

ENVIRONMENTAL IMPACT STATEMENT

Pursuant to Manchester Township Municipal Code

**WILBUR AVENUE
BLOCK 59 * LOTS 649, 650, 651 & 652
MANCHESTER TOWNSHIP, OCEAN COUNTY
NEW JERSEY**

PREPARED FOR:

**3250 WILBUR, LLC
418 CLIFTON AVE, SUITE #200
LAKEWOOD, NJ 08701**

PREPARED BY:



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A handwritten signature in black ink that reads "Kristin Wildman".

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1.0 INTRODUCTION

DuBois and Associates, LLC (DuBois) has been retained by 3250 Wilbur, LLC to prepare an Environmental Impact Statement for a proposed project consisting of a major subdivision for the creation of thirteen (13) single-family homes with associated driveways, a cul-de-sac and two (2) stormwater management basins on the parcel of land designated as Block 59, Lots 649, 650, 651 and 652 (herein termed, “the site”) located within Manchester Township, Ocean County, New Jersey. This Environmental Impact Statement (EIS) presents an assessment of the probable or potential impacts the proposed development project may have upon natural resources at the project site and the surrounding area, and provides an overview of measures taken to minimize any adverse environmental impacts that may be caused by the development.

As outlined within the context of this EIS, the proposed project has been designed to have minimal impact on environmental resources and to avoid critical environmental areas to the maximum extent practicable. The site is in a location that is well suited to the proposed residential development and the site design layout is compatible with the surrounding development.

2.0 METHODOLOGY

This EIS has been prepared to document the decision-making process used to formulate and render a professional opinion concerning the subject site and development project. This report has been prepared through on and off-site field investigations of existing natural resources located upon the site and desktop review of the following material:

- Manchester Township Land Use Ordinance;
- NJ State Plan;
- NJDEP Bureau of Geographic Information Systems;
- NJDEP NJ-GeoWeb Map Viewer;
- NJDEP Historical Preservation Office;
- NJDEP Natural Heritage Database;
- Ocean County Soil Survey;
- Federal sources including USDA, USFWS, USEPA and FEMA;
- Project materials supplied by the applicant, including:
 - Preliminary & Final Major Subdivision Plan, prepared by WJH Engineering
 - Wetlands Survey, prepared by WJH Engineering

DuBois performed a comprehensive site investigation of the entire site on January 3, 2022. On-site hydrology, freshwater wetlands, soils, vegetation communities, wildlife, ecotone areas, and existing and surrounding land uses were evaluated in relation to probable or potential impacts that may be imposed upon these resources by the proposed project. Weather was clear during the site investigation.

3.0 SITE LOCATION & EXISTING LAND USE/LAND COVERAGE

The site is comprised of 11.94 acres and is in the northern portion of Manchester Township and is shown on Sheet No. 2 of the official Tax Map of Manchester Township (refer to *Figure 1: Manchester Township Tax Map*). The site is located off of Wilbur Avenue, south of Devereux Drive and west of Route 70 (refer to *Figure 2: New Jersey Road Map*). The site is located on the SE Lakehurst NJ U.S. Geological Survey Quadrangle with NAD 83 state plane coordinates of E(x) 554,471 N(y) 437,458 at the approximate center of the site (refer to *Figure 3: SE Lakehurst NJ USGS Quadrangle Map*). The site is within the Barnegat Bay Watershed Management Area, the Union/Ridgeway Branch (Toms River) Watershed and the Ridgeway Br (below Hope Chapel Rd) subwatershed (HUC: 02040301070040). The site is in the Suburban and Environmentally Sensitive Planning Areas, (refer to *Figure 4: NJ State Planning Area Map*).

The site is partially developed with a single-family home and associated driveway in the southwestern portion of the site. A tributary to Ridgeway Branch bisects the northern half of the site. The remainder of the site consists of forested uplands and wetlands and maintained field areas. Surrounding land use includes single-family residential homes, roadways, as well as forested uplands and wetlands. Refer to *Figure 5: Aerial Map* for a depiction of the land coverage present on and in the vicinity of the subject site. Refer to *Appendix A: Site Photographs* for representative photographs of the site and immediate vicinity.

4.0 PROJECT DESCRIPTION

The proposed project entails the major subdivision for the creation of thirteen (13) single-family homes with associated driveways, a cul-de-sac and two (2) stormwater management basins. Each lot will require a septic disposal bed. All necessary approvals for development will be received prior to development. Access to the cul-de-sac and the remaining three driveways will be from Wilbur Avenue.

5.0 SITE INVENTORY & ENVIRONMENTAL ASSESSMENT

5.1 Planning, Zoning & Demographics

5.1.1 The State Plan

According to the New Jersey State Development and Redevelopment Plan (NJSDRP), prepared by the State Planning Commission in June 1992, and re-adopted in March 2001, the site is located within the Suburban and Environmentally Sensitive Planning Areas, however, the project will be constructed entirely within the Suburban Planning Area (refer to *Figure 4: NJ State Planning Area Map*).

In the Suburban Planning Area, the State Plan's intention is to:

- provide for much of the state's future development;
- revitalize cities and towns;
- promote growth in center-based developments;
- stabilize older suburbs;
- redesign areas of sprawl; and
- protect the character of existing stable communities.

The Land Use Policy Objectives of the Suburban Planning Area are to promote redevelopment and development in Cores and neighborhoods of Centers and in Nodes that have been identified through cooperative regional planning efforts. Promote diversification of land uses, including housing where appropriate, in single use developments and enhance their linkages to the rest of the community. Ensure efficient and beneficial utilization of scarce land resources throughout the Planning Area to strengthen its existing diversified and compact nature.

The Housing Policy Objectives of the Suburban Planning Area are to provide a full range of housing choices through redevelopment, new construction, rehabilitation, adaptive reuse of nonresidential buildings and the introduction of new housing into appropriate nonresidential settings. Preserve the existing housing stock through maintenance, rehabilitation and flexible regulation.

The Natural Resource Conservation Policy Objectives of the Suburban Planning Area are to reclaim environmentally damaged sites and mitigate future negative impacts, particularly to waterfronts, scenic vistas, wildlife habitats and to Critical Environmental Sites, and Historic and Cultural Sites. Give special

emphasis to improving air quality. Use open space to reinforce neighborhood and community identity, and protect natural linear systems, including regional systems that link to other Planning Areas.

5.1.2 Zoning

According to the Manchester Township Zoning Map, the subject site is mapped as lying within the Single-Family Residential Zone (R-40) zone (refer to *Figure 6: Manchester Township Zoning Map*).

Principal uses of the Single-Family Residential Zone (R-40) zone include:

- Single-family homes.
- Churches and places of worship.
- Public and private schools not operated for a profit, subject to the regulations of the Rural Agricultural Zone pertaining to these uses.
- Parks and playgrounds not operated for a profit.
- Governmental buildings for administrative, protection and safety purposes, such as Township offices, first aid or firehouse.

5.1.3 Demographics

The 2010 United States census counted 43,070 people, 22,840 households, and 11,694 families in the township. The population density was 527.7 per square mile (203.7/km²). There were 25,886 housing units at an average density of 317.2 per square mile (122.5/km²). Of the 22,840 households, 9.7% had children under the age of 18; 42.5% were married couples living together; 6.7% had a female householder with no husband present and 48.8% were non-families. Of all households, 45.4% were made up of individuals and 36.1% had someone living alone who was 65 years of age or older. The average household size was 1.85 and the average family size was 2.55. 10.3% of the population were under the age of 18, 3.7% from 18 to 24, 12.6% from 25 to 44, 23.3% from 45 to 64, and 50.2% who were 65 years of age or older. The median age was 65.1 years. For every 100 females, the population had 74.5 males. For every 100 females ages 18 and older there were 71.9 males. (2010 United States Census Bureau).

The 2020 United States census counted 45,115 people in the Township. (2020 United States Census Bureau), which is a population increase of 4.7%.

Planning, Zoning & Demographics impact assessment

The residential development will promote the Land Use Policy Objectives of the Suburban Planning area by promoting diversification of land uses, including redesigning areas of sprawl and providing a full range of housing choices through redevelopment and new construction. The project will not disturb any freshwater wetlands or regulated waters and will therefore promote the Conservation Policy Objectives of the State Plan. The project is compatible with the residential development surrounding the project site.

The proposed residential subdivision is a permitted use in the R-40 Zoning District, and the project complies with the required bulk standards of the ordinance.

Based upon the census data, the population of Manchester Township has increased. This project will increase housing for residents in the area.

Steps taken to minimize environmental impacts

The proposed project has been designed to avoid critical environmental resources to the maximum extent practicable. Discussion of on-site natural resources and their probable or potential impacts and minimization measures are to be discussed further within the context of this report.

The proposed project site is surrounded by a residential development with a similar pattern of design layout to the north as well as single-family homes to the west and south. The project is compatible with the residential nature of the area. The development has access from an existing township roadway and to public water. The project has been designed outside of environmentally sensitive resources, including wetlands, wetland buffers and riparian buffers. The proposed residential development is compatible with the objectives and goals of the Suburban Planning Area. The project is a permitted use and is consistent with the principal and conditional uses outlined in the Single-Family Residential Zone (R-40) zone.

5.2 Geology & Subsurface Water

5.2.1 Bedrock Geology

The site lies within the Outer Coastal Plain Physiographic Province. The Outer Coastal Plain Province consists of unconsolidated Tertiary deposits of sands, silt, and gravels. The soils are sandy with less clay than the inner coastal plain, and are more acidic and drier. They are characterized by relatively flat lowlands formed of metamorphic, and igneous rocks that are interbedded with layers formed by oceanic (marine) deposition. According to the Geographic Information Systems (GIS) data layer entitled “Bedrock Geology for New Jersey”, provided by the NJDEP New Jersey Geological Survey (NJGS), the site is underlain by the Cohansey Formation (refer to *Figure 7: NJ Bedrock Geology Map*). The Cohansey Formation is made up of quartz sand, white to yellow, medium to coarse-grained, cross-bedded. Local clay, gravel and ironstones beds. (New Jersey Geological and Water Survey, Rutgers University)

5.2.2 Bedrock Aquifer

The site is underlain by the Kirkwood - Cohansey aquifer system. The Kirkwood Formation is made up of fine- to medium-grained micaceous sand with clay beds while the Cohansey Formation is mostly medium to coarse sand, with minor lenses of silt and clay occurring locally, and some gravel. The water is fresh, acidic, highly corrosive, and low in dissolved solids. Iron and manganese levels may be elevated locally. Mercury and radium concentrations exceed primary drinking water standards in some wells. (New Jersey Geological and Water Survey, Rutgers University)

5.2.3 Surface Geology

According to the GIS data layer entitled “Surface Geology for New Jersey”, provided by the NJDEP NJGS, the surficial geology underlying the site is mainly composed of Weather Coastal Plain Formation with a small portion of Upper Stream Terrace Deposits (refer to *Figure 8: New Jersey Surface Geology Map*). Weather Coastal Plain Formation is composed of exposed sand and clay of Coastal Plain bedrock formations. Includes thin, patchy alluvium and colluvium, and pebbles left from erosion of surficial deposits. Upper Stream Terrace Deposits are composed of sand and pebble gravel, minor silt and cobble gravel; yellow, reddish yellow, yellowish brown. As much as 20 feet thick. (NJGS 2006).

Geology & Subsurface Water impact assessment

Minimal disturbance of the Cohansey Formation will occur as a result of grading, subsurface stormwater installation, septic system installation, foundation construction, and associated earth disturbances. Such disturbances will displace and modify underlying soils, which will remain on-site during construction of the

site improvements. There are no geologic limitations including faults or impermeable bedrock that may pose development limitations.

The proposed project is considered to be a “major development” as defined by the NJDEP Stormwater Management Rules. Stormwater management for the proposed development has been addressed using a stormwater management basin. The proposed facilities have been designed in accordance with the New Jersey Stormwater Best Management Practices Manual, New Jersey Department of Environmental Protection, Division of Watershed Management, March 2021. The management and control of stormwater have been designed to satisfy the required groundwater recharge and stormwater runoff quality and quantity standards.

The septic systems will be designed to conform with N.J.A.C. 7:9A Standards (Chapter 9A) for Individual Subsurface Sewage Disposal Systems for location and design to prevent impacts to groundwater or geologic features.

The proposed development will minimally increase demand on potable water supply, which ultimately increases demand for water that is present in the subsurface aquifer systems. Connection to public water, however as opposed to individual wells, will not impose any drawdown of the water-table aquifer in the local area, thereby avoiding subsurface hydrologic flow impacts to the ground water table, surrounding wells, and adjacent wetlands and waterways. The applicant will obtain confirmation from Manchester Township Water and Sewer Utilities for adequate capacity for water use.

