PROCIVIL 360

COLE EXPANSION

Feasibility Study

PROCIVIL360
12 S. MAIN STREET, BROOKSVILLE, FL 34601
352-593-4255
www.procivil360.com

Current Zoning of your property

Your parcel is currently zoned PDP(HC)with C-4 uses (H-04-26). The Master Plan is also attached to this Feasibility Study and as you can see the existing building was covered in the Master Plan however the proposed building was not. This would require a Master Plan revision to add the new 14,000 sf building to the site. See Exhibit 1 and Master Plan.

Future Land Use of your property

Based on the County's Comprehensive Plan, your property is in a strip of land designated for Rural development. There is no need to change the Comprehensive Plan to permit such a project. See Exhibit 2.

FEMA Flood Maps

The property is predominately located in Flood Zone X shown on Map 12053C 0068D dated 2/2/2012. New FEMA maps are coming out daily and this will need to be updated once the area map has been completed. See Exhibit 3.

Presence of Wetlands or Surface Waters on, or Adjacent to your Site.

The mapping indicates no wetlands, surface waters, on or adjacent to the site. See Exhibit 4.

Existing Soil Types

The predominant soil type where you wish to build is Blichton Loamy Fine sand. This is an extremely bad soil when it comes to drainage, the proposed relocated pond on the Conceptual will be a wet detention pond, same as the existing pond on-site currently. See Exhibit 5.

Lidar Contours of the Site and Surrounding Properties

The Southwest Florida Water Management District (SWFWMD) has performed Lidar mapping of THE entirety of Hernando County. These contours, available through the SWFWMD database, represent the general topography of the land. They also indicate low areas which may or may not be on this property. Exhibit 6 reflects the topography of this parcel. The topo shows the lowest part of the property to the western side. This is were the placement for the proposed relocated pond is shown on the Conceptual layout. The property to the west of the subject parcel is lower and historical discharge can occur to the west during the drainage design.

Flood Plain Nodes and Reaches

SWFWMD has developed flood plain management models and topographic mapping for all of Hernando County. These studies have been adopted by Hernando County and as a result, all future building activity is subject to the more detailed, updated information, which is some cases, may be different from the typical FEMA maps. The red lines in Exhibit 7 represent ridge lines which are used in determining the contributing area and surface flow for each specific node. The nodes are sub-basins, typically low areas within or adjacent to the project. Nodes in some cases may be only a junction where two or more reaches (links) join. The blue lines represent these reaches. The reaches theoretically connect the nodes. One

must know how to decipher and interpret the models to determine if a reach has any flow between the nodes.

In this case, this property is part of 2 separate basins the western basin A0100 is very large and everything runs off to the west to an existing depression off-site. The smaller basin A0070 is the front half of the building and everything there goes to south through a series of swales down to the low point off of Ponce De Leon Blvd. See Exhibit 6.

Acceptance of Off-Site Runoff

To the north there may be some off-site sheet-flow runoff coming onto the property. This will be considered in any future drainage calculations and grading plans. Off-site runoff must be accepted into your project's drainage system, or captured, and conveyed around the building site.

Location of a Positive Discharge (closed or open basin)

According to the SWFWMD Basin Study for Blue Sink and Chass, this property has a positive outfall to the West and South. Thus the 100-year storm and lower events will need to be attenuated on-site.

Determination of Size of Future Retention Pond

Once the next phase of this project starts, the drainage retention area (DRA) design can be completed. We do believe a soil boring, and percolation test to be necessary, both Hernando County, and SWFWMD typically require such during the permitting phase. We already recognize the soils as being very bad, and would plan as previously stated, a wet-detention pond for the design. The pond will need to capture both the 25-year 24 hour and 100-year 24-hour storm events for the watershed routed to this pond. A discharge structure may be required to regulate the flow leaving the pond.

Environmental Audit Clearance

If financing is involved, more than likely this will be required by the lending institution. We do not offer this service, but recommend Creative Environmental Services, Mr. George Foster.

Environmental Survey Plant and Animal Species ()

Gopher tortoise study is required on all new construction. We do not offer this service but recommend Mr. David McAlpine of McAlpine Environmental to provide that service.

Determination of Frontage Road Disposition

No frontage road is required for this project.

Water / Sewer Map

The existing site is serviced by on-site well and septic. The City of Brooksville to our knowledge does not have any existing utility lines that far north on Ponce De Leon Blvd.

Access

There is one existing point of access into the property one being the existing main access on Annutalaga Ave. which connects to Ponce De Leon Blvd.

Existing Landscape Buffers, etc. to meet County Code.

Along Annutalaga Ave.:

A vegetative buffer at least five (25) feet in width shall abut the street right-of-way/pavements for the street right-of-way frontage. If only installed planting areas are used, the vegetative buffer shall include a hedge of shrubs with a minimum height of eighteen (18) inches at time of planting. Shrubs shall be appropriately spaced according to growth needed of the species for the hedge to attain eighty (80) percent opacity within twelve (12) months of planting. The existing buffer along Annatalaga Ave. appears to meet code.

