



CIVIL ENGINEERING **DRAFT DUE DILIGENCE REPORT**

Black Creek Landing Middleburg, Florida

PREPARED FOR:

Jaffe Contracting Inc.
101 Brewster Lane
Palm Coast, FL 32137

PREPARED BY:

WGI, Inc.
2035 Vista Parkway
West Palm Beach, FL 33411

March 6, 2020





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INTRODUCTION AND BACKGROUND

WGI, Inc. (WGI) has prepared this Civil Engineering Due Diligence Report to assess pertinent information as it relates to the existing infrastructure and the development of the subject site located along State Road 25 in Middleburg, Florida. As part of the review, WGI established the design requirements to develop the site into a commercial development. Specifically, this report will review the ability to provide adequate stormwater attenuation, review floodplain requirements, and discuss wetland mitigation for the site.

SITE LOCATION

The subject site consists of 29.28 acres and located along State Road 25 within the unincorporated Clay County limits. The following Parcel IDs for the site are:

Parcel ID

- 35-05-24-006700-174-01
- 35-05-24-006700-119-00

Address: 2945 Python Ct, Middleburg, FL 32068

EXISTING CONDITIONS

The existing site is native forested pine scrub located between County Road 215 and state road 25.

The site is bound by an existing Bull Creek to the Southwest, County Road 215 to the west and State Road 25 (Blanding Blvd.) to the East. The neighboring properties to the north and west are vacant except for a communications tower to the property to the northwest. The property to the southwest across Bull Creek is currently occupied by First Assembly of God.

SITE ACCESS

No current access drive is located on the subject property. Access to the site is proposed via an unsignalized right-in, right-out, driveway connection to State Road 25, which is located approximately 0.25 miles south of the intersection of County Road 215 and State Road 25.

Permitting

The proposed driveway connection improvements will require permit/plan approvals from the following agencies:

- Florida Department of Transportation (FDOT)

EARTHWORK

Earthwork excavation of stormwater management facilities and placement of fill is required, to raise the proposed buildings above the floodplain elevation. Import of fill material will be likely to bring the site above floodplain elevation.





STORMWATER MANAGEMENT

There is no existing stormwater management system infrastructure on-site currently. The proposed drainage improvements associated with the project will include a wet detention area, swales, inlets and pipes with a proposed connection to the existing Bull Creek, which will serve as the legal point of positive outfall for the site. Water quality and attenuation requirements will be provided within the swale and wet detention areas with a control structure prior to discharge. The proposed improvements will be designed in accordance with Clay County, St. Johns River Water Management District, and NPDES requirements.

FEMA Flood Zone

In accordance with the Flood Insurance Rate Map Community Panel Number 1209C0145E dated March 17th, 2014 (**Exhibit 1**) as published by the Federal Emergency Management Agency (FEMA), the site contains the following flood designation.

- Floodway Area (Zone AE) With base flood elevation range of 21'-24' (NAVD'88 Datum)
 - The floodway is a channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increase in flood heights.
- Special flood hazard areas subject to inundation by the 1% annual chance flood.
- Zone X Areas of 0.2% chance flood.

Flood Criteria

Finished Floor Elevations: The minimum finished floor elevation will be at or above the 100 year floodplain elevation.

Perimeter Berm Elevations – The minimum perimeter berm elevation around the property will be at or above the calculated 25 year 1-day storm event peak stage.

Water Quality - Pollution Abatement

The detention of stormwater run-off for water quality purposes will be provided in the amount of the first inch of run-off over the entire site or 2.5 inches times the percent impervious area, whichever is greater. The required water quality volume will be provided within the wet detention.

Water Quantity

Adequate stormwater detention must be provided within the project site to store the run-off to accommodate the following:

- 25 year 1-day storm event peak stages below the proposed perimeter berm elevations.
- 2.3 year 1-day (mean-annual) storm event peak stages below the proposed crown of road pavement elevations.
- Floodplain compensation volumes (the volume of storage removed from the flood plain area) will need to be provided with hydraulic connection to the floodplain.

