ansuya Enterprise, LLC., Block 18, Lots 2.04 and 6; Block 17, Lot 2, Town of Clinton, Hunterdon County, New Jersey" dated November 5, 2001 and prepared by Schoor DePalma Inc.

B. Applicant/Owner

The applicant/owner is Ansuya Enterprise LLC., 16 Fieldstone Drive, Clinton, NJ 08809.

2.0 PROJECT DESCRIPTION

A. Location and Area

The total tract consists of approximately 8.255 acres, which is bordered on the north by an open field and shopping mall, on the south and west by New Jersey Highway Route 31, and on the east by successional fields and wooded land. The South Branch of the Raritan River transects the property in a southwest to northeast direction (Figures 1 & 2). It is identified as Block 17, Lot 2 and Block 18, Lots 2.04 and 6 on the Town of Clinton tax map (Figure 3).

Of the total 8.255 acres, only the 4.48 acres of Lot 2.04 (fronting of Rt. 31) and Lot 6 are being disturbed for this application. Block 17, Lot 2 is located on the northern side of the South Branch Raritan River and will remain undisturbed as part of this application.

B. Project Description

The project is a proposed 47,900 square foot hotel with 2 conference/meeting rooms on approximately 8.255 acres in the Town of Clinton, Hunterdon County. Access to the site will be via State Highway 31 on the southern portion of the site. Approximately 2.76 acres of the tract will be disturbed for the development.

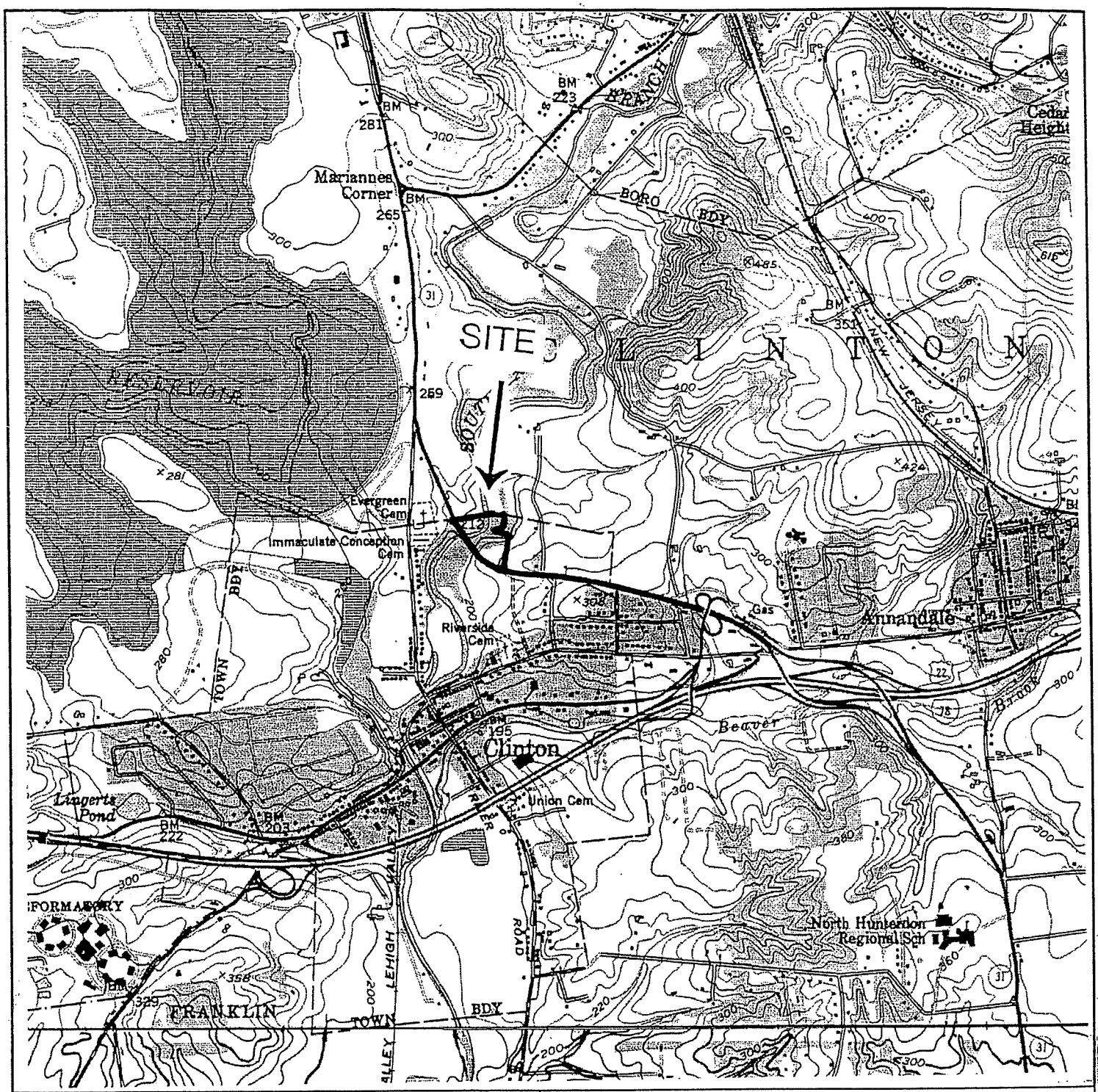

FIGURE 1: APPROXIMATE SITE LOCATION OUTLINED ON A COPY OF THE USGS 76 MINUTE QUAD MAP HIGH BRIDGE QUAD.

USGS MAP

NORTH

ANSUYA
CLINTON TOWN
HUNTERDON COUNTY, NJ

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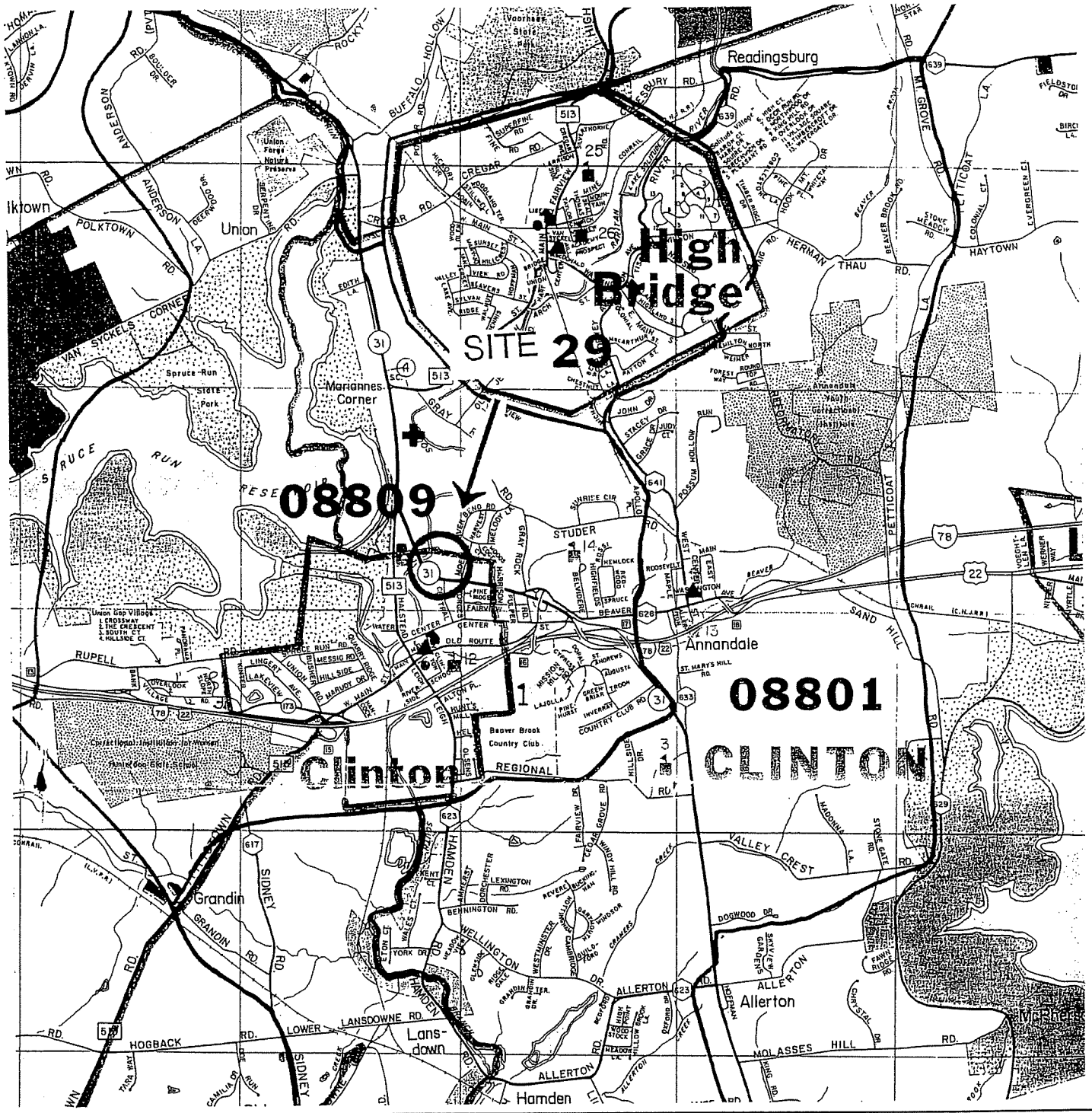

FIGURE 2: APPROXIMATE SITE LOCATION OUTLINED ON A COPY OF THE HUNTERDON COUNTY ROAD MAP.

COUNTY ROAD MAP

NORTH

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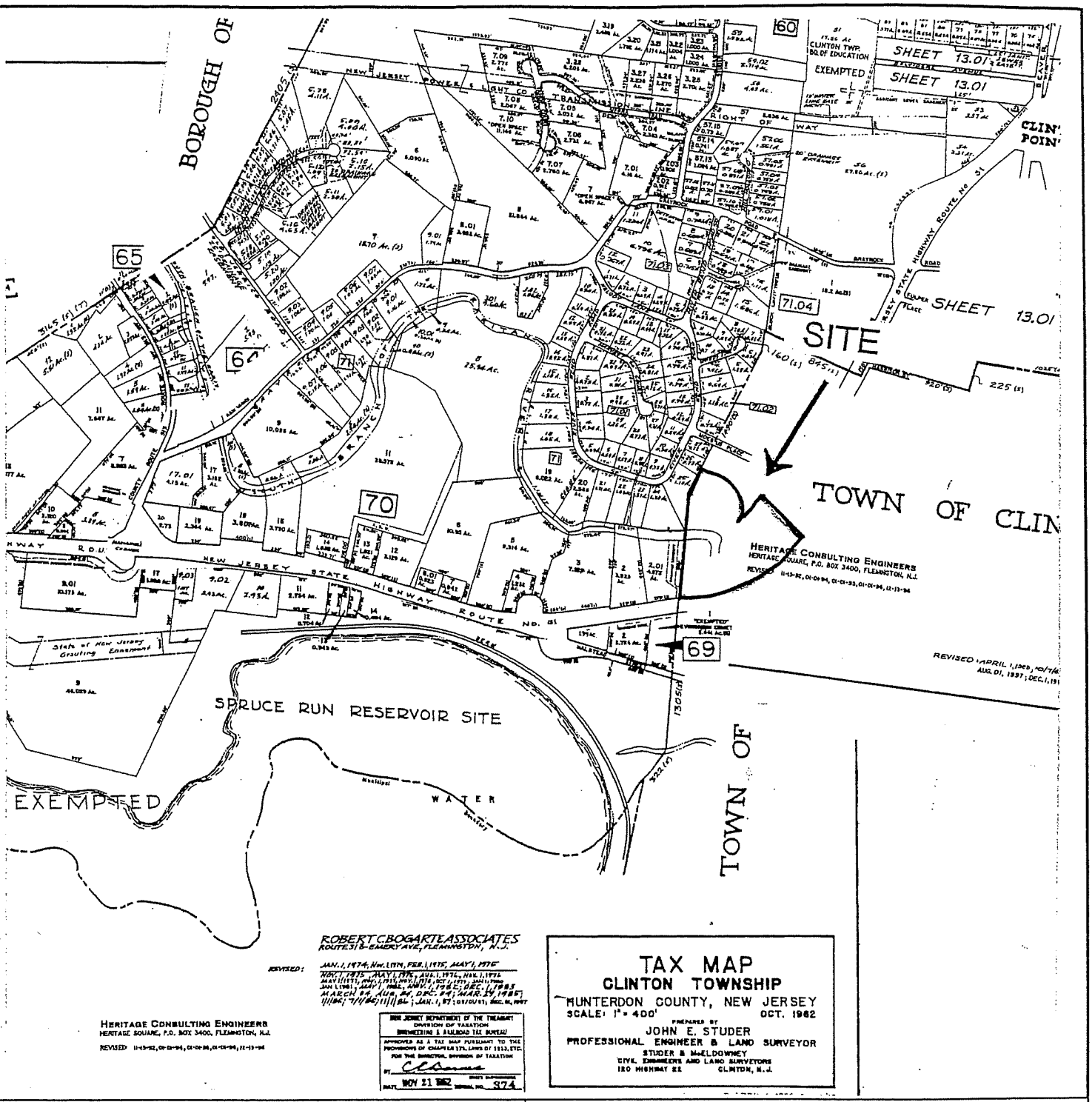

FIGURE 3: APPROXIMATE SITE LOCATION OUTLINED ON A COPY OF THE CLINTON TOWN TAX MAP.