All other property Lines:

A buffer shall be required between a Planned Development Project land use which is multifamily or non-residential and a land use, external to the PDP, which is residential, agricultural-residential, or agricultural. The buffer shall consist of a minimum five-foot landscaped separation distance. The multifamily or nonresidential use located on such lot shall be permanently screened from the adjoining and contiguous properties by a wall, fence, and/or approved enclosures. Such screening shall have a minimum height of five (5) [feet] and a maximum height of eight (8) feet, or an evergreen hedge with a minimum height of five (5) feet at the time of planting. Hernando County Municode: Appendix A Article VIII C. The existing buffers along all other sides of the property are existing and intact.

Permits Required for Development –

A Master Plan Revision, SWFWMD Individual ERP modification, Hernando County Site Development Permit including Site, Drainage, CSWMP, Utilities/Fire, and Landscaping. Concurrency.

Expected Fill Material to Develop Site

The Building Contractor should determine how much clean fill he wishes to have under his building. In addition, he may wish to obtain soil boings and soil classification to assist in foundation design for this project. The material obtained from the excavation of the retention area could be utilized for building fill. It may be stockpiled for later use or spread down-hill on the site. There is no need to export soil from the site.

Subdivision into Other Parcels

NA. There is no intent conveyed by the Owner to subdivide this land for sale to others.

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Conceptual Plan Exhibit 7

Concept #1

The first conceptual layout is an additional 14,000 sf single-story building located at the existing pond area of the parcel. The existing pond would be relocated to the rear (west property line) of the parcel, the backfill for the existing pond would be generated from the proposed pond. All parking requirements are provided and exceeded on the Conceptual Plan. See Exhibit 7

