STONEFIELD

ENVIRONMENTAL IMPACT STATEMENT

PROPOSED 7-STORY MIXED-USE BUILDING
& 8-STORY RESIDENTIAL BUILDING
BLOCK 48, LOTS 2, 2.01, & 2.02
101 SOUTH KING STREET
CITY OF GLOUCESTER CITY
CAMDEN COUNTY, NEW JERSEY

PREPARED FOR:

MERIDIA GLOUCESTER CITY 101, URBAN RENEWAL, LLC

PREPARED BY:

STONEFIELD ENGINEERING & DESIGN, LLC
92 PARK AVENUE
RUTHERFORD, NEW JERSEY

REPORT DATE
APRIL 25, 2023

ARTHUR KUYAN, PE, CME
NEW JERSEY PROFESSIONAL ENGINEER LICENSE #55741

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1.0 SITE DESCRIPTION

Meridia Gloucester City 101, Urban Renewal, LLC is proposing the construction of a 7-story mixed-use building & 8-story residential building. The subject property is designated Block 48, Lots 2, 2.01 & 2.02 commonly known as 101 South King Street. The subject property is located within the Gloucester City Freedom Pier Redevelopment Plan and is bounded by a commercial area and the Gloucester City Marine Terminal to the north, South King Street to the east, the Gloucester Towne nursing home to the south, and the Delaware River to the west. The total project area is 429,936 SF (9.87 acres) and the total limit of disturbance is 213,902 SF (4.91 acres). Project Figures can be found in APPENDIX A of this Report.

The site currently consists of a four-story commercial building to remain, a large asphalt parking lot, a riverfront walkway, and concrete foundation remnants. Much of the existing parking lot, concrete foundations, and existing unused utilities will be demolished. The proposed development includes the construction of a 247-unit mixed-use building and a 117-unit residential building inclusive of parking facilities, a new streetscape, landscaping, utilities, site lighting, and stormwater management facilities.

This Environmental Impact Statement has been prepared per the City of Gloucester City requirements to investigate the property's existing conditions, evaluate the potential impacts of the proposed redevelopment, and discuss the measures to mitigate environmental impacts, if any.

2.0 RELATIONSHIP TO LOCAL AND REGIONAL GUIDANCE DOCUMENTS

2.1 CITY OF GLOUCESTER CITY MASTER PLAN

The proposed development supports the municipality's Master Plan by creating a 'showcase' mixed-use development that provides waterfront access to the pier and does not conflict with the adjacent industrial uses.

2.3 CAMDEN COUNTY MASTER PLAN

The proposed development aligns with the County Master Plan for active waterfronts through harnessing the economic and cultural potential of the County's signature destination parks, and open spaces.

2.4 REGIONAL AND STATE PLANNING GUIDES

The site is located within the Metropolitan Planning Area (PA1) of the New Jersey State Development and Redevelopment Plan (NJSDRP). The proposed development aligns with the State Planning Area's intent by helping revitalize this area of the city, providing growth in a compact form factor, and redesigning the site while protecting the character of the existing community.

3.0 INVENTORY OF EXISTING ENVIRONMENTAL CONDITIONS

The project site consists of three lots: 2, 2.01, and 2.02 which have a combined lot area of 429,936 SF (9.87 acres). The site is currently developed with a four-story commercial building to remain on the northeast side, a large asphalt parking lot in the southern region, a riverfront walkway along the pier section, and concrete foundation remnants of the former Coast Guard Station. The project is located within a historic preservation covenant per the NJDEP. Prior archeological investigations at this site revealed several archeological resources that have been outlined in the report by E2 Project Management (Dated February 12, 2021). Refer to APPENDIX A for maps of the project site and APPENDIX E for the Archeological Data Recovery Plan.

3.1 SOILS

Soil mapping was obtained from the National Resource Conservation Service (NRCS) for the project site and immediate area. Generally, lots 2 and 2.01 are underlain by Urban Land, and lot 2.02 is underlain by the Delaware River. Per NJDEP the site is located within an area of historic fill. Additional information regarding the NRCS soil mapping can be found in APPENDIX B. The table below provides a summary of soils for the project site:

TABLE 1: ON-SITE SOIL GROUPS

Soil Description	Hydrologic Soil Group	Permeability Rate (in/hr)	Approximate Project Coverage
Urban Land	D	Untested	84.8%
Water	Not Applicable	Not Applicable	15.2%

3.2 TOPOGRAPHY

The high point of the project site is approximately 12.96' and is located at the center of the property, of which the west side of the property drains west towards the Delaware River, and the east side of the property drains east towards the South King Street right-of-way. Slopes on site generally range from 0.70% to 3.0% within the property area. Grades rise along South King Street from south to north and towards the Coast Guard station from the bulkhead edge along Freedom Pier.

3.3 VEGETATION

Under current conditions, the site has areas of grass along South King Street and the east side of the property. Several mature trees are scattered throughout the lawn area and along the asphalt driveway.

3.4 WILDLIFE OR THREATENED & ENDANGERED SPECIES

Per the NJDEP's NJ-GeoWeb, no endangered species reside within the site's land area. The Delaware River is a habitat for the following species: Shortnose Sturgeon, Atlantic Sturgeon, Great Blue Heron, and Peregrine Falcon.

3.5 SCENIC OR HISTORIC FEATURES

The project will be constructed within the former Coast Guard Station site which is considered a historic property per the NJDEP's NJ-GeoWeb service. An archeological Data Recovery Plan was performed by E2 Project Management LLC uncovering additional archaeological resources on the site relating to Native American human burials, the former Coronel Joseph Ellis homestead, and the former United States Immigration Station. See APPENDIX E for the Archeological Data Recovery Plan.

3.6 FLOODING AND/OR FLOOD PLAINS

Per FEMA and NJDEP flood mapping, the project is located within a tidal flood hazard area Zone AE. The flood hazard area elevation varies on-site ranging from 9 inland of the river to 10 along the bulkhead and 11 within the river shore.

3.7 WETLANDS

There are no existing wetlands on-site.

3.8 UTILITIES

The site is currently serviced by a water main and 24" sanitary main within South King Street along the site frontage. Water service is provided by the Gloucester City Department of Water. Sanitary treatment is provided by the Camden County Municipal Utilities Authority and the conveyance system is assumed to be maintained by the City of Gloucester City. The site is also currently serviced by electric utility poles and a gas main within South King Street. The gas and electricity are under the jurisdiction of PSE&G.

3.9 ENVIRONMENTAL CONCERNS

Air quality on-site is likely unaffected by the building remnants under existing conditions. The only potential source of air pollutants would be passing and idling cars on South King Street.

3.10 TRAFFIC

Under existing conditions, the property receives minimal traffic. Traffic to the existing development currently consists of employees of the currently occupied commercial building to remain. The other parking areas on site are used by people visiting the pier and surrounding area.

4.0 ENVIRONMENTAL IMPACT ASSESSMENT

The proposed redevelopment will consist of a proposed 7-story mixed-use building with 10,000 SF of retail space, 100 parking spaces, 247 dwelling units, and an 8-story residential building with 390 parking spaces, & 117 dwelling units. Additional improvements include a gateway-style entrance, loading area, residential courtyard amenities, decorative lighting, landscaping, utility services, stormwater management, conveyance systems, electric vehicle chargers, mechanical parking system, and a 147-space surface parking lot. The building will be accessed by one full-movement driveway fronting South King Street. Refer to the Site Plan for a depiction of the proposed project improvements.

4.1 SOILS

Soils on-site will be unaffected by the proposed development, and existing soil conditions have been considered when designing the stormwater management practices that will be utilized. Per NJDEP most of the site is located within an area of historic fill where site soils have been historically contaminated due to previous operations.

4.2 TOPOGRAPHY

The areas to be developed will generally rise in elevation to preserve the archeological resources on-site and meet FEMA flood elevation at the finished floor. All buildings on the property have been set to one foot above the tidal flood hazard elevation and the proposed parking lot has been elevated to be mostly out of the flood. The peripheries of the site will meet the existing grades and slope towards South King Street right-of-way and the existing riverwalk around Freedom Pier respectively.

4.3 VEGETATION

Existing vegetation to be removed on-site will predominantly be in the southern and western sections of the site. Vegetation will be undisturbed near the existing commercial building to the north. A landscaping plan has been designed for the proposed development inclusive of new grasses and street trees.

4.4 WILDLIFE OR THREATENED & ENDANGERED SPECIES

As no threatened or endangered species are located within the site's land area according to NJGeoweb, and since no construction will be done within the Delaware River the proposed development will have no negative influence on threatened or endangered species. Development impacts do not extend off-site and will therefore not affect nearby threatened or endangered species either.