Steps taken to minimize environmental impacts

All excavation and grading shall be performed in accordance with an approved site plan which contains soil erosion and sediment control provisions to prevent the displacement and translocation of exposed geologic sediments. The applicant will adhere to an approved Soil Erosion and Sediment Control Plan which will follow BMPs contained within the *Standards for Soil Erosion and Sediment Control in New Jersey*. This is necessary to avoid adverse impacts of displaced soil (geologic substrate) on adjacent lands, particularly wetland areas and surface water bodies. It will include engineering standards and vegetative standards to control land disturbance activities. Standards to be employed include:

- installing sediment barriers (silt fence) around the entire development envelope to intercept and detain potential transported sediment;
- temporary stabilization by spreading seed, mulch and salt hay to reduce potential damage from wind and water erosion until permanent stabilization is accomplished;
- permanent vegetative cover of grass seed mix after final grading;
- if necessary, water will be applied to prevent the establishment of dust from exposed soil surfaces;
- stabilized pad of clean crushed stone located at points where traffic will be accessing a construction site;

Proper grading will protect against soil loss from erosion, enhance establishment of permanent vegetative cover and help to properly manage stormwater runoff all of which will reduce off-site discharge of pollutants.

5.3 Ocean County Soil Survey

According to the SSURGO GIS data layer provided by the USDA Natural Resources Conservation Service (NRCS), four (4) soil types representing four (4) soil series are mapped on the subject site (refer to *Figure 9: Ocean County Soil Survey Map*). The following description is referenced directly from the Soil Survey of Ocean County (Web Soil Survey 2022).

Map unit: DocBO – Downer loamy sand, 0 to 5 percent slopes, Northern Tidewater Area

The Downer component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on low hills, knolls, coastal plains. The parent material consists of loamy fluviomarine deposits and/or gravelly fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Map unit: DoeBO – Downer sandy loam, 2 to 5 percent slopes, Northern Tidewater Area

The Downer component makes up 80 percent of the map unit. Slopes are 0 to 5 percent. This component is on low hills, knolls, coastal plains. The parent material consists of loamy fluviomarine deposits and/or gravelly fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is well drained. Water movement in the most restrictive layer is moderately high. Available water to a depth of 60 inches is moderate. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 2s. This soil does not meet hydric criteria.

Map unit: EveC – Evesboro sand, 5 to 10 percent slopes

The Evesboro component makes up 95 percent of the map unit. Slopes are 5 to 10 percent. This component is on low hills on coastal plains. The parent material consists of sandy eolian deposits and/or sandy fluviomarine deposits. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is excessively drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is low. Shrink-swell potential is low. This soil is not flooded. It is not ponded. There is no zone of water saturation within a depth of 72 inches. Organic matter content in the surface horizon is about 1 percent. Nonirrigated land capability classification is 7s. This soil does not meet hydric criteria.

Map unit: MakAt – Manahawkin muck, 0 to 2 percent slopes, frequently flooded

The Manahawkin, frequently flooded component makes up 85 percent of the map unit. Slopes are 0 to 2 percent. This component is on flood plains, swamps on coastal plains. The parent material consists of organic, woody material over sandy alluvium. Depth to a root restrictive layer is greater than 60 inches. The natural drainage class is very poorly drained. Water movement in the most restrictive layer is high. Available water to a depth of 60 inches is very high. Shrink-swell potential is low. This soil is frequently flooded. It is frequently ponded. A seasonal zone of water saturation is at 0 inches during January, February, March, April. Organic matter content in the surface horizon is about 55 percent. Nonirrigated land capability classification is 7w. This soil meets hydric criteria.

Table 1: Physical properties, suitabilities and/or limitations of on-site soils in regard to building site development

Soil Name	Shallow Excavations	Dwellings Without Basements	Local Roads and Streets	Lawns and Landscaping
DocBO	Somewhat limited	Not limited	Somewhat limited	Very limited
DoeBO	Somewhat limited	Not limited	Somewhat limited	Very limited
EveC	Very limited	Not limited	Not limited	Very limited
MakAt	Very limited	Very limited	Very limited	Very limited

* Rating class terms indicate the extent to which the soils are limited by all of the soil features that affect the specified use. "Not limited" indicates that the soil has features that are very favorable for the specified use. Good performance and very low maintenance can be expected. "Somewhat limited" indicates that the soil has features that are moderately favorable for the specified use. The

limitations can be overcome or minimized by special planning, design, or installation. Fair performance and moderate maintenance can be expected. "Very limited" indicates that the soil has one or more features that are unfavorable for the specified use. The limitations generally cannot be overcome without major soil reclamation, special design, or expensive installation procedures. Poor performance and high maintenance can be expected.

Soil Survey mappings are an approximation as to the extent of on-site soil types, and field verification is necessary to determine the accuracy of the mappings. DuBois conducted field investigations upon and in the vicinity of the project site to determine the accuracy of Soil Survey mappings on the property; soils are generally consistent with the mapping and series descriptions.

Soils Impact assessment

The proposed development project will remove topsoil and will result in the displacement of Downer sandy loam through regrading, subsurface utility installation, foundation construction and associated earth disturbances. Downer sandy soils pose no limitations for buildings without basements, and are somewhat limited for roads and streets. The underlying soils in the area of the proposed improvements are well drained to efficiently infiltrate and treat stormwater.

Steps taken to minimize environmental impacts

The project will comply with the Ocean County Soil Conservation District (SCD). Disturbed areas will be re-vegetated with local grass and vegetation similar to the current vegetation surrounding the project site as required and approved by the SCD. Forested areas within the northern portion of the site within the wetland buffer, will remain vegetated and untouched.

5.4 Sewerage

The project proposes that each lot will construct one (1) new individual subsurface sanitary septic disposal system.

Sewerage impact assessment

Each lot will be serviced by one, new, individual septic system that is compliant with state and local standards. The new systems will require County approval to ensure protection of the waters of the state by preventing the entry of increased pollutants from inadequate facilities pursuant to the New Jersey Pollutant Discharge Elimination System (NJPDES) Rules N.J.A.C. 7:14A-22 and 23. Compliance with these regulations and County approval will demonstrate the septic systems have been designed to ensure no impacts to any surrounding waters and wetlands.

Steps taken to minimize environmental impacts

The septic disposal systems will be designed pursuant to the applicable county and state standards, and therefore environmental impacts are not anticipated. The applicant will ensure adherence to all standard conditions and requirements of the County permit to be issued. Portable sanitation facilities will be made available to construction personnel on the job site and will be disposed of off-site accordingly.

5.5 Freshwater Wetlands, Hydrology & Surface Water Quality

According to the NJDEP freshwater wetland GIS mappings, freshwater wetlands are mapped along the north portion of the subject site (refer to *Figure 10: NJDEP Freshwater Wetlands Map*). On-site wetlands were delineated by DuBois, and a Freshwater Wetlands Letter of Interpretation – Line Verification (LOI-LV) has

been submitted to the New Jersey Department of Environmental Protection (NJDEP) to confirm the wetland boundaries and resource value classification. The wetlands are not associated with mapped habitat for threatened/endangered species (refer to *Figure 13: NJDEP Landscape Project (v3.3) Map*). As such, it is anticipated that the wetlands will be classified as intermediate resource value by the NJDEP with a 50-foot regulated transition area.

An unnamed tributary of Ridgeway Branch bisects the northern half of the site flowing from west to east. The waterway is not mapped as trout production waters or trout maintenance waters, however Timber Rattlesnake habitat is mapped by the NJDEP Natural Heritage Program within one (1) mile, which are species which are critically dependent on the regulated water for survival. Any segment of a water flowing through an area that contains a threatened or endangered species, and/or present or documented habitat for those species, which is critically dependent on the regulated water for survival, and all upstream waters (including tributaries) located within one mile of such habitat (measured along the length of the regulated water) (NJDEP, 2021). Due to the relative distance and similar habitat between the mapped habitat and the project area, it is the opinion of DuBois that the waterway may receive a 150-foot riparian zone.

Any disturbance below this flood hazard area limit or within riparian zones will require compliance with the applicable sections pursuant to the NJDEP Flood Hazard Area Control Act (FHA) Rules at N.J.A.C.7:13. It is anticipated a Flood Hazard Area Verification application will be submitted to the NJDEP to determine the limits of the Flood Zone A. However, as proposed on the plans, all work is to be completed outside of the mapped Flood Zone. This will be subject to NJDEP review and approval pursuant to the Flood Hazard Area Control Act Rules (N.J.A.C.7:13).

The site is within the Barnegat Bay Watershed Management Area, the Union/Ridgeway Branch (Toms River) Watershed and the Ridgeway Br (below Hope Chapel Rd) subwatershed (HUC: 02040301070040).

Freshwater Wetlands, Hydrology and Surface Water Quality impact assessment

An unnamed tributary to Ridgeway Branch located in the northern portion of the site is not designated as a category one water body, however, downstream tributaries contain occurrences of Timber Rattlesnake habitat which are species which are critically dependent on the regulated water for survival. Due to the relative distance and similar habitat between the mapped habitat and the project area, it is the opinion of DuBois that the waterway may receive a 150-foot riparian zone. If the NJDEP agrees with this classification, the project would occur within the riparian zone and approvals pursuant to the Flood Hazard Area Control Act Rules (N.J.A.C.7:13) would be needed for construction within this area.

According to the Federal Emergency Management Agency (FEMA) Preliminary FIRMs, the subject site is not located within a regulated flood zone (refer to *Figure 11: FEMA Flood Zone Map*). The flood hazard area should be confirmed through a NJDEP Flood Hazard Area Verification.

A stormwater management plan is necessary to accommodate the development; introduction of impervious surfaces will alter existing hydrologic conditions of the development area however conveyance of stormwater to an infiltration basin will maintain existing levels of groundwater recharge and also provide for water quality treatment. Runoff will be directed via roof leaders, subsurface drains, and other subsurface conduits to the stormwater basin. Non-structural strategies shall be employed including connection of roof drains to an infiltration system with overflow onto grassed swales; low maintenance landscaping and use of native vegetation.

Steps taken to minimize environmental impacts

An application for an NJDEP Freshwater Wetlands Letter of Interpretation was submitted by DuBois and is pending. Any encroachment of the project in to wetlands or wetlands buffer areas will require NJDEP approval pursuant to the Freshwater Wetland Protection Act Rules (N.J.A.C. 7:7A). However, the proposed project avoids impacts to the assumed wetland and wetland buffer areas.

Development within the flood hazard area and riparian zone will be in compliance with all applicable flood design standards, pursuant to the Flood Hazard Area Control Act Rules (N.J.A.C. 7:13).

5.6 Topography and Slope

The majority of the site can be described as being mostly flat with moderate decline in topography toward the tributary in the north central portion of the site. A high elevation of 103 feet along Wilbur Avenue gently slopes to a low elevation of 75.42 feet along the tributary.

Topography and Slope impact assessment

Minimal regrading will be needed as a majority of construction will be along Wilbur Avenue. The pitch and slope of the overall site will remain the same.

Steps taken to minimize environmental impacts

Any soils that become exposed during construction will follow BMPs for soil erosion and sediment control to mitigate the negative effects of exposed and displaced soil. These BMPs are outlined above under Chapter 5.2.

5.7 Vegetation Communities

The site is located in the Northern Atlantic Coastal Plain Section and the New Jersey Outer Coastal Plain Subsection as recognized by the U.S. Forest Service. DuBois documented existing vegetation communities on-site and assembled a list of the dominant vegetation present. Refer to *Appendix A: Site Photographs* for a depiction of the below described vegetation communities. Refer to *Figure 13: Vegetation Communities Map* for a depiction of the areas described below.

Wooded uplands throughout the site are classified as pine-oak upland communities. Overstory and subcanopy vegetation includes pitch pine (*Pinus rigida*, FACU), white oak (*Quercus alba*, FACU), sassafras (*Sassafras albidum*, FACU), black oak (*Quercus velutina*, FACU) and eastern red cedar (*Juniperus virginiana*, FACU) are the dominant trees present. Species such as American holly (*Ilex opaca*, FAC), mountain laurel (*Kalmia latifolia*, FACU) and sassafras (*Sassafras albidum*, FACU) are present in the understory. Thick tangles of cat greenbrier (*Smilax glauca*, FAC) were noted among the woody vine stratum. The area associated with the dwelling consist of maintained lawn and field areas. The vegetation upon this portion of site is consistent with upland conditions.