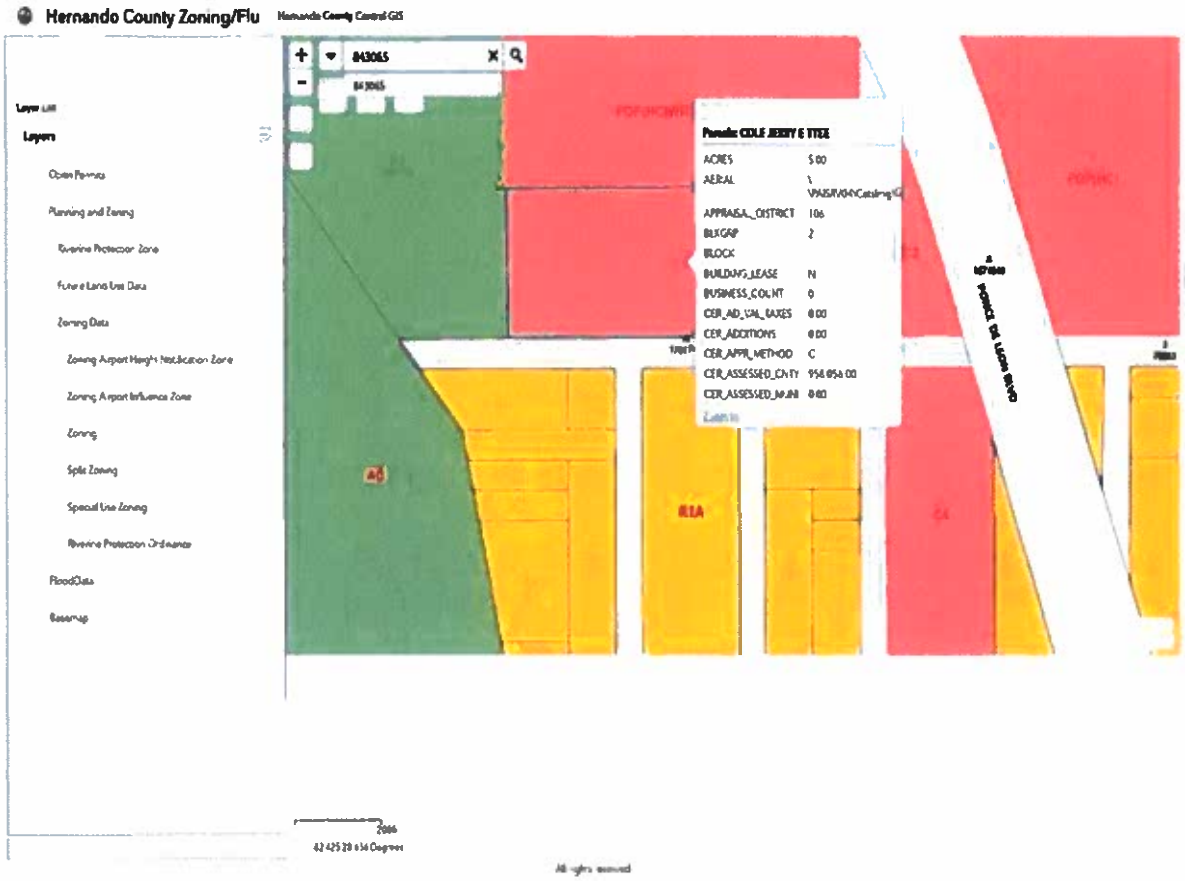

EXHIBIT 1 ZONING MAP

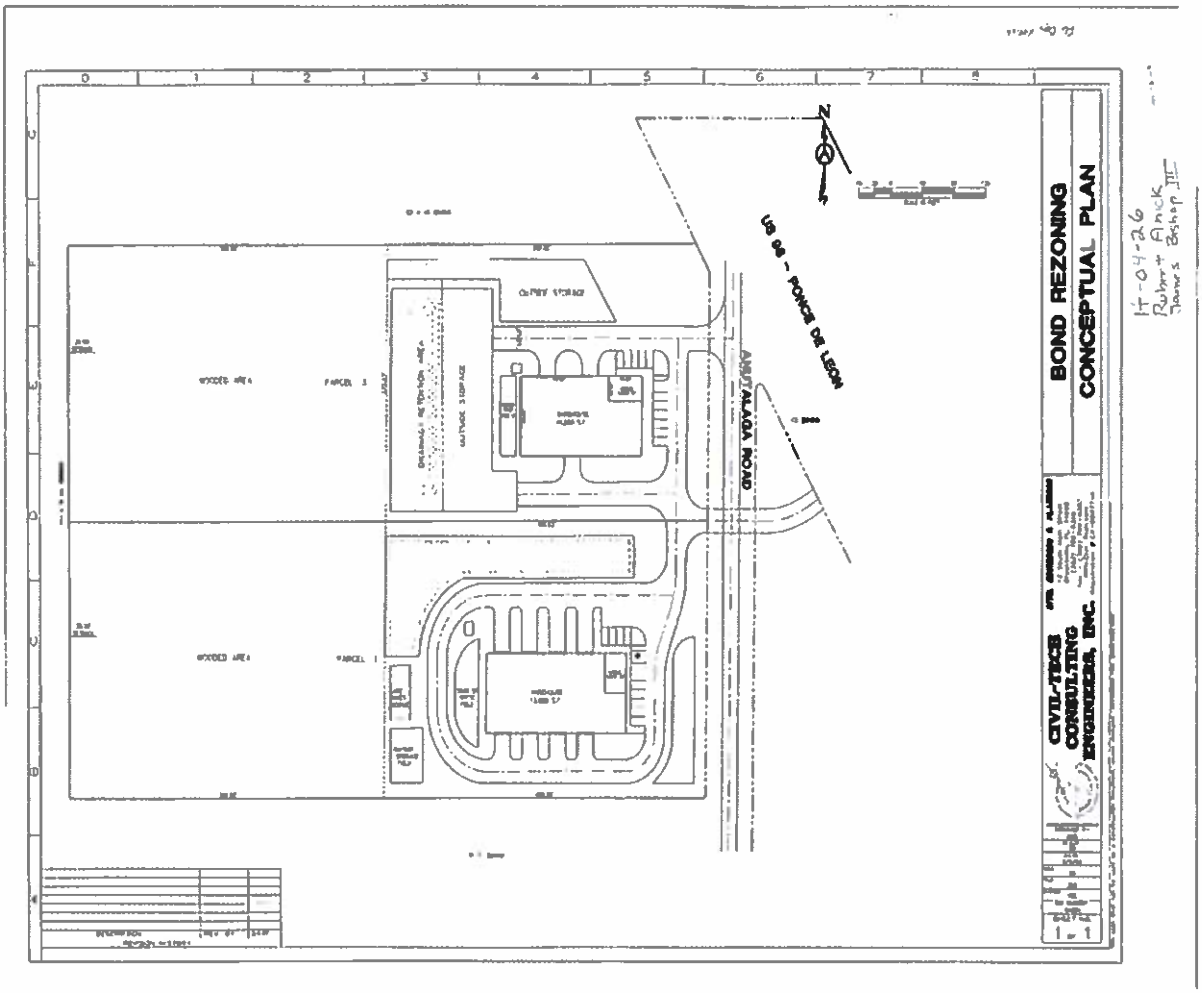

EXHIBIT 1A MASTER PLAN

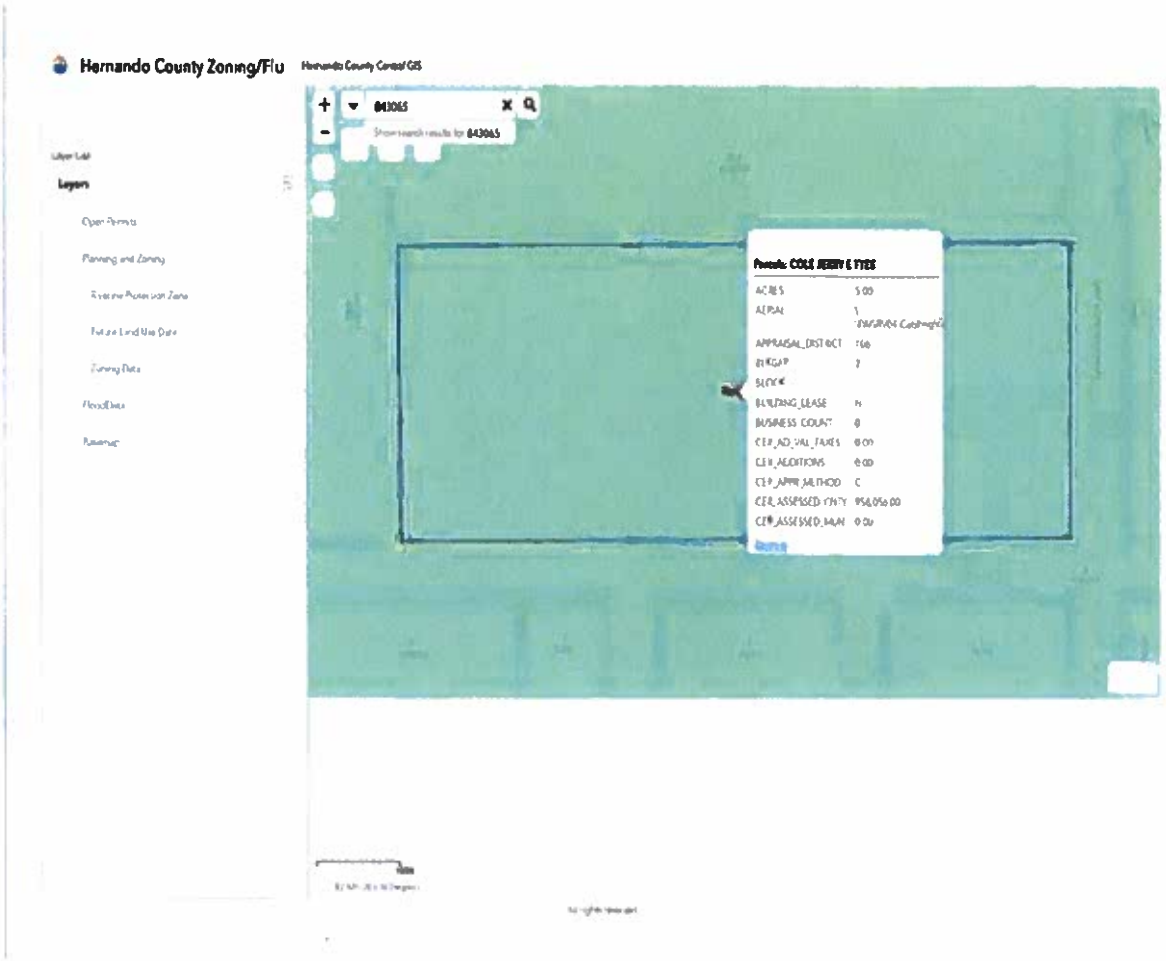

EXHIBIT 2 FLUM MAP

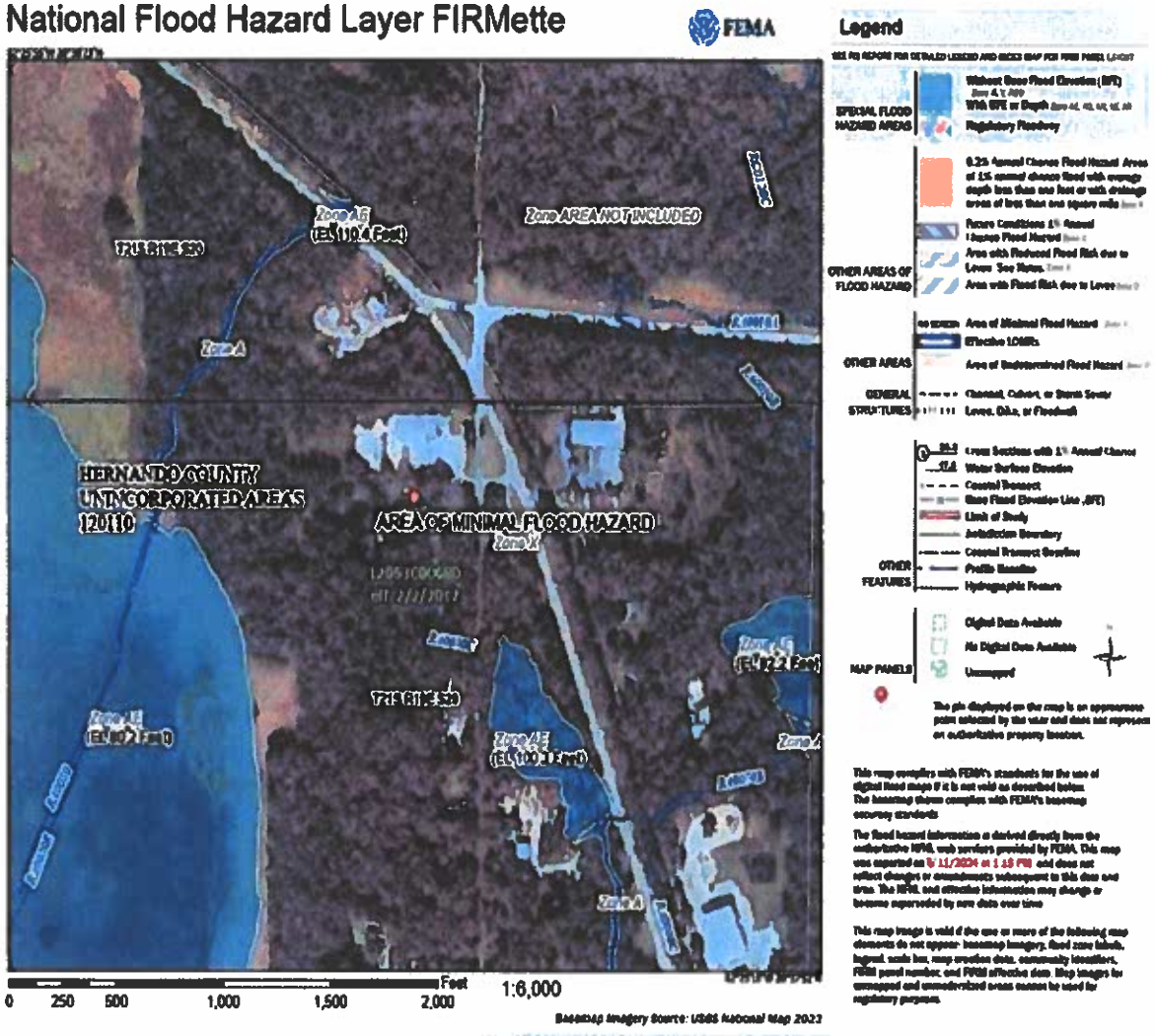

EXHIBIT 3 FEMA MAP

EXHIBIT 4 WETLAND MAP