4.5 SCENIC OR HISTORIC FEATURES

Archaeological resources within the site will be filled above the existing grade to preserve the site for possible future archaeological investigations. Special Areas of concern identified by the Archeological Data Recovery Plan by E2 Project Management LLC will be excavated and examined before construction.

4.6 FLOODING AND/OR FLOOD PLAINS

The finished floor elevations for the proposed buildings will be 1 foot higher than the 100-year flood elevations of 10.0 and 9 feet (for buildings A & B respectively). The parking areas are likewise proposed to be raised above the flood elevation.

4.7 WETLANDS

There are no wetlands located on-site.

4.8 UTILITIES

The proposed development is to obtain gas and electric service via two (2) gas lines and two (2) electrical lines which connect to the existing gas main and electrical utility poles within the South King Street right-of-way. Water and sanitary services will be provided via two (2) ductile iron water lines, one (1) 6-inch PVC sanitary lateral, and one (1) 8-inch PVC sanitary lateral which will connect to the existing underground water and sanitary sewer mains within South King Street. Will serve letters have been requested from all applicable utility providers.

4.9 ENVIRONMENTAL CONCERNS

Air quality is expected to remain unchanged as the residential building expansion is a low-generating use of air pollution. An air quality study has not been performed for this area. Proposed landscaping around the site positively impacts the air quality under post-development conditions.

4.10 TRAFFIC

Traffic to the property will increase due to the proposed development. Approximately 536 new trips will be generated by the proposed use. Parking and loading facilities are proposed on-site to accommodate residents, visitors, employees, and customers per the City of Gloucester City regulations. The additional traffic generated for the project site related to the new buildings and retail areas is not anticipated to have a significant impact on South King Street and the surrounding transportation network. Refer to the Traffic Impact Statement prepared by our office included with the City Planning Board submission.

5.0 LICENSES, PERMITS, AND APPROVALS REQUIRED

The following licenses, permits, and approvals are anticipated in conjunction with this application:

- City of Gloucester City
  - Preliminary & Final Major Site Plan Approval
  - Minor Subdivision Approval
  - Building Permit
- Camden County
  - Site Plan Approval
- Camden County Soil Conservation District
  - Soil Erosion and Sediment Control Plan Certification
- NJDEP
  - Flood Hazard Area Individual Permit
  - Waterfront Development Permit
  - Treatment Works Approval
  - Bureau of Water Systems Engineering Approval
  - Green Acres Development Review
- US Army Corps of Engineers
  - Stormwater Discharge Permit
- Delaware River Basin Commission Approval (if needed)

At the time of this Statement, all approvals are still pending.

6.0 STEPS TO MINIMIZE ENVIRONMENTAL IMPACTS

The development of the project and site plan design enhances the property and minimizes environmental damage by completing the following:

- Remediation of existing on-site contaminated soils
- Preserving archeological resources
- Matching the existing topography and drainage patterns
- Replacing all vegetation proposed to be removed during construction
- Redeveloping on existing impervious surfaces
- Designing the proposed development to complement the adjacent historic features present

APPENDIX A
PROJECT FIGURES

INVENTORY

AERIAL MAP

TAX & ZONING MAP

USGS LOCATION MAP

FEMA MAP

NJDEP HISTORIC PROPERTIES MAP

AERIAL MAP

200' 0' 200' 400'

GRAPHIC SCALE IN FEET

1" = 200'

SOURCE: GOOGLE EARTH PRO, IMAGE RETRIEVED 01/08/2021

MERIDIA CAPODAGLI

PROPOSED MIXED-USE DEVELOPMENT

BLOCK 48, LOTS 2, 2.01, & 2.02
101 SOUTH KING STREET
CITY OF GLOUCESTER CITY, CAMDEN COUNTY, NEW JERSEY

DRAWN BY:	RD
CHECKED BY:	AK
DATE:	01/14/2021
SCALE:	1" = 200'
PROJECT ID:	RUT-200341

STONEFIELD engineering & design

Rutherford, NJ · New York, NY · Boston, MA
Princeton, NJ · Tampa, FL · Detroit, MI
www.stonefieldeng.com

Headquarters: 92 Park Avenue, Rutherford, NJ 07070
Phone 201.340.4468 · Fax 201.340.4472

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TAX & ZONING MAP

200' 0' 200' 400'

GRAPHIC SCALE IN FEET

1" = 200'

SOURCE: CITY OF GLOUCESTER CITY TAX MAP, SHEET 2, AND GLOUCESTER CITY ZONING MAP

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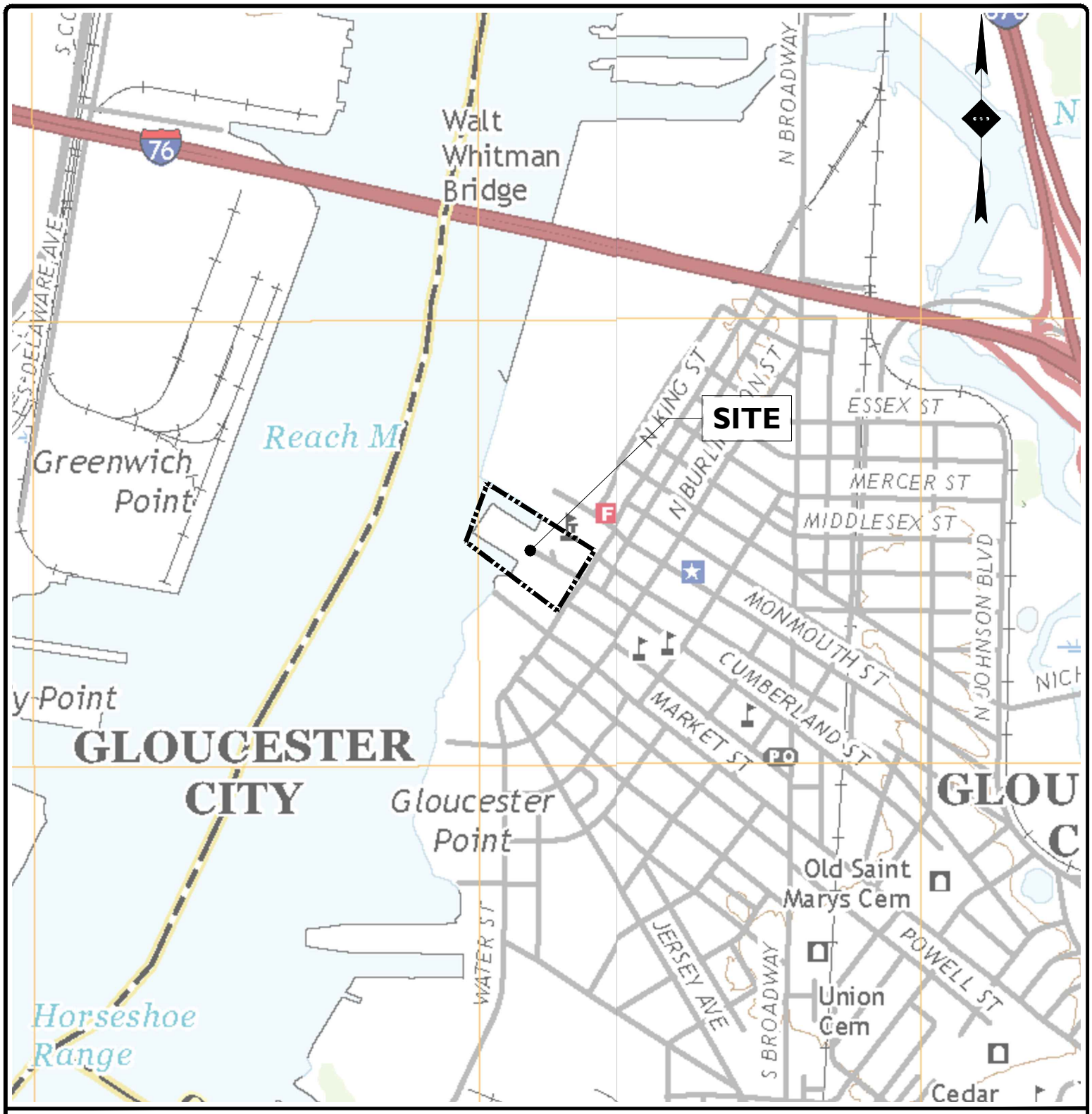

USGS QUADRANGLE MAP

1000' 0' 1000' 2000'

GRAPHIC SCALE IN FEET

1"= 1000'

SOURCE: USGS 7.5 MINUTE SERIES, CAMDEN, NEW JERSEY QUADRANGLE MAP, DATED 2019, AND USGS 7.5 MINUTE SERIES, PHILADEPHIA, PENNSYLVANIA QUADRANGLE MAP, DATED 2019.

