

# **ENVIRONMENTAL IMPACT STATEMENT**

PROPOSED FAST FOOD AND MIXED-USE RETAIL BUILDING
BLOCK 88.01
I 165 NJ STATE ROUTE 27
TOWNSHIP OF FRANKLIN
SOMERSET COUNTY, NEW JERSEY

PREPARED FOR:

3 RONSON, LLC 115 EAST 11<sup>TH</sup> AVENUE ROSELLE, NJ 07203 908-259-9800

PREPARED BY:

STONEFIELD ENGINEERING & DESIGN, LLC SEPTEMBER  $15^{TH}$ , 2020 PRI - 200007

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## 1.0 Project Data/Site Description

3 Ronson, LLC is proposing the construction of a 1,748 SF Fast Food Restaurant with an additional 1,159 SF of Mixed-Use Retail Space within. The subject property is designated Block 88.01, Lot 43, commonly known as 1165 NJ State Route 27, located at the corner of Veronica Avenue and Lincoln Highway (NJ State Route 27). The site is located in the General Business (GB) Zone where the proposed use is classified as a permitted use.

The subject property is currently developed with a one-story retail center and retail strip stores with associated parking. The proposed development includes the construction of a 1,748 SF Fast Food Restaurant with an additional 1,159 SF Mixed-Use Retail Space within. Demolition is inclusive of parking spaces and striping along with some landscaping and stormwater piping. One drive-thru lane and one bypass lane around the queue are proposed for the restaurant. The parking area consists of 16 spaces for the proposed fast-food restaurant and a total of 157 spaces for the entire shopping center development. An existing full-movement driveway is located along Veronica Avenue into the shopping center as well as a right-ingress and right egress driveway along Lincoln Highway. Under existing conditions, the site primarily sheet flows towards the westerner portion of the shopping center to various inlets and eventually into an aboveground basin located at the south western portion of the site. The site has been designed to eliminate the removal of soil from the site. Site improvements for the project include lighting, landscaping, utilities, and stormwater management facilities.

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

## 2.0 MAPPING

The project is located in a Municipal setting. Please see Appendix C for a reduced size of the site plan for the project listed above. The Royce Silt Loam located on site has a landform of alluvial flats and a linear downslope shape, while the Lansdowne Silt Loam located on site has a landform of flats and a down-slope shape of concave.

## 3.0 Existing Environmental Features

## 3.1 NATURAL RESOURCES

The topography on site is generally flat the flows towards the south-west portion of the property towards the aboveground basin.

The site is underlain by the following soil classifications, based upon the County Soil Survey (Appendix B), the Geotechnical Report, and the site survey:

**TABLE I: ON-SITE SOIL GROUPS** 

Soil Description	Hydrologic Soil Group	Permeability Rate (in/hr)	Approximate Project Coverage
RoyB, Royce Silt Loam	С	0.20 to 0.60 in/hr. 3 to 8 percent slopes	3.1%
RoyB, Royce Silt Loam	С	0.20 to 0.60 in/hr. 2 to 6 percent slopes	45.0%
LbtA, Landsdowne Silt Loam	С	0.06 to 0.20 in/hr. 0 to 2 percent slopes	51.9%

<sup>\*</sup>Refer to the NRCS County Soil Report located in Appendix B for further information

The existing development consists of various size underground stormwater pipes that convey the runoff into an aboveground basin. The site is a developed commercial parcel with minimal existing vegetation. Buffer planting along the north and west property lines are present with a mix of native shade and evergreen trees. Native shade trees are scattered throughout the parking lot with no shrub or groundcover present in the parking lot islands. Maintained lawn is present along Veronica Avenue and Somerset Street with few ornamental trees along veronica Avenue. According to NJ-Geoweb there are no threatened or endangered species on site or within the vicinity of the site.

#### 3.2 MAN-MADE RESOURCES

The present land use on site is classified as Urban according to NJ-Geoweb. The adjacent land uses are all Urban and a large portion behind the proposed development is classified as Forest. Existing noise levels are relatively non-existent, and any noise is created from cars that enter and exit from the site. The site is classified in the General Business (GB) Zone. The site currently has sewer, water, gas and electric service.