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 Hernando County, Florida

Cole Expansion

EXHIBIT 5 SOILS MAP

September 11, 2024

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.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or a part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require

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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.

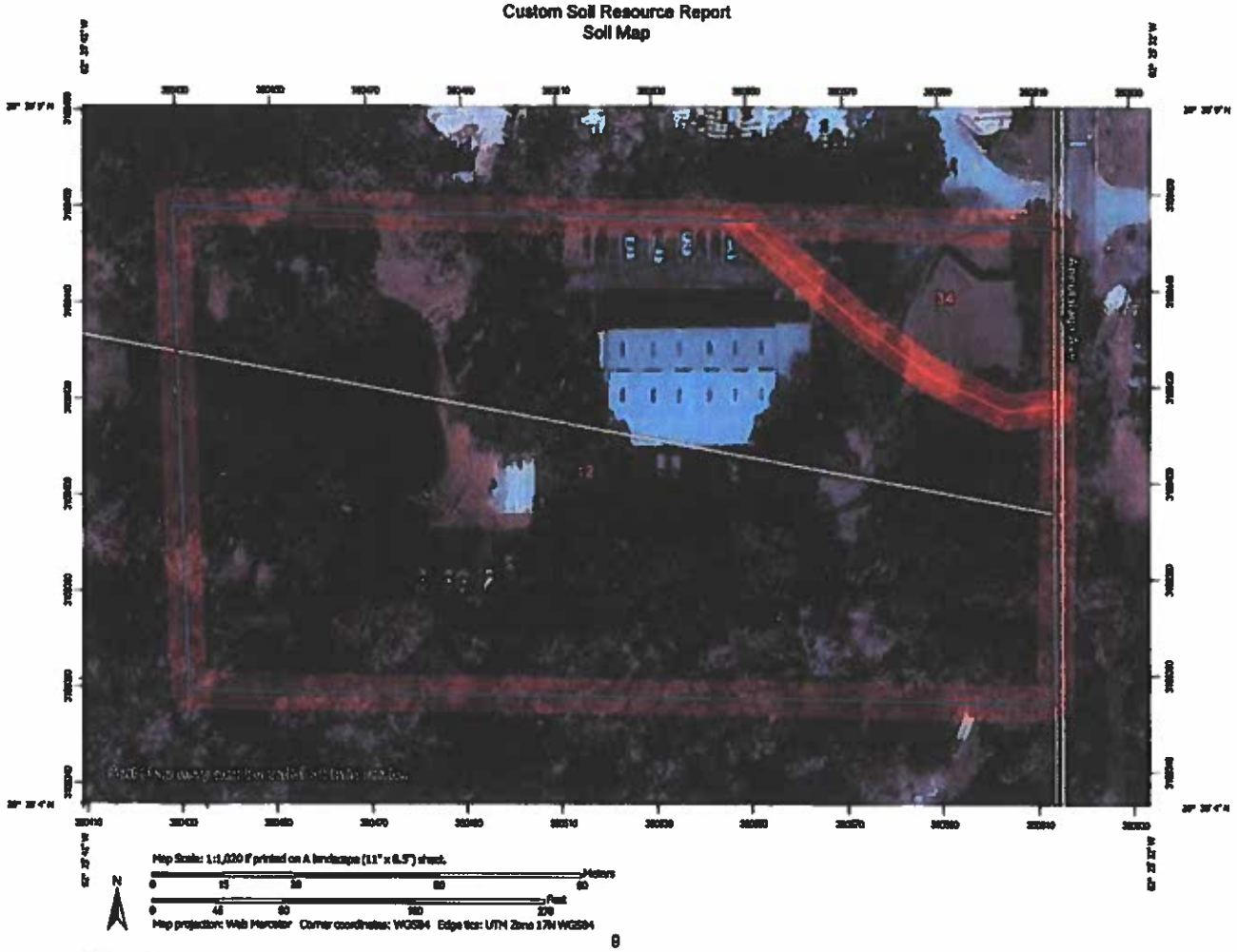

EXHIBIT 5 SOILS MAP

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 20 000

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 Hernando County, Florida
Survey Area Data: Version 20, Aug 28, 2023