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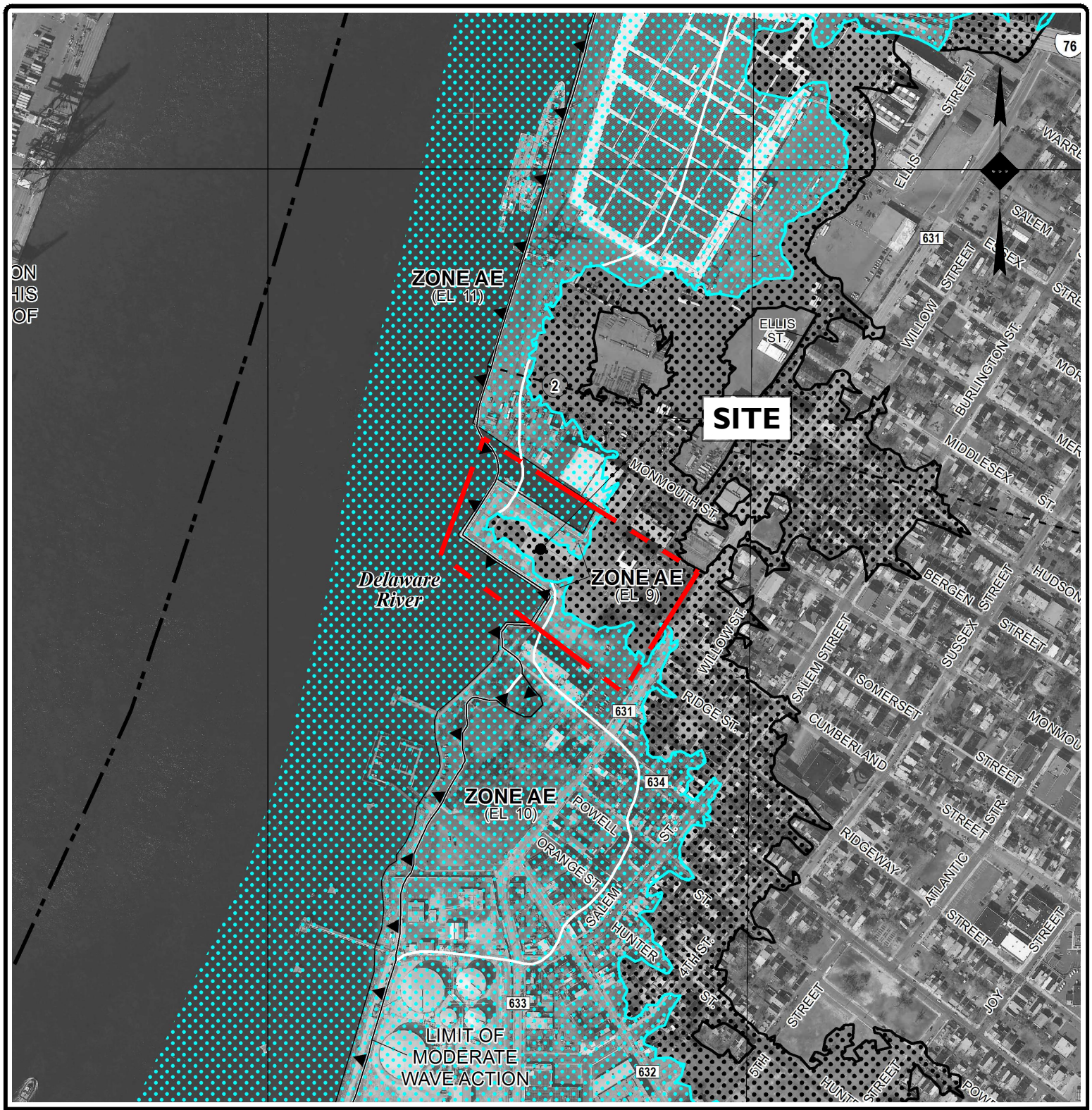

FEMA FLOOD MAP

500' 0' 500' 1000'

GRAPHIC SCALE IN FEET

1"= 500'

SOURCE: EFFECTIVE FEMA FIRM MAP 34007C0019F, AND EFFECTIVE FEMA FIRM MAP 34007C0038F, DATED 08/17/2016.

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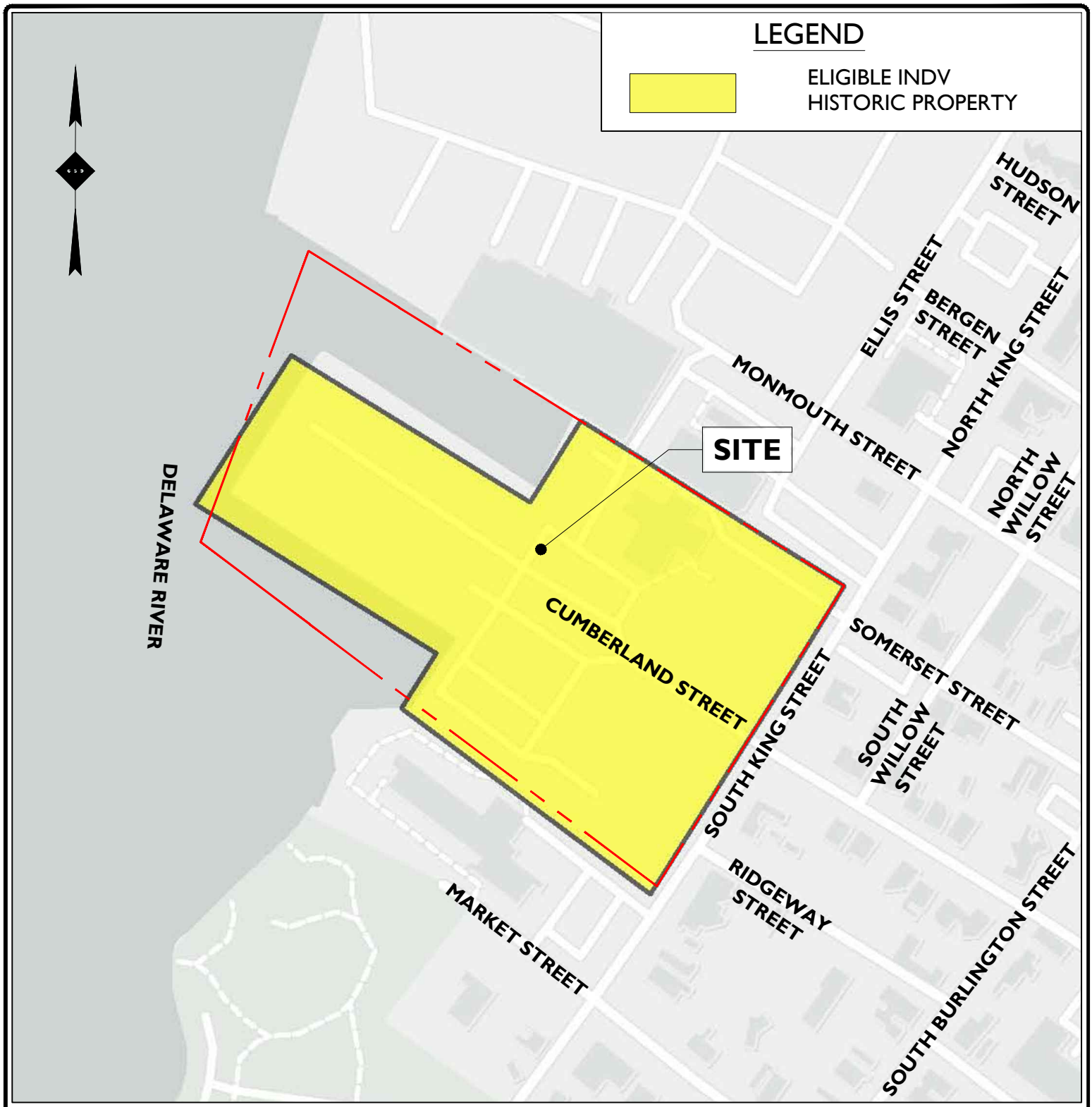

NJDEP GIS HISTORIC PROPERTIES MAP

200' 0' 200' 400'

GRAPHIC SCALE IN FEET
1" = 200'

SOURCE: NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION GEOGRAPHIC INFORMATION SYSTEM, IMAGE RETRIEVED 01/14/2021

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APPENDIX B
NRCS COUNTY SOIL SURVEY

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for

Camden County, New Jersey

April 13, 2023

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:2,500 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 35 70 140 210