## 3.3 HUMAN RESOURCES

The exterior facade of the shopping center buildings has a consistent aesthetic with the surrounding corridors. The current development contributes positively to the society and economy as it offers jobs to the public and places to shop and consume goods.

#### 3.4 POLLUTION PROBLEMS

Under existing conditions there are no pollution issues regarding water, sewer, and air quality.

## 4.0 Construction Phase

A sequence of construction has been implemented on the Soil Erosion and Sediment Control Plan. No construction is anticipated in the right-of-way, therefore no negative impacts on traffic are anticipated during construction.

## 5.0 REQUIRED APPROVALS

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

- Township of Franklin Planning Board
  - o Preliminary & Final Site Plan Approval
- Somerset County
  - o Site Plan Review
- Somerset Country Soil Conservation District
  - Soil Erosion and Sediment Control Plan Certification
- New Jersey Department of Transportation
  - Major Access Permit
- Delaware Raritan Canal Commission
  - Staff Approval

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

## 6.0 IMPACT OF THE PROPOSED PROJECT

## 6. I NATURAL RESOURCES

The geology on site will remain the same after construction and the topography proposed has designed to remain consistent with the existing conditions on site.

The site is underlain by the following soil classifications, based upon the County Soil Survey (Appendix B), the Geotechnical Report, and the site survey:

**TABLE I: ON-SITE SOIL GROUPS** 

Soil Description	Hydrologic Soil Group	Permeability Rate (in/hr)	Approximate Project Coverage
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RoyB, Royce Silt Loam	С	0.20 to 0.60 in/hr. 2 to 6 percent slopes	45.0%
LbtA, Landsdowne Silt Loam	С	0.06 to 0.20 in/hr. 0 to 2 percent slopes	51.9%

<sup>\*</sup>Refer to the NRCS County Soil Report located in Appendix B for further information

The aboveground infiltration basin has been redesigned to safely convey all stormwater on site and subsurface pipes to convey the stormwater have been implemented on site as well. The site proposes to incorporate a landscaping plan consistent of deciduous trees, evergreen trees, evergreen shrubs, deciduous shrubs as well as ground covers and perennials in order to reduce any potential noise pollution and increase the overall aesthetic of the site. According to NJ-Geoweb there are no threatened or endangered species on site or within the vicinity of the site.

## 6.2 MAN-MADE RESOURCES

The present land use on site is classified as Urban according to NJ-Geoweb. The adjacent land uses are all Urban and a large portion behind the proposed development is classified as Forest. Change in land use is not anticipated for this project. Noise levels will remain the same after the project has completed construction. The site is classified in the General Business (GB) Zone. The fast food restaurant is proposing electric service to be connected to the existing utility pole along Veronica Avenue, the sewer service to be connected the existing sanitary manhole on site, the water connection to the existing water line to the east of the driveway along

Veronica Avenue and the gas service to be connected into the gas valve to the east of the driveway along Veronica Avenue.

## 6.3 HUMAN RESOURCES

The exterior facade of the proposed project is intended to enhance the aesthetic of the surrounding corridor. The development will also contribute positively to the society and economy as it will offer jobs to the public and another place to eat. The site is not located in a historical district.

#### 6.4 POLLUTION PROBLEMS

No negative pollution, water, sewer, or air quality impacts are anticipated for the proposed project.

## 6.5 Traffic Generation and Circulation

For the proposed fast-food restaurant, the ITE data indicates that pass-by percentages of approximately 50% would be reasonably anticipated. By generating limited new peak hour traffic to the area, the proposed restaurant will not have a detrimental effect on the surrounding roadway system. Therefore, the overall traffic impact arising as a direct result of the proposal will be minimal.

As previously mentioned, there is a full-movement driveway on Veronica Avenue and left-turn egress is prohibited on Route 27. Based on 35% to 40% use of the driveway on Veronica Avenue, and accounting for internal trip credits, the new trips to/from the Route 27 driveway will fall below 100 trips per hour. As a result, a new Access Permit will not be required from NJDOT.

A single unit truck and passenger car are safely able to navigate in and out of the proposed development.