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

Date(s) aerial images were photographed Jan 8, 2022—Jan 30, 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
12	Bilchton loamy fine sand, 2 to 5 percent slopes	4.2	91.2%
34	Micanopy loamy fine sand, 2 to 5 percent slopes	0.4	8.8%
Totals for Area of Interest		4.6	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.

Hernando County, Florida

12—Blichton loamy fine sand, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: bt4h
Elevation: 30 to 110 feet
Mean annual precipitation: 48 to 56 inches
Mean annual air temperature: 68 to 75 degrees F
Frost-free period: 309 to 339 days
Farmland classification: Not prime farmland

Map Unit Composition

Blichton, hydric, and similar soils: 70 percent
Blichton, non-hydric, and similar soils: 12 percent
Minor components: 18 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Blichton, Hydric

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Base slope, interfluve
Down-slope shape: Concave
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 7 inches: loamy fine sand
E - 7 to 22 inches: loamy fine sand
Btg - 22 to 29 inches: sandy loam
Btgv - 29 to 60 inches: sandy clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 0 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Forage suitability group: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)

Hydric soil rating: Yes

Description of Blichton, Non-hydric

Setting

Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (three-dimensional): Side slope, interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Parent material: Sandy and loamy marine deposits

Typical profile

A - 0 to 7 inches: loamy fine sand
E - 7 to 22 inches: loamy fine sand
Btg - 22 to 29 inches: sandy loam
Btgv - 29 to 60 inches: sandy clay loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Poorly drained
Runoff class: Very high
Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: About 6 to 12 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 6.7 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 3w
Hydrologic Soil Group: B/D
Forage suitability group: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: No

Minor Components

Flemington, non-hydric

Percent of map unit: 5 percent
Landform: Ridges on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy, loamy, or clayey soils on flats and rises of hydric uplands (G154XB441FL)
Hydric soil rating: No

Kanapaha, non-hydric

Percent of map unit: 5 percent
Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluve, talf

Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy soils on flats of mesic or hydric lowlands (G154XB141FL)
Hydric soil rating: No

Wauchula, non-hydric
Percent of map unit: 4 percent
Landform: Flatwoods on marine terraces
Landform position (three-dimensional): Talf
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on flats of hydric or mesic lowlands (G154XB241FL)
Hydric soil rating: No

Nobleton
Percent of map unit: 4 percent
Landform: Rises on marine terraces
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex
Across-slope shape: Linear
Other vegetative classification: Sandy over loamy soils on rises and knolls of mesic uplands (G154XB231FL)
Hydric soil rating: No

34—Micanopy loamy fine sand, 2 to 5 percent slopes

Map Unit Setting
National map unit symbol: 2w4h1
Elevation: 30 to 300 feet
Mean annual precipitation: 48 to 58 inches
Mean annual air temperature: 66 to 75 degrees F
Frost-free period: 248 to 339 days
Farmland classification: Prime farmland if drained

Map Unit Composition
Micanopy and similar soils: 88 percent
Minor components: 12 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Micanopy

Setting
Landform: Rises on marine terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex

Parent material: Sandy and clayey marine deposits

Typical profile

A - 0 to 8 inches: loamy fine sand
E - 8 to 15 inches: loamy fine sand
Bt1 - 15 to 18 inches: sandy clay loam
Bt2 - 18 to 25 inches: sandy clay
Btg - 25 to 62 inches: sandy clay

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
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 18 to 30 inches
Frequency of flooding: None
Frequency of ponding: None
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 4.0
Available water supply, 0 to 60 inches: Moderate (about 8.4 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 2w
Hydrologic Soil Group: C
Forage suitability group: Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Other vegetative classification: Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Hydric soil rating: No

Minor Components

Nobleton

Percent of map unit: 3 percent
Landform: Rises on marine terraces
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Convex
Other vegetative classification: Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Hydric soil rating: No

Blichton

Percent of map unit: 3 percent
Landform: Knolls on marine terraces, ridges on marine terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve, base slope
Down-slope shape: Convex, linear
Across-slope shape: Linear, concave
Other vegetative classification: Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Hydric soil rating: Yes

Flemington

Percent of map unit: 3 percent
Landform: Ridges on marine terraces
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Interfluve
Down-slope shape: Linear
Across-slope shape: Concave
Other vegetative classification: Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Hydric soil rating: No

Kendrick

Percent of map unit: 3 percent
Landform: Ridges on marine terraces, knolls on marine terraces
Landform position (two-dimensional): Shoulder, summit
Landform position (three-dimensional): Interfluve
Down-slope shape: Convex, linear
Across-slope shape: Linear, convex
Other vegetative classification: Upland Hardwood Hammock (R154XY008FL), Loamy and clayey soils on flats and rises of mesic lowlands (G154XB331FL)
Hydric soil rating: No

References

American Association of State Highway and Transportation Officials (AASHTO). 2004. Standard specifications for transportation materials and methods of sampling and testing. 24th edition.