Feet: 0 100 200 400 600

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 18N WGS84

MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Map Unit Polygons

Soil Map Unit Lines

Soil Map Unit Points

Special Point Features

Blowout

Borrow Pit

Clay Spot

Closed Depression

Gravel Pit

Gravelly Spot

Landfill

Lava Flow

Marsh or swamp

Mine or Quarry

Miscellaneous Water

Perennial Water

Rock Outcrop

Saline Spot

Sandy Spot

Severely Eroded Spot

Sinkhole

Slide or Slip

Sodic Spot

Spoil Area

Stony Spot

Very Stony Spot

Wet Spot

Other

Special Line Features

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:12,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Camden County, New Jersey
Survey Area Data: Version 16, Aug 29, 2022

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 5, 2022—Jul 4, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
UR	Urban land	9.0	84.8%
WATER	Water	1.6	15.2%
Totals for Area of Interest		**10.6**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however,

onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Camden County, New Jersey

UR—Urban land

Map Unit Setting

National map unit symbol: rvrf
Elevation: 0 to 170 feet
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Urban land: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Urban Land

Setting

Parent material: Surface covered by pavement, concrete, buildings, and other structures underlain by disturbed and natural soil material

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8s
Hydric soil rating: Unranked

Minor Components

Udorthents

Percent of map unit: 5 percent
Landform: Low hills
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

WATER—Water

Map Unit Setting

National map unit symbol: rvrh
Mean annual precipitation: 30 to 64 inches
Mean annual air temperature: 46 to 79 degrees F
Frost-free period: 131 to 178 days
Farmland classification: Not prime farmland

Map Unit Composition

Water: 100 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

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APPENDIX C
ARCHEOLOGICAL DATA RECOVERY PLAN

Archaeological Data Recovery Plan

MERIDIA AT GLOUCESTER CITY
CUMBERLAND STREET, GLOUCESTER CITY, CAMDEN COUNTY, NJ

PREPARED FOR:

CAPODAGLI PROPERTY COMPANY, LLC/MERIDIA, LLC
201 S. WOOD AVE, LINDEN, NJ 07036

February 12, 2021

E2 Project Management LLC
87 Hibernia Avenue
Rockaway, NJ 07866

1.0 INTRODUCTION

The Capodagli Property Company, LLC and the City of Gloucester, Camden County, New Jersey seek to construct a new residential development within the Freedom Pier property identified as Tax Block 48, Lot 2.01 situated on the west side of South King and both north and south of Cumberland Street (see Figures 1 and 2). The proposed development includes the construction of new multi-unit mixed-use structures to include parking, retail, and residential space—specifically within the south part of the parcel and an artificial pier extending into the Delaware River (see Figure 3). Plans for the development indicate that ground disturbing activities are anticipated to occur proximal to several previously recorded archaeological sites: 28-Ca-94, 28-Ca-191, and 28-Ca-50.

Owned by the Federal Government from ca. 1910 until 1991 for its initial use as an immigration center and later as a coast guard administrative facility, the property was sold to the City of Gloucester for the purposed of redevelopment in 1991. As part of the sale, the US Secretary of Transportation encumbered the property with a preservation covenant requiring that:

1) The structures and archaeological resources situated on said real property will be preserved and maintained in accordance with Plans approved in writing by the State of New Jersey Historic Preservation Officer (SHPO).
2) No physical or structural changes or changes of color or surfacing will be made to the exterior of the structures and architecturally or historically significant interior features as determined by the SHPO without the written approval of the SHPO.
3) In the event of violation of the above restrictions, the SHPO may institute a suit to enjoin such violation of for damages by reason of any breach thereof.
4) These restrictions shall be binding on the Parties hereto, their successors, and assigns in perpetuity; however, the SHPO may, for good cause, and with the concurrence of the Advisory Council on Historic Preservation (ACHP) modify or cancel any of all of the foregoing restrictions upon written application of the Grantee, its successors, or assigns.

Later consultations between the City of Gloucester and the New Jersey Historic Preservation Office conducted in 1995 resulted in the generation of a Memorandum of Understanding approved by the NJHPO, the City of Gloucester, and the ACHP setting forth the following stipulations regarding archaeological resources present within the property:

Stipulation 2:

a) The Grantee shall preserve and maintain the archaeological sites, as shown on the attached map, in order to preserve and enhance those characteristics that make the sites eligible for the National Register of Historic Places.
b) No disturbance of the ground surface, new construction, or related activity shall be undertaken or permitted to be undertaken on or adjacent to Archaeological Sites without the express prior written permission of the New Jersey SHPO, sign by a fully authorized representative thereof.

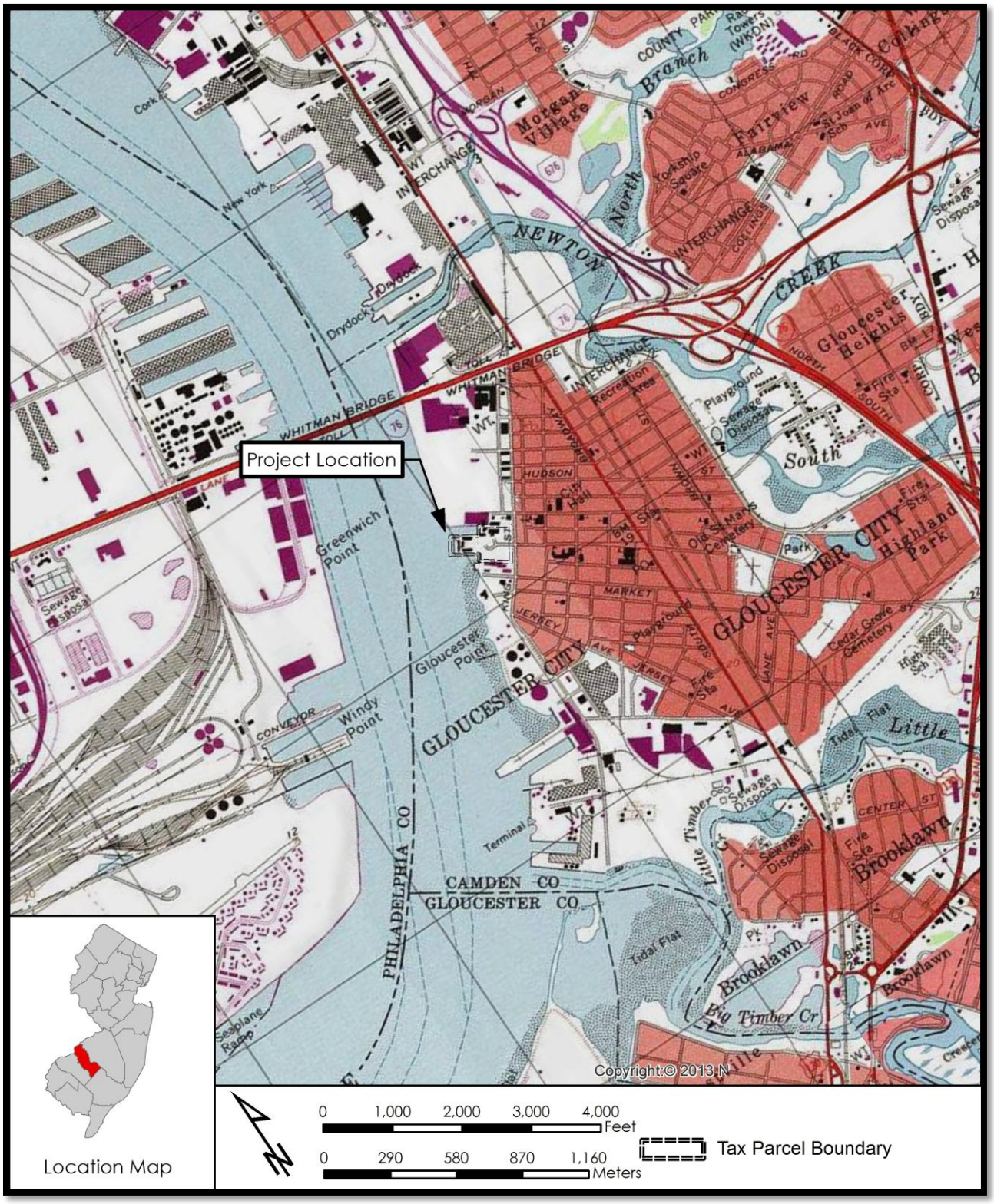

FIGURE 1—USGS Topographic Map Depicting the Project Location.

FIGURE 2—Aerial View of the Project Location.