TAX MAP

NORTH

ANSUYA
CLINTON TOWN
HUNTERDON COUNTY, NJ

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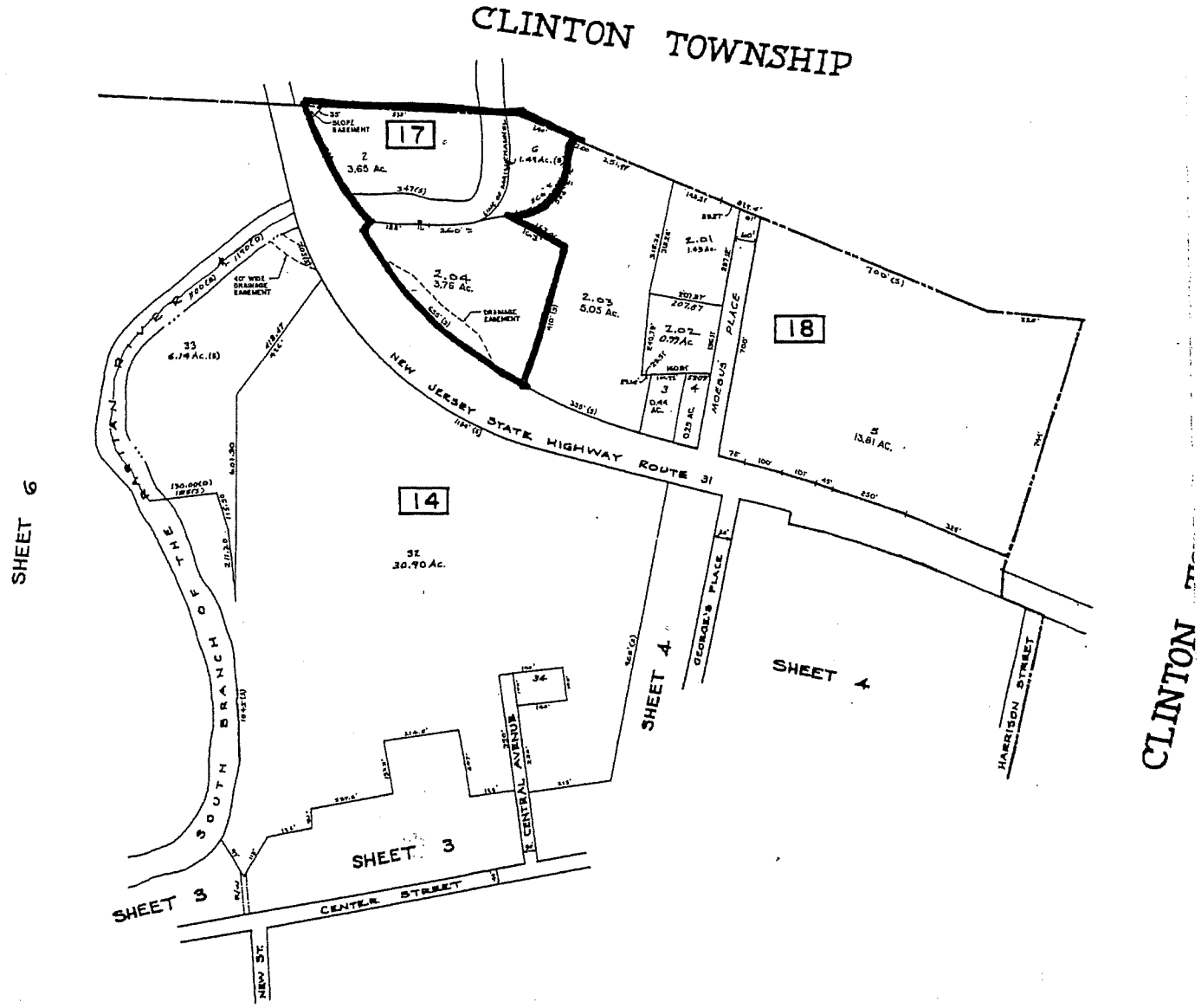

FIGURE 3: APPROXIMATE SITE LOCATION OUTLINED ON A COPY OF THE CLINTON TOWN TAX MAP.

TAX MAP

NORTH

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Approximately 4.57 acres of the site consists of freshwater wetlands and State open water. No wetland disturbances are proposed on the site. Minor disturbance to the wetland transition area is proposed and will be subject to the review and approval of the NJDEP Land Use Regulation Program. A New Jersey Department of Environmental Protection Letter of Interpretation will be obtained to verify the limits of wetlands on the site. A transition area waiver will be requested to allow the transition area encroachments.

C. Stormwater Management Facilities

Stormwater runoff generated from the project will be routed via a series of inlets to a stormwater management / water quality basin located on the western portion of the site. A copy of the stormwater management report and design calculations has been submitted separately as the "Project Hydrology Report" prepared by Schoor DePalma.

D. List of Federal, State, County and Local Approvals Required

NJDEP Wetlands Letter of Interpretation (pending)
NJDEP Wetlands Statewide General Permits (to be applied for)
NJDEP Stream Encroachment Permit (to be applied for)
Hunterdon Area Soil Conservation District Certification (to be applied for)
Hunterdon County Planning Board Site Plan Approval (to be applied for)
Town of Clinton Sewer Approval (pending)
Town of Clinton Potable Water Approval (pending)

3.0 Inventory of Existing Environment

A. Existing Land Use and Zoning

The project site consists of approximately 8.255 acres supporting mid-successional fields, mixed hardwood forest, emergent and forested wetlands, and the South Branch Raritan River. A 35-foot wide slope easement is located in the northwestern corner of Block 17, Lot 2, and a drainage easement is located along the Route 31 frontage in Lot 2.04. No other structures or development features occur on the site. The site is located in the Office Building District (OB-3) zone. The applicant was granted a Use Variance from Section 88-58.1 by the Board of Adjustment, Resolution #98-5, adopted on October 23, 2000 for the construction and operation of a hotel on the subject property.

B. Waterbodies, Flood Hazard Areas and Wetlands

Wetlands on the site have been delineated and an application for a NJDEP Letter of Interpretation will be submitted. Approximately 4.57 acres of regulated wetlands and open waters have been delineated throughout the site as depicted on the accompanying plans.

Waterbodies on the site consist of the South Branch Raritan River. The South Branch Raritan River is classified as Freshwater, trout maintenance (FW2-TM) by the NJDEP Office of Land and Water Planning (NJDEP 1994). The designated uses of FW2 waters are: 1) maintenance, migration and propagation of the natural and established biota; 2) primary and secondary contact recreation; 3) industrial and agricultural water supply; 4) public potable water supply after such treatment as required by law or regulation and; 5) any other reasonable uses (NJDEP 1994).

The location of the 100 -yr. floodplain on the site is depicted on the plans accompanying

this application (Schoor DePalma, 2001).

A headwall and rip-rap swale is located within the drainage easement on adjacent to Route 31 on the southern portion of the property. This swale is used to carry stormwater runoff from Route 31.

C. Air Quality

The Town of Clinton lies within the Northern Delaware Valley Reporting Region in the State of New Jersey Pollutant Standard Index. This region includes Hunterdon, Warren, and Sussex Counties. Monitoring information is compiled annually by the New Jersey Department of Environmental Protection (NJDEP Bureau of Air Monitoring, 1999). The monitoring stations nearest the project site are located in Flemington at the Raritan Sewage Plant, and in Chester, Morris County at the Bell Labs on Route 513. These stations monitored, sulfur dioxides, smoke shade, nitrogen oxides and ozone. The latest data available were published in December 2000 for the 1999 recording year.

1. Sulfur Dioxide (SO_2)

Sulfur dioxide levels were continuously monitored at 15 locations during 1999, including a monitoring station located in Chester. Neither violations of the primary nor secondary ambient air quality standards were recorded at this site (NJDEP Bureau of Air Monitoring, 2000).

2. Smoke Shade

Smoke shade was monitored at 12 locations in the State, including a monitoring station located in Flemington. Although, no ambient air quality standards have been established for this parameter, the Flemington station had the third lowest daily average maximum level of smoke shade (measured as coefficient of haze) (NJDEP Bureau of Air

Monitoring, 2000).

3. Nitrogen Oxides

Nitrogen oxides are products of combustion that are emitted from industrial boilers and motor vehicles. Monitoring stations, located at 10 sites in the State, including Chester, recorded levels of nitric oxide (NO) and nitrogen dioxide (NO_2). No violations of the primary or secondary standards for nitrogen dioxide were recorded. Although no standards have been established for nitric oxide, Chester had the lowest annual average concentration (NJDEP Bureau of Air Monitoring, 2000).

4. Ozone

Ozone is caused by various photochemical reactions of volatile organic substances (hydrocarbons) with oxides of nitrogen on days with bright sunshine and warm temperatures. Ozone is thus only a potential problem in the late spring, summer and early fall months.

During 1999, ozone was monitored at 14 locations across the State, and at all but four of the stations levels of O_3 violated the ambient air quality standard. Chester did not violate the maximum daily 1-hour average primary standard, and Flemington violated the state standard on two days (NJDEP Bureau of Air Monitoring, 2000).

D. Topography

In general, the site slopes from the southeast and northwest corners towards the South Branch of the Raritan River in the center of the site. High points on the site are at elevation 248 above sea level in the southeastern corner of the property and at elevation 194 above sea level in the northwestern corner of the property. The swale adjacent to Route 31 has a low area at elevation 224. There are approximately 2.18 acres of area with slopes

greater than 10%, primarily found along the streambanks. A map of slopes greater than 10% is included under separate cover.

E. Soils

The Soil Survey of Hunterdon County (USDA, 1987) (Figure 4) indicates that the soils on the project site consist of the following (these are listed in order of decreasing extent by mapping unit, mapping unit symbol, and depth to water table):

a. Birdsboro silt loam, 2-6% slope, BdB, 3+ feet.
b. Steep stony land, Parker material, SpF, variable.
c. Alluvial land, 2-5% slope, Ac, 1 - 3 feet.
d. Duffield silt loam, 6-12% slope, eroded, DuC2, 4+ feet.

The Birdsboro series consists of deep, nearly level to strongly sloping, well-drained soils that have a stratified sandy or gravelly substratum. These soils formed in deposits of mostly silt loam alluvium derived from material weathered mainly from shale and sandstone. Permeability is moderate except in the sandy substratum where it is moderately rapid. Available water capacity is high and the natural reaction is strongly acid. This soil is mapped throughout the southern portion of the site.

Steep Stony Land, Parker material has surface stones of gneiss larger than 10 inches in diameter and 3 to 5 feet apart. The soil between the stones is similar to Parker soils. Slopes are 18 to 40 percent. These soils are mapped along the southern side of the South Branch of the Raritan River.

Alluvial land is on flood plains and is subject to frequent overflow. It mainly consists of nearly level soil with a surface layer of loam. The underlying material is loam or sandy loam

FIGURE 4: APPROXIMATE SITE LOCATION OUTLINED ON THE USDA SOIL SURVEY MAP FOR HUNTERDON COUNTY. SHEETS 15, 16.

SOILS MAP

NORTH

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in texture and is 15 to 50 percent gravel and cobblestones. Flooding is most common in early spring when the water table is at a depth of 1 to 2 feet. In the summer the water table may be several feet deeper. Permeability is moderate to moderately rapid, and available water capacity is high. Reaction ranges from strongly acid to neutral. This series is mapped as most of the land on-site to the north of the South Branch of the Raritan River.

The Duffield series consists of deep, gently sloping to moderately steep, well-drained soils that have formed over limestone or limey shale. Permeability is moderate and available water capacity is high. Natural reaction is neutral to medium acid. This soil is found in the northwestern most corner of the subject site.

F. Geologic Characteristics

The site lies within the Highlands Physiographic Province, which occupies one-eighth (900 square miles) of the land area of New Jersey and is the largest geomorphic province in New Jersey (Wolfe,1977). The broad, flat-topped highlands are underlain chiefly with Precambrian gneisses and schists, while the long, narrow valleys are underlain with fault-block inliers of Paleozoic Kittatinny Limestone and Martinsburg Shale. The elevations of the Highlands ranges from 1, 496 feet, the highest elevation near Vernon, to 987 feet along the Delaware River.

The project site is underlain in its entirety by the Allentown Dolomite member of the Kittatinny Supergroup of the Kittatinny Valley Sequence (Drake et al., 1996). The Allentown Dolomite formation consists of medium – to very light gray, fine – to medium-grained, very thin to very thick bedded dolomite containing minor orthoquartzite and shale. Oolites and algal stromatolites occur throughout the unit. Thickness ranges from 0 to 73 meters (0-240 feet) due to erosion.

G. Vegetation

The site can be divided into two sections that are separated by the South Branch of the Raritan River. The northern section, Block 17, Lot 2, is approximately 3.775 acres in size and is primarily composed of forested wetlands. There is no proposed disturbance to this area. The forested wetlands are dominated by ash (*Fraxinus sp.*) in the overstory, multiflora rose (*Rosa multiflora*) in the understory and grasses, poison ivy (*Toxicodendron radicans*) and skunk cabbage (*Symplocarpus foetidus*) in the groundcover. The uplands on this lot are dominated by ash and apple (*Malus sp.*) in the overstory, spicebush (*Lindera benzoin*), multiflora rose, and shrub honeysuckle (*Lonicera tatarica*) in the understory, and poison ivy, raspberry (*Rubus sp.*), and Japanese knotweed (*Polygonum cuspidatum*) in the groundcover.

The remaining parcel (Block 18, Lots 2.04 and 6) is approximately 4.480 acres in size. Of the 4.480 acres, 1.4 acres are wooded. The wooded area consists of upland mixed hardwood forest. The remainder of the site consists of successional fields and maintained lawn area adjacent to Route 31 and around the drainage swale (approximately 3.08 acres).

The overstory in the mixed hardwood forest is dominated by Norway maple (*Acer platanoides)*, tree-of-heaven (*Ailanthus altissima)*, scarlet oak (*Quercus coccinea)*, and chestnut oak (*Quercus prinus*). The understory includes barberry (*Berberis thunbergii*), Russian olive (*Elaeagnus angustifolia*), black cherry (*Prunus serotina*), American beech (*Fagus grandifolia*), poison ivy (*Toxicodendron radicans*), and young individuals of the species found in the overstory. The ground cover includes Japanese honeysuckle (*Lonicera japonica)* and multiflora rose (*Rosa multiflora*).

Upland successional fields are dominated by a mix of herbaceous and young woody vegetation including tree-of-heaven, Norway maple, basswood (*Tilia americana*), black

cherry, apple (*Malus sp.*), multiflora rose, fox grape (*Vitis labrusca*), Virginia creeper (*Parthenocisus quinquefolia*), goldenrod (*Solidago spp.*), horseweed (*Erigeron canadensis),* garlic mustard (*Alliaria petiolata),* mugwort (*Artemisia vulgaris),* asters (*Aster spp.*) and grasses.

The lawn area was dominated by grasses, dandelion (*Taraxacum officinale*), plantain (*Plantago major*), and goldenrod.

No specimen trees (defined by NJDEP to be the largest individual of its species in the state) were observed on the site. No mature forest stands or threatened or endangered plant species were observed on the project site. The NJDEP Natural Heritage Program and US Fish and Wildlife Service (USFWS) were contacted regarding records of threatened or endangered species on or in the vicinity of the project site (Appendix 1 and 2). The US Fish and Wildlife has no records of any threatened or endangered plants on or in the immediate vicinity of the site. The NJDEP Natural Heritage Program has a record of Frank's sedge (*Carex frankii*) in the immediate vicinity of the site. Frank's sedge is not listed as state or federally threatened or endangered, rather as rare in the state (S3) but globally secure (G5).

A listing of the vegetation observed throughout the site is presented in Table 1.

TABLE 1: Vegetation Observed on the Site

Mixed Hardwood Forest	
Overstory:	
Acer platanoides	Norway maple
Ailanthus altissima	tree-of-heaven
Quercus coccinea	scarlet oak
Quercus prinus	chestnut oak
Understory:	
Berberis thunbergii	barberry
Elaeagnus angustifolia	Russian olive
Prunus serotina	black cherry
Fagus grandifolia	American beech
Toxicodendron radicans	poison ivy
Ground Cover:	
Lonicera japonica	Japanese honeysuckle
Rosa multiflora	multiflora rose
Upland Successional Fields	
Understory	
Prunus serotina	black cherry
Ailanthus altissima	tree-of-heaven
Acer platanoides	Norway maple
Tilia linden	basswood
Malus sp	apple
Ground Cover:	
Erigeron canadensis	horseweed
Rosa multiflora	multiflora rRose
Solidago sp.	goldenrod
Artemisia vulgaris	mugwort
Alliaria petiolata	garlic mustard
Vitis labrusca	fox grape
Parthenocisus quinquefolia	Virginia creeper
Aster spp	asters

TABLE 1: Vegetation Observed on the Site

Lawn Area
Ground Cover:

Taraxacum officinale	dandelion
Plantago major	common plantain
Allium vineale	wild onion
Solidago spp.	goldenrod

NOTE: Understory stratum also includes young individuals of those species found in the overstory.