American Society for Testing and Materials (ASTM). 2005. Standard classification of soils for engineering purposes. ASTM Standard D2487-00.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deep-water habitats of the United States. U.S. Fish and Wildlife Service FWS/OBS-79/31.

Federal Register. July 13, 1994. Changes in hydric soils of the United States.

Federal Register. September 18, 2002. Hydric soils of the United States.

Hurt, G.W., and L.M. Vasilas, editors. Version 6.0, 2006. Field indicators of hydric soils in the United States.

National Research Council. 1995. Wetlands: Characteristics and boundaries.

Soil Survey Division Staff. 1993. Soil survey manual. Soil Conservation Service. U.S. Department of Agriculture Handbook 18. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_054262

Soil Survey Staff. 1999. Soil taxonomy: A basic system of soil classification for making and interpreting soil surveys. 2nd edition. Natural Resources Conservation Service, U.S. Department of Agriculture Handbook 436. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053577

Soil Survey Staff. 2010. Keys to soil taxonomy. 11th edition. U.S. Department of Agriculture, Natural Resources Conservation Service. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/soils/?cid=nrcs142p2_053580

Tiner, R.W., Jr. 1985. Wetlands of Delaware. U.S. Fish and Wildlife Service and Delaware Department of Natural Resources and Environmental Control, Wetlands Section.

United States Army Corps of Engineers, Environmental Laboratory. 1987. Corps of Engineers wetlands delineation manual. Waterways Experiment Station Technical Report Y-87-1.

United States Department of Agriculture, Natural Resources Conservation Service. National forestry manual. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/home/?cid=nrcs142p2_053374

United States Department of Agriculture, Natural Resources Conservation Service. National range and pasture handbook. http://www.nrcs.usda.gov/wps/portal/nrcs/detail/national/landuse/rangepasture/?cid=stelprdb1043084