## 7.0 Adverse Impacts Resulting From Project

## 7.1 WATER QUALITY

According to the DRCC, all proposed impervious surfaces, intended to carry vehicle traffic must meet water quality standards including the reduction of the post-construction load of total suspended solids (TSS) in the stormwater runoff generated from the water quality design storm by a rate of 80% of the anticipated load from the developed site. An 80% water quality unit has been utilized to treat all stormwater applicable for treatment.

## 7.2 AIR QUALITY

The proposed development is not anticipating presenting any significant impacts to air quality as the proposed use is a restaurant without any anticipated discharge of pollutants in the air. Air quality on the developed site will likely remain similar to that of the surrounding commercial uses on site and along the corridors.

#### 7.3 Noise

Noise reduction techniques have been implemented by providing deciduous trees, evergreen trees, evergreen shrubs, and deciduous shrubs throughout the property and along the property line to mitigate any potential noise production from the development.

## 7.4 UNDESIRABLE LAND USE PATTERNS

The proposed land use is a fast-food restaurant with drive thru which is a consistent use with the Urban Land use classified on NJ-Geoweb. An undesirable land use in this location would be uses such as Barren Land, Water and Wetlands. Uses that would not be consistent with the Urban Land would be industrial, mining, manufacturing, and agricultural uses.

#### 7.5 DAMAGE OR DESTRUCTION OF SIGNIFICANT PLAN OR WILDLIFE SYSTEMS

The proposed development intends to utilize an already existing lot and does not intent on any destruction of plant or wildlife systems of any kind. Construction will take place in the vacant grass portion along Veronica Avenue. According to NJ-Geoweb there are no threatened or endangered species on site or within the vicinity of the site.

## 7.6 AESTHETIC VALUES

The newly implemented fast-food restaurant with drive-thru intends to implement a visually pleasing exterior façade that will contribute positively to the Township and overall corridor.

#### 7.7 DESTRUCTION OF NATURAL RESOURCES

No major destruction of any natural resources is anticipated. A few trees are proposed to be removed but additional trees are being put in their place. The limit of soil disturbance has been minimized to the greatest extent possible.

## 7.7 DISPLACEMENT OF PEOPLE AND BUSINESSES

The project has no anticipation of displacement of any people or businesses. The vacant grass portion and parking stalls along Veronica Avenue is being utilized to incorporate a new business.

## 7.8 DISPLACEMENT OF VIABLE FARMS

The project has no anticipation of displacement of viable farms. The vacant grass portion and parking stalls along Veronica Avenue are being utilized to incorporate a new restaurant building with associated parking, drive aisles, lighting, and landscaping. The existing site is already fully developed besides the portion dedicated to the newly proposed fast-food restaurant.

## 7.8 EMPLOYMENT AND PROPERTY TAX

The newly constructed fast-food restaurant will offer new employment to the surrounding community and the property tax will remain the same.

## 7.9 DESTRUCTION OF MAN-MADE RESOURCES

The existing striping and pavement on site by the retail strip stores are intended to be demolished. Concrete pads and stormwater pipes are also being removed in order to incorporate the new design of the restaurant. The newly constructed fast-food restaurant building will utilize the space of these demolished parking spaces and the open grass portion along Veronica Avenue.

#### 7.10 DISRUPTION OF DESIRABLE COMMUNITY AND REGIONAL GROWTH

The proposed development has no anticipation on disrupting the community or regional growth. After construction, the project will offer an economic benefit to the community and its surroundings.

## 7.11 TRAFFIC IMPACTS

For the proposed fast-food restaurant, the ITE data indicates that pass-by percentages of approximately 50% would be reasonably anticipated. By generating limited new peak hour traffic to the area, the proposed restaurant will not have a detrimental effect on the surrounding roadway system. Therefore, the overall traffic impact arising as a direct result of the proposal will be minimal.

As previously mentioned, there is a full-movement driveway on Veronica Avenue and left-turn egress is prohibited on Route 27. Based on 35% to 40% use of the driveway on Veronica Avenue, and accounting for

internal trip credits, the new trips to/from the Route 27 driveway will fall below 100 trips per hour. As a result, a new Access Permit will not be required from NIDOT.