Vegetation begins to transition to species more inclined to be found in freshwater wetlands such as black gum (*Nyssa sylvatica*, FAC), red maple (*Acer rubrum*, FAC) and sweetgum (*Liquidambar styraciflua*, FAC) at the lower elevation of the site. There was a thick understory within the wetland portion of the site that consisted of highbush blueberry (*Vaccinium corymbosum*, FACW), sweet pepperbush (*Clethra alnifolia*, FACW), and saplings from the overstory. In the herbaceous layer, species such as cinnamon fern (*Osmunda cinnamomea*, FACW), sensitive fern (*Onoclea sensibilis*, FACW), and *Sphagnum* mosses were observed. The vegetation upon this portion of the site is consistent with wetland conditions.

Vegetation Communities impact assessment

The proposed project will result in removal of vegetation to accommodate the development. The site has been historically and is currently cleared for agricultural use.

DuBois reviewed Natural Heritage Database correspondence from the NJDEP, Division of Parks and Forestry, Office of Natural Lands Management, Natural Heritage Program (NHP) for any threatened or endangered faunal or floral occurrences located upon or within the immediate vicinity (¼ mile) of the property. The NHP correspondence letter does not identify any rare or endangered plant species or any Natural Heritage Priority Site on or within the vicinity of the site.

Steps taken to minimize environmental impacts

A comprehensive inventory of vegetative species was conducted on the site. There are no rare, threatened or endangered plant species identified on the site that will be disturbed. The proposed project includes significant new landscaped areas, including native tree and shrub species. The proposed landscaped areas will be seeded and planted with native species to the maximum extent practicable.

5.8 Wildlife

The subject site is located within the Pinelands landscape region, as identified by the NJDEP NJ Wildlife Action Plan. The Pinelands zone harbors the highest number of listed species. One federal threatened, ten state endangered, and ten state threatened species, 73 nongame species of conservation concern, and seven regional priority game species occur in the Northern Pinelands. (NJDEP 2008).

NJDEP Office of Natural Lands Management, Natural Heritage Program (NHP) Database records for potential threatened/endangered species occurrences, as well as NJDEP Landscape Project Mappings which depict habitat polygons used to value areas for potential critical wildlife habitat were reviewed to obtain a list of species with potential to occur within the local area. According to the NJDEP Landscape Maps of Endangered, Threatened and Other Priority Wildlife (version 3.3) there is no mapped habitat on site. The nearest habitat is located 600 feet to the west, and is mapped as Rank 4 occupied habitat for timber rattlesnake (*Crotalus h. horridus*) and Rank 3 occupied habitat for northern pine snake (*Pituophis m. melanoleucus*) occupied habitat sighting (refer to *Figure 7: Landscape Project v3.3 Map* and *Appendix B: Natural Heritage Program Response*).

Portions of the site associated with deciduous wooded wetlands are mapped for potentially suitable great blue heron (*Ardea herodias*) foraging habitat (Rank 2). Rank 2 habitat is assigned to species-specific habitat patches containing one or more occurrences of species considered to be species of special concern. While this species is not afforded regulatory protection, the project avoids impacts to the existing forested wetlands. As such, impacts to the great blue heron are not expected to result from the project.

DuBois also reviewed the NJDEP Landscape Project Version 3.3 for potential and certified vernal habitat areas mapped on or within the vicinity of the site. “Vernal habitat” includes a vernal pool - or the area of ponding - plus any freshwater wetlands adjacent to the vernal pool. Vernal habitats contain pools that are confined depressions, either natural or man-made, that maintain ponded water for part of the year and are devoid of breeding fish populations. These temporary wetlands provide habitat to many species of amphibians, several of which breed exclusively in vernal pools, as well as a multitude of insects, reptiles, plants, and other wildlife. Landscape Project Version 3.3 identifies not only vernal and potential vernal pools themselves, but also a 300-meter buffer surrounding the habitat that allows for successful breeding, dispersal,

foraging, overwintering, and migration of species that use vernal pools. According to the Landscape Project mapping, no potential vernal habitat is located on site or immediate site vicinity.

As part of the site investigation which was performed in January 2023, all wildlife, or evidence thereof, encountered on the site were noted. Due to the seasonal nature of the site investigation performed as well as the migratory habits, diurnal and ephemeral nature of wildlife which may pass through an area, not all species which can be observed at the site are recorded here. The list compiled is solely a representation of the fauna that were directly, or indirectly, observed at the site. Most bird and mammal species encountered are resident and typical of this area of Burlington County. This list does not constitute any formal wildlife study.

Table 2: On-site Wildlife List

<i>Taxonomic Name</i>	<i>Common Name</i>
<i>Baeolophus bicolor</i>	Tufted Titmouse
<i>Branta canadensis</i>	Canada Goose
<i>Buteo jamaicensis</i>	Red-Tailed Hawk
<i>Cardinalis cardinalis</i>	Northern Cardinal
<i>Colaptes auratus</i>	Northern Flicker
<i>Cyanocitta cristata</i>	Blue Jay
<i>Junco hyemalis</i>	Dark-eyed Junco
<i>Dumetella carolinensis</i>	Gray Catbird
<i>Hirundo rustica</i>	Barn Swallow
<i>Hyla versicolor</i>	Northern Gray Treefrog
<i>Melospiza melodia</i>	Song Sparrow
<i>Molothrus ater</i>	Brown-Headed Cowbird
<i>Odocoileus virginianus</i>	White-tailed Deer
<i>Passer domesticus</i>	House Sparrow
<i>Procyon lotor</i>	Common Raccoon
<i>Sciurus carolinensis</i>	Gray Squirrel
<i>Sturnus vulgaris</i>	European Starling
<i>Sylvilagus floridanus</i>	Eastern Cottontail Rabbit
<i>Turdus migratorius</i>	American Robin
<i>Vulpes fulvus</i>	American Red Fox
<i>Xeniadura macroura</i>	Mourning Dove
<i>Zonotrichia albicollis</i>	White-throated sparrow

Wildlife impact assessment

The site is not associated with any contiguous suitable biotic communities that are identified as critical wildlife habitat. The proposed project will directly remove upland cropland that may be potentially valuable for a variety of grassland bird species. Development of this land will reduce the acreage of the associated fields. Undeveloped wooded areas adjacent to the site will remain undisturbed and will continue to provide habitat for wildlife.

Many of the bird species encountered during site inspections are also commonly found within developed habitats and can be expected to utilize the site once planted and landscaped. Through proposed vegetated buffers outside of the development area, limited on-site wildlife habitat will be preserved.

Steps taken to minimize environmental impacts

The proposed project will replace upland maintained fields and previously occupied single-family residence with residential development.

Tributary wetlands and wetland buffers north of the site will remain largely undisturbed as a result of this project, and will continue to serve as suitable wildlife habitat for common observed species currently utilizing the site.

There are no anticipated adverse impacts to aquatic organisms as the development will be located 50-feet from the adjacent stream.

Although a variety of birds or small mammalian wildlife have the potential to use or be transient upon the site, isolated woodland does not provide significant functional habitat for rare or special-concern wildlife; therefore, development of the site is not expected to be particularly averse to rare fauna. Many of the wildlife species encountered during the site inspections are commonly found within rural or suburban habitats and the site, post-development, will continue to provide habitat.

5.9 Threatened & Endangered Species

5.9.1 Fauna

DuBois reviewed NJDEP Office of Natural Lands Management, Natural Heritage Program (NHP) Database records for potential threatened/endangered species occurrences, and NJDEP Landscape Project Mappings which depict habitat polygons used to value areas for potential critical wildlife habitat were reviewed to obtain a list of species with potential to occur within the local area. Based on these records and NHP response received on January 3, 2022, there have been no known occurrences for state threatened or state endangered species on the subject site (refer to *Appendix B* for a copy of the NHP correspondence).

5.9.2 Flora

DuBois reviewed the NJDEP GIS Natural Heritage Priority Sites Maps. The Natural Heritage Priority Sites Coverage was created to identify critically important areas to conserve New Jersey's biological diversity, with particular emphasis on rare plant species and ecological communities. According to the NJDEP, the site lies outside of any Natural Heritage Priority Sites.

DuBois also reviewed the NJDEP GIS Natural Heritage Grid Map for data on rare plant species and ecological communities. The Natural Heritage Grid Map divides each U.S.G.S. quadrangle map into one hundred (100) cells, with each cell ranging from three hundred fifty-eight (358) to three hundred seventy-two (372) acres in size. If a rare plant or ecological community is documented anywhere within a cell, then the entire cell will be coded for the occurrence. Each grid cell is coded into one (1) of four (4) categories: 1) S – the location is precisely known within the cell; 2) M – the location is not precisely known but the documented location is only known to within 1.5 miles; 3) BOTH – both precisely known and less precise occurrences are found within the same cell; and 4) NONE – the cell does not contain any aforementioned documented records. The site and surrounding areas are outside any documented grid cells.

A request was made to the NJDEP NHP for identification of any endangered plant species or ecological communities that may be present upon and in the vicinity of the subject property. DuBois has reviewed the January 3, 2022 NHP correspondence for the site which states that the Natural Heritage Database does not have any records for rare plants or ecological communities on the site (refer to *Appendix B* for a copy of the NHP correspondence).

Threatened & Endangered Species impact assessment

No records for rare fauna are documented on the site, and no rare fauna species were observed during any site investigations.

Steps taken to minimize environmental impacts

It is the determination of DuBois that the project will not result in any direct or indirect impacts to threatened or endangered species habitat.

5.10 Air Quality

Each year, the NJDEP Bureau of Air Monitoring produces an Air Quality Report, which summarizes air quality data for the entire State. The most recent report available is based on 2019 data. This report provides concentrations of individual pollutants and compares them to the National Ambient Air Quality Standards (NAAQS). The major objectives of monitoring air pollutant levels are:

- To provide an early warning system for pollutant levels that may have the potential to endanger public health;
- To assess air quality in light of established public health and welfare standards; and
- To track air pollution trends and changes in ambient air quality due to changes in the amount of pollutants emitted.

In 2019, the NJDEP Bureau of Air Monitoring operated 3 ambient air monitoring stations. The stations vary in the number and type of monitors operating at each site. The NJDEP air monitoring program is primarily focused on the measurement of pollutants for which NAAQS have been established, also known as criteria pollutants. Criteria pollutant monitoring is regulated by the United States Environmental Protection Agency (USEPA), which prescribes the design and siting of the monitoring networks, the acceptable monitoring methods, and the minimum quality assurance activities. Only data which meet USEPA requirements can be used to determine compliance with the NAAQS. There are six criteria air pollutants: carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), sulfur dioxide (SO₂), and particulate matter (PM).

In this area of the state, monitoring sites are located in Toms River for particulate matter (PM_{2.5}). Monitoring sites in Colliers Mills measures ozone (O₃).

Table 3: National Ambient Air Quality Standards (NAAQS)

	<u>Primary</u>	<u>Secondary</u>
Total suspended Particulates (ug/m ³)		
12-month geometric mean ^b	10.2 ug/m ^{3a}	-
Average 24-hour concentration ^b	26.3 ug/m ^{3c}	-
Inhalable Particulates (PM ₁₀) (ug/m ³)		
Annual arithmetic mean	37 ug/m ³	-
24-hour average	150 ug/m ³	150 ug/m ³
Sulfur Dioxide (SO ₂) (ug/m ³)		
12-month arithmetic mean	80 ug/m ³ (0.03 ppm)	60 ug/m ³ (0.02 ppm) ^b
Average 24-hour concentration	365 ug/m ³ (0.14 ppm) ^a	260 ug/m ³ (0.10 ppm) ^a

Average 3-hour concentration	-	1300 ug/m ³ (0.50 ppm) ^a
Average 1-hour concentration	75 ppb	-
Nitrogen Dioxide (NO ²) (ug/m ³)		
12-month arithmetic mean	100 (0.05 ppm)	100 (0.05 ppm)
Annual average	100 ug/m ³ (0.53 ppm)	100 ug/m ³ (0.53 ppm)
1-hour average guideline	190 ug/m ³ (0.100 ppm)	-
Carbon Monoxide (CO) (ug/m ³)		
Average 8-hour concentration	10 mg/m ³ (9 ppm)	10 (9 ppm) ^f
Average 1-hour concentration	40 mg/m ³ (35 ppm)	40 (35 ppm) ^f
Ozone (O ³) (ug/m ³)		
Maximum daily 1-hour average	235 ug/m ³ (0.12 ppm) ^f	160 ug/m ³ (0.08 ppm) ^b
1-hour average	-	235 ug/m ³ (0.12 ppm) ^f
8-hour average	0.075 ppm	0.075 ppm

* ug/m³ - micrograms per cubic meter

* ppm - parts per million

* ppb – parts per billion

* mg/m³ - milligrams per cubic meter

Notes:

- New Jersey standards are not to be exceeded more than once in any 12-month period, while National short-term standards are not to be exceeded more than once in a calendar year.
- New Jersey standard only.
- Intended as guideline for achieving short-term standards.
- National Ambient Air Quality Standard.
- National standards uses block averages, midnight to midnight, rather than moving averages.
- Maximum daily 1-hour average: averaged over a three (3) year period, the expected number of days above the standard must be less than or equal to one.