H. Wildlife

The site is somewhat limited in its value as wildlife habitat due to the adjacent development and major state highway immediately adjacent to the property. The site does, however, provide suitable habitat for a variety of common species. Species that were observed using the site included mourning dove (*Zenaida macroura*), northern cardinal (*Cardinalis cardinalis*), northern mockingbird (*Mimus polyglottos*), song sparrow (*Melospiza melodia*), tree sparrow (*Spizella arborea),* bluejay (*Cyanocitta cristata),* red-bellied woodpecker (*Melanerpes carolinus),* white-tailed deer (*Odocoileus virginianus*), cottontail rabbit (*Sylvilagus floridanus),* eastern gray squirrel (*Sciurus carolinensis)* and raccoon (*Procyon lotor).*

No threatened or endangered animal species were observed on the project site. The NJDEP Natural Heritage Program and US Fish and Wildlife Service were contacted regarding records of threatened or endangered species on or in the vicinity of the project site (Appendix 1 and 2). The NJDEP Natural Heritage Program has no records of any threatened or endangered wildlife species on or in the immediate vicinity of the site. The U.S. Fish and Wildlife Service (USFWS) indicated that there is the potential for suitable bog turtle habitat (federally threatened) on or in the immediate vicinity of the site. As part of the review of the letter of interpretation application, NJDEP personnel will make a determination as to whether or not the wetlands on the site are suitable habitat for the species.

I. Historic, Archaeological or Cultural Resources

No historic features were observed on site. The New Jersey State Museum has been contacted regarding any documented archaeological or cultural resources on or in the vicinity of the project site (Appendix 3). One known archaeological resource has been identified as potentially being within the limits of the proposed project. As part of the NJDEP wetland permit review they will assess the potential for impacts to the archaeological resources that may be on-site. The Applicant will comply with any NJDEP requirements at that time.

J. Visual Character

The site is currently partially wooded and partially a successional field. Route 31 forms the site's western and southern borders. Successional fields are found to the east of the site, and an open field and commercial plaza are located to the north. The site does not contain any unique views or vistas.

K. Noise

The project site is undeveloped, consisting of approximately 8.255 acres of forest and successional fields. The only noticeable source of noise was vehicular traffic on Route 31.

L. Traffic

Please see the traffic study enclosed under separate cover for a detailed discussion of existing traffic conditions.

M. Fill and subsurface structures

There are no known subsurface structures on the site.

4.0 ENVIRONMENTAL IMPACT ASSESSMENT

A. Water Quality

During the construction phase of the project, impacts to water quality will be primarily associated with soil erosion and sedimentation. Implementation of an approved Soil Erosion and Sediment Control Plan will control the majority of erosion pollution. However, it is reasonable to assume that some sedimentation will occur during construction, particularly during times of heavy precipitation. The settling of airborne dust and sediments related to grading and excavation, together with the pollutants produced by diesel trucks and excavation equipment, can be expected to have a minor impact on water quality.

Construction impacts will be minimized through the proper phasing of construction to ensure that the water quality basin and related pollutant control measures are among the first activities undertaken. Soil erosion and sediment control measures to be employed during construction include silt fencing, straw bale dikes, and filter fabric around inlets and the proper maintenance of inlet structures. All construction debris, including any empty storage containers, will be removed from the site on a regular basis and transported to an acceptable disposal site. Sanitary facilities will be provided and properly maintained for use by all construction workers.

Post-construction impacts are primarily associated with stormwater runoff from impervious surfaces such as the parking area and internal roadways. This runoff can contain tars, oils, and grease related to both the exposed surfaces and vehicular deposits. Other pollutants that can be carried in stormwater runoff are the phosphorous and nitrogenous constituents of fertilizers, various hydrocarbons, and trace metals from paints, stains, treated lumber or vehicle components and solid waste such as litter.

The proposed development will result in the creation of approximately 1.6 acres of impervious surfaces. The stormwater runoff from 1.6 acres of impervious surfaces will be directed into a Stormceptor water quality chamber and then into a water quality / detention basin. The remaining runoff will be directed via surface flow into undeveloped areas.

Retention of the stormwater in the Stormceptor and basin prior to discharge will minimize the pollutant loading by allowing sediments, trace metals and other particulates to settle out. Vegetative uptake will also help in the removal of soluble nitrogen and phosphorous through biological processes. The design of the stormwater management system will be subject to the review and approval of the NJDEP Land Use Regulation Program.

B. Air Quality

Any impact to ambient air quality will be associated with the construction of the project and a slight increase in traffic to the site upon completion of the project. Construction activities are considered to be short - term impacts.

Temporary sources of pollution during construction include the increase in local truck traffic related to the delivery of materials and supplies, increased vehicular traffic related to the transport of workers to and from the site and the use of heavy equipment for clearing, grading and excavation. Dust generated by the grading and excavation activities and the fumes generated by the paving of roadways can also contribute to temporary localized decreases in air quality.

Steps to minimize impacts to air quality associated with the construction phase of the project include the minimization of vehicular idling time on-site, watering down of exposed

soils and effective timing of construction activities. Deliveries will be scheduled such that trucks will not be entering or leaving the site during peak traffic hours, whenever possible. This will limit the time these vehicles spend idling in congested traffic, and will therefore minimize the associated emissions.

Upon completion of the project, impacts to air quality will be primarily associated with vehicular traffic to and from the site. Although some traffic related pollutants are unavoidable, all vehicles are now subject to strict new emissions testing to minimize impact to air quality. The project is not expected to violate any State or Federal ambient air quality standards.

C. Water Supply

Water will be provided to the site by the Town of Clinton Water Department. Estimated water demand is 8,100 gallons per day. A will-serve letter will be requested from the Town of Clinton Water Department confirming adequacy of water service for the site. A copy of their response will be forwarded upon receipt.

D. Topography

Approximately 2.76 acres of the site will be disturbed for construction of the project. This area will be filled and graded to a topography that is conducive to the construction of a hotel/conference center. Of the total 2.18 acres of slopes greater than 10% on the site, approximately 0.89 acres will be disturbed for development.

E. Soils

The site will be susceptible to soil erosion and sedimentation during the construction phase due to surface runoff. Pursuant to State law, Soil Erosion and Sediment Control Plans will be prepared by the applicant and submitted to the Hunterdon County Soil Conservation

District for review and approval. Some of the precautions to be taken to prevent soil erosion and sedimentation during the construction phase may include:

a) Installation of haybale filters or silt fence to trap sediment before leaving the site or entering the undisturbed wooded areas.

b) Installation of a gravel-tracking pad at the construction entrance to prevent off-site tracking of soil by construction vehicles.

c) Installation of haybale protection filters around inlets to keep sediment from entering the storm drains and prevent possible clogging of pipes.

d) Temporary seeding to stabilize exposed soils, as necessary.

e) Strict adherence to construction sequence and the soil erosion and sedimentation control plans to insure minimum exposure of the site to erosion.

The stormwater management system will be installed during construction to ensure the quality of stormwater. The system has been designed to meet the applicable State, County and Municipal standards to provide adequate measures to decrease the additional quantity of surface water runoff expected with the increased impervious surfaces on the site. The water quality basin will help control post development stormwater discharge and provide for surface runoff water quality improvement.

F. Hydrology

The proposed project will contain a detention basin with a Stormcepter water quality chamber to meet all township and NJDEP water quality requirements. As part of the NJDEP wetlands application the water quality aspects of the stormwater management system will be subject to the review and approval of the NJDEP. For additional information see the Project Hydrology Report submitted separately.

G. Vegetation

Construction of the proposed development as depicted on the accompanying plans will require the disturbance of approximately approximately 2.76 acres. Limits of disturbance will be clearly delineated in the field to avoid unnecessary clearing of vegetation. As discussed previously, the NJDEP Natural Heritage Program has a record of Frank's sedge (*Carex frankii*) in the immediate vicinity of the site. This species is classified as rare in the state and is an obligate wetland species. No wetland disturbance is proposed and therefore no adverse impacts to the species, if it does occur on-site, are anticipated.

Short-term impacts associated with clearing will include the possibility of increased runoff and erosion. Long-term impacts include the permanent loss of approximately 2.76 acres of vegetation in the project area. Of these 2.76 acres, approximately 1.6 acres will be covered with structures and impervious surfaces. The remaining 1.16 acres will consist of lawn and landscaping.

H. Wildlife

The project site contains approximately 8.255 acres. Construction of the project will result in the conversion of 2.76 acres of wildlife habitat into a hotel/conference center. The remaining 1.16 acres will remain as undeveloped open space.

The USFWS has indicated the potential for bog turtle habitat to be present on or in the immediate vicinity of the site (Appendix 2). As part of the NJDEP wetland permit review they will assess the habitat on-site for potential threatened and endangered species. The Applicant will comply with any NJDEP requirements at that time. Existing populations of wildlife species on the site will be reduced. Many of the small mammals such as eastern

cottontail and eastern gray squirrel may adapt to site conditions and maintain a small population within the developed portion of the site. The common songbirds that currently utilize the site will likely continue to utilize the lawn and landscaped areas within the development. Localized breeding populations of these species will be most affected. However, it is unlikely that the development will have a significant overall effect on the regional bird populations.

I. Historic and Archaeologic Resources

No historic features were observed on site. The New Jersey State Museum has been contacted regarding any documented archaeological or cultural resources on or in the vicinity of the project site (Appendix 3). One known archaeological resource has been identified as potentially being within the limits of the proposed project. As part of the NJDEP wetland permit review they will assess the potential for impacts to the archaeological resources identified as possibly being on-site. The Applicant will comply with any NJDEP requirements at that time

J. Visual Character

The proposed development will change a successional field adjacent to a major highway into a commercial use, specifically a hotel/conference center. Commercial development is the predominant use along the Route 31 corridor in the vicinity of the project site, so the proposed will be consistent this the visual character of the highway corridor.

K. Noise

A short-term increase in noise levels during the construction phase of the project is expected. This will be primarily associated with clearing, grading, construction vehicles, electric and air powered equipment and manual construction tools. Methods of reducing

regulations.

O. Hazardous Waste

There are no anticipated toxic or otherwise dangerous or hazardous wastes that will be generated during construction or operation of the proposed project.

P. Artificial Light

The proposed project will utilize light fixtures equipped house side shields to minimize light spillage as required by local zoning regulations. The areas adjacent to the proposed project are vacant, with the exception of State Highway 31, and will therefore have no adverse affects on adjacent properties.

5.0 ECONOMIC IMPACT

The proposed project will create ten new positions to service the hotel and conference center, in addition to the number of auxiliary jobs it will create through the use of local goods and services. A ratable will be added to the municipal tax roles that does not require a large amount of municipal services.

6.0 UNAVOIDABLE ADVERSE IMPACTS

The proposed development has been designed to minimize environmental impacts to the extent possible. No significant adverse impacts to the site or surrounding area are expected as a result of the proposed development. However, development will always have minor inherent unavoidable adverse impacts. Those associated with this project are related primarily to construction activities and are discussed below.

A. Water Quality

During construction of the project, minor impacts to water quality can be expected as a result of soil erosion. Although this will be minimized through implementation of a Soil Erosion and Sediment Control Plan, some erosion will likely occur, particularly during periods of heavy precipitation.

Additionally, greases, sealants, tars and oils associated with construction vehicles, as well as those associated with building supplies may contribute to water quality degradation during construction. Post-construction impacts to water quality are mainly associated with the increase in runoff from new impervious surfaces. This will be minimized through the use of a water quality basin as discussed in previous sections.

B. Soils

A minimal amount of soil erosion is to be expected, particularly during the construction phase. Steps to be taken to minimize these impacts are discussed in Section 4.0.

C. Vegetation

Construction of the proposed project will result in the loss of 2.76 acres of vegetation on the site. Of this amount, approximately 1.6 acres will consist of structures and impervious surfaces. The remaining 1.16 acres will consist of lawn and landscaping. The loss of vegetation on the site will be somewhat offset by implementation of an approved landscaping plan.

D. Noise

A short-term increase in on-site noise levels during construction of the project is expected. However, this will be of limited duration until the project is completed and should

not be unreasonably objectionable. Hours of construction will be in accordance with the Town Ordinance. Post-construction noise levels may increase slightly due to the increase in traffic.

E. Air Quality

Air quality on and, to a limited extent, near the site will be affected during construction of the project. Likely sources of pollution during construction include increased vehicular traffic (including construction, delivery and worker vehicles), dust generated by grading and other earth moving, and fumes from paving and related activities. These are considered short-term impacts and will cease upon completion of the construction phase. Upon completion of the project, any long-term impacts to air quality will be associated with the increased traffic associated with the development, although this is expected to be minimal.

7.0 PROJECT ALTERNATIVES

A. Alternative Location

In terms of location, zoning and environmental sensitivity, the location is well suited to the proposed use. Because the property is currently owned by the applicant, alternative sites were not investigated.

B. Alternative Site Design

Several alternative layouts and uses were considered, but the proposed design was determined to best suit the needs of the applicant while minimizing environmental impacts to sensitive areas such as wetlands and steep slopes. The applicant was granted a Use Variance from Section 88-58.1 by the Board of Adjustment, Resolution #98-5, adopted on October 23, 2000 for the construction and operation of a hotel on the subject property.

The proposed project requires no waivers or variances from the bulk requirements of the Office Building District (OB-3) zone.

8.0 CONCLUSIONS

The proposed project will minimize environmental impacts to sensitive areas such as wetlands and steep slopes while maximizing benefits to the community by employing a number of local residents, enticing visitors to the region, and contributing to the municipal tax roles while requiring few municipal services.

9.0 REFERENCES

1. NJDEP Bureau of Air Monitoring. 2000. 1999 Air Quality Report.

2. NJDEP Office of Land and Water Planning. April 1994. Surface Water Quality Standards.

3. Owens, James P. et al. 1998. Bedrock Geologic Map of Central and Southern New Jersey. US Geologic Survey Miscellaneous Inventory Series Map I-2540-B.

4. USDA Soil Conservation Service. 1974. Soil Survey for Hunterdon County, New Jersey.

5. Wolfe, Peter E. 1977. The Geology and Landscapes of New Jersey. Crane, Russak & Company, NY.

6. Zapecza, O.S. 1984. Hydrogeologic Framework of the New Jersey Coastal Plain. US Geologic Survey Report #84-730.1.

10.0 APPENDICES

Appendix 1

Correspondence with the NJDEP Office of Natural Lands Management Regarding Threatened and Endangered Species on or in the Vicinity of the Project Site.

OCT 2 6 2001

State of New Jersey

DONALD T. DIFRANCESCO
Acting Governor

Department of Environmental Protection
Division of Parks and Forestry
Office of Natural Lands Management
Natural Heritage Program
P.O. Box 404
Trenton, NJ 08625-0404
Tel. #609-984-1339
Fax. #609-984-1427

Robert C. Shinn, Jr.
Commissioner

October 24, 2001

James M. Vasslides
Schoor DePalma, Inc.
200 State Highway 9
P.O. Box 900
Manalapan, NJ 07726-0900

Re: ANSUYA Enterprise, LLC

Dear Mr. Vasslides:

Thank you for your data request regarding rare species information for the above referenced project site in Clinton Town, Hunterdon County.