## 7.12 HEALTH, SAFETY AND WELL-BEING OF THE PUBLIC

All construction for the project will be contained on site and no work is proposed within the right-of-way. Proper safety pre-cautions for construction to keep the workers and public safe will be taken. Additionally, soil erosion controls are being implemented in order to prevent any sedimentation from escaping the boundaries of the project.

## 8.0 PROJECT ALTERNATIVES

Under a "no action" alternative, the property does not offer its full potential for development. The fast-food restaurant allows the development to be fully utilized and max out its potential for the Township. The addition of this restaurant offers an overall benefit to the community giving consumers an additional location to utilize this service and offering the public jobs. Overall, the social impact is more beneficial under the proposed project than that of a "no-action" alternative. Access to the restaurant flows uniformly with the existing traffic patterns on site and no road work in the right-of-way or changes to the driveways are anticipated. The proposed development is contained within the General Business (GB) Zone for which the proposed use is permitted. The proposed development increases the aesthetics of the site with a modern architectural design and a landscaping design inclusive of native, low-maintenance trees, shrubs, and ground cover. The proposed development offers increased economic activity and aesthetic appeal of the site when compared to the "no action" alternative.

## 9.0 AMELIORATIVE MEASURES

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

- Implementing soil erosion and sediment control measures during construction
- Provides enhanced landscaping to reduce noise pollution and enhance the overall aesthetic to the property
- Implementing non-structural stormwater management strategies in conjunction with underground storm piping to comply with runoff quantity, recharge and water quality.

# APPENDIX A PROJECT FIGURES

INVENTORY
USGS LOCATION MAP
ZONING/TAX MAP
AERIAL MAP

# **AERIAL MAP**

SOURCE: GOOGLE EARTH PRO 6/25/2019

200' 200' 400'

GRAPHIC SCALE IN FEET I'' = 200'

3 RONSON, LLC PROPOSED FAST FOOD RESTAURANT AND ATM **KISOK** 

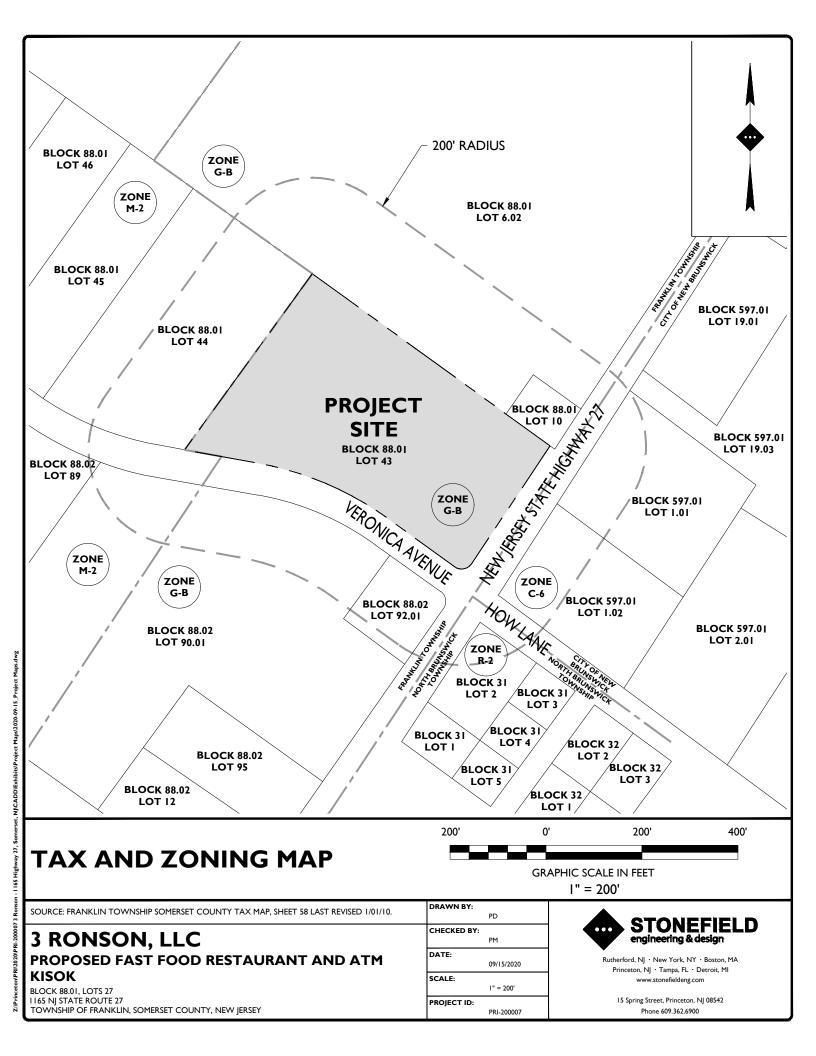
BLOCK 88.01, LOTS 27 1165 NJ STATE ROUTE 27 TOWNSHIP OF FRANKLIN, SOMERSET COUNTY, NEW JERSEY