Source: New Jersey Department of Environmental Protection, Bureau of Air Monitoring, 2015 Air Quality Report.

The Air Quality Report includes a listing of the Highest Pollutant Standards Index with the location for days that were Unhealthy (UH), Very Unhealthy (VUH), and Unhealthy for Sensitive Groups (USG). In 2019, there were 162 “Good” days, 190 were “Moderate,” and 13 were “Unhealthy for Sensitive Groups.” This indicates that in 2019 air quality in New Jersey was good on 44% of days, and moderate on 52% of days. However, air pollution was still bad enough on 4% of days to potentially affect sensitive people. This indicates that air quality in New Jersey is considered good or moderate most of the time, but that pollution is still bad enough to adversely affect some people on about one day in thirty.

Existing sources of air contaminants surrounding the site would primarily be emissions from vehicular traffic associated with surrounding roadways, commercial development and residences.

Air Quality Assessment

Temporary pollutant emissions and impacts to air quality will result from the construction of the project requiring the use of trucks and other vehicle traffic. A minimal increase in permanent impacts from vehicular traffic associated with the increase in office space will occur post construction.

Steps taken to minimize environmental impacts

The impacts from vehicular traffic associated with the proposed commercial project are not expected to impact the existing air quality of the site and surrounding areas. Air quality impacts are expected to be minimal and temporary during the construction phase and will not exceed any federal or state air quality standard.

5.11 Cultural, Historical and Archeological Resources

DuBois conducted a desktop search of the NJDEP Historic Preservation Office (HPO) records for the presence of any cultural, historical or archeological resources located on or in the vicinity of the project site. The NJDEP NJ-GeoWeb Map Viewer data layers entitled “NJDEP Historic Properties of New Jersey”, “NJDEP Historic Districts of New Jersey” and “NJDEP Archaeological Site Grid of New Jersey” were reviewed (refer to *Figure 14: NJDEP Historic and Archeological Resources Map*). The Historic Properties, Historic Districts and Archaeological Site Grid data layers display historic properties and archaeological grids that are either included in the New Jersey or National Registers of Historic Places, have been determined eligible for inclusion through federal or state processes as administered by the New Jersey HPO, or have been identified through cultural resource survey or other documentation on file at the HPO. The layers conclude that the subject site is not a historic property, nor is it mapped within a historic district.

Cultural, Historical and Archeological Resources impact assessment

No cultural, historical or archeological resources were identified on the site during the desktop review. As such, there are no anticipated adverse impacts to cultural, historical or archeological resources resulting from the proposed project.

Steps taken to minimize environmental impacts

As no potential cultural, historical or archeological resources were identified on the site, steps to minimize environmental impacts are not proposed.

5.12 Noise Characteristics and Light Pollution

Consistent contributors to existing local and regional noise levels in the area are primarily associated with the traffic from adjacent roadways and surrounding existing residential development. Noise levels likely increase along adjacent roadways during peak traffic hours in the morning and evening hours during the week, and minimal noise levels will increase associated with typical homeowner use of the residential development.

Since a residential development is proposed for this site, light pollution will not occur.

Noise assessment and impact

During the construction phase of this project, noise levels will be temporarily increased from heavy equipment, trucks, and various construction practices. Construction activities will occur during permitted working hours to minimize impacts. The anticipated contributors to local noise levels with the post-construction conditions of the development will be from an increase in vehicle noise due to the addition of single-family homes. The noise levels are anticipated to be generally consistent with the surrounding residential land use. It is not anticipated that a Noise Study is warranted.

Steps taken to minimize environmental impacts

Site preparation and construction will be performed during permitted work hours of the workday. Work will not be done in the early morning or late evening. The project will follow the requirements presented in the Noise Control regulations at N.J.A.C.7:29. Furthermore, the noise levels will be associated with intermittent movement of cars and trucks into and out of the area and will not be associated with a “continuous airborne sound”. The noise levels from the built project are anticipated to be generally consistent with the surrounding residential land use and are not expected to cause a significant impact. Therefore, a noise analysis should not be required for this project and the development will be compliant with state and local standards.

5.13 Aesthetics

Visual resources that define a landscape’s aesthetic quality are the lines, forms, spaces, colors, and textures experienced from where people live, work, recreate and travel. The quality of visual resources is important to those who reside in and travel through a landscape (USDA NRCS 2004). The property is surrounded by single-family homes to the south and west, a residential development to the north and a pine/oak forest to the east and northwest. Wooded areas in the northern half of the site will remain as depicted on the overall project plan.

Aesthetics assessment and impact

The project is compatible with the residential development to the north of the property in terms of density and layout. Wooded areas as buffers will remain within selected areas of the project site as depicted on the project plan, typically occurring at the rear of properties between new development, and between new development and existing development.

Steps taken to minimize environmental impacts

The forested portion of the site associated with the tributary will remain post-construction and will act as a buffer between the project area and homes to the north. Native plants and grasses will be used to enhance the aesthetics of the property when the development has finished. The proposed single-family houses and stormwater basin will be visually attractive and compatible with the residential uses surrounding the site. The project will not have a negative impact on the aesthetics of the surrounding community.

5.14 Hazardous or Miscellaneous Non-hazardous Materials and Solid Waste

A Phase I Environmental Site Assessment has not been reviewed for the site. Pursuant to the applicant, a Phase I was completed for the project and recognized environmental concerns were not identified. During DuBois’s field investigations there were no areas of concern observed within the project boundaries on the surface landscape.

Solid waste and recycling will be handled in accordance with local requirements. The on-site individual subsurface sanitary sewer facilities will be designed in accordance with the required standards and no impacts as a result of wastewater generation or discharge will occur. Implementation of specific environmental performance controls are not necessary for this project.

6.0 REQUIRED LICENSES, PERMITS, AND APPROVALS

Table 4: Approvals Status

Granting Authority	License, Permit or Approval	Status
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Manchester Township Planning Board	Preliminary and Final Site Plan Approval	Subject of this application
Ocean County Planning Board	Preliminary and Final Site Plan Approval	Concurrent Application
Ocean County Soil Conservation District	Soil Erosion and Sediment Control Plan	Concurrent Application
NJDEP Land Use	LOI – Line Verification FHA Verification	Submitted, waiting approval Pending Submission

7.0 **ALTERNATIVES ANALYSIS**

The following alternatives were evaluated in demonstrating the suitability of the proposed location and design of the proposed residential project.

- **No Development Alternative:** The building addition project will promote the Land Use Policy Objectives of the Suburban Planning Area and the intent of the Single-Family Residential (R-40) Zoning District by providing a full range of housing choices through redevelopment and new construction. The no-development alternative will not serve to ensure efficient and beneficial utilization of scarce land resources throughout the Planning Area as the population increases.
- **Alternate Location:** The site is an appropriate location for the proposed development based on the stated goals of the State Plan, and the permitted uses and density specified in the Manchester Township Zoning Ordinance. The project is compatible with the density and site layouts of the surrounding residential development. The proposed development project avoids significant encroachment into the wetlands, transition areas, regulated waters, flood hazard area and/or riparian buffer environmental areas. An alternate location may result in larger disturbance to environmentally regulated areas, or more expansive disturbance to other forested areas that exceeds the proposed current proposed development.
- **Reduction of Scope:** The proposed size and scope of the development project is appropriate to utilize the established project area and is consistent with the area permitted to be developed pursuant to prior Township and state approvals. The size and scope of the project primarily utilizes previously disturbed areas, and as proposed limits disturbance to environmentally sensitive areas. Further reduction of the size or scope of the development is not practical or feasible for the project.

8.0 **ADVERSE ENVIRONMENTAL IMPACTS THAT CANNOT BE AVOIDED**

A number of undesirable environmental impacts are unavoidable during and after construction.

- A permanent displacement of the surficial geologic deposits in the form of underlying soils will occur as a result of additional grading, foundation and basin construction and other earth disturbances;
- Stormwater management BMP control measures will be employed to treat water quality to the maximum extent practicable, however control measures can rarely achieve 100% pre-development water quality levels;

- Traffic conditions within the area of the project will temporarily increase during the construction phase of the project, and will minimally increase as a result of the proposed development;
- Locally, temporary increases in noise levels will be encountered as a result of site clearing, heavy machinery, construction, and increased traffic conditions during construction. Post-development noise levels will be consistent with standard development and will be consistent with existing and surrounding development and the adjacent roadways;
- During construction, clearing and grading may give rise to wind-blown dust, soil erosion, sedimentation, and a reduction of air and water quality within the site. These adverse environmental impacts shall be controlled to the maximum extent possible through proper implementation of BMP environmental performance controls;
- The proposed development will minimally increase demand for water allocation from the purveyor which utilizes wells from the coastal plain aquifer system;
- Solid waste (garbage, refuse) will be carted away by private contractor however waste will be generated that will result in increased landfill storage.

9.0 SUMMARY & DISCUSSION

The proposed residential subdivision project has been designed in compliance with local and State regulations so as to have minimal impact on the environment. The majority of the impacts will be during construction and are temporary. These impacts will end once the construction is complete. The residential project is compatible with the development patterns of the area and the site is suitable for such development. The project will not result in an increase in air pollution, contamination, noise or the degradation of ground or surface water quality.

Measures taken to minimize and mitigate adverse environmental impacts stemming from the project will be performed through the proper implementation of environmental performance controls. The project will be constructed in accordance with all applicable soil erosion and sediment control BMPs contained within the *Standards for Soil Erosion and Sediment Control in New Jersey*.

The proposed project avoids critical environmental areas, most notably freshwater wetlands and transition areas, and impacts to critical or rare wildlife and plant habitats. Unique vegetation communities are not present upon the portion of the site to be developed and will not be affected by the project. There is no documentation of threatened or endangered wildlife or plant species habitat occurrences associated with the development footprint and the project will not have impacts to said resources. Any impacts to the on-site flood hazard areas or riparian zones, will be subject to NJDEP permitting requirements.

As determined within the context of this report, the proposed project will have a minimal temporary adverse impact on the natural environment due to the proper planning and implementation of the proposed project. Careful planning, construction, and management of the project shall limit the possibility of future adverse environmental impacts.

10.0 REFERENCES

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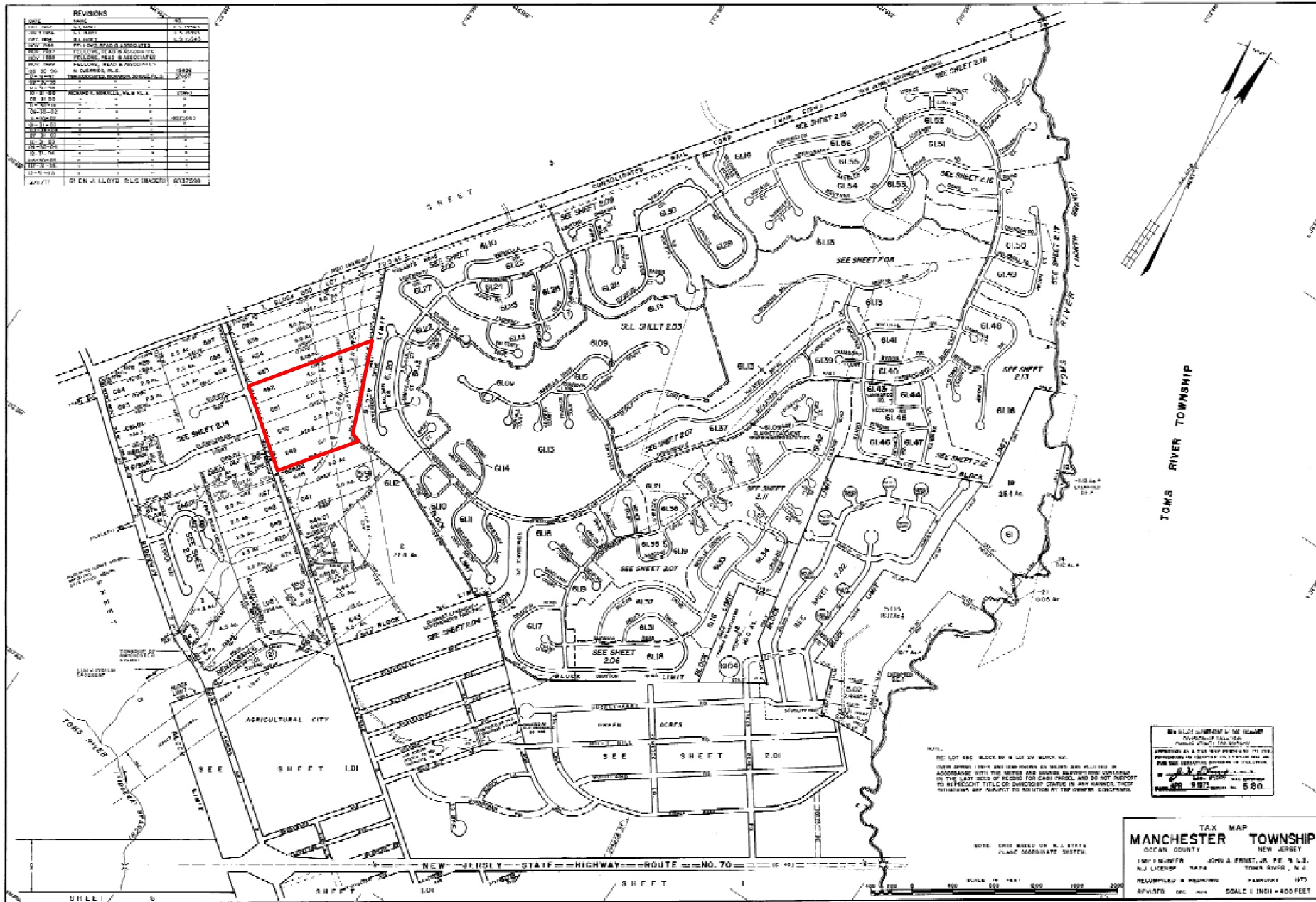
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Figures