The Natural Heritage Data Base has a record for an occurrence of *Carex frankii* that may be in the immediate vicinity of the site. The attached list provides more information about this occurrence. **Because some species are sensitive to disturbance or sought by collectors, this information is provided to you on the condition that no specific locational data are released to the general public. This is not intended to preclude your submission of this information to regulatory agencies from which you are seeking permits.**

Also attached is a list of rare species and natural communities that have been documented from Hunterdon County. This county list can be used as a master species list for directing further inventory work. If suitable habitat is present at the project site, these species have potential to be present. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend you contact the Division of Fish and Wildlife, Endangered and Nongame Species Program.

PLEASE SEE THE ATTACHED 'CAUTIONS AND RESTRICTIONS ON NHP DATA'.

Thank you for consulting the Natural Heritage Program. The attached invoice details the payment due for processing this data request. Feel free to contact us again regarding any future data requests.

Sincerely,

Herbert A. Lord

Herbert A. Lord
Data Request Specialist

cc: Thomas F. Breden
Lawrence Niles
NHP File No. 01-4007468

NATURAL LANDS MANAGEMENT

CAUTIONS AND RESTRICTIONS ON NATURAL HERITAGE DATA

The quantity and quality of data collected by the Natural Heritage Program is dependent on the research and observations of many individuals and organizations. Not all of this information is the result of comprehensive or site-specific field surveys. Some natural areas in New Jersey have never been thoroughly surveyed. As a result, new locations for plant and animal species are continuously added to the data base. Since data acquisition is a dynamic, ongoing process, the Natural Heritage Program cannot provide a definitive statement on the presence, absence, or condition of biological elements in any part of New Jersey. Information supplied by the Natural Heritage Program summarizes existing data known to the program at the time of the request regarding the biological elements or locations in question. They should never be regarded as final statements on the elements or areas being considered, nor should they be substituted for on-site surveys required for environmental assessments. The attached data is provided as one source of information to assist others in the preservation of natural diversity.

This office cannot provide a letter of interpretation or a statement addressing the classification of wetlands as defined by the Freshwater Wetlands Act. Requests for such determination should be sent to the DEP Land Use Regulation Program, P.O. Box 401, Trenton, NJ 08625-0401.

This cautions and restrictions notice must be included whenever information provided by the Natural Heritage Database is published.

22 OCT 2001

IMMEDIATE VICINITY OF PROJECT SITE
RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK	DATE OBSERVED	IDENT.	LOCATION
*** Vascular plants									
CAREX FRANKII	FRANK'S SEDGE				G5	S3	1973-06-30	Y	DUNHAM PARK. CLINTON. SOUTH BRANCH OF RARITAN RIVER CLINTON.

1 Records Processed

HUNTERDON COUNTY

RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN

THE NEW JERSEY NATURAL HERITAGE DATABASE

	NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
	CICINDELA MARGINIPENNIS	COBBLESTONE TIGER BEETLE				G2G3	S1
	ENALLAGMA BASIDENS	DOUBLE-STRIPED BLUET				G5	S3
	LAMPSILIS CARIOSA	YELLOW LAMPMUSSEL				G3G4	S1
	LEPTODEA OCHRACEA	TIDEWATER MUCKET				G4	S1
	POLYGONIA PROGNE	GRAY COMMA				G5	SH
	PTICHODIS BISTRIGATA	SOUTHERN PTICHODIS				G3	S1S3
*** Other types							
	BAT HIBERNACULUM	BAT HIBERNACULUM				G?	S2
*** Vascular plants							
	ADLUMIA FUNGOSA	CLIMBING FUMITORY				G4	S2
	AGASTACHE NEPETOIDES	YELLOW GIANT-HYSSOP				G5	S2
	AGASTACHE SCROPHULARIIFOLIA	PURPLE GIANT-HYSSOP				G4	S2
	AGRIMONIA MICROCARPA	SMALL-FRUIT GROOVEBURR				G5	S2
	ARISTOLOCHIA SERPENTARIA	VIRGINIA SNAKEROOT				G4	S3
	ASIMINA TRILOBA	PAWPAW		E		G5	S1
	ASPLENIUM PINNATIFIDUM	LOBED SPLEENWORT		E		G4	S1
	ASTER PRAEALTUS	WILLOW-LEAF ASTER		E		G5T5?	S1
	BOTRYCHIUM ONEIDENSE	BLUNT-LOBE GRAPE FERN				G4Q	S2
	CACALIA ATRIPLICIFOLIA	PALE INDIAN PLANTAIN		E		G4G5	S1
	CARDAMINE ANGUSTATA	SLENDER TOOTHWORT				G5	S3
	CAREX AMPHIBOLA VAR AMPHIBOLA	NARROW-LEAF SEDGE		E		G5T4Q	S1
	CAREX BUSHII	BUSH'S SEDGE		E		G4	S1
	CAREX DEWEYANA	DEWEY'S SEDGE		E		G5T5	S1
	CAREX FRANKII	FRANK'S SEDGE				G5	S3
	CAREX HITCHCOCKIANA	HITCHCOCK'S SEDGE				G5	S2
	CAREX JAMESII	JAMES' SEDGE		E		G5	S1
	CAREX LEPTONERVIA	FINE-NERVE SEDGE		E		G4	S1
	CAREX MEADII	MEAD'S SEDGE				G4G5	SX.1

14 SEP 2001

HUNTERDON COUNTY

RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN

THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
CAREX OLIGOCARPA	FEW-FRUIT SEDGE		E		G4	S1
CAREX PALLESCENS	PALE SEDGE				G5	S2
CAREX WILLDENOWII VAR WILLDENOWII	WILLDENOW'S SEDGE				G5T5	S2
CASTILLEJA COCCINEA	SCARLET INDIAN-PAINTBRUSH				G5	S2
CERCIS CANADENSIS	REDBUD		E		G5T5	S1
CHEILANTHES LANOSA	HAIRY LIPFERN				G5	S2
CHENOPODIUM SIMPLEX	MAPLE-LEAF GOOSEFOOT				G5	S2
CRATAEGUS CALPODENDRON	PEAR HAWTHORN		E		G5	S1
CRATAEGUS DODGEI	DODGE'S HAWTHORN				G4	S2
CRATAEGUS HOLMESIANA	HOLMES' HAWTHORN				G5	S1
CRATAEGUS SUCCULENTA	FLESHY HAWTHORN		E		G5	S1
CUSCUTA CEPHALANTHI	BUTTONBUSH DODDER		E		G5	S1
CYNOGLOSSUM VIRGINIANUM VAR VIRGINIANUM	WILD COMFREY				G5T5	S2
CYSTOPTERIS PROTRUSA	LOWLAND FRAGILE FERN				G5	S2
DESMODIUM HUMIFUSUM	TRAILING TICK-TREFOIL		E		G1G2Q	SH
DICENTRA CANADENSIS	SQUIRREL-CORN		E		G5	S1
DOELLINGERIA INFIRMA	CORNEL-LEAF ASTER				G5	S2
DRABA REPTANS	CAROLINA WHITLOW-GRASS		E		G5	SH
ELLISIA NYCTELEA	AUNT LUCY		E		G5	S1
ERAGROSTIS FRANKII	FRANK'S LOVE GRASS				G5	S2
HYBANTHUS CONCOLOR	GREEN VIOLET		E		G5	S1
HYDROPHYLLUM CANADENSE	BROAD-LEAF WATERLEAF		E		G5	S1
HYPERICUM PYRAMIDATUM	GREAT ST. JOHN'S-WORT				G4	S3
ISOTRIA MEDEOLOIDES	SMALL WHORLED POGONIA	LT	E		G2	S1
JEFFERSONIA DIPHYLLA	TWINLEAF		E		G5	S1
KUHNIA EUPATORIOIDES	FALSE BONESET		E		G5T5	S1
LATHYRUS VENOSUS	VEINY VETCHLING		E		G5	SH

HUNTERDON COUNTY

RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN

THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
LECHEA INTERMEDIA VAR INTERMEDIA	LARGE-POD PINWEED				G5T4T5	S2
LEMNA VALDIVIANA	PALE DUCKWEED		E		G5	S1
LINUM SULCATUM	GROOVED YELLOW FLAX		E		G5T5	S1
MONARDA CLINOPODIA	BASIL BEEBALM		E		G5	SH
ONOSMODIUM VIRGINIANUM	VIRGINIA FALSE-GROMWELL		E		G4	S1
PANICUM OLIGOSANTHES VAR OLIGOSANTHES	FEW-FLOWER PANIC GRASS				G5T5?	S1S2
PENSTEMON LAEVIGATUS	SMOOTH BEARDTONGUE		E		G5	S1
PHLOX PILOSA	DOWNY PHLOX		E		G5T5	SH
PINUS PUNGENS	TABLE MOUNTAIN PINE		E		G4	S1.1
PRUNUS ALLEGHANIENSIS	ALLEGHENY PLUM		E		G4T4	S1
PRUNUS PUMILA VAR DEPRESSA	LOW SAND CHERRY				G5T5	S2
PTELEA TRIFOLIATA	WAFER-ASH		E		G5T5	S1
PYCNANTHEMUM CLINOPODIOIDES	BASIL MOUNTAIN-MINT		E		G2	S1
PYCNANTHEMUM TORREI	TORREY'S MOUNTAIN-MINT		E		G2	S1
RANUNCULUS MICRANTHUS	ROCK BUTTERCUP				G5	S2
RANUNCULUS TRICHOPHYLLUS VAR TRICHOPHYLLUS	THREAD-LEAF WATER BUTTERCUP				G5T5	S2
RHYNCHOSPORA GLOBULARIS	COARSE GRASS-LIKE BEAKED-RUSH		E		G5?	S1
RIBES MISSOURIENSE	MISSOURI GOOSEBERRY		E		G5	S1
RUDBECKIA FULGIDA	ORANGE CONEFLOWER		E		G5T4?	S1
SALIX LUCIDA SSP LUCIDA	SHINING WILLOW				G5T5	S1
SCUTELLARIA NERVOSA	VEINED SKULLCAP				G5	S2
SEDUM TELEPHIOIDES	ALLEGHENY STONECROP				G4	SX.1
SELAGINELLA RUPESTRIS	ROCK SPIKE-MOSS				G5	S2
SOLIDAGO RIGIDA	PRAIRIE GOLDENROD		E		G5T5	S1
STACHYS TENUIFOLIA	SMOOTH HEDGE-NETTLE				G5	S3
STELLARIA PUBERA	STAR CHICKWEED		E		G5	SH
TRIOSTEUM ANGUSTIFOLIUM	NARROW-LEAF HORSE-GENTIAN		E		G5	S1

14 SEP 2001

HUNTERDON COUNTY
RARE SPECIES AND NATURAL COMMUNITIES PRESENTLY RECORDED IN
THE NEW JERSEY NATURAL HERITAGE DATABASE

NAME	COMMON NAME	FEDERAL STATUS	STATE STATUS	REGIONAL STATUS	GRANK	SRANK
VALERIANELLA RADIATA	BEAKED CORNSALAD		E		G5	S1
VERBENA SIMPLEX	NARROW-LEAF VERVAIN		E		G5	S1
VICIA CAROLINIANA	CAROLINA WOOD VETCH		E		G5	S1
VIOLA CANADENSIS	CANADIAN VIOLET		E		G5T?	S1

108 Records Processed

EXPLANATIONS OF CODES USED IN NATURAL HERITAGE REPORTS

FEDERAL STATUS CODES

The following U.S. Fish and Wildlife Service categories and their definitions of endangered and threatened plants and animals have been modified from the U.S. Fish and Wildlife Service (F.R. Vol. 50 No. 188; Vol. 61, No. 40; F.R. 50 CFR Part 17). Federal Status codes reported for species follow the most recent listing.

LE	Taxa formally listed as endangered.
LT	Taxa formally listed as threatened.
PE	Taxa already proposed to be formally listed as endangered.
PT	Taxa already proposed to be formally listed as threatened.
C	Taxa for which the Service currently has on file sufficient information on biological vulnerability and threat(s) to support proposals to list them as endangered or threatened species.
S/A	Similarity of appearance species.

STATE STATUS CODES

Two animal lists provide state status codes after the Endangered and Nongame Species Conservation Act of 1973 (NSSA 23:2A–13 et. seq.): the list of endangered species (N.J.A.C. 7:25–4.13) and the list defining status of indigenous, nongame wildlife species of New Jersey (N.J.A.C. 7:25–4.17(a)). The status of animal species is determined by the Nongame and Endangered Species Program (ENSP). The state status codes and definitions provided reflect the most recent lists that were revised in the New Jersey Register, Monday, June 3, 1991.

D	Declining species–a species which has exhibited a continued decline in population numbers over the years.
E	Endangered species–an endangered species is one whose prospects for survival within the state are in immediate danger due to one or many factors – a loss of habitat, over exploitation, predation, competition, disease. An endangered species requires immediate assistance or extinction will probably follow.
EX	Extirpated species–a species that formerly occurred in New Jersey, but is not now known to exist within the state.
I	Introduced species–a species not native to New Jersey that could not have established itself here without the assistance of man.
INC	Increasing species–a species whose population has exhibited a significant increase, beyond the normal range of its life cycle, over a long term period.
T	Threatened species–a species that may become endangered if conditions surrounding the species begin to or continue to deteriorate.
P	Peripheral species–a species whose occurrence in New Jersey is at the extreme edge of its present natural range.
S	Stable species–a species whose population is not undergoing any long-term increase/decrease within its natural cycle.
U	Undetermined species–a species about which there is not enough information available to determine the status.

Status for animals separated by a slash(/) indicate a duel status. First status refers to the state breeding population, and the second status refers to the migratory or winter population.

Plant taxa listed as endangered are from New Jersey's official Endangered Plant Species List N.J.S.A. 131B-15.151 et seq.

E Native New Jersey plant species whose survival in the State or nation is in jeopardy.

REGIONAL STATUS CODES FOR PLANTS

LP Indicates taxa listed by the Pinelands Commission as endangered or threatened within their legal jurisdiction. Not all species currently tracked by the Pinelands Commission are tracked by the Natural Heritage Program. A complete list of endangered and threatened Pineland species is included in the New Jersey Pinelands Comprehensive Management Plan.

EXPLANATION OF GLOBAL AND STATE ELEMENT RANKS

The Nature Conservancy has developed a ranking system for use in identifying elements (rare species and natural communities) of natural diversity most endangered with extinction. Each element is ranked according to its global, national, and state (or subnational in other countries) rarity. These ranks are used to prioritize conservation work so that the most endangered elements receive attention first. Definitions for element ranks are after The Nature Conservancy (1982: Chapter 4, 4.1-1 through 4.4.1.3-3).

GLOBAL ELEMENT RANKS

G1 Critically imperiled globally because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres) or because of some factor(s) making it especially vulnerable to extinction.

G2 Imperiled globally because of rarity (6 to 20 occurrences or few remaining individuals or acres) or because of some factor(s) making it very vulnerable to extinction throughout its range.