Water Discharge

The stormwater outfall after required pre-treatment is Bull Creek, a tributary of the Black Creek. The site will be required to meet water quantity and quality compliance with the St Johns River Water Management District and Clay County building department requirements.





Permitting

The proposed stormwater improvements will require permit / plan approvals from the following agencies:

- St Johns River Water Management District - Environmental Resource Permits
- Clay County Building Department
- FEMA – Letter of Map Revision

WETLANDS

Project Boundary and Wetland Map from Environmental Services, Inc. (**Exhibit 2**) shows the existing wetlands on site, approximately 10.07 acres. Wetland permitting is required at both the State and Federal regulatory agencies. The State agency is the St. John's River Water Management District (SJRWMD) and the Federal agency is the US Army Corps of Engineers (USACE). This can be accomplished through the SJRWMD and the USACE prior to an initial permit application or can be a part of the overall permit review.

Permitting with SJRWMD is done through the Environmental Resource Permit (ERP) standard Individual permit which is subject to a public notice under a system and takes approximately 4 to 5 months. The USACE review will be through a Dredge and Fill permit under Section 404 of the Clean Water Act.

Mitigation for any wetland impacts will likely be accomplished through the purchase of mitigation credits at an approved wetland mitigation bank servicing the area. The amount of credits required is dependent on both the quantity of wetland impacts and the quality of those impacted wetlands. It is also important to note that both agencies require the applicant to consider avoiding and minimizing impacts to wetlands as part of the site planning development. Justification for any proposed impacts must be provided during the permitting review.

The existing Bull Creek and adjacent wetland areas to remain will be determined by wetland mitigation and associated permitting. Topographic survey information is required to determine the area of the site necessary to grade up to proposed elevations determined by stormwater management calculations.

WATER AND WASTEWATER UTILITIES

The project is not located within a utility department jurisdiction. In addition, there are no existing water utilities within the immediate vicinity to service the project. The provided letter from Clay County Utility Authority (**Exhibit 3**) states that the project will require well and septic system for potable water and sewer needs.

Water Distribution

Potable water for the development of this property will require a "Public water system" well to service water distribution and fire protection, if required by building use. Well locations will require setbacks from wetlands, buildings and septic drain fields.

Wastewater Collection and Transmission

The project is not located within a utility department jurisdiction and there are no existing wastewater utilities within the immediate vicinity to service the project.





The proposed sanitary sewer improvements to serve the project shall include a new system of manholes and gravity mains with sanitary services to each proposed residential unit. The new building units will require a large-capacity septic system

Estimated Flows

Estimated flow rates will be determined by use of the occupied spaces. The estimate flows of the site will be responsible for determining the size of the water use wells and wastewater treatment design.

Permitting

The proposed water distribution and sanitary sewer collection improvements will require permit / plan approvals from the following agencies:

- Florida Department of Environmental Protection (FDEP). For onsite wastewater system discharge.
- St Johns River Water Management District (Consumptive Use Permit). For water wells.
- Clay County Health Department

UTILITY SERVICE PROVIDERS

The following utility providers have been indicated to have facilities within the vicinity of the project site as indicated on Exhibit 4:

- AT&T (Telephone)
- Comcast Cable (Cable TV)
- Clay County Electric Orange Park District (Electric)
- MCI (Fiber)

EXHIBIT 1

FEMA Flood Insurance Rate Map

NOTES TO USERS

This map is for use in administering the National Flood Insurance Program. It does not necessarily identify all areas subject to flooding, particularly from local drainage sources of small size. The community map repository should be consulted for possible updated or additional flood hazard information.