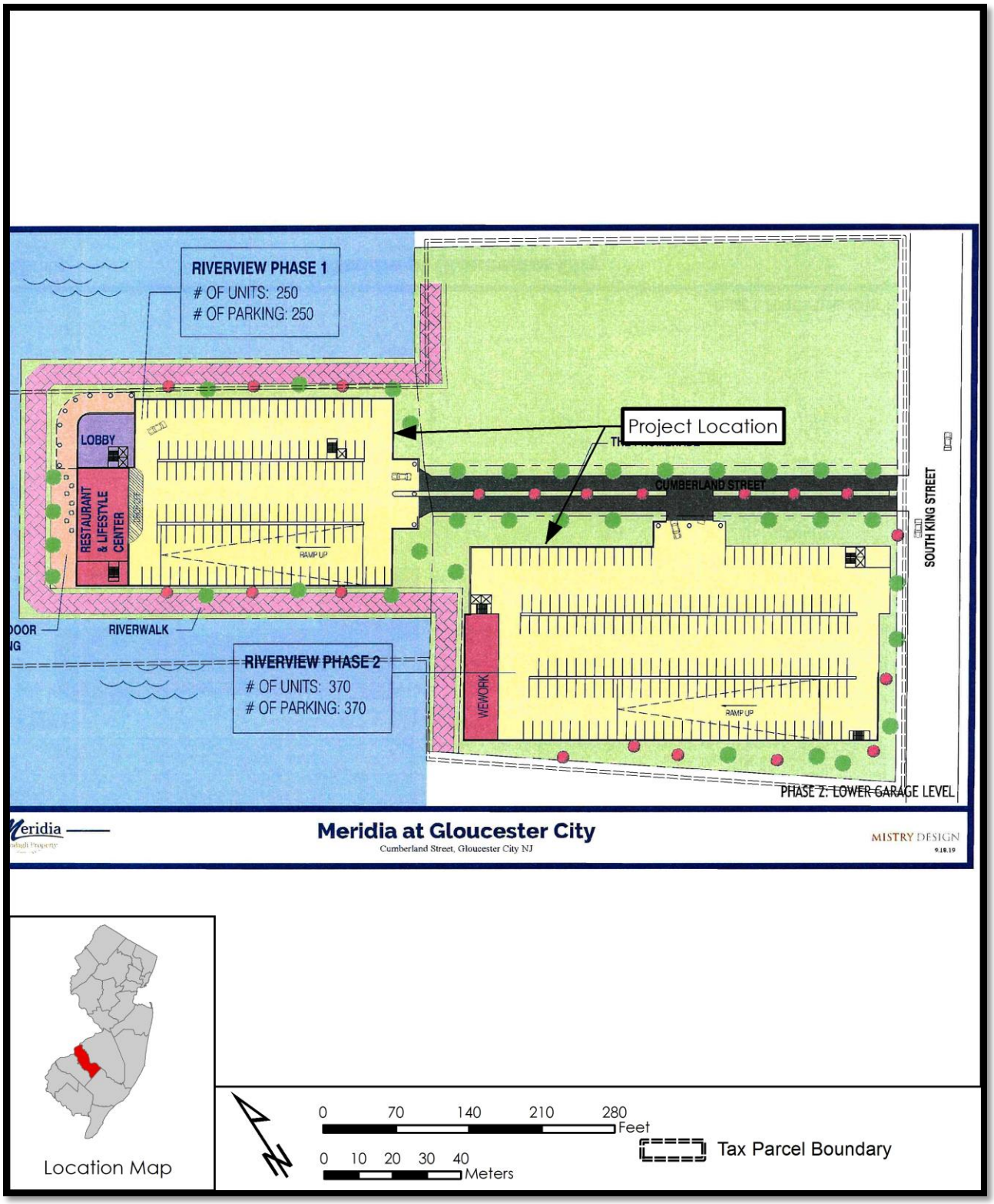

FIGURE 3—Locations of Proposed New Structures within the Project Location.

c) Should the New Jersey SHPO require, as a condition of granting permission of disturbance of archaeological areas, that the Grantee conduct archaeological data recovery operations or other activities designed to mitigate any adverse effects of such disturbance, the Grantee shall, at its own expense, conduct such activities in accordance with the Secretary of the Interior's Standards and Guidelines for Archaeological Documentation and such other standards and guidelines as the New Jersey SHPO may specify. Such standards and guidelines may address research design, field work, analysis, preparation and dissemination of reports, and disposition of artifacts and other materials.

d) A plan shall be developed with professional archaeological input which will establish an agreed upon procedure for human burial discoveries outside the two areas identified as National Register eligible in the cultural resource survey report, for use during all subsequent ground disturbing activity at the site.
The plan shall provide for: 1) identification of the chain of command to provide the authority to stop work in the discovery area; 2) appropriate legal and cultural group notification and consultation; and 3) in the case of prehistoric burials [as determined appropriate by the HPO after consultation with the HPO and the appropriate cultural group(s)] archaeological excavation, analysis, reporting, and reburial.

e) The terms of the covenant may be amended for good cause by the HPO with the consultation and concurrence of the ACHP.

As a result of these requirements, the Capodagli Property Company, LLC has contracted with E2 Project Management LLC to assist with guiding the proposed development project through the Cultural Resources Review process. As part of this guidance, CPC has modified the initial project designs from a slab-on-grade within the archaeological site to an elevated floor and the use of piers to support the ground floor. The initial slab-on-grade would have resulted in approximately 36,000 square feet of ground disturbance within the limits of the deed-restricted archaeological site while the updated plan will generate approximately 6,500 square feet of ground disturbance within the deed-restricted area. At present, roughly 65 ten-foot diameter columns (~ 78.54 ft^2) are expected to be installed within the limits of the deed-restricted area accounting for an approximate maximum of 5,105 square feet of proposed ground disturbance. In order to protect the remainder of the site from inadvertent ground disturbances, E2PM will also include shielding recommendations (e.g matting, etc…) for construction-related activities.

2.0 SITE BACKGROUND

The Phase I/II Archaeological Investigation of the property conducted in 1994 by Louis Berger & Associates, Inc. provides an in-depth comprehensive history of the subject property. As such, recapitulation is not warranted for the purposes of this document. However, some basic highlights of this study reveal that historic occupation of this property stretches back to 1689 as a town lot deeded to Mathew Medcalf (Berger 1994) which passed through his descendants until 1747 when purchased by Samuel Harrison, a wealthy shipping captain who owned significant tracts along the river. Harrison sold the parcel in 1759 to Brigadier General Joseph Ellis, a tanner, blacksmith, and skilled militia commander during the American Revolution known for routing Hessian and British forces. Ellis constructed within the property a residence where he lived with his wife. Ellis worked from his home, a one-and one-half-story house located on Water Street (no longer extant) within the Freedom Pier parcel and amassed significant

wealth through ownership of a fishery, service in the Legislative Council, service as Sheriff of Gloucester County (prior to the formation of Camden County), and service as a Judge of the Court of Common Pleas.

The Freedom Pier property passed along as part of Ellis' estate bequeathed first to Samuel Ellis, Joseph Ellis' son, then to Samuel's heirs until purchased in 1845 by the Gloucester Land Company—a Philadelphia-based incorporation of twenty three associates who purchased nearly 200 acres with the purpose of turning Gloucester Town into a thriving industrial city. Under the aegis of the Gloucester Land Company, Ellis' residence was razed in 1882 to make way for a new residence owned by William J. Thompson. Known colloquially as the "Duke of Gloucester," Thompson developed a reputation for wielding power and influence through the many businesses and hotels he owned. Capitalizing on Blue Laws in nearby Philadelphia, Thompson turned Gloucester City into a nearby recreation destination. He built on the Freedom Pier property a mansion as a testament to his wealth and power. Locally called "Monaco Castle," the residents of Gloucester City linked the residence to Thompson's fortune being accumulated through legalized gambling above any of his other business endeavors.

Around 1909, bad fortune coupled with bad investments destroyed Thompson's extensive holdings. The Washington Park Amusement park he owned burned in a catastrophic fire and several business investments he tried promoting collapsed. Broke, he sold his mansion in 1910 to the United States Government for the establishment of a US Immigration Station for the Port of Philadelphia. During World War II, the immigration station served as a detention center for enemy aliens that included Nazi spies and foreign nationals and sailors caught at the outbreak of war. Following the end of the war, the Coast Guard took over the property and used it as a repair yard for buoys and boats. The Coast Guard de-accessioned the site in

Known Archaeological Resources

There are three known archaeological resources immediately proximal to the Freedom Pier property: 28-Ca-50, 28-Ca-94, and 28-Ca-191. Site 28-Ca-50 consists of a multicomponent historic and prehistoric archaeological site found during construction of the US Department of Housing and Urban Development funded Gloucester Towne nursing home. Phase III data recovery of the site conducted by MAAR, Inc. revealed historic structural foundations, multiple phases of prehistoric site occupation and several Native Americas human burials (MAAR 1984a, b, c).

The historic archaeological resources pertained to past historic use of the property while prehistoric materials spanned a wide swath of the Delaware River Valley's prehistory. The human burials were found close to the property line abutting the Freedom Pier property and consisted of the remains of five complete adults, an infant, and an incomplete set of remains for a sixth adult.