G3 Either very rare and local throughout its range or found locally (even abundantly at some of its locations) in a restricted range (e.g., a single western state, a physiographic region in the East) or because of other factors making it vulnerable to extinction throughout it's range; with the number of occurrences in the range of 21 to 100.

G4 Apparently secure globally; although it may be quite rare in parts of its range, especially at the periphery.

G5 Demonstrably secure globally; although it may be quite rare in parts of its range, especially at the periphery.

GH Of historical occurrence throughout its range i.e., formerly part of the established biota, with the expectation that it may be rediscovered.

GU Possibly in peril range-wide but status uncertain; more information needed.

GX Believed to be extinct throughout range (e.g., passenger pigeon) with virtually no likelihood that it will be rediscovered.

G? Species has not yet been ranked.

STATE ELEMENT RANKS

S1 Critically imperiled in New Jersey because of extreme rarity (5 or fewer occurrences or very few remaining individuals or acres). Elements so ranked are often restricted to very specialized conditions or habitats and/or restricted to an extremely small geographical area of the state. Also included are elements which were formerly more abundant, but because of habitat destruction or some other critical factor of its biology, they have been demonstrably reduced in abundance. In essence, these are elements for which, even with intensive searching, sizable additional occurrences are unlikely to be discovered.

S2 Imperiled in New Jersey because of rarity (6 to 20 occurrences). Historically many of these elements may have been more frequent but are now known from very few extant occurrences, primarily because of habitat destruction. Diligent searching may yield additional occurrences.

S3 Rare in state with 21 to 100 occurrences (plant species in this category have only 21 to 50 occurrences). Includes elements which are widely distributed in the state but with small populations/acreage or elements with restricted distribution, but locally abundant. Not yet imperiled in state but may soon be if current trends continue. Searching often yields additional occurrences.

S4 Apparently secure in state, with many occurrences.

S5 Demonstrably secure in state and essentially ineradicable under present conditions.

SA Accidental in state, including species (usually birds or butterflies) recorded once or twice or only at very great intervals, hundreds or even thousands of miles outside their usual range; a few of these species may even have bred on the one or two occasions they were recorded; examples include European strays or western birds on the East Coast and vice-versa.

SE Elements that are clearly exotic in New Jersey including those taxa not native to North America (introduced taxa) or taxa deliberately or accidentally introduced into the State from other parts of North America (adventive taxa). Taxa ranked SE are not a conservation priority (viable introduced occurrences of G1 or G2 elements may be exceptions).

SH Elements of historical occurrence in New Jersey. Despite some searching of historical occurrences and/or potential habitat, no extant occurrences are known. Since not all of the historical occurrences have been field surveyed, and unsearched potential habitat remains, historically ranked taxa are considered possibly extant, and remain a conservation priority for continued field work.

SP Element has potential to occur in New Jersey, but no occurrences have been reported.

SR Elements reported from New Jersey, but without persuasive documentation which would provide a basis for either accepting or rejecting the report. In some instances documentation may exist, but as of yet, its source or location has not been determined.

SRF Elements erroneously reported from New Jersey, but this error persists in the literature.

SU Elements believed to be in peril but the degree of rarity uncertain. Also included are rare taxa of uncertain taxonomical standing. More information is needed to resolve rank.

SX Elements that have been determined or are presumed to be extirpated from New Jersey. All historical occurrences have been searched and a reasonable search of potential habitat has been completed. Extirpated taxa are not a current conservation priority.

SXC Elements presumed extirpated from New Jersey, but native populations collected from the wild exist in cultivation.

SZ Not of practical conservation concern in New Jersey, because there are no definable occurrences, although the taxon is native and appears regularly in the state. An SZ rank will generally be used for long distance migrants whose occurrences during their migrations are too irregular (in terms of repeated visitation to the same locations), transitory, and dispersed to be reliably identified, mapped and protected. In other words, the migrant regularly passes through the state, but enduring, mappable element occurrences cannot be defined.

Typically, the SZ rank applies to a non-breeding population (N) in the state - for example, birds on migration. An SZ rank may in a few instances also apply to a breeding population (B), for example certain lepidoptera which regularly die out every year with no significant return migration.

Although the SZ rank typically applies to migrants, it should not be used indiscriminately. Just because a species is on migration does not mean it receives an SZ rank. SZ will only apply when the migrants occur in an irregular, transitory and dispersed manner.

B Refers to the breeding population of the element in the state.

N Refers to the non-breeding population of the element in the state.

T Element ranks containing a "T" indicate that the infraspecific taxon is being ranked differently than the full species. For example *Stachys palustris* var. *homotricha* is ranked "G5T? SH" meaning the full species is globally secure but the global rarity of the var. *homotricha* has not been determined; in New Jersey the variety is ranked historic.

Q Elements containing a "Q" in the global portion of its rank indicates that the taxon is of questionable, or uncertain taxonomical standing, e.g., some authors regard it as a full species, while others treat it at the subspecific level.

.1 Elements documented from a single location.

Note: To express uncertainty, the most likely rank is assigned and a question mark added (e.g., G2?). A range is indicated by combining two ranks (e.g., G1G2, S1S3).

IDENTIFICATION CODES

These codes refer to whether the identification of the species or community has been checked by a reliable individual and is indicative of significant habitat.

Y Identification has been verified and is indicative of significant habitat.

BLANK Identification has not been verified but there is no reason to believe it is not indicative of significant habitat.

? Either it has not been determined if the record is indicative of significant habitat or the identification of the species or community may be confusing or disputed.

Appendix 2

Correspondence with the US Fish and Wildlife Service Regarding Threatened and Endangered Species on or in the Vicinity of the Project Site.

United States Department of the Interior
FISH AND WILDLIFE SERVICE

Ecological Services
927 N. Main Street (Bldg. D1)
Pleasantville, New Jersey 08232
Tel: 609-646-9310
Fax: 609-646-0352

10/31/01

IN REPLY REFER TO:
ES-01/707

October 30, 2001

Mr. James M. Vasslides
Schoor Depalma
Justin Corporate Center, 200 State Highway Nine
P.O. Box 900
Manalapan, New Jersey 07726-0900
Fax Number: (732) 577-9888

Reference: Threatened and endangered species review in the vicinity of the proposed hotel/conference center (E01284A), Town of Clinton, Hunterdon County, New Jersey.

The U.S. Fish and Wildlife Service (Service) has reviewed the proposed project(s) pursuant to Section 7 of the Endangered Species Act (ESA) (87 Stat. 884; 16 U.S.C. 1531 *et seq.*) to ensure the protection of federally listed and proposed endangered and threatened species. The following comments do not address all Service concerns for fish and wildlife and do not preclude separate review and comment afforded by other applicable environmental legislation.

Endangered species and their habitats are protected by Section 7(a)(2) of the ESA, which requires federal agencies, in consultation with the Service, to ensure that any action it authorizes, funds, or carries out is not likely to jeopardize the continued existence of listed species or result in destruction or adverse modification of critical habitat. An assessment of potential direct, indirect, and cumulative impacts is required for all federal actions that may affect listed species.

Potentially suitable habitat for the **bog turtle** (***Clemmys muhlenbergii***) (federally listed as threatened) occurs on or in the vicinity of the proposed project site(s). In New Jersey, bog turtles inhabit open, wet meadows and bogs with standing or slow-moving shallow water over a mucky substrate, emergent and scrub/shrub wetlands, spring-fed fens, and forested wetlands that contain emergent or scrub/shrub wetlands.

500m

To assist you in determining potential impacts of the proposed project(s) on the bog turtle, more detailed information regarding the species and its habitat is enclosed. If any wetlands as described above will be disturbed, or if materials will be discharged into or upstream of such wetlands, a **habitat survey** of the project area(s) must be conducted by a qualified herpetologist (see attached list of recognized qualified bog turtle surveyors) to determine presence or absence of bog turtle habitat. If the survey documents the presence of bog turtles, or habitat, within the project area(s), an assessment of potential project impacts must also be completed. Project construction or implementation must not commence until the survey results and assessment of impacts have been forwarded to this office to determine if further consultation under Section 7 of the ESA is required. If you have any questions or require further assistance regarding threatened or endangered species, please contact this office, at (609)-646-9310, extension 49.

Reviewing Biologist: Lisa Solberg

Authorizing Supervisor: J. L. C. [illegible]

Enclosures

FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN NEW JERSEY

An **ENDANGERED** species is any species that is in danger of extinction throughout all or a significant portion of its range.

A **THREATENED** species is any species that is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.

	COMMON NAME	SCIENTIFIC NAME	STATUS
FISHES	Shortnose sturgeon*	*Acipenser brevirostrum*	E
REPTILES	Bog turtle	*Clemmys muhlenbergii*	T
	Atlantic Ridley turtle*	*Lepidochelys kempii*	E
	Green turtle*	*Chelonia mydas*	T
	Hawksbill turtle*	*Eretmochelys imbricata*	E
	Leatherback turtle*	*Dermochelys coriacea*	E
	Loggerhead turtle*	*Caretta caretta*	T
BIRDS	Bald eagle	*Haliaeetus leucocephalus*	T
	Piping plover	*Charadrius melodus*	T
	Roseate tern	*Sterna dougallii dougallii*	E
MAMMALS	Eastern cougar	*Felis concolor couguar*	E+
	Indiana bat	*Myotis sodalis*	E
	Gray wolf	*Canis lupus*	E+
	Delmarva fox squirrel	*Sciurus niger cinereus*	E+
	Blue whale*	*Balaenoptera musculus*	E
	Finback whale*	*Balaenoptera physalus*	E
	Humpback whale*	*Megaptera novaeangliae*	E
	Right whale*	*Balaena glacialis*	E
	Sei whale*	*Balaenoptera borealis*	E
	Sperm whale*	*Physeter macrocephalus*	E

FEDERAL CANDIDATE SPECIES IN NEW JERSEY

CANDIDATE SPECIES are species that appear to warrant consideration for addition to the federal List of Endangered and Threatened Wildlife and Plants. Although these species receive no substantive or procedural protection under the Endangered Species Act, the U.S. Fish and Wildlife Service encourages federal agencies and other planners to give consideration to these species in the environmental planning process.

SPECIES	SCIENTIFIC NAME
Bog asphodel	*Narthecium americanum*
Hirst's panicgrass	*Panicum hirstii*

Note: For complete listings of taxa under review as candidate species, refer to Federal Register Vol. 64, No. 205, October 25, 1999 (Endangered and Threatened Wildlife and Plants; Review of Plant and Animal Taxa that are Candidates for Listing as Endangered or Threatened Species).

Revised 11/99

FEDERAL CANDIDATE AND STATE-LISTED SPECIES

Candidate species are species under consideration by the U.S. Fish and Wildlife Service (Service) for possible inclusion on the List of Endangered and Threatened Wildlife and Plants. Although these species receive no substantive or procedural protection under the Endangered Species Act, the Service encourages federal agencies and other planners to consider federal candidate species in project planning.

The New Jersey Natural Heritage Program maintains the most up-to-date information on federal candidate species and State-listed species in New Jersey and may be contacted at the following address:

Mr. Thomas Breden
Natural Heritage Program
Division of Parks and Forestry
P.O. Box 404
Trenton, New Jersey 08625
(609) 984-0097

Additionally, information on New Jersey's State-listed wildlife species may be obtained from the following office:

Dr. Larry Niles
Endangered and Nongame Species Program
Division of Fish and Wildlife
P.O. Box 400
Trenton, New Jersey 08625
(609) 292-9400

If information from either of the aforementioned sources reveals the presence of any federal candidate species within a project area, the Service should be contacted to ensure that these species are not adversely affected by project activities.

Revised 08/00

PERMIT REQUIREMENTS FOR ACTIVITIES IN WETLANDS

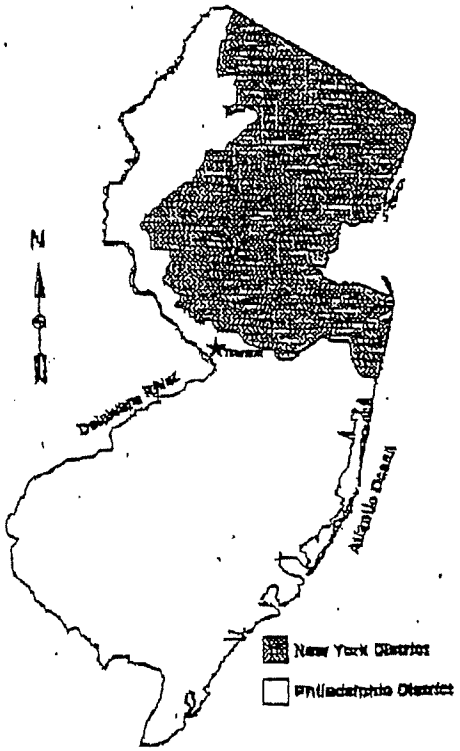
A review of the Service's National Wetland Inventory maps indicates that wetlands occur within the project area. Wetlands provide habitats for a variety of migratory and resident species of fish and wildlife. Thus, the Service discourages activities in and affecting the Nation's wetlands that would unnecessarily damage, degrade, or destroy the values associated with them. Project activities in wetlands may require federal and State permits from the U.S. Army Corps of Engineers pursuant to the Clean Water Act of 1977 (33 U.S.C. 1344 *et seq.*), and the New Jersey Department of Environmental Protection and Energy pursuant to the Freshwater Wetlands Protection Act (N.J.S.A. 13:9B-1 *et seq.*). Thus, if work is proposed in wetlands, the following offices must be contacted to determine federal and State permit requirements, respectively:

Federal Permitting Authority:

Regulatory Branch
U.S. Army Corps of Engineers
New York District
26 Federal Plaza
New York, New York 10278-0090
(212) 264-3996
Fax #: (212) 264-4260

or

Regulatory Branch
U.S. Army Corps of Engineers
Philadelphia District
100 Penn Square East
Philadelphia, Pennsylvania 19107-3390
(215) 656-6725
Fax #: (215) 656-6724



State Permitting Authority:

Land Use Regulation Program
Department of Environmental Protection and Energy
CN 401
Trenton, New Jersey 08625-0401
(609) 292-1235
Fax #: Northern Counties (609-292-1231); Southern Counties (609-292-8115)

GUIDELINES FOR BOG TURTLE SURVEYS[1]

(revised May 2001)

RATIONALE

A bog turtle survey (when conducted according to these guidelines) is an attempt to determine presence or probable absence of the species; it does not provide sufficient data to determine population size or structure. Following these guidelines will standardize survey procedures. It will help maximize the potential for detection of bog turtles at previously undocumented sites at a minimum acceptable level of effort. Although the detection of bog turtles confirms their presence, failure to detect them does not absolutely confirm their absence (likewise, bog turtles do not occur in all appropriate habitats and many seemingly suitable sites are devoid of the species).. Surveys as extensive as outlined below are usually sufficient to detect bog turtles; however, there have been instances in which additional effort was necessary to detect bog turtles, especially when habitat was less than optimum, survey conditions were less than ideal, or turtle densities were low.

PRIOR TO CONDUCTING ANY SURVEYS

If a project is proposed to occur in a county of known bog turtle occurrence (see attachment 1), contact the U.S. Fish and Wildlife Service (Service) and/or the appropriate State wildlife agency (see attachment 2). They will determine whether or not any known bog turtle sites occur in or near the project area, and will determine the need for surveys.