To obtain more detailed information in areas where **Base Flood Elevations (BFEs)** and/or **floodways** have been determined, users are encouraged to consult the Flood Profiles and Floodway Data and/or Summary of Stillwater Elevations tables contained within the Flood Insurance Study (FIS) report that accompanies this FIRM. Users should be aware that BFEs shown on the FIRM represent rounded whole-foot elevations. These BFEs are intended for flood insurance rating purposes only and should not be used as the sole source of flood elevation information. Accordingly, flood elevation data presented in the FIS report should be utilized in conjunction with the FIRM for purposes of construction and/or floodplain management.

Coastal Base Flood Elevations (BFEs) shown on this map apply only landward of 0.0' North American Vertical Datum of 1988 (NAVD 88). Users of this FIRM should be aware that coastal flood elevations are also provided in the Summary of Stillwater Elevations table in the Flood Insurance Study report for this jurisdiction. Elevations shown in the Summary of Stillwater Elevations table should be used for construction and/or floodplain management purposes when they are higher than the elevations shown on this FIRM.

Boundaries of the **floodways** were computed at cross sections and interpolated between cross sections. The floodways were based on hydraulic considerations with regard to requirements of the National Flood Insurance Program. Floodway widths and other pertinent floodway data are provided in the Flood Insurance Study report for this jurisdiction.

Certain areas not in Special Flood Hazard Areas may be protected by **flood control structures**. Refer to Section 2.4 "Flood Protection Measures" of the Flood Insurance Study report for information on flood control structures for this jurisdiction.

The projection used in the preparation of this map was HARN State Plane Florida East FIPS Zone 9901 Feet. The horizontal datum was NAD83, GRS1980 spheroid. Differences in datum, spheroid, projection or UTM zones used in the production of FIRMs for adjacent jurisdictions may result in slight positional differences in map features across jurisdiction boundaries. These differences do not affect the accuracy of this FIRM.

Flood elevations on this map are referenced to the North American Vertical Datum of 1988. These flood elevations must be compared to structure and ground elevations referenced to the same vertical datum. For information regarding conversion between the National Geodetic Vertical Datum of 1929 and the North American Vertical Datum of 1988, visit the National Geodetic Survey website at <http://www.ngs.noaa.gov/> or contact the National Geodetic Survey at the following address:

NGS Information Services
NOAA, NNGS12
National Geodetic Survey
SSMC-3, #9202
1315 East-West Highway
Silver Spring, Maryland 20910-3282
(301) 713-3242

To obtain current elevation, description, and/or location information for **bench marks** shown on this map, please contact the Information Services Branch of the National Geodetic Survey at (301) 713-3242 or visit its website at <http://www.ngs.noaa.gov/>.

Base map information shown on this FIRM was provided in digital format by the Clay County Property Appraiser's Office. This information was photogrammetrically compiled at a scale of 1:12000 from aerial photography dated 2008.