Site 28-Ca-94 was identified in 1993/4 by Louis Berger & Associates (Berger) during a Phase I/II archaeological investigation of the Freedom Pier property. Historic archaeological resources were identified associated with the former Colonel Joseph Ellis residence, the residence of William Thompson, and past changes at the Immigration Station. Prehistoric artifacts recovered during the investigation suggest multiple repeated uses of the property throughout its prehistory.

Site 28-Ca-191 was recently recorded with the New Jersey State Museum and represents a refinement of the location of the former Col. Joseph Ellis Homestead. No excavation apart from that undertaken by Berger has been conducted at this site.

Past Archaeological Investigations

Archaeological investigations were previously conducted within the Meridia at Gloucester City property by the firm of Louis Berger & Associates, Inc. (Berger) in 1994/5. The archaeological investigations included Phase IB identification of archaeological resources and Phase II evaluation of the identified resources.

Field methods employed during Berger's investigation included the excavation of shovel test pits at a 15-meter interval throughout the property to ascertain the presence/absence of archaeological resources as well as pinpoint concentrations of artifacts requiring additional further investigation. Berger's Phase II methods included the excavation of several test units and trenches to reveal the subsurface soil conditions within the property as well as expose any potential artifact-bearing cultural features. Based upon the results of Berger's investigations, dense artifact concentrations were identified in conjunction with a relict buried A-horizon ground surface within one portion of the site while the remainder of the site had been admixed through historic agricultural practices (e.g. plowing, grubbing, etc…). Figure 4 shows the locations of Berger's past Phase IB testing program in relation to the current project limits while Figure 5 indicates the location of the former buried ground surface.

3.0 THEORETICAL FRAMEWORK

Berger in 1995 detailed the theoretical framework within which the prehistoric resources within this portion of the property hold significance as part of their Phase III Archaeological Research Design. Berger argued that the Phase III investigations would contribute to the understanding of prehistoric behaviors and adaptation in Southern New Jersey through an evaluation of the functional role of the multiple prehistoric components dating from the Transitional, Early Woodland, Middle Woodland, and Late Woodland periods, in regard to prehistoric settlement patterns along the Delaware River drainage. E2PM further suggests that comparative analysis from similar documented sites along both the New Jersey and Pennsylvania sides of the River from the Mouth of the Delaware Bay to its split into the East and West Branches would help in further understanding these models. Indeed, the presence of an intact buried A-horizon within portions of the site allows for the possible presence of temporally distinct cultural horizons and deposits which may be able to provide vital information as opposed to admixed plow-zone soils which could contain multiple intermingled and de-contextualized components.

Settlement Models

Berger summarized the most common settlement patterns within the Delaware River Valley known at the time of their data recovery plan. These included Williams and Thomas' (1982) Early/Middle Woodland period pattern which focused on a primary reliance on the seasonal availability of food resources where semi-permanent base camps provided nearly year-round living and temporary fishing stations, shellfish procurement stations, and hunting-gathering camps were occupied on a seasonal basis. Williams and Thomas' model also included mortuary sites chosen within little consideration for nearby subsistence

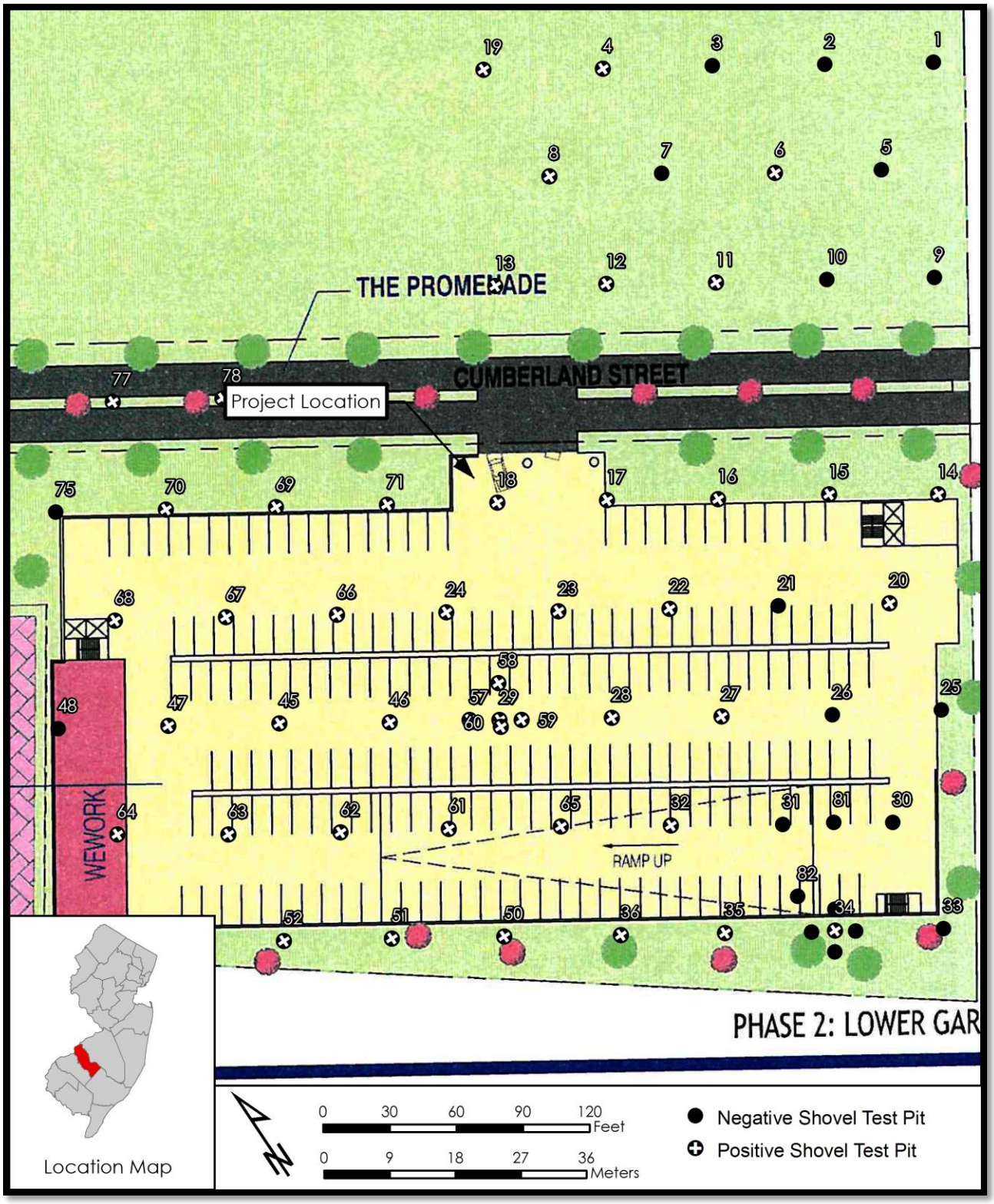

FIGURE 4—STPs Excavated by Louis Berger in 1994/5 in Relation to Proposed New Structure.