- If a wetland in or near the project area is *known* to support bog turtles, measures must be taken to avoid impacts to the species. The Service and State wildlife agency will work with federal, state and local regulatory agencies, permit applicants, and project proponents to ensure that adverse effects to bog turtles are avoided or minimized.

- If wetlands in or adjacent to the project area are *not* known bog turtle habitat, conduct a bog turtle habitat survey (Phase 1 survey) if:

1. The wetland(s) have an emergent and/or scrub-shrub wetland component, *and*

2. Direct and indirect adverse effects to the wetland(s) cannot be avoided.

See *Bog Turtle Conservation Zones* for guidance regarding activities likely to affect bog turtles and their habitat. In addition, consult with the Fish and Wildlife Service and/or appropriate State wildlife agency to definitively determine whether or not a Phase 1 survey will be necessary.

BOG TURTLE HABITAT SURVEY (= Phase 1 survey)

The purpose of this survey is to determine whether or not the wetland(s) are *potential* bog turtle habitat. These surveys are usually performed by someone who is either: (1) qualified to conduct bog turtle surveys (i.e., Phase 2 surveys), or (2) qualified to identify and delineate wetlands. The following conditions and information apply to habitat surveys.

- Surveys can be performed any month of the year (except when significant snow cover is present).

This flexibility in conducting Phase 1 surveys allows efforts during the Phase 2 survey window to be spent on wetlands most likely to support bog turtles (i.e., those that meet the criteria below).

- Potential bog turtle habitat is recognized by three criteria *(not all of which may occur in the same portion of a particular wetland)*:

1. **Suitable hydrology**. Bog turtle wetlands are typically spring-fed with shallow surface water or saturated soils present year-round, although in summer the wet area(s) may be restricted to near spring head(s). Typically these wetlands are interspersed with dry and wet pockets. There is often subsurface flow. In addition, shallow rivulets (less than 10 cm deep) or pseudo-rivulets are often present.

2. **Suitable soils**. Usually - a bottom substrate of soft muck or mucky-like soils (this does not refer to a technical soil type); you will usually sink to your ankles or deeper in muck, although in summers of dry years this may be limited to areas near spring heads. In some portions of the species' range, the soft substrate consists of scattered pockets of peat (6+ inches deep) instead of muck. Suitable soils are the critical criterion.

3. **Suitable vegetation**. Dominant vegetation of low grasses and sedges (emergent wetland), often with a scrub-shrub wetland component. Common emergent vegetation includes: tussock sedge (*Carex stricta*), soft rush (*Juncus effusus*), rice cut grass (*Leersia oryzoides*), sensitive fern (*Onoclea sensibilis*), tearthumbs (*Polygonum spp.*), jewelweeds (*Impatiens spp.*), arrowheads (*Saggittaria spp.*), skunk cabbage (*Symplocarpus foetidus*), Panic grasses (*Panicum spp.*), other sedges (*Carex spp.*), spike rushes (*Eleocharis* sp.), grass-of-Parnassus (*Parnassia glauca*), shrubby cinquefoil (*Potentilla fruticosa*), sweet-flag (*Acorus calamus*), and in disturbed sites, reed canary grass (*Phalaris arundinacea*) or purple loosestrife (*Lythrum salicaria*). Common scrub- shrub species include alder (*Alnus spp.*), red maple (*Acer rubrum*), willow (*Salix spp.*), tamarack (*Larix laricina*), and in disturbed sites, multiflora rose (*Rosa multiflora*).

- Suitable hydrology, soils and vegetation are necessary to provide the critical wintering sites (soft muck, peat, burrows, root systems of woody vegetation) and nesting habitats (open areas with tussocky or hummocky vegetation) for this species. It is very important to note, however, that one or more of these criteria may be absent from portions of a wetland or wetland complex supporting bog turtles. Absence of one or more criteria does not preclude bog turtle use of these areas to meet important life functions, including foraging, shelter and dispersal.

- If these criteria (suitable soils, vegetation and hydrology) are present in the *wetland*, then the *wetland* is considered to be potential bog turtle habitat, regardless of whether or not that portion of the wetland occurring within the project boundaries contains all three criteria. If the *wetland* is determined to be potential habitat and the project will directly or indirectly impact *any portion* of the wetland, then either:

- Completely avoid all direct and indirect effects to the wetland, in consultation with the Service and appropriate State wildlife agency, OR

- Conduct a Phase 2 survey to determine the presence of bog turtles.

- The Service and appropriate State agency (see list) should be sent a copy of survey results for review and comment including: a USGS topographic map indicating location of site; project design map, including location of wetlands and streams; color photographs of the site; surveyor's name; date of visit; opinion on potential/not potential habitat; a description of the hydrology, soils, and vegetation.

BOG TURTLE SURVEY (= Phase 2 survey)

If the wetland(s) are identified as potential bog turtle habitat (see Phase 1 survey), and direct and indirect adverse effects cannot be avoided, conduct a bog turtle survey in accordance with the specifications below. Note that this is *not* a survey to estimate population size or structure; a long-term mark/recapture study would be required for that.

Prior to conducting the survey, contact the appropriate State agency (see attached list) to determine whether or not a scientific collector's permit valid for the location and period of the survey will be required.

1. Surveys should only be performed during the period from April 15-June 15. This coincides with the period of greatest annual turtle activity (spring emergence and breeding) and before vegetation gets too dense to accurately survey. While turtles may be found outside of these dates, a result of no turtles would be considered inconclusive. Surveys beyond June also have a higher likelihood of disruption or destruction of nests or newly hatched young.

2. Air and water temperatures should be a minimum of 55° F.

3. Surveys should be done during the day, at least one hour after sunrise and no later than one hour before sunset.

4. Cloud cover should be <50 percent; and surveys should not be done during or immediately following rain events, unless it clears rapidly and is sunny.

5. One (1) to three (3) people should survey each wetland together. At least one (1) of these must be a recognized qualified bog turtle surveyor[2], and the others should have at least some previous experience conducting bog turtle surveys. To maintain survey effort consistency and increase the probability of encountering turtles, the same surveyors should be used for each wetland.

6. A minimum of four (4) surveys per wetland site are needed to adequately assess the site for presence of bog turtles. At least two of these surveys must be performed in May. From mid- April to mid-May, surveys should be separated by six or more days. From mid-May to mid- June, surveys should be separated by three or more days. The shorter period between surveys during late May and June is needed to ensure that surveys are carried out during the optimum window of time (i.e., before wetland vegetation becomes too thick).

Note that bog turtles are more likely to be encountered by spreading the surveys out over a longer period. For example, erroneous survey results could be obtained if surveys were conducted

on four successive days in late April due to possible late spring emergence, or during periods of extreme weather because turtles may be buried in mud and difficult to find. If bog turtles are found on the first, second or third visit, the site does not need to be revisited. Because this is solely a presence/absence survey, survey efforts at a particular wetland may cease once a bog turtle has been found.

7. Survey time should be three (3) to six (6) person-hours per acre of wetland per visit. Both random opportunistic searching and transect surveys should be used at each wetland.

8. Walk quietly through the wetland. Bog turtles will bask on sedge tussocks and mossy hummocks, or be half-buried in shallow water or rivulets. Walking noisily through the wetland will often cause the turtles to submerge before they can be observed. Be sure to search areas where turtles may not be visible, including shallow pools, underground springs, open mud areas, vole runways and under tussocks. Do not step on the tops of tussocks or hummocks because turtle nests, eggs and nesting microhabitat may be destroyed.

9. Photo-documentation of each bog turtle located will be required; a macro lens is highly recommended. The photos should be in color and of sufficient detail and clarity to identify the bog turtle to species and individual. Therefore, photographs of the carapace, plastron, and face/neck markings should be taken of each individual turtle. Do not harass the turtle in an attempt to get photos of the face/neck markings; if gently placed on the ground, most turtles will slowly extend their necks if not harassed. If shell notching is conducted, do the photo- documentation after the notching is done.

10. The following information should be collected for each bog turtle: sex, carapace length-straight line, carapace width, weight, and details about scars/injuries. Plastron length-straight line information should also be collected to differentiate juveniles from adults (>70 mm; Ernst 1977) as well as to obtain additional information on recruitment, growth, and demography.

11. Each bog turtle should be marked (e.g., notched, PIT tagged) in a manner consistent with the requirements of the appropriate State agency and/or Service. Contact the appropriate State agency prior to conducting the survey to determine what type of marking system, if any, should be used.

12. All bog turtles must be returned to the point of capture as soon as possible on the same day as capture. They should only be held long enough to identify, measure, weigh, and photograph them, during which time their exposure to high temperatures must be avoided. No bog turtles may be removed from the wetland without permission from the Service and appropriate State agency.

13. The Fish and Wildlife Service and appropriate State agency should be sent a copy of survey results for review and concurrence, including the following: dates of site visits; time spent per wetland per visit; names of surveyors; a site map; a description of the wetlands within the project area (e.g., acreage, vegetation, soils, hydrology); an explanation of which wetlands or portions of wetlands were or were not surveyed, and why; survey methodology; weather per visit at beginning and end of survey (air temperature, water temperature, percent cloud cover, wind, and precipitation); presence or absence of bog turtles, including number

of turtles found and date, and age/sex of turtles found; and other reptile and amphibian species found and date.

ADDITIONAL SURVEYS / STUDIES

Proper implementation of the Phase 2 survey protocol is usually adequate to determine species presence or probable absence. Additional surveys, however, may be necessary to determine whether or not bog turtles are using a particular wetland, especially if the Phase 2 survey results are negative but the quality and quantity of habitat are good and in a watershed of known occurrence. In this case, additional surveys (Phase 2 and/or trapping surveys), possibly extending into the following field season, may be recommended by the Service or appropriate State agency.

If bog turtles are documented to occur at a site, additional surveys/studies may be necessary to characterize the population (e.g., number, density, population structure, recruitment), identify nesting and hibernating areas, and/or identify and assess adverse impacts to the species and its habitat, particularly if project activities are proposed to occur in, or within 300 feet of, wetlands occupied by the species.

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[1] These guidelines are taken directly from the final "Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan" (dated May 15, 2001). As additional information becomes available regarding survey techniques and effectiveness, these survey guidelines may be updated and revised. Contact the Fish and Wildlife Service or one of the state agencies listed below for the most recent version of these guidelines.

[2] Searching for bog turtles and recognizing their habitat is a skill that can take many months or years of field work to develop. This level of expertise is necessary when conducting searches in order to ensure that surveys are effective and turtles are not harmed during the survey (e.g., by stepping on nests). Many individuals that have been recognized as qualified to conduct bog turtle surveys obtained their experience through graduate degree research or employment by a state wildlife agency.

Attachment 1

CONTACT AGENCIES - BY STATE

(Revised May 2001)

STATE	FISH AND WILDLIFE SERVICE	STATE AGENCY
Connecticut	U.S. Fish and Wildlife Service New England Field Office 22 Bridge Street, Unit #1 Concord, NH 03301	Department of Environmental Protection Env. & Geographic Information Center 79 Elm Street, Store Floor, Hartford, CT 06106 *(info about presence of bog turtles in or near a project area)* Department of Environmental Protection Wildlife Division, Sixth Floor 79 Elm Street, Store Floor, Hartford, CT 06106 *(to get a Scientific Collectors Permit or determine what type of marking system to use)*
Delaware	U.S. Fish and Wildlife Service Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401	Nongame & Endangered Species Program Delaware Division of Fish and Wildlife 4876 Hay Point Landing Road Smyrna, DE 19977
Maryland	U.S. Fish and Wildlife Service Chesapeake Bay Field Office 177 Admiral Cochrane Drive Annapolis, MD 21401	Maryland Department of Natural Resources Wildlife & Heritage Division PO Box 68, Main Street Wye Mills, MD 21679
Massachusetts	U.S. Fish and Wildlife Service New England Field Office 22 Bridge Street, Unit #1 Concord, NH 03301	Division of Fisheries and Wildlife Dept. Fisheries, Wildlife and Env Law Enforcement Rt. 135 Westboro, MA 01581
New Jersey	U.S. Fish and Wildlife Service New Jersey Field Office 927 North Main Street, Bldg. D-1 Pleasantville, NJ 08232	Endangered & Nongame Species Program Division of Fish, Game & Wildlife Northern Region Office 26 Route 173W, Hampton, NJ 08827
New York	U.S. Fish and Wildlife Service 3817 Luker Road Cortland, NY 13045	New York Natural Heritage Program Department of Environmental Conservation 700 Troy-Schenectady Road Latham, NY 12110-2400 *(info about presence of bog turtles in or near a project area)* NY Department of Environmental Conservation Special Licenses Unit 50 Wolf Road, Albany, NY 12233 *(for endangered species permit applications)*
Pennsylvania	U.S. Fish and Wildlife Service Pennsylvania Field Office 315 South Allen Street, Suite 322 State College, PA 16801	Endangered Species & Herpetology Coordinator Pennsylvania Fish and Boat Commission Bureau of Fisheries and Engineering 450 Robinson Lane Bellefonte, PA 16823

Attachment 2

BOG TURTLE COUNTIES OF OCCURRENCE OR LIKELY OCCURRENCE[1]

(Revised May 2001)

STATE	COUNTY	
Connecticut	Fairfield	Litchfield
Delaware	New Castle	
Maryland	Baltimore Carroll	Cecil Harford
Massachusetts	Berkshire	
New Jersey	Atlantic Burlington Camden Gloucester Hunterdon Mercer Middlesex Monmouth	Morris Ocean Passaic Salem Somerset Sussex Union Warren
New York	Albany Columbia Dutchess Genesee Orange Oswego Putnam	Seneca Sullivan Ulster Warren Wayne Westchester
Pennsylvania	Adams Berks Bucks Chester Cumberland Delaware Franklin	Lancaster Lebanon Lehigh Monroe Montgomery Northampton York

[1] *This list is valid for one year from the date indicated. It may, however, be revised more frequently if new counties of occurrence are documented. Updates to this list are available from the Service upon request.*

BOG TURTLE CONSERVATION ZONES[1]

(revised April 18, 2001)

Projects in and adjacent to bog turtle habitat can cause habitat destruction, degradation and fragmentation. Of critical importance is evaluating the potential direct and indirect effects of activities that occur in or are proposed for upland areas adjacent to bog turtle habitat. Even if the wetland impacts from an activity are avoided (i.e., the activity does not result in encroachment into the wetland), activities in adjacent upland areas can seriously compromise wetland habitat quality, fragment travel corridors, and alter wetland hydrology, thereby adversely affecting bog turtles.

The following bog turtle conservation zones have been designated with the intent of protecting and recovering known bog turtle populations within the northern range of this species. The conservation suggestions for each zone are meant to guide the evaluation of activities that may affect high-potential bog turtle habitat, potential travel corridors, and adjacent upland habitat that may serve to buffer bog turtles from indirect effects. *Nevertheless, it is important to recognize that consultations and project reviews will continue to be conducted on a case-by-case basis, taking into account site- and project- specific characteristics.*

Zone 1

This zone includes the wetland and visible spring seeps occupied by bog turtles. Bog turtles rely upon different portions of the wetland at different times of year to fulfill various needs; therefore, this zone includes the entire wetland (the delineation of which will be scientifically based), not just those portions that have been identified as, or appear to be, optimal for nesting, basking or hibernating. In this zone, bog turtles and their habitat are most vulnerable to disturbance, therefore, the greatest degree of protection is necessary.