Manchester Township Tax Map

**Block 59 * Lot 649, 650, 651, 652
Manchester Township, Ocean County, NJ**



Sheet No. 1 of 1

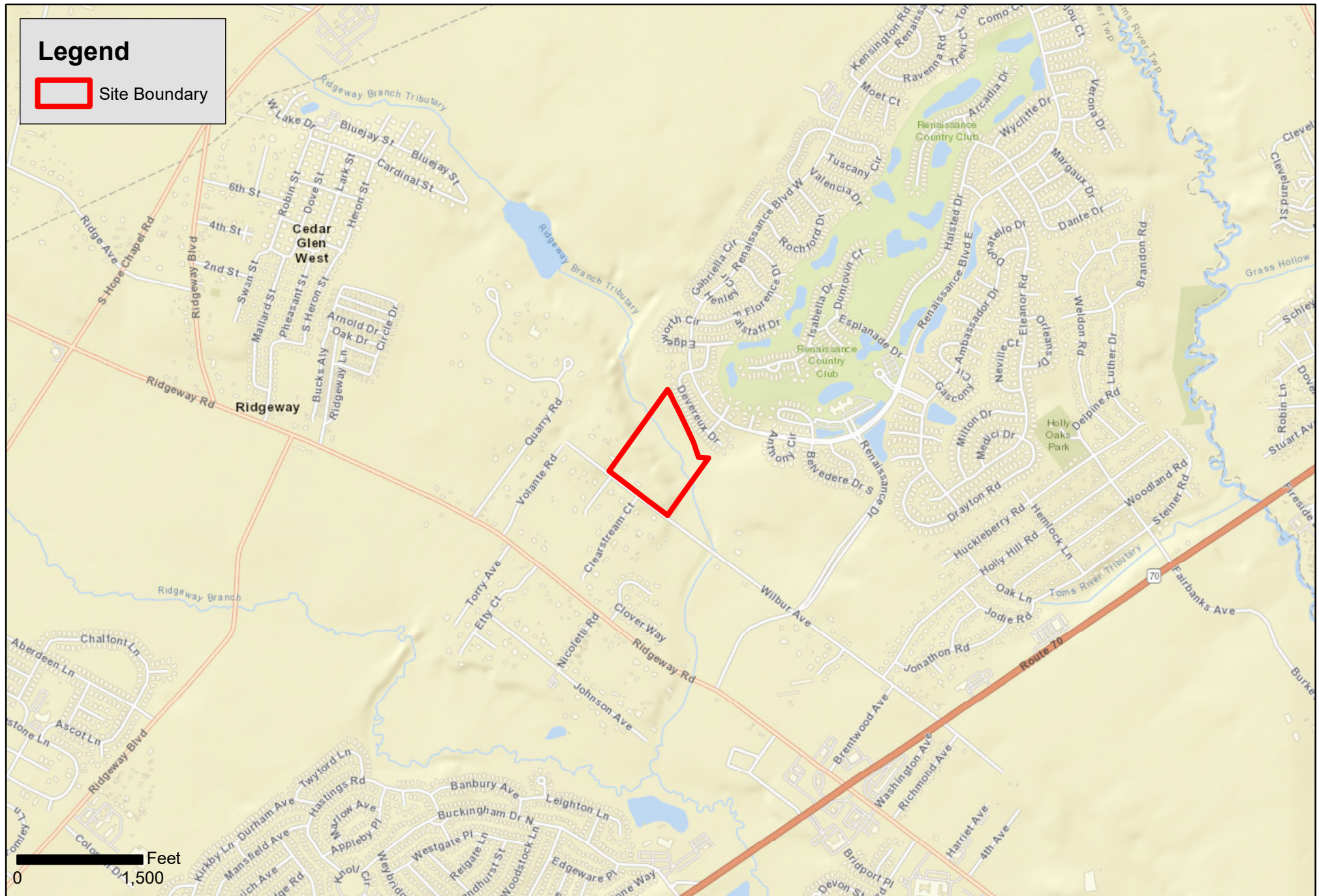
Job No.: D2438.001

Date: 7/11/2022

Drawn By: PH

Legend

 Site Boundary



New Jersey Road Map

Block 59 * Lot 649, 650, 651, 652
Manchester Township, Ocean County, NJ



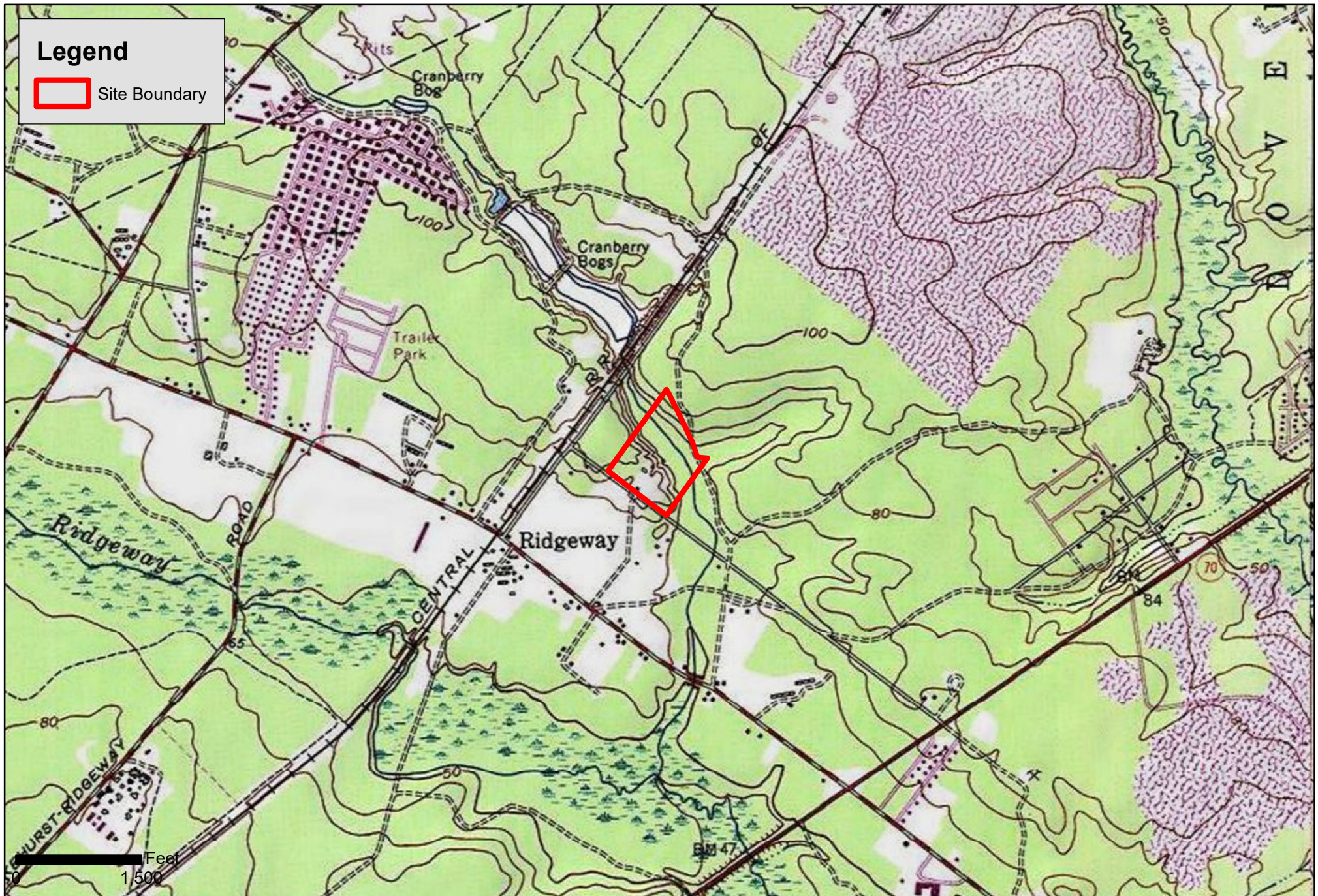
Sheet No. 1 of 1

Job No.: D2438.001

Scale: 1 in = 1,500 ft

Date: 7/11/2022

Drawn By: PH



SE Lakehurst NJ USGS Quadrangle Map

Block 59 * Lot 649, 650, 651, 652
Manchester Township, Ocean County, NJ



Sheet No. 1 of 1

Job No.: D2438.001

Scale: 1 in = 1,500 ft

Date: 7/11/2022

Drawn By: PH



NJ State Planning Areas Map

Block 59 * Lots 649, 650, 651, 652
Manchester Township, Ocean County, NJ



Figure 4

Job No.: D2438.001

Scale: 1 in = 250 ft

Date: 12/7/2022

Drawn By: PH

Legend

 Site Boundary



Aerial Map

Block 59 * Lots 649, 650, 651, 652
Manchester Township, Ocean County, NJ



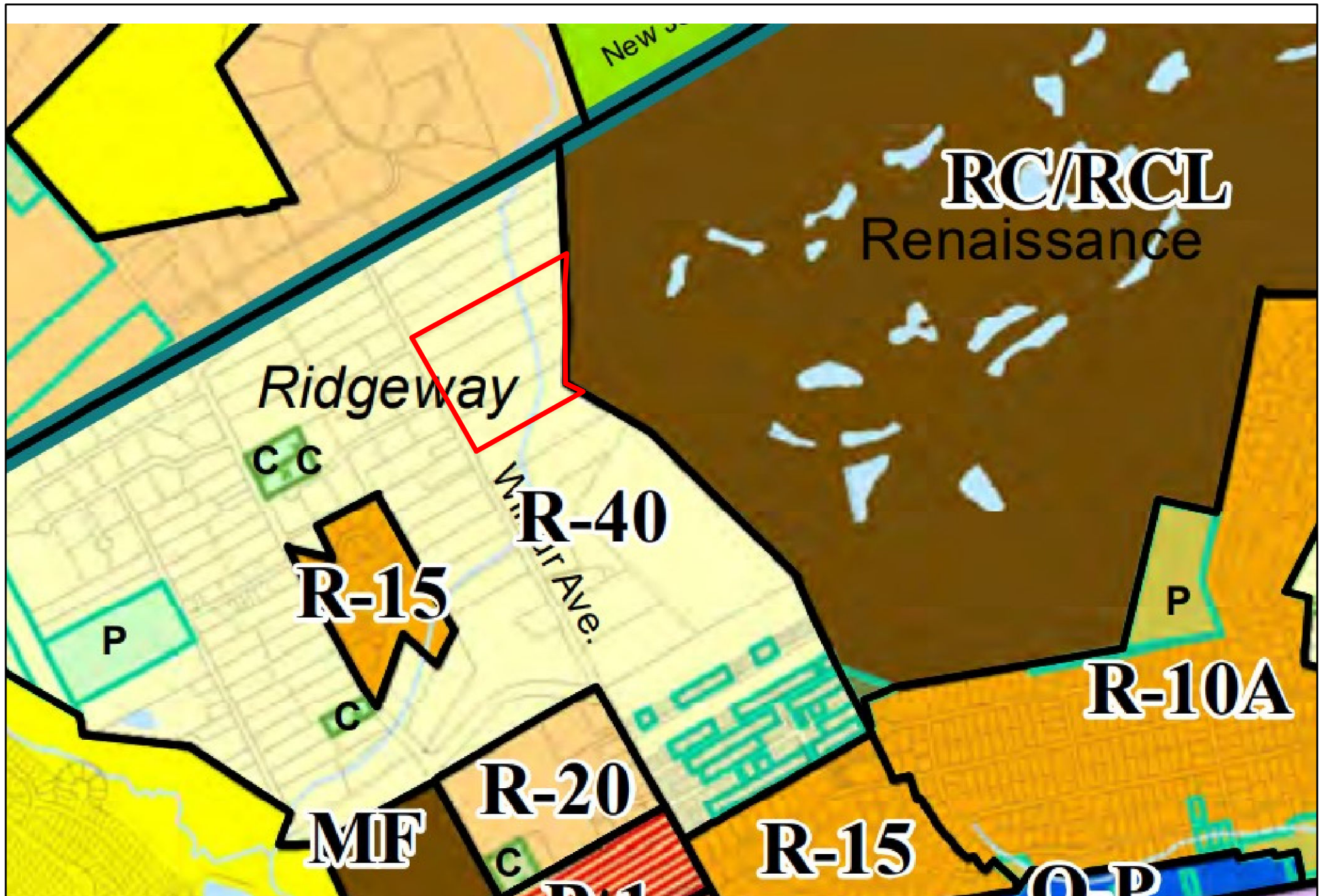
Figure 5

Job No.: D2438.001