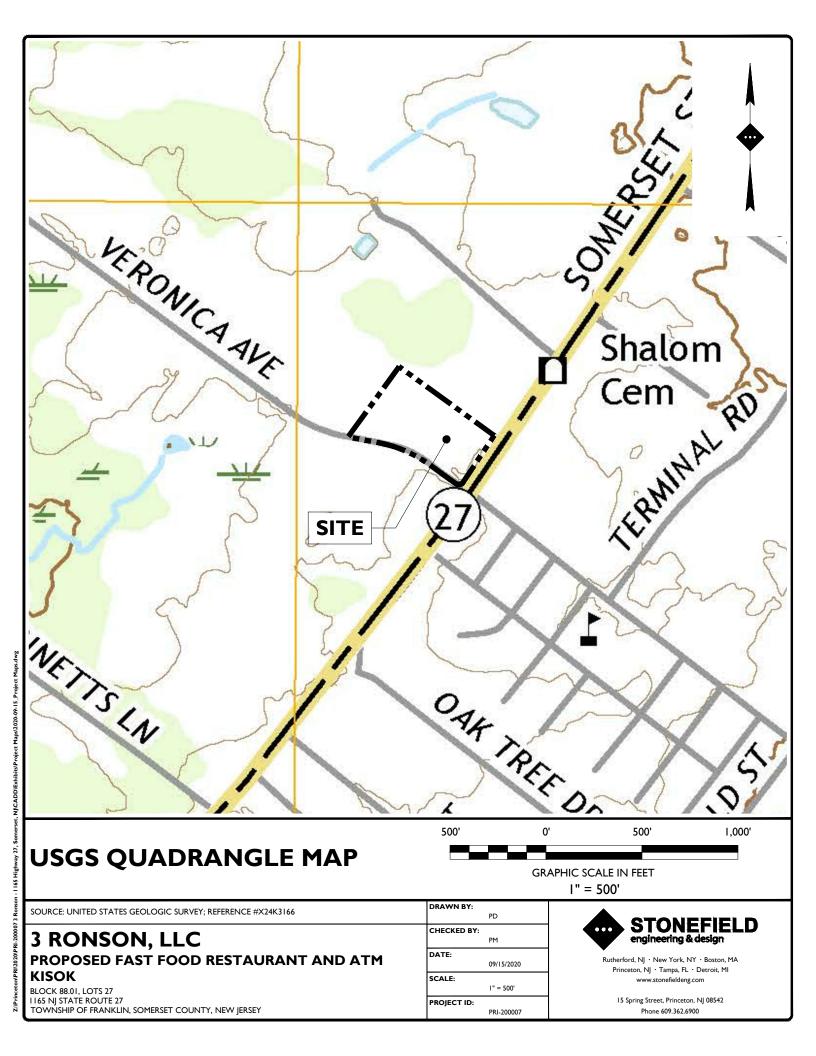
DRAWN BY: CHECKED BY: DATE: 09/15/2020 SCALE: I" = 200' PROJECT ID: PRI-200007



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# APPENDIX B NRCS COUNTY SOIL SURVEY