Within this zone, the following activities are likely to result in habitat destruction or degradation and should be avoided. These activities (not in priority order) include:

- development (e.g., roads, sewer lines, utility lines, storm water or sedimentation basins, residences, driveways, parking lots, and other structures)
- wetland draining, ditching, tiling, filling, excavation, stream diversion and construction of impoundments
- heavy grazing
- herbicide, pesticide or fertilizer application[2]
- mowing or cutting of vegetation[2]
- mining
- delineation of lot lines (e.g., for development, even if the proposed building or structure will not be in the wetland)

Some activities within this zone may be compatible with bog turtle conservation but warrant careful evaluation on a case-by-case basis:

- light to moderate grazing
- non-motorized recreational use (e.g., hiking, hunting, fishing)

Zone 2

The boundary of this zone extends *at least 300 feet* from the edge of Zone 1 and includes upland areas adjacent to Zone 1. Activities in this zone could indirectly destroy or degrade wetland habitat over the short or long-term, thereby adversely affecting bog turtles. In addition, activities in this zone have the potential to cut off travel corridors between wetlands occupied or likely to be occupied by bog turtles, thereby isolating or dividing populations and increasing the risk of turtles being killed while attempting to disperse. Some of the indirect effects to wetlands resulting from activities in the adjacent uplands include: changes in hydrology (e.g., from roads, detention basins, irrigation, increases in impervious surfaces, sand and gravel mining); degradation of water quality (e.g., due to herbicides, pesticides, oil and salt from various sources including roads, agricultural fields, parking lots and residential developments); acceleration of succession (e.g., from fertilizer runoff); and introduction of exotic plants (e.g., due to soil disturbance and roads). This zone acts as a filter and buffer, preventing or minimizing the effects of land-use activities on bog turtles and their habitat. This zone is also likely to include at least a portion of the groundwater recharge/supply area for the wetland.

Activities that should be avoided in this zone due to their potential for adverse effects to bog turtles and their habitat include:

- development (e.g., roads, sewer lines, utility lines, storm water or sedimentation basins, residences, driveways, parking lots, and other structures)
- mining
- herbicide application[2]
- pesticide or fertilizer application
- farming (with the exception of light to moderate grazing - see below)
- certain types of stream-bank stabilization techniques (e.g., rip-rapping)
- delineation of lot lines (e.g., for development, even if the proposed building or structure will not be in the wetland)

Careful evaluation of proposed activities on a case-by-case basis will reveal the manner in which, and degree to which activities in this zone would affect bog turtles and their habitat. Assuming impacts within Zone 1 have been avoided, evaluation of proposed activities within Zone 2 will often require an assessment of anticipated impacts on wetland hydrology, water quality, and habitat continuity.

Activities that are likely to be compatible with bog turtle conservation, but that should be evaluated on a case-by-case basis within this zone include:

- light to moderate grazing
- non-motorized recreational use (e.g., hiking, hunting, fishing)
- mowing or cutting of vegetation

Zone 3

This zone includes upland, wetland, and riparian areas extending either to the geomorphic edge of

the drainage basin or at least one-half mile beyond the boundary of Zone 2. Despite the distance from Zone 1, activities in these areas have the potential to adversely affect bog turtles and their habitat. This particularly applies to activities affecting wetlands or streams connected to or contiguous with Zone 1, because these areas may support undocumented occurrences of bog turtles and/or provide travel corridors. In addition, some activities (e.g., roads, groundwater withdrawal, water/stream diversions, mining, impoundments, dams, "pump-and-treat" activities) far beyond Zone 1 have the potential to alter the hydrology of bog turtle habitat, therefore, another purpose of Zone 3 is to protect the ground and surface water recharge zones for bog turtle wetlands. Where the integrity of Zone 2 has been compromised (e.g., through increases in impervious surfaces, heavy grazing, channelization of stormwater runoff), there is also a higher risk of activities in Zone 3 altering the water chemistry of bog turtle wetlands (e.g., via nutrient loading, sedimentation, and contaminants).

Activities occurring in this zone should be carefully assessed in consultation with the Fish and Wildlife Service and/or appropriate State wildlife agency to determine their potential for adverse effects to bog turtles and their habitat. Prior to conducting activities that may directly or indirectly affect wetlands, bog turtles and/or bog turtle habitat surveys should be conducted in accordance with accepted survey guidelines.

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1 These guidelines are taken directly from the final "Bog Turtle (*Clemmys muhlenbergii*), Northern Population, Recovery Plan" (dated May 15, 2001).

2 Except when conducted as part of a bog turtle habitat management plan approved by the Fish and Wildlife Service or State wildlife agency

RECOGNIZED QUALIFIED BOG TURTLE SURVEYORS

The following list includes individuals experienced in field herpetology that the U.S. Fish and Wildlife Service, New Jersey Field Office, and the New Jersey Endangered and Nongame Species Program currently recognize as qualified to identify bog turtle habitat and survey for the presence of bog turtles. This list may not include all individuals qualified to survey for this species. This list will be updated periodically. Inclusion of names on this list does not constitute endorsement by the Service or any other U.S. Government agency or State agency.

Scott Angus
Amy S. Greene Environmental Consultants, Inc.
18 Commerce Street Plaza
Flemington, New Jersey 08822-1743
Work: (908) 788-9676

Dr. Rudolf Arndt
The Richard Stockton College
Jimmy Leeds Road
Pomona, New Jersey 08240
Home: (609) 965-9089
Work: (609) 652-4432

Bryon DuBois
Trident Environmental Consultants
1658 Route 9
Toms River, New Jersey 08755
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Tim Hoen
1376 Rock Ridge Road
Jarretsville, Maryland 21084
Home: (410) 557-6879

Michael Kovacs
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Rockaway, New Jersey 07866
Work: (973) 366-9500

Joe McSharry
4304 Parkwood Avenue
Baltimore, Maryland 21206
Home: (410) 483-3132

Jessica Morrow
A.D. Marble & Company, Inc.
10999 Red Run Boulevard
Suite 117
Owings Mills, MD 21117
Work: (410) 902-1421

David Moskowitz
EcolSciences, Inc.
75 Fleetwood Drive, Suite 250
Rockaway, New Jersey 07866
Work: (973) 366-9500

Laura Newgard
EcolSciences, Inc.
75 Fleetwood Drive, Suite 250
Rockaway, New Jersey 07866
Work: (973) 366-9500

Deborah Poppel
ENSR
2005 Cabot Blvd. West
Langhorne, Pennsylvania 19047
Work: (215) 757-4900 ext.232
email: dpoppel@ensr.com

Richard P. Radis
Amy S. Greene Environmental Consultants, Inc.
18 Commerce Street Plaza
Flemington, New Jersey 08822-1743
Work: (908) 788-9676

Gian L. Rocco
322 Amblewood Way
State College, Pennsylvania 16803
Home: (814) 237-2313
email: gxr124@psu.edu

Janis Seegar
12265 Harford Road
Glen Arm, Maryland 21057
Home: (410) 592-6122
Work: (410) 436-4912
(Aberdeen Proving Ground)

William H. Smejkal
Amy S. Greene Environmental Consultants, Inc.
18 Commerce Street Plaza
Flemington, New Jersey 08822-1743
Work: (908) 788-9676

Andrea M. Teti
150 Commissioners Road
Woodstown, New Jersey 08098
Home: (856) 769-4796
Cell: (609) 457-1370
email: sierra@nothinbut.net

Anthony Wisnieski
Reptile House - Baltimore Zoo
Druid Hill Park
Baltimore, Maryland 21217
Work: (410) 396-0441
Work: (410) 462-4398

Robert Zappalorti
Herpetological Associates, Inc.
575 Tom's River Road
Jackson, New Jersey 08527
Work: (732) 833-8600

October 2001

Appendix 3

Correspondence with the NJ State Museum
Regarding Historic, Cultural or Archaeological Resources on the Site.

OCT 2 6 2001

State of New Jersey
DEPARTMENT OF STATE
TRENTON, NJ 08625

DONALD T. DIFRANCESCO
Acting Governor

DEFOREST B. SOARIES, JR
Secretary of State

Mailing address:
New Jersey State Museum
PO Box 530
Trenton, New Jersey 08625-0530

Location:
New Jersey State Museum
205 West State Street
Trenton, New Jersey 08625-0530

October 18, 2001

Mr. James Vasslides
Schoor DePalma, Inc.
Justin Corporate Center
200 State Highway Nine
P.O. Box 900
Manalapan NJ 07726-0900

Re: Request for Archaeological Information
for the ANSUYA Enterprise, LLC
Town of Clinton, Hunterdon County, NJ
Your Job Number: E01284A

Dear Mr. Vasslides:

We have checked our records for the above-referenced project and report the following:

One known archaeological resource (28-Hu-524) appears to be located within the boundaries of the project area. There are 9 known archaeological resources located within a one-half mile radius of the project area. A copy of your project map showing the locations of these sites is enclosed. An archaeological survey, by a professional archaeologist, would have to be conducted in order for an accurate assessment to be made of its archaeological significance.

If we can be of further assistance, please do not hesitate to contact us.

Sincerely,

Karen Flinn
Assistant Curator
Archaeology/Ethnology Bureau

KF:gg
Enclosure
CC: NJ Department of Environmental Protection, Historic Preservation Office

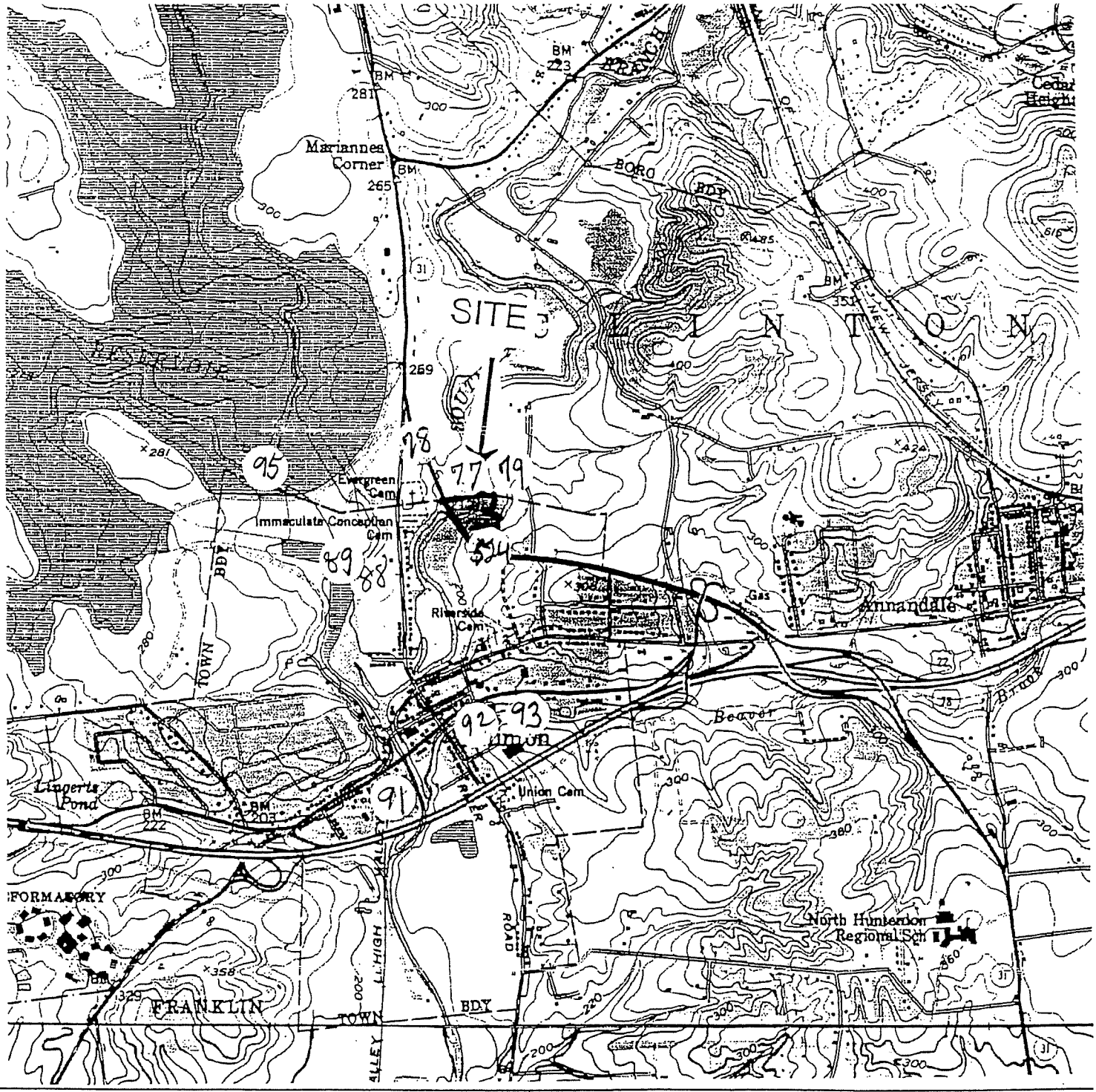


FIGURE 1: APPROXIMATE SITE LOCATION OUTLINED ON A COPY OF THE USGS 76 MINUTE QUAD MAP HIGH BRIDGE QUAD.

USGS MAP

NORTH

ANSUYA
CLINTON TOWN
HUNTERDON COUNTY, NJ

N:\projects\e01284a\ecological\figure.doc

SCHOOR DEPALMA
Engineers and Design Professionals
200 STATE HIGHWAY NINE
P.O. BOX 900
MANALAPAN, N.J. 07726-0900
TEL. (732) 577-9000 FAX (732) 577-9888

SCALE	DATE	DRAWN BY	PROJECT NO.
1" = 2000'	05/21/01	IRC	E01284A

FAX FAX FAX FAX

Date: 10/30/01

From: KAREN FLYNN

NEW JERSEY STATE MUSEUM
205 West State Street – PO Box 530
Trenton, NJ 08625-0530

Phone: 609-292-8594

FAX No.: (609) 984-1403

To: JIM VASSILOPES

Company: SCHOOL DEPALMA

FAX No.: 732-577-8168

Subject: 28-Hu-524

Number of pages (including cover sheet): 3

Note:

P. 1 OF 3

SITE REGISTRATION PROGRAM
NEW JERSEY STATE MUSEUM
Bureau of Archaeology
205 West State Street
Trenton, New Jersey 08625
(609) 292-8594

SITE NO.: 28- Hu - 524
Site Name: Dead Man's Curve Site
Atlas Coordinates: 24-23-4-6-7
UTM ~~Grid~~ Coordinates: 18/N 4498.980 E 507.72
National Register Status:
State Register Status:

609) 292-8594

National Register Status:
State Register Status:
Date: 12/91
File:

County: Hunterdon

Municipality: Clinton

Location (descriptive): Immediately adjacent and east of Rt. 31 and approximately 200' south of the South Branch of the Raritan River.