Scale: 1 in = 300 ft

Date: 12/7/2022

Drawn By: PH



Manchester Township Zoning Map

Block 59 * Lots 649, 650, 651, 652
Manchester Township, Ocean County, NJ



Figure 6

Job No.: D2438.001

Date: 12/7/2022

Drawn By: PH

Legend

 Site Boundary

Cohansey Formation

0 250 Feet



NJ Bedrock Geology Map

Block 59 * Lots 649, 650, 651, 652
Manchester Township, Ocean County, NJ



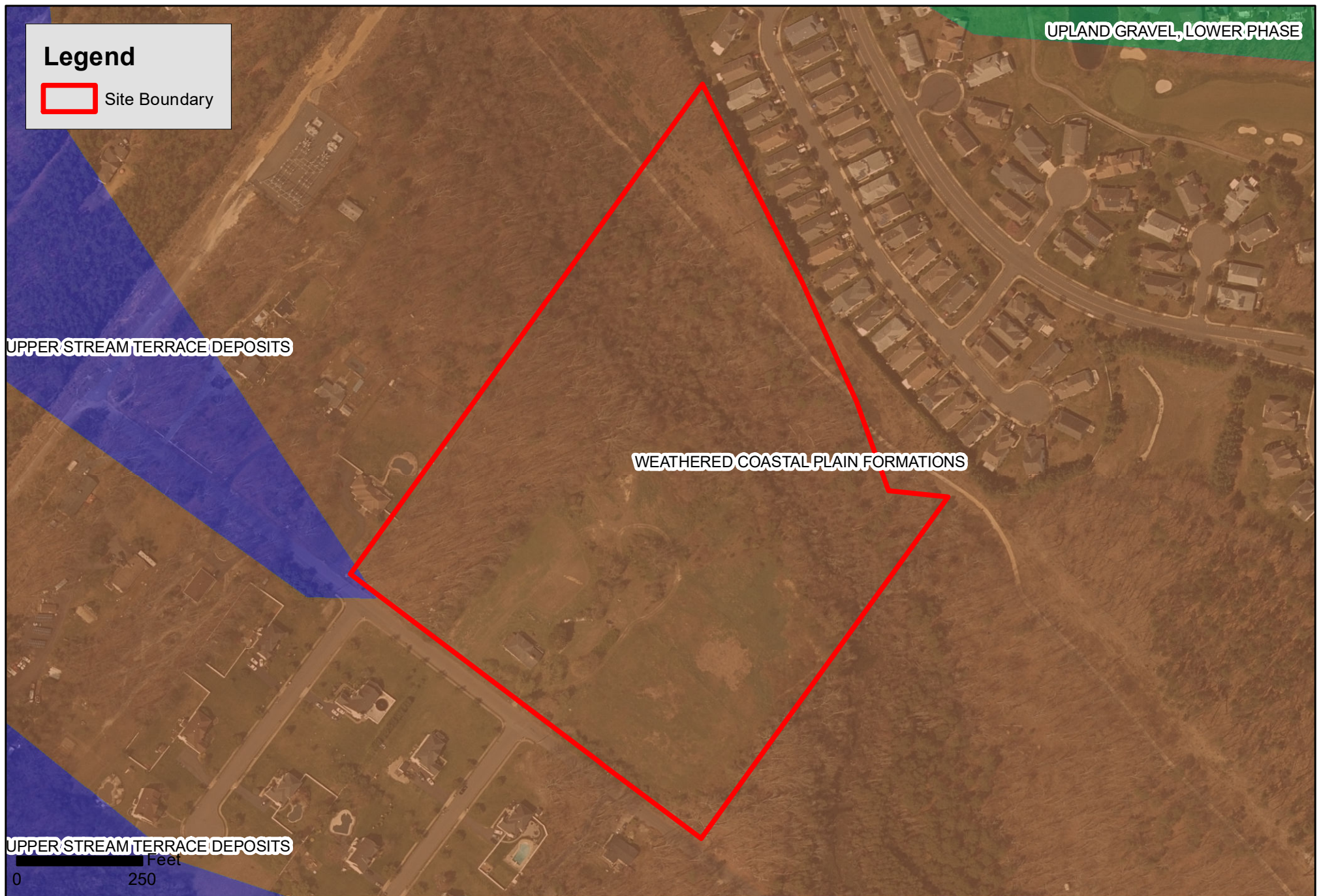
Figure 7

Job No.: D2438.001

Scale: 1 in = 250 ft

Date: 12/7/2022

Drawn By: PH



NJ Surface Geology Map

Block 59 * Lots 649, 650, 651, 652
Manchester Township, Ocean County, NJ



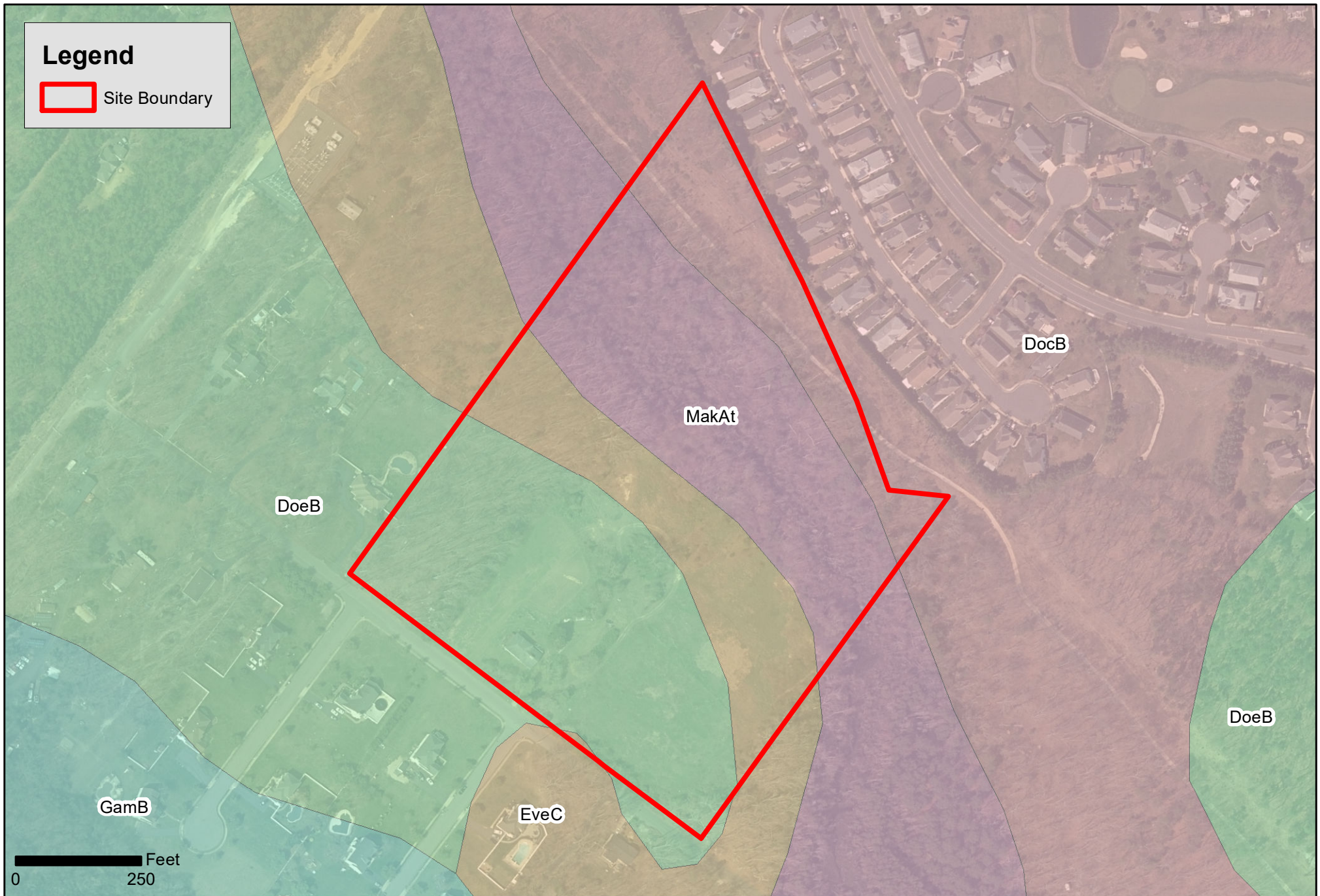
Figure 8

Job No.: D2438.001

Scale: 1 in = 250 ft

Date: 12/7/2022

Drawn By: PH



Ocean County Soil Survey Map

Block 59 * Lots 649, 650, 651, 652
Manchester Township, Ocean County, NJ



Figure 9

Job No.: D2438.001

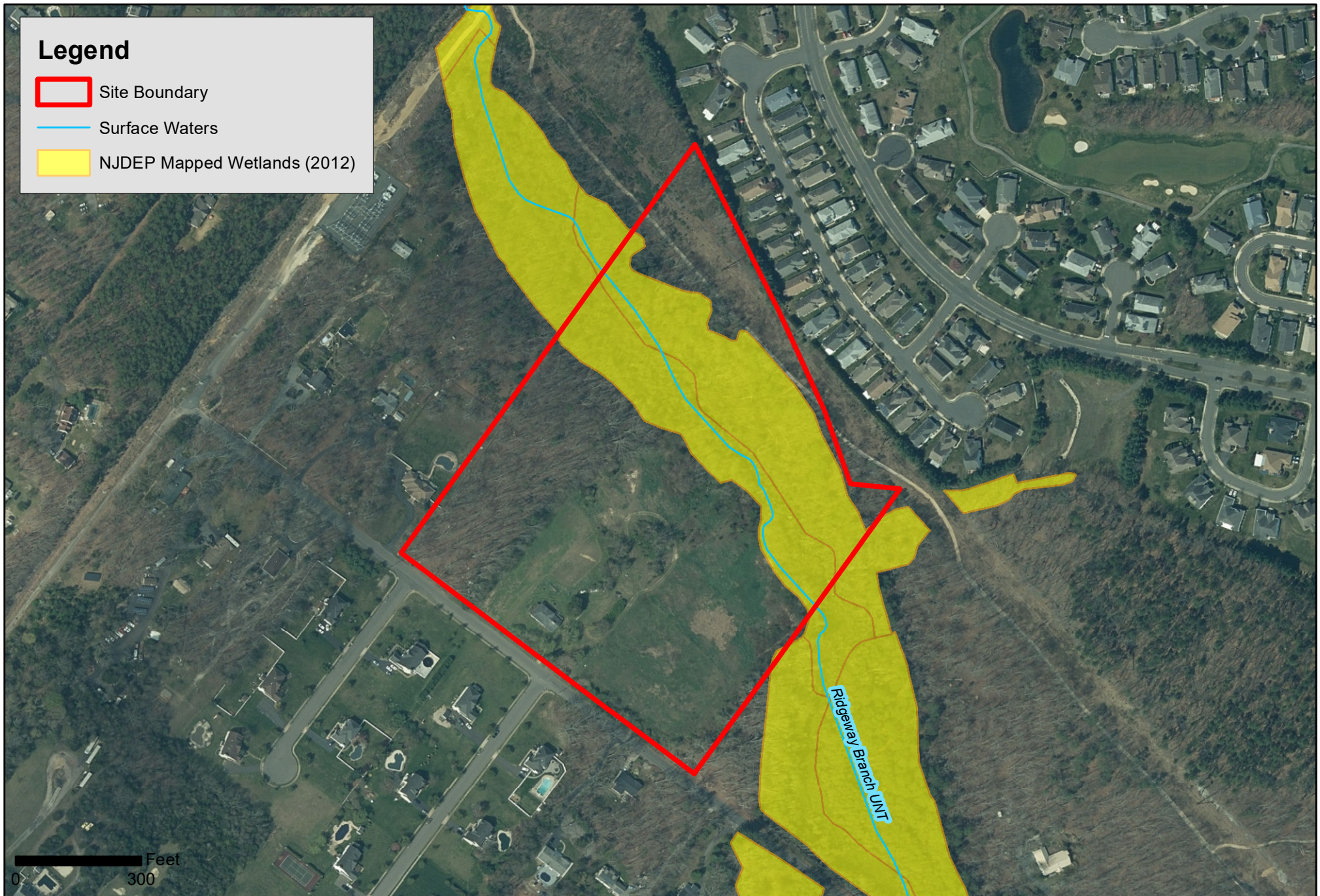
Scale: 1 in = 250 ft

Date: 12/7/2022

Drawn By: PH

Legend

-  Site Boundary
-  Surface Waters
-  NJDEP Mapped Wetlands (2012)