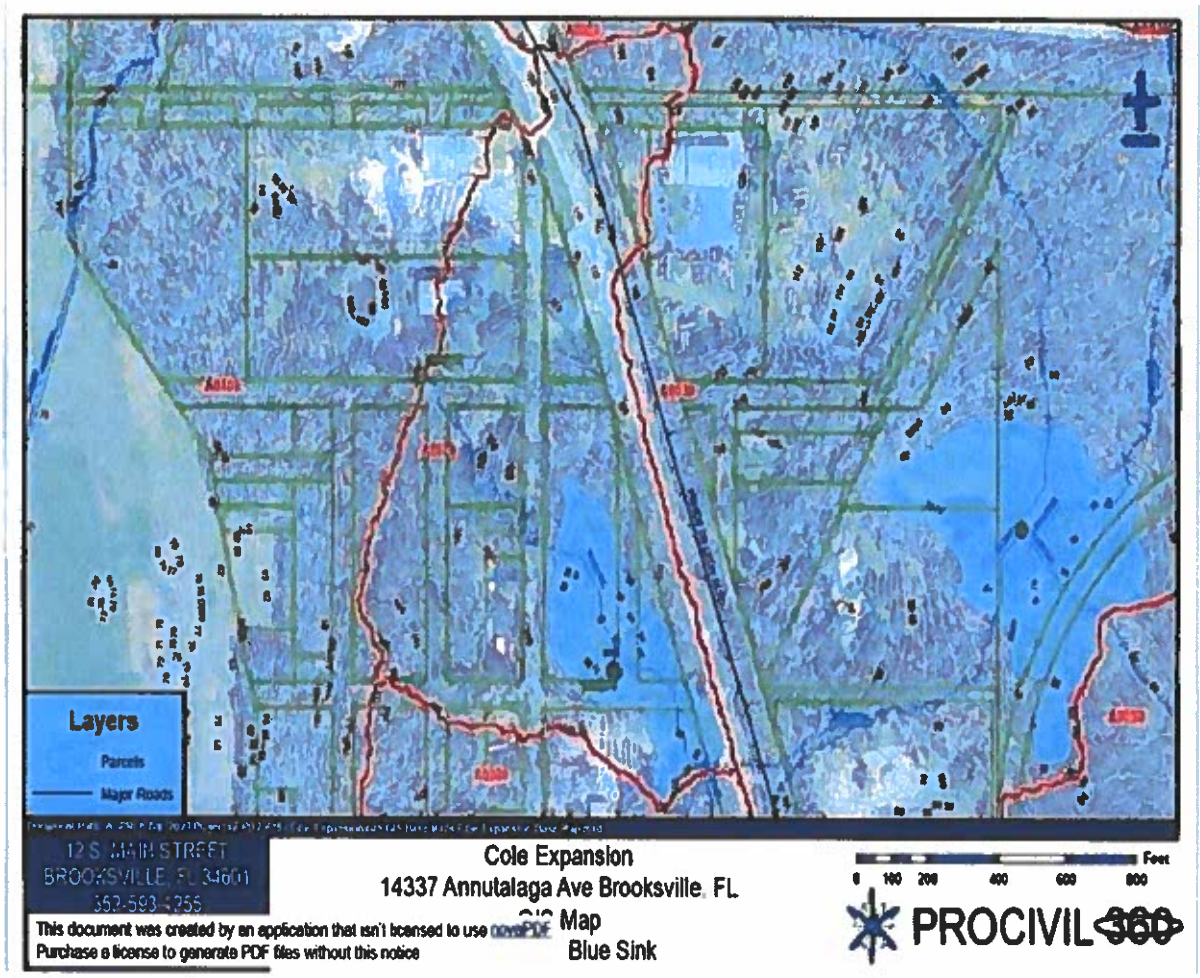

EXHIBIT 6 FLOOD PLAIN NODES

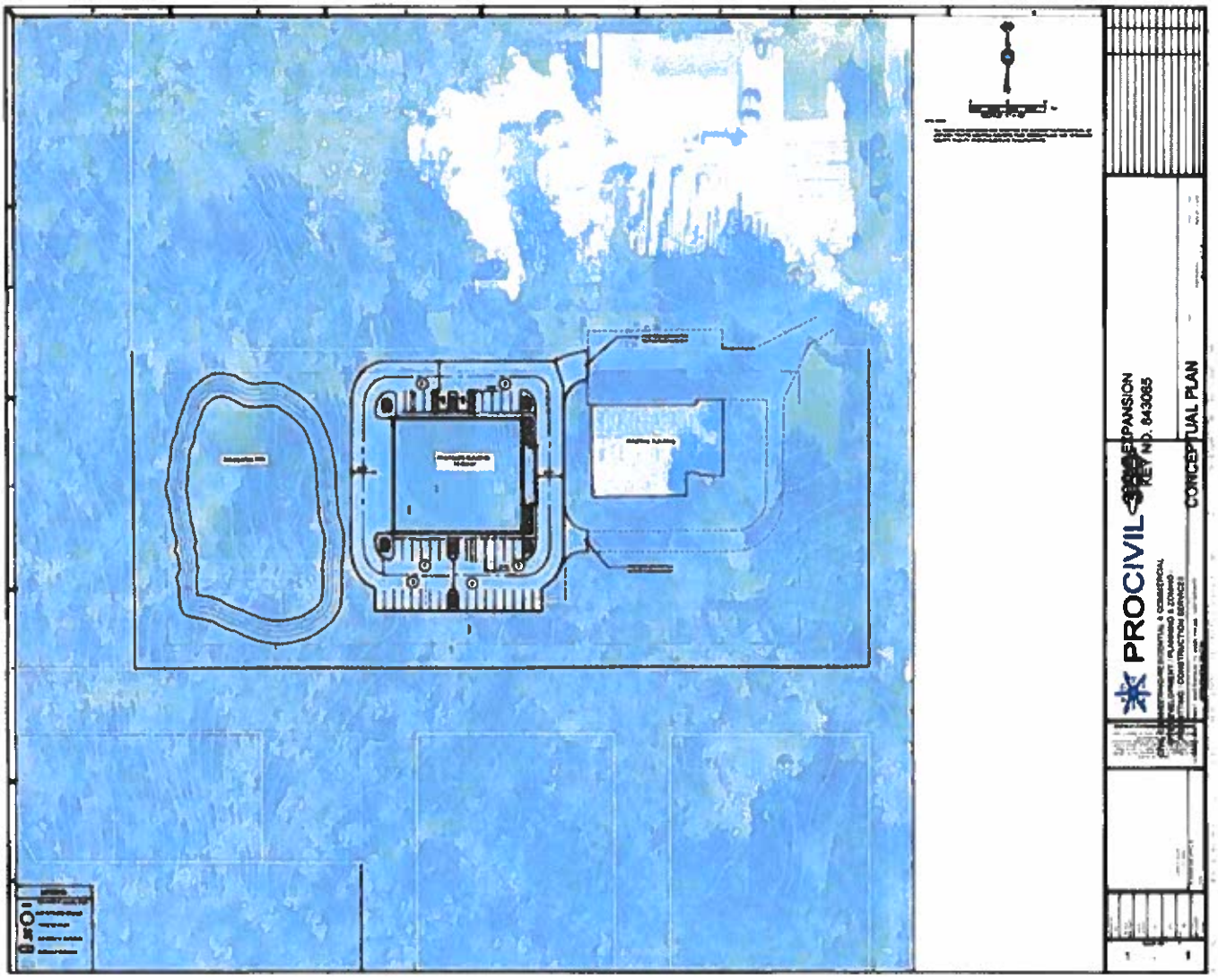

EXHIBIT 7 CONCEPTUAL