**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 Middlesex County, New Jersey, and Somerset County, New Jersey



## **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.



#### 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 (o)

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

å Stony Spot

00 Very Stony Spot

Ŷ Wet Spot

Other Δ

Special Line Features

#### Water Features

Streams and Canals

#### Transportation

Rails ---

Interstate Highways

**US Routes** 

Major Roads

Local Roads 00

#### Background

Aerial Photography

#### MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24.000.

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: Middlesex County, New Jersey Survey Area Data: Version 15, Sep 16, 2019

Soil Survey Area: Somerset County, New Jersey Survey Area Data: Version 17, Sep 16, 2019

Your area of interest (AOI) includes more than one soil survey area. These survey areas may have been mapped at different scales, with a different land use in mind, at different times, or at different levels of detail. This may result in map unit symbols, soil properties, and interpretations that do not completely agree across soil survey area boundaries.

MAP LEGEND	MAP INFORMATION	
	Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.	
	Date(s) aerial images were photographed: Jun 22, 2019—Jul 13, 2019	
	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 (Soil Map)

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI	
RoyB	Royce silt loam, 3 to 8 percent slopes	0.2	3.1%	
Subtotals for Soil Survey Area		0.2	3.1%	
Totals for Area of Interest		5.1	100.0%	

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
LbtA	Lansdowne silt loam, 0 to 2 percent slopes	2.6	51.9%
RoyB	Royce silt loam, 2 to 6 percent slopes	2.3	45.0%
Subtotals for Soil Survey Area		4.9	96.9%
Totals for Area of Interest		5.1	100.0%

## Map Unit Descriptions (Soil Map)

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.

## Middlesex County, New Jersey

## RoyB—Royce silt loam, 3 to 8 percent slopes

## **Map Unit Setting**

National map unit symbol: nc6h Elevation: 300 to 1,000 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: All areas are prime farmland

## **Map Unit Composition**

Royce and similar soils: 90 percent *Minor components:* 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

## **Description of Royce**

## Setting

Landform: Alluvial flats

Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Fine-loamy residuum weathered from shale

## **Typical profile**

Ap - 0 to 8 inches: silt loam
BA - 8 to 12 inches: silt loam
Bt - 12 to 30 inches: clay loam
2BC - 30 to 48 inches: channery loam

2R - 48 to 80 inches: weathered bedrock

## Properties and qualities

Slope: 2 to 6 percent

Depth to restrictive feature: 39 to 60 inches to lithic bedrock

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water storage in profile: Moderate (about 7.7 inches)

#### Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C Hydric soil rating: No

#### **Minor Components**

## **Birdsboro**

Percent of map unit: 5 percent Landform: Stream terraces

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Tread

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: No

## Lansdowne

Percent of map unit: 5 percent

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: No

## **Somerset County, New Jersey**

## LbtA—Lansdowne silt loam, 0 to 2 percent slopes

## **Map Unit Setting**

National map unit symbol: 1lp86

Elevation: 0 to 220 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: Farmland of statewide importance

## **Map Unit Composition**

Lansdowne and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

## **Description of Lansdowne**

## Setting

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave Across-slope shape: Linear

Parent material: Fine-loamy till derived from sandstone and shale over residuum

weathered from sandstone and shale

### Typical profile

Ap - 0 to 7 inches: silt loam

Bt - 7 to 50 inches: silty clay

C - 50 to 60 inches: clay loam

R - 60 to 80 inches: unweathered bedrock

#### Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: 39 to 60 inches to lithic bedrock

Natural drainage class: Somewhat poorly drained

Runoff class: Medium

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to

moderately high (0.06 to 0.20 in/hr)

Depth to water table: About 12 to 30 inches

Frequency of flooding: None Frequency of ponding: None

Available water storage in profile: High (about 9.7 inches)

## Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2w

Hydrologic Soil Group: C Hydric soil rating: No

## **Minor Components**

#### Fallsington, bedrock substratum, rarely flooded

Percent of map unit: 5 percent

Landform: Depressions

Landform position (two-dimensional): Toeslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave Across-slope shape: Concave

Hydric soil rating: Yes

## Parsippany, frequently flooded

Percent of map unit: 5 percent Landform: Flood plains Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: Yes