Period of Site: Prehistoric

Type of Site: Unknown

Cultural affiliation(s) (if known): Unknown

Owner's Name:
Address:
Phone:
Attitude toward Preservation:
Tenant's Name:
Address:
Phone:

Surface Features: Rise sloping towards river Prominent Landmarks:

Vegetation Cover: Cultivated field

Nearest Water Source: South Branch of the Raritan River Distance: Approximately 200'

Soil Type: Birdsboro silt loam, 2 to 6% slopes Erosion: Moderate hazard

Stratified (if known):

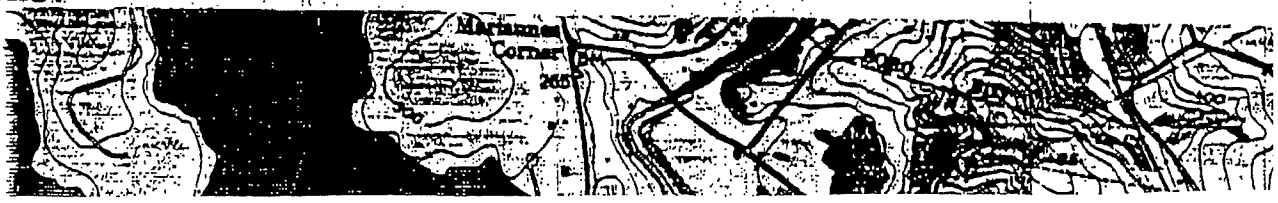
THREAT OF DESTRUCTION (if known): Road construction

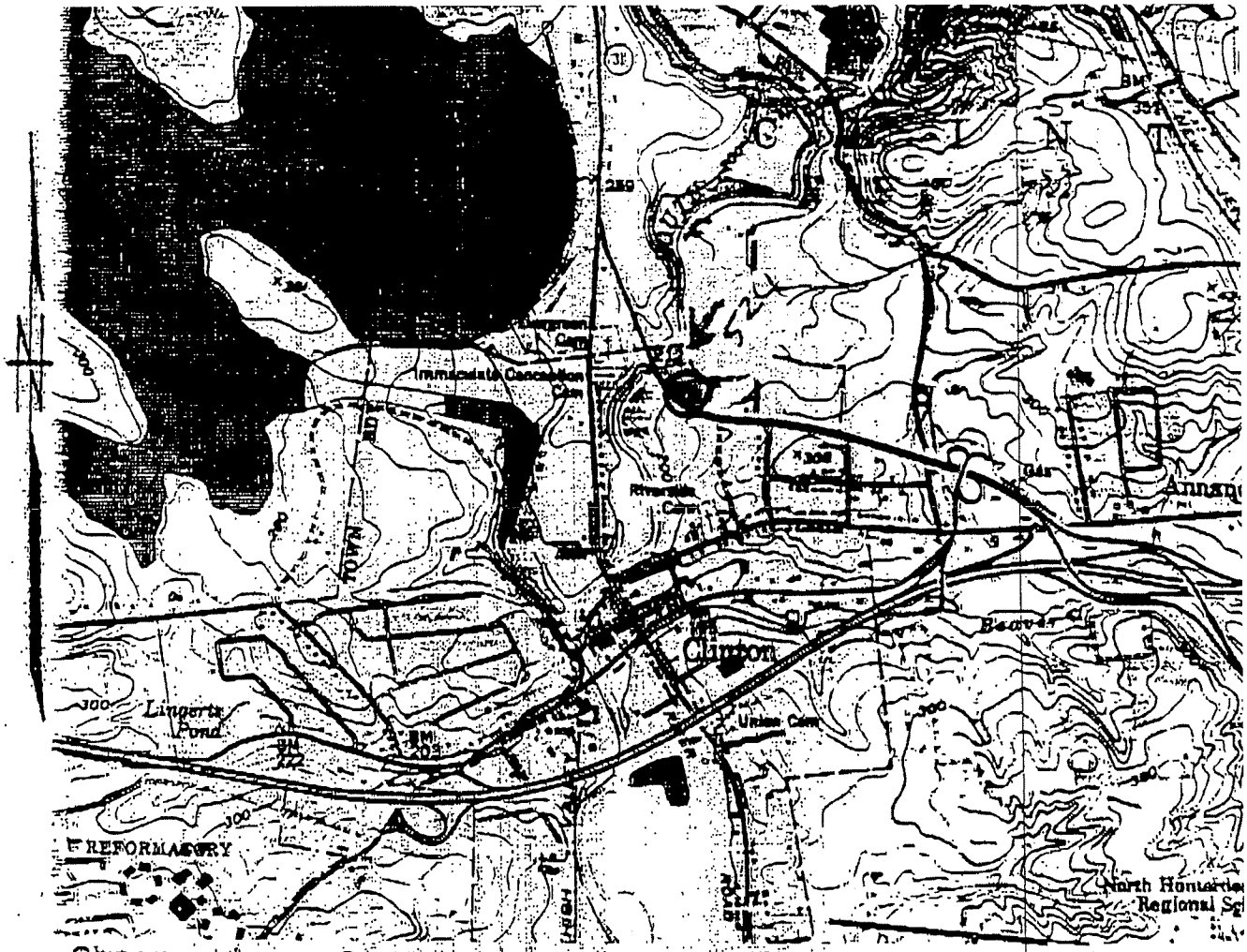
PREVIOUS WORK (list below):

By whom	Date	Collection Stored	Previous Designation

U.-52U

Indicate the chief topological features such as streams, swamps, shorelines, and elevations (approx.). Also, show buildings and roads. Indicate the site location by enclosing the site area with a dotted line. Use a scale (approx.) to indicate distance and dimensions.





Observations, Remarks, or Recommendations

Scale: 1" = 0 4

Surface collection and posthole excavation was conducted.
Material recovered: jasper-flakes, utilized flakes, one core-scraper and core, chert-flakes, utilized flakes, one biface (non-diagnostic), argillite-flakes, biface tool.

This site may be Skinner & Schrabisch #395 on the N.J. Atlas Sheet.

References: Unpublished | Approx. Date | Published | Date

p. 3 of 3

Skinner & Schrabisch Bulletin #18 Archaeology of Warren and Hunterdon | 191?

11.0 PREPARERS QUALIFICATIONS

SCHOOR DEPALMA
Engineers and Design Professionals

John Taikina, P.P., A.I.C.P.

Education

BA – Biology, Rutgers College, New Brunswick, NJ

Professional Affiliations

Institute of Transportation Engineers - Associate
American Planning Association

Summary of Experience

Mr. Taikina is a Principal at Schoor DePalma. He is a licensed professional planner in New Jersey and is certified nationally by the American Institute of Certified Planners.

Mr. Taikina has over 12 years of experience at the municipal, county and regional levels. He has expertise in transportation issues, urban redevelopment, municipal and regional planning based on the willingness and ability to involve the public and interested parties in a meaningful way.

Mr. Taikina currently serves as the Planner-of-Record for the urban communities of Plainfield and Neptune. He has just completed Master Plan and Zoning Ordinance revisions for each of these National Register Historic District municipalities that encourage economic development and preserve quality of life for their residents.

Mr. Taikina has served as project manager for new mixed-use redevelopment projects in urban and suburban communities throughout New Jersey. In New Brunswick, he is managing the first development proceeding with private financing since the city's renaissance began in 1977. The project includes over 200,000 sf of office space, 40,000 sf of retail space, 766 new apartment units and two parking garages totaling almost 2,000 spaces. In West Deptford, Mr. Taikina managed the redevelopment planning of a former 1,100 acre dredge spoils site on the Delaware River, where he was responsible for the overall master planning and redevelopment of a mixed-use residential, commercial and recreational complex including a community center, senior citizen housing, marinas and an 18-hole golf course.

Mr. Taikina recently completed the Borough of New Providence Downtown Master Plan responsible for public involvement planning and design of a compact mixed-use suburban downtown. The plan, prepared with grant funding, incorporates infill development with traffic calming and parking improvements to facilitate reinvestment in the CBD.

Mr. Taikina has appeared before numerous planning & zoning boards in the state of New Jersey, providing testimony for development projects for residential, retail, hospitality, and commercial development clients. Prior to joining the firm Mr. Taikina held the position of Senior Planner with Monmouth County. He most recently led the development of Station Square: The Asbury Park Transportation Center Plan, which received the 1997 NJAPA Current Topic Award highlighting the preservation of place through economic development.

Education

B.S.C.E.T. New Jersey Institute of Technology 1986

Continuing Education Seminars:
Rutgers, The State University – Stormwater Management
Atlantic Builders Conference – Stream Encroachment
NJDEP – NJ Freshwater Wetlands Regulations

Registrations

P.E. – NJ
P.P. – NJ
C.M.E. - NJ

Summary of Experience

Mr. Textores is a Senior Project Manager. He brings to Schoor DePalma over 20 years of experience in land use planning and site design in both public and private sectors. Mr. Textores has extensive experience in the management of residential, commercial, and municipal projects through the concept, permitting, and construction stages.

Project Experience

Project Manger
Van Cleef Engineering Associates
A Multi-Diciplined Engineering Consulting Firm

Mr. Textores was responsible for the preparation of conceptual layouts and sketches for residential and commercial projects, as well as the preparation of construction plans and documents. He represented private sector clients at planning and zoning hearings presenting site plans and subdivisions designed by him or under his immediate supervision. Mr. Textores was also responsible for obtaining all permits and approvals necessary for the construction of a project.

PARTIAL LIST OF MUNICIPALITIES IN WHICH EXPERT TESTIMONY WAS PROVIDED

Branchburg Township
Bridgewater Township
Clinton Township
Delaware Township
Edison Township
Franklin Township (Hunterdon County)
Franklin Township (Somerset County)
Franklin Township (Warren County)
Hillsborough Township
Holland Township
Marlboro Township
Montgomery Township
Raritan Borough
Readington Township
Union Township (Hunterdon County)

SCHOOR DEPALMA

Brian Hobbs
Senior Technical Manager

Education

B.S. – Natural Resource Management, Cook College, Rutgers University, 1983

Graduate Studies

Forest Biology and Soil Science
College of Forest Resources, University of Maine at Orono, 1983-1986

Related Training

Certified Wetland Delineator (Certificate #WDCP93MD0710060A)
Underground Storage Tanks (NJDEP Sponsored)
Health & Safety for Hazardous Waste Site Investigation Personnel (OSHA 40hr course)
Soil Suitability for Septic Systems (Rutgers University)
Endangered and threatened species in New Jersey (Rutgers University)

Professional Background

Mr. Hobbs has been involved in environmental consulting since 1986. He participates in all of the Firm's ecological service projects. A strong background in plant and soil science and knowledge of current environmental regulations enables him to evaluate environmental impacts and other aspects of our client's environmental needs.

Summary of Experience

Prior to joining Schoor DePalma, Mr. Hobbs was a research and teaching assistant at the University of Maine's College of Forest Resources. In this capacity, he conducted soil-site relationships research in northeastern forests. Since 1986, he has been actively involved in private environmental consulting throughout New Jersey. He is involved in the earliest stages of project planning to determine permitting requirements and provides technical input during project design. Mr. Hobbs has performed many wetland delineations, conducted vegetation and wildlife inventories, endangered species surveys and soils studies. He works extensively with state and federal environmental agencies to coordinate field reviews and permitting. He is experienced in the preparation of environmental reports, impact statements (State and municipal), mitigation plans, and permit applications (freshwater wetlands, CAFRA, NJPDES, waterfront development, tidal wetlands, Section 404 and Section 10). Mr. Hobbs also designs individual subsurface sewage disposal systems, including initial soil/site evaluation and laboratory analysis of soil permeability.

SCHOOR DEPALMA

James Vasslides
Senior Professional

Education

B.S. – Natural Resource Management, Cook College, Rutgers University, 1998
Graduate Studies – Tropical Marine Science, University of Puerto Rico

Training

Wetland Delineator Series, Rutgers University, 1999
Ecological Risk Assessment Seminar, Rutgers University, 2000
Stream Sampling for Macroinvertebrates, Rutgers University, 2000
Threatened and Endangered Species, Rutgers University, 2001

Certifications

PADI Open Water Certification 1991

Summary of Experience

Mr. Vasslides has a broad background in the environmental field stemming from diverse experiences in fields such as Dendrology, Marine Sciences, and Terrestrial Ecology.

During wetland delineations he has conducted vegetation and wildlife inventories, endangered species studies, and soil studies. He has worked closely with local, state, and federal regulatory agencies in the permitting process. Mr. Vasslides has prepared environmental impact statements, permit applications for freshwater wetlands, CAFRA, tidal wetlands, Army Corps of Engineers, and Waterfront Development. He has also conducted forestry inventories and prepared Community Forestry Management Plans and Natural Resource Inventories.

Along with other members of the Coastal Ecological Department at Schoor DePalma, Mr. Vasslides participates in the preliminary stages of project development, site investigation and related permitting.

Representative Project Experience

- Environmental Permitting, Closed Paper Mill, Northern New Jersey – Coordinated with NJ DEP, LURP/ISRA, National Park Service, US Army Corps of Engineers, Delaware River Basin Commission, State Historic Preservation Office, Soil Conservation Districts and client, prepared reports and permits in support of a hazardous waste remediation and restoration project within the wetlands and floodplain of the Delaware River.

- Wetland Delineation, GPS Field Surveys, Endangered Species Surveys, Environmental Impact Statement Preparations, and Permit Applications for a Linear Corridor Projects – Performed field work including wetland delineations, GPS data collection, and endangered species surveys, and

prepared various reports and applications in support of a major linear pipeline project for an energy company in northern New Jersey.

- Endangered Bog Turtle Field Surveys in Pennsylvania – Identified multiple amphibian, reptilian, and avian species while performing transect and random opportunistic surveys for the state endangered and federally threatened bog turtle.

- Fish Sampling Using Electroshocking Methods – Sampling of fish by both backpack and boat based electroshocking methods with subsequent identification in various sized waterbodies throughout Central New Jersey.

- Programmatic Environmental Impact Statement for Dredged Material Disposal, New York/New Jersey Region – Assisted in the preparation of a Programmatic Environmental Impact Statement for the USACE evaluating the impacts of and mitigative action for the numerous dredge material disposal options in the New York/New Jersey region.

- Benthic Sampling, Belmar Region, New Jersey - Conducted water quality measurements and benthic sediment sampling along the Central New Jersey Atlantic Coastline for a beach replenishment project.

- Plankton Surveys, Belmar Region, New Jersey - Intensively surveyed for both icthyoplankton and zooplankton utilizing a mesh tow bag. Samples were then prepared for shipping and analysis.

- Bivalve Sampling Experiment, Cape May County, New Jersey - Designed and carried out an experiment to measure the condition index and associated values of the eastern oyster, *Crassostrea virginica*, in three locations in southern New Jersey.

- Underwater Habitat Assessment and Fish Identification, La Parguera, Puerto Rico – Assisted in habitat and fish identification in various habitat types off the coast of La Parguera, Puerto Rico.

- Fish Trap Impacts on Habitat, La Parguera, Puerto Rico – Designed and carried out a research project to determine the effect of chevron style fish traps on the different types of habitats off the coast of La Parguera, Puerto Rico.