E2 Project Management LLC

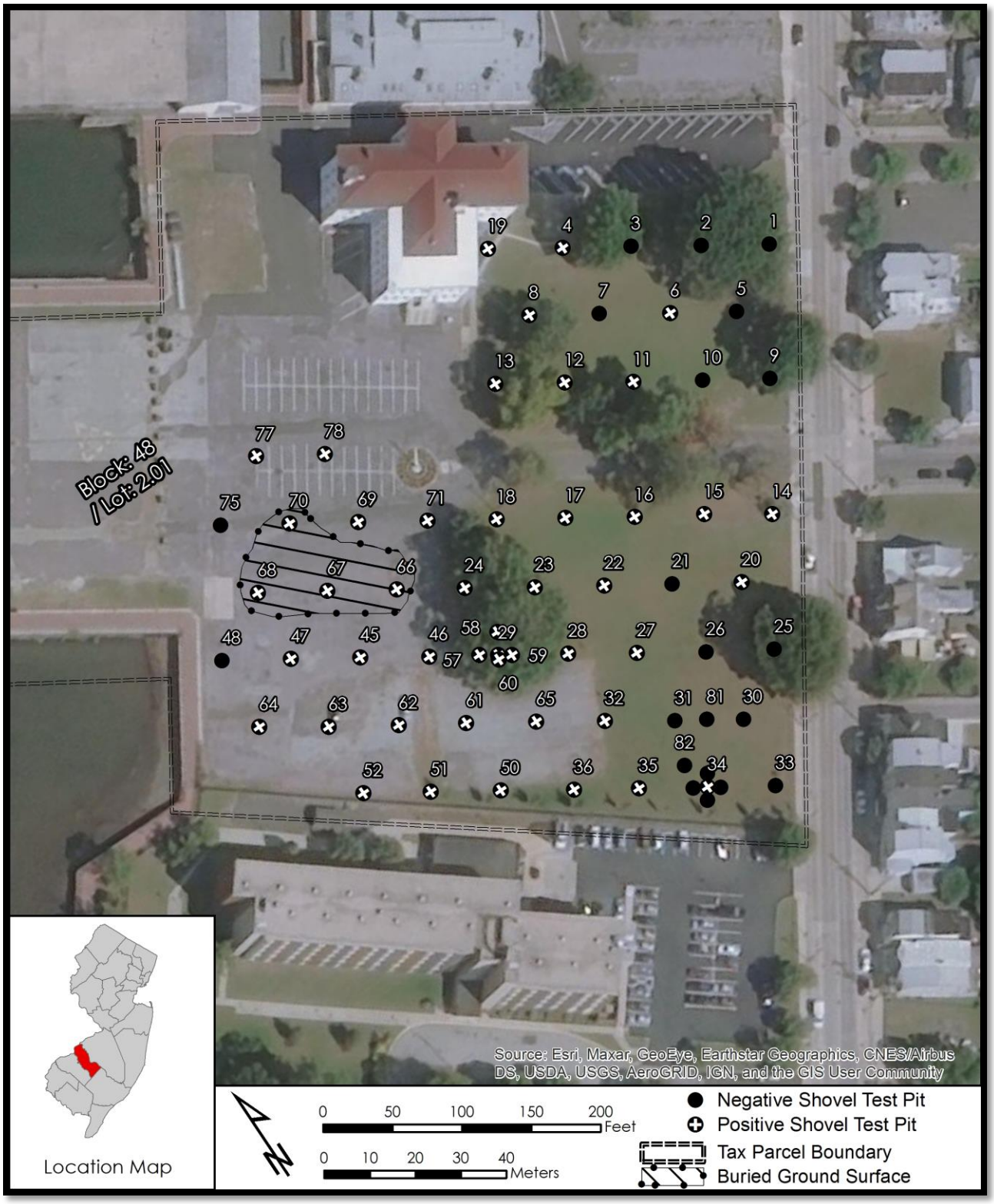

FIGURE 5—Location of Buried Ground Surface Identified by Berger within Project Location.

resources (1982). Kraft and Mounier (1982) presented a similar model in which Late Woodland people occupied year-round habitation sites from which forays purposed at resource procurement would create temporary campsites. In this model, however, the habitation sites which were generally focused around the main trunks of river systems would occupy floodplains and employ agricultural methods which resulted in massive habitation areas up to 20 acres in size. The smaller campsites in this model centered around river mouths, headwaters, springs, and other water-based features.

Stewart et al. argued in 1986 for a predominance of Late Woodland Period settlement within the Lower Delaware Valley and its drainages opposed to the Upper Delaware River Valley consisting of three functional site types: A macro-band camp which supported sedentary or near permanent habitation, transient camps which were frequently reused and included small hearths, tool maintenance activities, and expedient tool manufacture, and stations which consisted of very low-density lithic scatters involved with hunting and field-dressing game. In 1993, Stewart refined this pattern to suggest that its use represented a cultural adaptation behavior brought southward along the River from groups in the Upper Delaware Valley (Stewart 1993).

Berger (1987) developed a model based upon excavations undertaken at the Abbott Farm National Historical Landmark near Trenton which included four types of site types: Macro-social units, Transient Camps, Stations, and Specialized Camps. Berger defined their macro units as semi-permanent habitations characterized by hearths, pits, caches, burials, and structures while transient camps were short to modest duration campsites typically associated with streams or marshes and focused on food processing, tool maintenance, and expedient tool manufacture. Stations were defined as short-term activity areas utilized for less than a day's duration and specialized camps were dedicated to processing resources obtained in the area's vicinity (Berger 1987).

Watson and Custer's (1990) model of settlement developed for the Rancocas River drainage consists of four site types: macro-band base camps, micro-band base camps, transient camps, and procurement sites. Macro-band camps were sedentary major habitation sites situated in riverine settings occupied by large numbers of people nearly year round due to abundant resources. Micro-band camps differed in that they focused on specialized resource procurement. Transient camps operated as supplemental procurement locations feeding resources to the micro and macro base camps. Finally, procurement sites exhibit evidence of limited food processing and tool maintenance.

A more recent analysis of settlement patterns conducted in 2001 by Dr. Peter Pagoulatos attempted a quantitative approach to understanding site distribution (Pagoulatos 2001). Pagoulatos defined base locations as B1—recurrent, long-term use habitation sites with features such as hearths, trash pits, house structures, activity areas, burials, caches, and storage facilities. Of the 145 total Late Woodland Sites identified within the Inner Coastal Plain, Pagoulatos' data indicates that only six of these qualify as B1-type sites. Meanwhile, B2 base locations, defined as limited seasonal-use habitation sites containing occasional household areas, burials, and storage facilities, but to a lesser degree than B1-type sites, accounted for 35 of the identified Late Woodland sites. The remainder of the sites identified were classified by Pagoulatos as T1 or T2 loci, which others describe as transient and resources processing sites. Based upon his analysis, Pagoulatos concludes that sites within the Delaware River Valley reflect a collector-based system typical of more sedentary, less mobile residential groups relying upon long-term food storage technologies versus a highly-mobile foraging type economy.

Recently Becker (2010) has argued that while evidence points toward a more sedentary collector-based system of large sedentary camps employing agricultural methodologies, exploiting fish resources, and seasonally sending out hunting forays, Late Woodland peoples relied on a foraging lifestyle of seasonal mobility with no permanent habitations.

Research Questions

Based upon the above review of the known settlement patterns applied to the Delaware River valley, a definitive pattern of settlement is still not defined for this region. Intact archaeological resources found within the buried A-horizon within the Freedom Pier property may help provide information which can be attributed to specific cultural and/or temporal groups. Excavations at 28-Ca-94 could provide information toward the following:

1) Site Activities
2) Length of Occupation
3) Occupation Size
4) Resource exploitation/utilization

Through identifying these four site characteristics, it would be possible to infer regarding the site use/settlement model most likely employed at this site. Phase I and II excavations conducted by Berger suggest that food storage, tool manufacture, and foraging activities took place within the site, but data recovery would provide the additional elements of the economy of scale to which this occurred and the breadth and variety of resources found at the site.

4.0 DATA RECOVERY WORK PLAN

The proposed development for Meridia at Gloucester City includes the construction of approximately 65 ten-foot diameter (78.54 ft^2) columns, each supported by five H-piles piers driven into the ground, or approximately 5,105.1 ft^2 of total area. Of these, approximately 13 are located within the limits of an identified buried A-horizon for a total proposed ground disturbance of 1,021.02 ft^2. In sum, the footprint of the proposed structure occupies more than 36,000 ft^2 of the identified site 28-Ca-94. However, most of this area will be protected through the utilization of avoidance and protection measures.

I. Avoidance and Protection Measures

Avoidance of impacts to the archaeological site is included in the proposed structural design. As mentioned above, the potential footprint for the proposed building covers more than 36,000 ft2 of the identified 28-Ca-94. Through design changes, impacts to the archaeological site were reduced by more than 85 percent to a total area of ground disturbance measuring approximately 5,105.1 ft^2. However, in order to prevent inadvertent damage to the site, E2PM recommends the installation of geo-textile, overlain with crushed stone and topped with wooden mats to distribute any machinery loads for pouring concrete, driving piles, or setting steel or concrete parts.

II. Excavations Within the Buried A-Horizon

A total of 13 columns are proposed within the limits of the identified buried A-horizon, constituting an approximate surface area of 1,021 ft^2. E2PM proposes the excavation of 52 3-ft x 3-ft units within the 13 proposed column locations. The excavation units will be excavated in a checker-board pattern (see Figure 6) so that should features be identified, additional units may be opened for further investigation.