#### **Elkton**

Percent of map unit: 5 percent Landform: Marine terraces Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: Yes

## RoyB—Royce silt loam, 2 to 6 percent slopes

## Map Unit Setting

National map unit symbol: Idsf Elevation: 300 to 1,000 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: All areas are prime farmland

## **Map Unit Composition**

Royce and similar soils: 90 percent Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

## **Description of Royce**

## Setting

Landform: Alluvial flats

Landform position (three-dimensional): Talf

Down-slope shape: Linear Across-slope shape: Linear

Parent material: Fine-loamy residuum weathered from shale

#### Typical profile

Ap - 0 to 8 inches: silt loam
BA - 8 to 12 inches: silt loam
Bt - 12 to 30 inches: clay loam

2BC - 30 to 48 inches: channery loam 2R - 48 to 80 inches: weathered bedrock

## **Properties and qualities**

Slope: 2 to 6 percent

Depth to restrictive feature: 39 to 60 inches to lithic bedrock

Natural drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20

to 0.60 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None Frequency of ponding: None

Available water storage in profile: Moderate (about 7.7 inches)

## Interpretive groups

Land capability classification (irrigated): None specified

Land capability classification (nonirrigated): 2e

Hydrologic Soil Group: C Hydric soil rating: No

## **Minor Components**

#### **Birdsboro**

Percent of map unit: 5 percent Landform: Stream terraces

Landform position (two-dimensional): Backslope Landform position (three-dimensional): Tread

Down-slope shape: Linear Across-slope shape: Linear Hydric soil rating: No

## Lansdowne

Percent of map unit: 5 percent

Landform: Flats

Landform position (two-dimensional): Footslope Landform position (three-dimensional): Base slope

Down-slope shape: Concave Across-slope shape: Linear Hydric soil rating: No

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# APPENDIX C CURRICULUM VITAE

# JEFFREY A. MARTELL, PE, PP, CME, LEED AP

## **Education**

BS Civil Engineering University of Delaware

Masters of Science Engineering Management New Jersey Institute of Technology

## Licensure

Professional Engineer State of New Jersey, New York, Pennsylvania, Connecticut, Michigan, North Carolina and Florida

Certified Municipal Engineer State of New Jersey

Professional Planner State of New Jersey

**LEED Accredited Professional** 

#### **Associations**

American Society of Civil Engineers (ASCE)

Urban Land Institute (ULI)

Mr. Jeffrey Martell is an accomplished Civil Engineer, licensed in numerous states, with extensive civil/site engineering, transportation engineering, environmental impact evaluation and construction inspection experience. Design and engineering experience for the private and public sector includes site layout, roadway design, traffic analysis, stormwater management, grading, utilities, lighting, soil erosion, and sediment control, and landscaping for over 1,000 land development and public improvement projects. He has professional experience designing and managing the unique and diverse elements of land development and infrastructure design. Mr. Martell also has extensive permitting experience with local Planning and Zoning Boards, County Planning and Commissions, State Environmental Agencies, Soil Conservation Districts and State Department of Transportation. Involvement in engineering design and consulting ranges from site evaluation and conceptual design, through entitlements, and construction administration/inspection.

Responsible for the design and permitting of over 1,000 land development and redevelopment projects, inclusive of project scoping, due diligence, design, construction specifications, entitlements, and construction administration.

Master site planning and design of numerous residential subdivisions and multi-family developments ranging from single family homes to 500 unit developments.

Master site planning and infrastructure management for industrial/commercial campuses, school campuses, utility authorities, and municipalities.

ADA compliance assessment, retro-fit design, and certification for numerous improvement projects at existing and proposed commercial facilities.

Preparation of GIS mapping for commercial and university campuses, mapping includes detailed asset management attributes and coding for managing maintenance programs.

LEED design and preparation of credit submittals.

Assessment of environmental constraints (wetlands, floodplains, etc.) and mitigation design.

Qualified as an Engineering Expert and provided Public Hearing testimony before approximately 100 Land Use Boards and Superior Court of New Jersey Law Division.

# APPENDIX D SITE PLAN SHEET