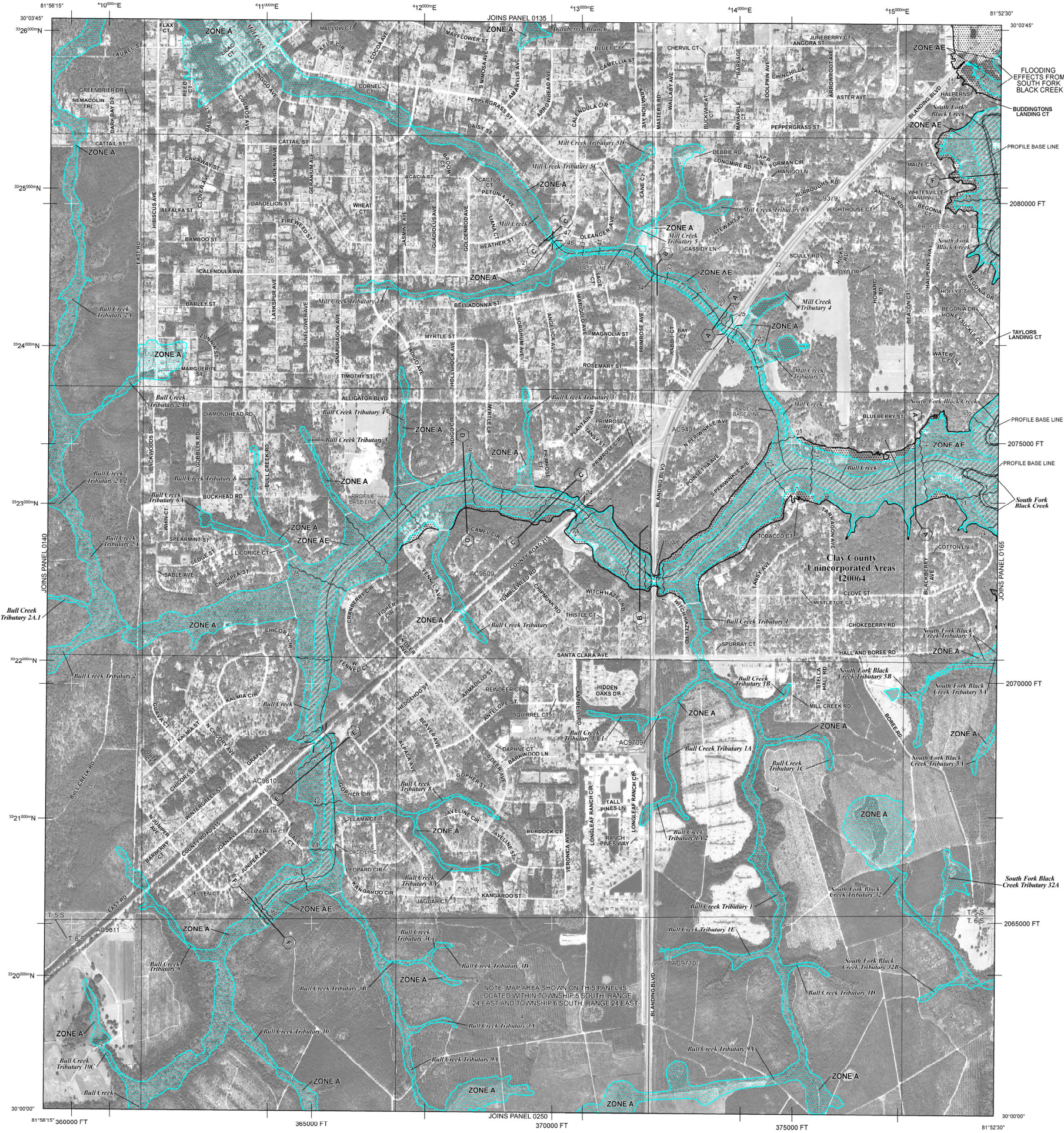
This map reflects more detailed and up-to-date **stream channel configurations** than those shown on the previous FIRM for this jurisdiction. The floodplains and floodways that were transferred from the previous FIRM may have been adjusted to conform to these new stream channel configurations. As a result, the Flood Profiles and Floodway Data tables in the Flood Insurance Study report (which contains authoritative hydraulic data) may reflect stream channel distances that differ from what is shown on this map.

Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels, community map repository addresses, and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which each community is located.

Contact the **FEMA Map Information eXchange (FMIX)** at 1-877-336-2627 for information on available products associated with this FIRM. Available products may include previously issued Letters of Map Change, a Flood Insurance Study report, and/or digital versions of this map. The FMIX may also be reached at its website at <http://mxc.fema.gov/>.

If you have questions about this map or questions concerning the National Flood Insurance Program in general, please call 1-877-FEMA MAP (1-877-336-2627) or visit the FEMA website at <http://www.fema.gov/business/nfip/>.