NJDEP Freshwater Wetlands Map

Block 59 * Lots 649, 650, 651, 652
Manchester Township, Ocean County, NJ



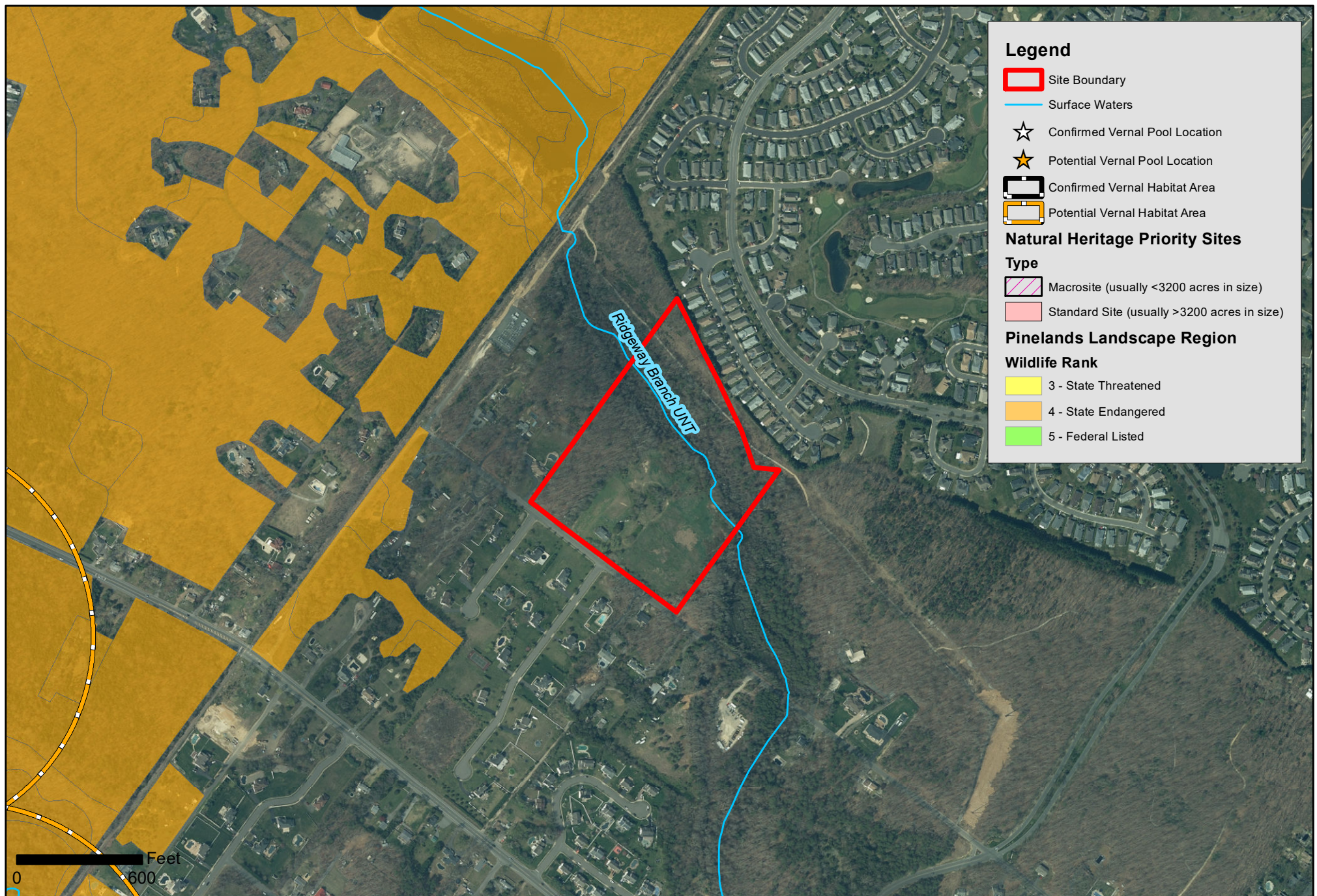
Figure 10

Job No.: D2438.001

Scale: 1 in = 300 ft

Date: 12/7/2022

Drawn By: PH



NJDEP Landscape Project and NHP Map

Block 59 * Lots 649, 650, 651, 652
Manchester Township, Ocean County, NJ



Figure 11

Job No.: D2438.001

Scale: 1 in = 600 ft

Date: 12/7/2022

Drawn By: PH



FEMA and Riparian Zone Map

Block 59 * Lot 649, 650, 651, 652
Manchester Township, Ocean County, NJ



Figure 12

Job No.: D2438.001

Scale: 1 in = 250 ft

Date: 12/7/2022

Drawn By: PH



Vegetation Communities Map

Block 59 * Lots 649, 650, 651, 652
Manchester Township, Ocean County, NJ



Figure 13

Job No.: D2438.001

Scale: 1 in = 250 ft

Date: 12/7/2022

Drawn By: PH

Legend

-  Site Boundary
-  Historic Properties in New Jersey
-  Archaeological Resource Presence Grid for New Jersey
-  Historic Districts in New Jersey

New Jersey Southern Railroad Historic District

0 500 Feet



NJDEP Historic Properties Map

Block 59 * Lots 649, 650, 651, 652
Manchester Township, Ocean County, NJ



Figure 14

Job No.: D2438.001

Scale: 1 in = 500 ft

Date: 12/7/2022

Drawn By: PH

Appendix A

Site Photographs



Photo 1: View of existing site frontage along Wilbur Avenue.



Photo 2: View of existing structure on the site.



Photo 3: View of existing conditions within the southern portions of the site.



Photo 4: View of the access road and utility line within the northern portion of the site.



Photo 5: View of forested upland vegetation encountered on-site.



Photo 6: View of the access road and upland conditions within the central portion of the site.



Photo 7: Representative view of the existing conditions within the wetlands portion of the site.



Photo 8: View of typical soils encountered within the wetlands portion of the site.

Appendix B

Natural Heritage Program
Correspondence



State of New Jersey

MAIL CODE 501-04

DEPARTMENT OF ENVIRONMENTAL PROTECTION

STATE PARKS, FORESTS & HISTORIC SITES

OFFICE OF NATURAL LANDS MANAGEMENT

501 East State Street

P.O. Box 420, Mail Code 501-04

Trenton, NJ 08625-0420

Tel. (609) 984-1339 • Fax (609) 984-0427

PHILIP D. MURPHY

Governor

SHEILA Y. OLIVER

Lt. Governor

SHAWN M. LATOURETTE

Commissioner

January 1, 2023

Frank Tutelian
DuBois & Associates
190 N Main Street
Manahawkin, NJ 08050

Re: Wilbur Avenue
Block(s) - 59, Lot(s) - 649, 650, 651, 652
Manchester Township, Ocean County

Dear Frank Tutelian:

Thank you for your data request regarding rare species information for the above referenced project site.

Searches of the Natural Heritage Database and the Landscape Project (Version 3.3) are based on a representation of the boundaries of your project site in our Geographic Information System (GIS). We make every effort to accurately transfer your project bounds from the map(s) submitted with the Natural Heritage Data Request Form into our GIS. We do not typically verify that your project bounds are accurate, or check them against other sources.

We have checked the Landscape Project habitat mapping and the Biotics Database for occurrences of any rare wildlife species or wildlife habitat on the referenced site. The Natural Heritage Database was searched for occurrences of rare plant species or ecological communities that may be on the project site. Please refer to Table 1 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented on site. A detailed report is provided for each category coded as 'Yes' in Table 1.

We have also checked the Landscape Project habitat mapping and Biotics Database for occurrences of rare wildlife species or wildlife habitat in the immediate vicinity (within ¼ mile) of the referenced site. Additionally, the Natural Heritage Database was checked for occurrences of rare plant species or ecological communities within ¼ mile of the site. Please refer to Table 2 (attached) to determine if any rare plant species, ecological communities, or rare wildlife species or wildlife habitat are documented within the immediate vicinity of the site. Detailed reports are provided for all categories coded as 'Yes' in Table 2. These reports may include species that have also been documented on the project site.

We have also checked the Landscape Project habitat mapping and Biotics Database for all occurrences of rare wildlife species or wildlife habitat within one mile of the referenced site. Please refer to Table 3 (attached) to determine if any rare wildlife species or wildlife habitat is documented within one mile of the project site. Detailed reports are provided for each category coded as 'Yes' in Table 3. These reports may include species that have also been documented on the project site.

For requests submitted in order to make a riparian zone width determination as part of a Flood Hazard Area Control Act (FHACA) rule application, we report records for all rare plant species and ecological communities tracked by the Natural Heritage Program that may be on, or in the immediate vicinity of, your project site. A subset of these plant species is also covered by the FHACA rules when the records are located within one mile of the project site. One-mile searches for FHACA plant species will only report precisely located occurrences for those wetland plant species identified under the FHACA regulations as being critically dependent on the watercourse. Please refer to Table 3 (attached) to determine if any precisely located rare wetland plant species covered by the FHACA rules have been documented. Detailed reports are

NHP File No. 22-4007413-26564

provided for each category coded as 'Yes' in Table 3. These reports may include species that have also been documented on, or in the immediate vicinity of, the project site.

The Natural Heritage Program reviews its data periodically to identify priority sites for natural diversity in the State. Included as priority sites are some of the State's best habitats for rare and endangered species and ecological communities. Please refer to Tables 1, 2 and 3 (attached) to determine if any priority sites are located on, in the immediate vicinity, or within one mile of the project site.

A list of rare plant species and ecological communities that have been documented from the county (or counties), referenced above, can be downloaded from <https://nj.gov/dep/parksandforests/natural/heritage/database.html>. If suitable habitat is present at the project site, the species in that list have potential to be present.

Status and rank codes used in the tables and lists are defined in EXPLANATION OF CODES USED IN NATURAL HERITAGE REPORTS, which can be downloaded from https://nj.gov/dep/parksandforests/natural/docs/nhpcodes_2010.pdf.

Beginning May 9, 2017, the Natural Heritage Program reports for wildlife species will utilize data from Landscape Project Version 3.3. If you have questions concerning the wildlife records or wildlife species mentioned in this response, we recommend that you visit the interactive web application at the following URL, <https://njdep.maps.arcgis.com/apps/webappviewer/index.html?id=0e6a44098c524ed99bf739953cb4d4c7>, or contact the Division of Fish and Wildlife, Endangered and Nongame Species Program at (609) 292-9400.

For additional information regarding any Federally listed plant or animal species, please contact the U.S. Fish & Wildlife Service, New Jersey Field Office at <http://www.fws.gov/northeast/njfieldoffice/endangered/consultation.html>.

Information supplied by the Natural Heritage Program summarizes existing data known to the program at the time of the request regarding the biological elements (species and/or ecological communities) or their locations. 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.