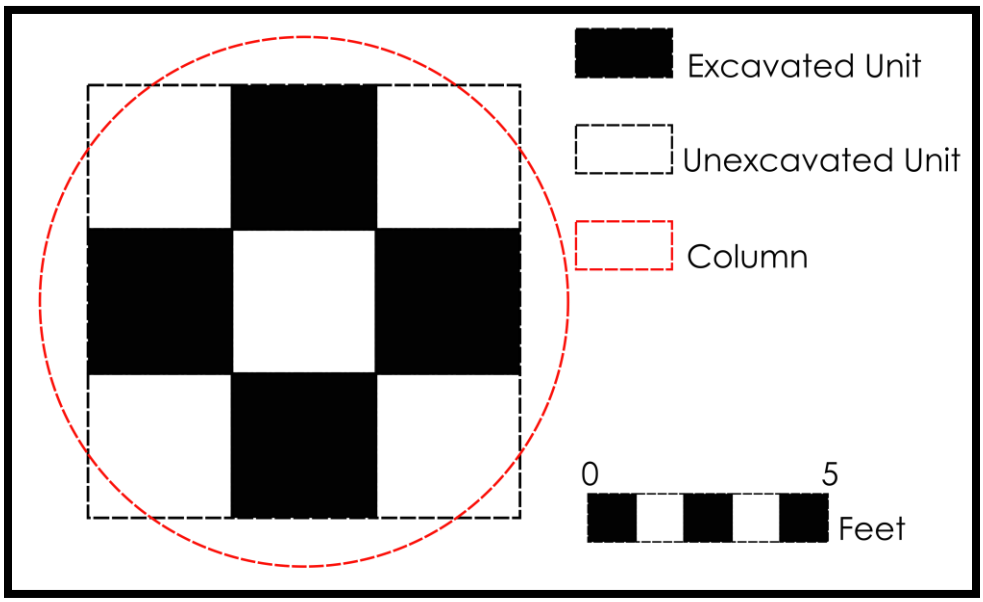

FIGURE 6—Proposed Sampling Pattern within Limits of the Buried A-Horizon.

Based upon this proposed plan, E2PM estimates that the excavated units will account for a greater than 45.8 percent sample of the buried ground surface. Field methods employed for the project will include:

- Excavation will be completed through the use of trowels and shovels by both natural stratigraphy and 0.3-foot arbitrary levels. All excavated soils will be screened through ¼" mesh hardware cloth to ensure artifact recovery. Artifacts will be retained, bagged, and labeled by their associated provenience. Artifacts encountered in-situ will be drawn in plan and profile views. All strata will be recorded on standardized forms with regard to depth, soil color, texture, artifact content, and the presence of any features.
- E2PM will fully excavate, screen, and document the four units in each grid pattern as show in Figure X. Upon completion of these excavations, the remaining five units will be excavated by natural stratum, but not screened. The purpose of this additional excavation is to identify the presence of any potential features within the unexamined areas. Should features be identified, then such features will be excavated and recorded.
- Identified features will be bisected and excavated in 0.3-foot increments in order to identify any potential temporal differentiation between levels of feature deposit. Features will be photographed and drawn in plan view both prior to and following excavation. Following excavation of the bisected half, the feature will be photographed and drawn in profile-view. All feature excavations will be recorded on standardized Feature and Feature level forms. After

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recording, the remaining intact portion of the cultural feature will be sampled for potential flotation analysis and the remaining soil will be screened.

- Identified human remains will be subject to the Unexpected Discovery of Human Remains Protocol for this project.
- Recordation will be performed through measured drawings, standardized forms (electronic and/or paper), and photography, as appropriate. A final profile drawing of the two best representative walls and closing photograph will be taken for each of the 9-unit blocks excavated within the buried A-Horizon.

Following excavation, all units will be recorded through plan & profile drawings and photographs and backfilled.

III. Excavations Outside the Buried A-Horizon

A total of 52 columns are situated outside of the limits of the identified buried ground surface. Based upon the field results by Berger during the Phase I and II investigations, these areas consisted largely of admixed soils with disturbed cultural deposits. Historic agricultural practices within the property had truncated the A and B soil horizons resulting in a deep historic plowzone and dispersed artifact deposits of commingled temporal affiliation. In only one instance did Berger' investigation identify a feature within sub-plow soils interpreted as B-horizon. Berger's conclusion in examining this feature was that potential subsurface deposits were likely present within the site. However, this interpretation lacks consideration of the vertical distribution impacts of various site formation processes which impacted the site over its existence and historically from the eighteenth century such as tillage, trampling, overbanking, and natural seasonal freeze/thaw effects.

While the major focus in understanding the impacts of tillage on site formation has concerned its effect on the lateral distribution of artifacts (Odell and Cowan 1987), little information addresses the effects of soil inversion on behalf of the plow and the vertical effects of trampling of artifacts on the part of the livestock and machinery pulling the plow. However, subsequent studies on site formation processes such as human and animal trampling of artifact assemblages and seasonal freeze/thaw action in relation to vertical artifact distribution suggest that multiple factors can result in a vertical separation of cross-fitting artifacts of as much as 40cm which can include not just cultural strata but geologic strata, as well (Bowers, et al 1983; Gifford-Gonzalez et al. 1985; Villa 1982; Nielsen 1991). As such, the observed sub-plow deposits are more likely a result of natural and historic site formation processes impacting the site over hundreds of years than relict intact features. Bolstering this interpretation is the lack of discernible soil discoloration commonly expected of intact sub-plow cultural deposits, especially those containing fire-cracked rock or thermally altered resources which would exhibit some form of reddening through the thermal oxidation of the soils.

Given these factors, E2PM proposes the excavation of 46 3-ft x 3-ft units to be distributed throughout the remaining 52 column locations (~4,084.08 ft^2). This plan would result in a greater than 10-percent sample of the non-buried-A areas (414 ft^2 ÷ 4,048.08 ft^2 ~ 10.13%) as well as provide an opportunity to sample each excavated column location for the presence of additional evidence of buried ground surfaces, relict features, or other significant features which could add to the interpretation and understanding of this site.

Field methods employed for this sampling strategy will include:

- Excavation will be completed through the use of trowels and shovels by both natural stratigraphy and 0.3-foot arbitrary levels. All excavated soils will be screened through ¼" mesh hardware cloth to ensure artifact recovery. Artifacts will be retained, bagged, and labeled by their associated provenience. Artifacts encountered in-situ will be drawn in plan and profile views. All strata will be recorded on standardized forms with regard to depth, soil color, texture, artifact content, and the presence of any features.
- Identified features will be bisected and excavated in 0.3-foot increments in order to identify any potential temporal differentiation between levels of feature deposit. Features will be photographed and drawn in plan view both prior to and following excavation. Following excavation of the bisected half, the feature will be photographed and drawn in profile-view. All feature excavations will be recorded on standardized Feature and Feature level forms. After recording, the remaining intact portion of the cultural feature will be sampled for potential flotation analysis and the remaining soil will be screened.
- Identified human remains will be subject to the Unexpected Discovery of Human Remains Protocol for this project.
- Recordation will be performed through measured drawings, standardized forms (electronic and/or paper), and photography, as appropriate. A final profile drawing of the two best representative walls and closing photograph will be taken for each of the 9-unit blocks excavated within the buried A-Horizon.

Following excavation, all units will be recorded through plan & profile drawings and photographs and backfilled.

5.0 ARTIFACT ANALYSIS

During the excavation of all units and features, recovered artifacts will be bagged and labeled with a provenience card denoting the excavation unit, stratum, level, depth, artifact content, and staff associated with each find. Each bag will be assigned a field numbers which will be logged in field documents to ensure accurate inventory control. Following the excavation of all cultural materials identified, E2PM will transport the recovered materials to their Rockaway, NJ laboratory for processing, analysis, identification, and cataloging.

- Non-edge tool lithic artifacts and historic artifacts will be washed, cleaned with a soft-bristle brush, and left to air-dry in a drying rack.
- Edge-tool lithic artifacts will be minimally dry-brushed for identification purposes and not washed. Edge-tool lithic artifacts may have blood residue present which could provide insight into the diversity of food resources exploited and processed at the site.
- Soil Samples will be floated for recovery of ethonobotanical, floral, and micro faunal remains.
- Carbon samples will be sent for C-14 analysis.
- Once dried, artifacts will be analyzed for signs of use-wear, micro-flaking, etc…
- Artifacts will be cataloged in E2PM's in-house artifact database.
- Once cataloged, artifacts will be re-bagged in clean containers.

6.0 REPORTING

A complete report of the methods and results of the Phase III data recovery will be produced by the archaeologist within six months of completing the fieldwork. The document will include methods of investigation, collected data, analysis of stratigraphic profiles and identified artifacts and/or features, should such information be recorded as part of the treatment plan. The report will also contain maps, drawings, and photographs as appropriate and will be prepared according to the Secretary of the Interior's Standards for Archaeological Documentation sufficient to comply with NJHPO requirements.

7.0 ARTIFACT CURATION

Custody of any Native American human remains or burial-related cultural items are subject to the Native American Graves Protection and Repatriation Act (NAGPRA), 25 USC 3001-3013, and shall be treated in accordance with NAGPRA and its implementing regulations, 43 CFR 10. The remaining artifacts will be donated to an institution such as the Camden County Historical Society Museum, The New Jersey State Museum, or other appropriate venue, as approved by the NJHPO. The artifacts shall be accompanied by archivally-stable copies of the field notes and report.

APPENDIX A

Resumes of Key Personnel