LEGEND

SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently deteriorated. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Areas to be protected from 1% annual chance flood event by a federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths, or flood velocities
- Base Flood Elevation line and value; elevation in feet
- base flood elevation value where uniform within zone; elevation in feet

513
(EL 987)

A Referenced to the North American Vertical Datum of 1988

A Cross section line

23 Transect line

Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

1000-meter Universal Transverse Mercator grid ticks, zone 17

5000-foot grid values: Florida State Plane coordinate system, East Zone (FIPSZONE = 0901), Transverse Mercator projection

Bench mark (see explanation in Notes to Users section of this FIRM panel)

DX5510
M1.5
River Mile

MAP REPOSITORIES
Refer to Map Repositories List on Map Index

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
March 17, 2014

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL

For community map revision history prior to countywide mapping, refer to the Community Map History table located in the Flood Insurance Study report for this jurisdiction.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'

0 500 1000 1500 2000
0 500 1000 1500 2000
FEET METERS

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0145E

FIRM
FLOOD INSURANCE RATE MAP
CLAY COUNTY,
FLORIDA
AND INCORPORATED AREAS

PANEL 145 OF 500
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CLAY COUNTY	120064	0145	E

Notice to User: The Map Number shown below should be used when placing map orders. The Community Number shown above should be used on insurance applications for the subject community.