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,



Robert J. Cartica
Administrator

c: NHP File No. 22-4007413-26564

Table 1: On Site Data Request Search Results (6 Possible Reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Possibly on Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites On Site	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat on the Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat on the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	Yes	1 page(s) included

**Rare Wildlife Species or Wildlife Habitat on the
Project Site Based on Search of
Landscape Project 3.3 Species Based Patches**

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<i>Aves</i>	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N

Other Animal Species On the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Grank	Srank
<i>Invertebrate Animals</i>					
Catocala herodias gerhardi	Herodias or Pine Barrens Underwing			G3T3	S3
Cicindela patruela consentanea	New Jersey Pine Barrens Tiger Beetle			G3T1T3	S2S3
Grammia placentia	Placentia Tiger Moth			G3G4	S1S3
Lithophane lemmeri	Lemmer's Noctuid Moth			G3G4	S2
Metarranthis pilosaria	Coastal Bog Metarranthis			G3G4	S3S4
Ptichodis bistrigata	Southern Ptichodis			G3	S1S3
Zanclognatha dentata	A Noctuid Moth			G3G4	S3
Total number of records:	7				

Table 2: Vicinity Data Request Search Results (6 possible reports)

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Immediate Vicinity of the Project Site Based on Search of Natural Heritage Database: Rare Plant Species and Ecological Communities Currently Recorded in the New Jersey Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites within the Immediate Vicinity	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat In the Immediate Vicinity of Project Site Based on Search of Landscape Project 3.3	No	0 pages included
5. Rare Wildlife Species or Wildlife Habitat In the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	Yes	1 page(s) included

Rare Wildlife Species or Wildlife Habitat Within the Immediate Vicinity of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches

Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<i>Aves</i>								
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N
<i>Insecta</i>								
	Hessel's Hairstreak	Callophrys hesseli	Casual Flyby	2	NA	Special Concern	G3G4	S3
<i>Reptilia</i>								
	Northern Pine Snake	Pituophis melanoleucus melanoleucus	Occupied Habitat	3	NA	State Threatened	G4T4	S2
	Timber Rattlesnake	Crotalus horridus horridus	Occupied Habitat	4	NA	State Endangered	G4T4	S1

Other Animal Species In the Immediate Vicinity of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Grank	Srank
<i>Invertebrate Animals</i>					
Catocala herodias gerhardi	Herodias or Pine Barrens Underwing			G3T3	S3
Cicindela patruela consentanea	New Jersey Pine Barrens Tiger Beetle			G3T1T3	S2S3
Grammia placentia	Placentia Tiger Moth			G3G4	S1S3
Lithophane lemmeri	Lemmer's Noctuid Moth			G3G4	S2
Metarranthis pilosaria	Coastal Bog Metarranthis			G3G4	S3S4
Ptichodis bistrigata	Southern Ptichodis			G3	S1S3
Zanclognatha dentata	A Noctuid Moth			G3G4	S3
Total number of records:	7				

***Table 3: Within 1 Mile for Riparian Zone Width Determination
(6 possible reports)***

<u>Report Name</u>	<u>Included</u>	<u>Number of Pages</u>
1. Rare Plant Species Occurrences for Riparian Zone Width Determination (Flood Hazard Area Control Act Rule Application) - Within One Mile of the Project Site Based on Search of Natural Heritage Database	No	0 pages included
2. Natural Heritage Priority Sites for Riparian Zone Width Determination - Within One Mile of the Project Site	No	0 pages included
3. Rare Wildlife Species or Wildlife Habitat for Riparian Zone Width Determination - Within One Mile of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches	Yes	1 page(s) included
4. Vernal Pool Habitat for Riparian Zone Width Determination - Within One Mile of the Project Site Based on Search of Landscape Project 3.3	Yes	1 page(s) included
5. Rare Wildlife Species or Wildlife Habitat for Riparian Zone Width Determination - Within One Mile of the Project Site Based on Search of Landscape Project 3.3 Stream Habitat File	No	0 pages included
6. Other Animal Species for Riparian Zone Width Determination - Within One Mile of the Project Site Based on Additional Species Tracked by Endangered and Nongame Species Program	Yes	1 page(s) included

Rare Wildlife Species or Wildlife Habitat for Riparian Zone Width Determination Within One Mile of the Project Site Based on Search of Landscape Project 3.3 Species Based Patches
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Class	Common Name	Scientific Name	Feature Type	Rank	Federal Protection Status	State Protection Status	Grank	Srank
<i>Aves</i>								
	Barred Owl	Strix varia	Breeding Sighting	3	NA	State Threatened	G5	S2B,S2N
	Cooper's Hawk	Accipiter cooperii	Breeding Sighting	2	NA	Special Concern	G5	S3B,S4N
	Great Blue Heron	Ardea herodias	Foraging	2	NA	Special Concern	G5	S3B,S4N
	Snowy Egret	Egretta thula	Foraging	2	NA	Special Concern	G5	S3B,S4N
<i>Insecta</i>								
	Hessel's Hairstreak	Callophrys hesseli	Casual Flyby	2	NA	Special Concern	G3G4	S3
<i>Reptilia</i>								
	Northern Pine Snake	Pituophis melanoleucus melanoleucus	Occupied Habitat	3	NA	State Threatened	G4T4	S2
	Timber Rattlesnake	Crotalus horridus horridus	Occupied Habitat	4	NA	State Endangered	G4T4	S1

**Vernal Pool Habitat for Riparian Zone Width Determination
Within One Mile of the Project Site
Based on Search of Landscape Project 3.3**

Vernal Pool Habitat Type	Vernal Pool Habitat ID
Vernal habitat area	2810
Potential vernal habitat area	1312
Total number of records:	2

Other Animal Species for Riparian Zone Width Determination
Within One Mile of the Project Site
Based on Additional Species Tracked by
Endangered and Nongame Species Program

Scientific Name	Common Name	Federal Protection Status	State Protection Status	Grank	Srank
<i>Invertebrate Animals</i>					
Catocala herodias gerhardi	Herodias or Pine Barrens Underwing			G3T3	S3
Cicindela patruela consentanea	New Jersey Pine Barrens Tiger Beetle			G3T1T3	S2S3
Grammia placentia	Placentia Tiger Moth			G3G4	S1S3
Lithophane lemmeri	Lemmer's Noctuid Moth			G3G4	S2
Metarranthis pilosaria	Coastal Bog Metarranthis			G3G4	S3S4
Ptichodis bistrigata	Southern Ptichodis			G3	S1S3
Zanclognatha dentata	A Noctuid Moth			G3G4	S3
Total number of records:	7				

Appendix C

Statements of Qualifications



Education:

B.S. Environmental Science
Concentration: Atmospheric
Science
University of Delaware – 2002

Certifications:

Professional Wetland Scientist-
Society of Wetland Scientists

Continuing Education:

Rutgers University
Methodology for Delineating
Wetland, Hydric Soils &
Wetland Vegetation
Identification

The Role of the Environmental
Consultant in Litigation

NJDEP Coastal Project Review

NJDEP Flood Hazard Area
Control Act Rules

Environmental Audits & Site
Assessments

Environmental Data Resources
Vapor Intrusion Risk & Due
Diligence Challenges in the Real
World

MAPPs Training Workshop
Hydric Soils

Professional Affiliations:

The Society of Wetland
Scientists
- Member

Environmental Assessment
Association
-Certified Environmental
Inspector
2007 – present

Career Positions:

The Lomax Consulting Group,
LLC
Cape May Court House, NJ-
Environmental Analyst 2004-
2007

Fields of Competence:

Kristin Wildman has over 18 years of experience in the fields of land use regulatory compliance, wetland science, soil science, biology and ecology. She has extensive experience in managing a variety of projects from the initial field study stage through various regulatory application and approval processes, including coordination with regulatory personnel. Mrs. Wildman has the knowledge and experience to identify applicable regulations, develop appropriate permitting strategies, prepare required permit applications and oversee NJDEP, NJPC and USACE application review. Mrs. Wildman has a respected professional relationship with various municipal and county agencies, NJDEP, NJPC, USFWS and USACE personnel. She conducts various environmental site assessments, development feasibility studies, dune delineations, wetland delineations, rare species habitat evaluations and population surveys.

Professional Experience:

Mrs. Wildman is a senior environmental consultant and project manager with the firm of DuBois and Associates. She manages all aspects of a project and coordinates specifically with a variety of clients to organize projects and proposals. Mrs. Wildman manages each individual project to ensure all appropriate and applicable regulations and tasks are implemented to facilitate successful completion/approval of the project.

Mrs. Wildman coordinates directly with professional engineers, attorneys, clients, and regulatory agencies to evaluate compliance and design of projects pursuant to various environmental regulations, inclusive of the Coastal Zone Management Rules, Freshwater Wetlands Protection Act Rules, Flood Hazard Area Control Act Rules, Pinelands Comprehensive Management Plan, Section 10 of the River and Harbors Act and Section 404 of the Clean Water Act. Mrs. Wildman works diligently on behalf of our clients, to obtain regulatory approvals and permits related to activities and projects involving the CAFRA Area, Waterfront Area, wetlands and waterways and their regulated buffer zones and other environmentally sensitive areas. Based on the permit analyses and project designs, she prepares compliance statements and provides all logistical and technical support to obtain environmental permits pursuant to the NJDEP and USACE regulations. She also prepares and oversees applications for NJDEP Bureau of Tidelands Management conveyance instruments. Mrs. Wildman continuously stays up to date with changing environmental regulations.

Mrs. Wildman is responsible for performing wetland delineations under the jurisdiction of multiple agencies, which are conducted pursuant to the interagency evaluation procedures. This includes expertise in analyzing the vegetation and technical indicators of hydrology and soils. She authors Freshwater Wetland Delineation Reports and prepares Freshwater Wetland Letter of Interpretation applications for submittal to the NJDEP for verification of the delineated wetland limits. Mrs. Wildman is also responsible for conducting subaquatic vegetation inventories and shellfish habitat evaluations and surveys.

Mrs. Wildman is responsible for conducting development feasibilities, wetland delineations, natural resource inventories, threatened/endangered species habitat assessments and directed surveys, and monitoring activities. Mrs. Wildman has experience with the survey and sampling protocols required under the jurisdiction of the USFWS, NJDEP, and Pinelands Commission for threatened and endangered species surveys. Mrs. Wildman also conducts vegetation inventories within a variety



Environmental Consultant
2007-2010
Senior Consultant / Director of
Technical Services 2010-2016

DuBois and Associates, LLC
Manahawkin, NJ –
Sr. Environmental Scientist /
Project Manager
2017 – Present

of biotic communities throughout New Jersey. These have included species specific surveys for numerous target plants considered rare State and/or Federally listed.

Mrs. Wildman has prepared lectures and presented to numerous local and state agencies. These presentations include *Amphibian/Reptiles of the New Jersey Coastal Plains* to local schools, *New Jersey Department of Environmental Protection Division of Land Use Regulation Regulatory Reform* to the New Jersey Department of State Red Tape Review Commission and *Environmental Constraints at the Cape May and Millville Airports* to the Delaware River & Bay Authority.

Mrs. Wildman has also conducted numerous volunteer survey efforts in coordination with the USFWS. These survey efforts include federally directed amphibian / reptile surveys and swamp pink population surveys.

Representative Projects of Relevance:

Atlantic Capes, Lund's Fisheries and Cold Spring Fish & Supply Co. Ports Rehabilitation
Ecological and environmental work was completed to assist commercial fisheries clients in conducting environmental constraints evaluations and permit analyses for improvements to their commercial facilities. Mrs. Wildman works directly with the engineers in assisting with design of the project to ensure compliance of proposed improvements pursuant to State waterfront development, CAFRA, freshwater wetlands, and flood hazard regulations. Mrs. Wildman also coordinates with the NJDEP and USACOE with regard to permit requirements and to ensure no adverse impacts to documented state and federal threatened and endangered species habitat. Mrs. Wildman prepared all necessary permit applications and ensured continued cooperative coordination with the regulatory agencies to ensure receipt of the applicable permit approvals for the port projects.

Nichomus Run Solar and Sheep Farm

Provided environmental and ecological support to a major development firm to assist in the state and local approvals of a large scale solar energy project. Mrs. Wildman prepared an Environmental Impact Report upon land proposed for the construction of a 150 Megawatts photovoltaic (PV) facility. She supervised site investigations of the entire site to observe and inventory hydrology, freshwater wetlands, soils, vegetation communities, wildlife, ecotone areas, and existing and surrounding land uses. Mrs. Wildman was also responsible for the delineation of on-site wetlands, testimony at the municipal zoning board use variance hearing, preparation of an application report and environmental report pursuant to N.J.A.C. 7:13 for a Flood Hazard Verification and N.J.A.C. 7:7A for a Freshwater Wetland Letter of Interpretation Line Verification application to New Jersey Department of Environmental Protection.

Logan Generating Station Dredging

Conducted sediment sampling and analysis of subaqueous material, and submitted permit applications and received approval from the NJDEP, USACE and DNREC to authorize dredging of berthing areas at the Logan Generating Plant's coal unloading pier in the Delaware River in Logan Township, Gloucester County. The activities required a NJDEP Waterfront Development Individual Permit, USACE Nationwide Permit and DNREC Subaqueous Lands Permit. This project included multi-jurisdictional coordination and project management, that also involved collaboration with USACE regarding the Federal dredging project of the Delaware River channel.