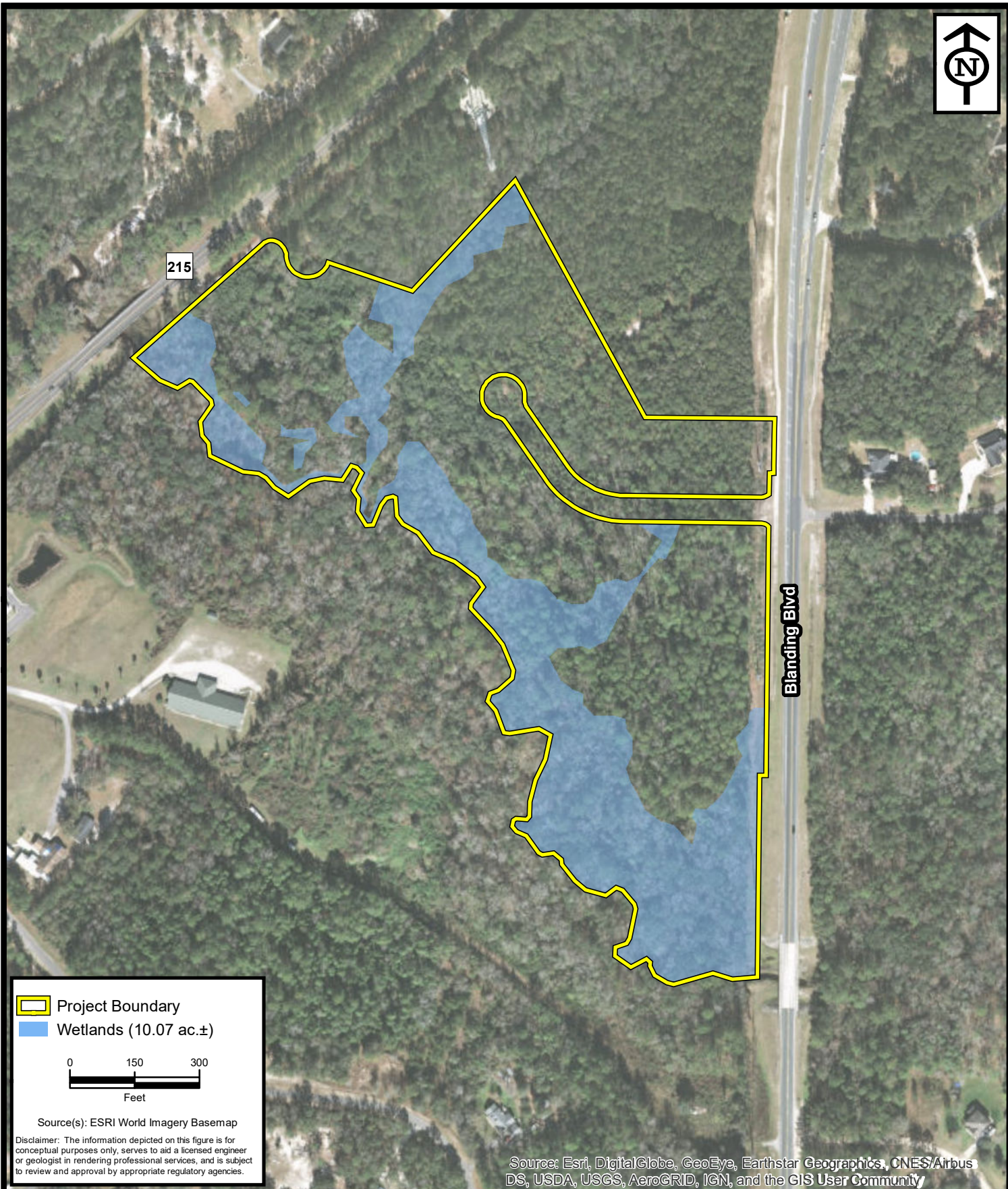
MAP NUMBER
12019C0145E

EFFECTIVE DATE
MARCH 17, 2014

Federal Emergency Management Agency

EXHIBIT 2

Project Boundary and Wetland Map (2018)



**ENVIRONMENTAL
SERVICES, INC.**

7220 Financial Way, Suite 100
Jacksonville, Florida 32256
(904) 470-2200
(904) 470-2112 Fax

www.environmentalservicesinc.com

Wetlands

Brown - Black Creek JD

Clay County, Florida

Project:	EJ18207.00
Date:	Aug 2018
Drawn By:	AA
Checked By:	JRN
Approved By:	BAA
Figure:	3

EXHIBIT 3

Clay County Utility Authority Letter

Travis Douglas

From: Summer Berndt <SBerndt@clayutility.org>
Sent: Friday, February 7, 2020 8:15 AM
To: Travis Douglas
Subject: [EXTERNAL] RE: Water/Sewer Department

Mr. Douglas,

Please be advised, there are no available as-builts for 2945 Python Court. This area is not serviced by CCUA and will need to utilize a well and septic system for its water and sewer needs. If you have any further questions please let me know.

Thank you,
Summer Berndt
Clay County Utility Authority
As-Built Coordinator
904-213-2450

Florida has a very broad Public Records Law. Virtually all written communications to or from CCUA and its employees are public record and are subject to disclosure to the public and media upon request. Under Florida law, e-mail addresses are public records. If you do not want your e-mail address released in response to a public-records request, do not send electronic mail to this entity. Instead, contact this office by phone or in writing. The information contained in this email and/or attachment(s) may be confidential and intended solely for the use of the individual or entity to whom it is addressed.

EXHIBIT 4

Sunshine One Call Design Ticket

Ticket : 038002004 Rev:000 Taken: 02/07/20 10:59ET

State: FL Cnty: CLAY GeoPlace: MIDDLEBURG
CallerPlace: MIDDLEBURG
Subdivision:

Address :
Street : BLANDING BLVD

Locat: DESIGN TICKET ONLY

:

Remarks : IN RESPONSE TO RECEIPT OF A DESIGN TICKET, SSOCOF PROVIDES THE ORIGINATOR OF THE DESIGN TICKET WITH A LIST OF SSOCOF MEMBERS IN THE VICINITY OF THE DESIGN PROJECT. SSOCOF DOES NOT NOTIFY SSOCOF MEMBERS OF THE RECEIPT BY SSOCOF OF A DESIGN TICKET. IT IS THE SOLE RESPONSIBILITY OF THE DESIGN ENGINEER TO CONTACT SSOCOF MEMBERS TO REQUEST INFORMATION ABOUT THE LOCATION OF SSOCOF MEMBERS' UNDERGROUND FACILITIES. SUBMISSION OF A DESIGN TICKET WILL NOT SATISFY THE REQUIREMENT OF CHAPTER 556, FLORIDA STATUTES, TO NOTIFY SSOCOF OF AN INTENT TO EXCAVATE OR DEMOLISH. THAT INTENT MUST BE MADE KNOWN SPECIFICALLY TO SSOCOF IN THE MANNER REQUIRED BY LAW. IN AN EFFORT TO SAVE TIME ON FUTURE CALLS, SAVE YOUR DESIGN TICKET NUMBER IF YOU INTEND TO BEGIN EXCAVATION WITHIN 90 DAYS OF YOUR DESIGN REQUEST. THE DESIGN TICKET CAN BE REFERENCED, AND THE INFORMATION ON IT CAN BE USED TO SAVE TIME WHEN YOU CALL IN THE EXCAVATION REQUEST.

*** LOOKUP BY MANUAL ***

:

Grids : 3001A8153A 3001A8154D 3001B8153A 3002D8153A 3002D8154D

Work date: 02/07/20 Time: 10:59ET Hrs notc: 000 Category: 6 Duration: UNKNOWN
Due Date : 02/11/20 Time: 23:59ET Exp Date : 03/10/20 Time: 00:59ET
Work type: DESIGN Boring: N White-lined: N
Ug/Oh/Both: U Machinery: N Depth: UNK Permits: N N/A
Done for : DESIGN

Company : WANTMAN GROUP Type: CONT
Co addr : 2035 VISTA PKY
City : WEST PALM BEACH State: FL Zip: 33411
Caller : MATTHEW PHILLIPS Phone: 561-687-2220
BestTime: CELL 7-530PM
Mobile : 480-234-2032
Email : MATTHEW.PHILLIPS@WANTMANGROUP.COM

Submitted: 02/07/20 10:59ET Oper: MAT Chan: WEB
Mbrs : AC1095 CLAYEL CUA607 MCIU01 QA2256 SBF02 SL1086

** There aren't any Excavator comments, so the column is omitted **

<u>Ex. Circum</u>	<u>Service Area</u>	<u>Utility Type(s)</u>	<u>Contact</u>	<u>Alt. Contact</u>	<u>Emergency Contact</u>	<u>Positive Response</u>
No	COMCAST CABLE COMMUNICATIONS AC1095	CATV	LEONARD MAXWELL- NEWBOLD (754) 221-1254		USIC DISPATCH (800) 778-9140	
No	CLAY ELECTRIC ORANGE PARK DISTRICT CLAYEL	ELECTRIC	JOEY WILKES (904) 276-6719	DAVID SLEETH (904) 276-6720	JOEY WILKES (904) 276-6719	
No	CLAY COUNTY UTILITY AUTHORITY CUA607	RECLAIMED WATER, SEWER, WATER	JESSICA GRAY (904) 213-2450	JANICE LOUDERMILK (904) 213-2464	TOMMY EURE (904) 219-4119	
No	MCI MCIU01	COMMUNICATION LINES, FIBER	MCIU01 INVESTIGATIONS (469) 886-4091	BRANDON WHITTAKER (919) 377-3243	NATIONAL FIBER SECURITY DEPARTMENT (800) 624-9675	
No	QUANTA TELECOMMUNICATI SERVICES LLC QA2256	FIBER	RUSSELL RIBBLETT (678) 836-5610	GARY HORNICK (470) 415-7830	RUSSELL RIBBLETT (678) 836-5610	
No	A T & T/ DISTRIBUTION SBF02	TELEPHONE	DINO FARRUGGIO (561) 997-0240	DINO FARRUGGIO (561) 997-0240	DINO FARRUGGIO (561) 997-0240	
No	UNITI FIBER LLC SL1086	FIBER	JOHN HALLEY (251) 753-8695		NOC UNITI FIBER (877) 652-2321	