US Army Corps of Engineers

APPROVED JURISDICTIONAL DETERMINATION FORM
U.S. Army Corps of Engineers

This form should be completed by following the instructions provided in Section IV of the JD Form Instructional Guidebook.

SECTION I: BACKGROUND INFORMATION

A. REPORT COMPLETION DATE FOR APPROVED JURISDICTIONAL DETERMINATION (JD): August 20, 2018

B. DISTRICT OFFICE, FILE NAME, AND NUMBER: Jacksonville District, Tampa Office, SAJ-2018-00590-RGH (ESSON, VINCENT / KEYSTONE RV RESORT / BRADFORD)

C. PROJECT LOCATION AND BACKGROUND INFORMATION:

State:Florida County/parish/borough: Bradford City: Keystone Hights
Center coordinates of site (lat/long in degree decimal format): Lat. 29.803913° **N**, Long. 82.066082° **W**.
Universal Transverse Mercator:
Name of nearest waterbody: Santa Fe River
Name of nearest Traditional Navigable Water (TNW) into which the aquatic resource flows: Santa Fe River
Name of watershed or Hydrologic Unit Code (HUC): 031102060101 - Sante Fe Lake

☒ Check if map/diagram of review area and/or potential jurisdictional areas is/are available upon request.
☐ Check if other sites (e.g., offsite mitigation sites, disposal sites, etc…) are associated with this action and are recorded on a different JD form.

D. REVIEW PERFORMED FOR SITE EVALUATION (CHECK ALL THAT APPLY):

☒ Office (Desk) Determination. Date: August 20, 2018
☐ Field Determination. Date(s):

SECTION II: SUMMARY OF FINDINGS

A. RHA SECTION 10 DETERMINATION OF JURISDICTION.

There **Are no** "*navigable waters of the U.S.*" within Rivers and Harbors Act (RHA) jurisdiction (as defined by 33 CFR part 329) in the review area. [*Required*]

☐ Waters subject to the ebb and flow of the tide.
☐ Waters are presently used, or have been used in the past, or may be susceptible for use to transport interstate or foreign commerce.
Explain: .

B. CWA SECTION 404 DETERMINATION OF JURISDICTION.

There **are and are not** "*waters of the U.S.*" within Clean Water Act (CWA) jurisdiction (as defined by 33 CFR part 328) in the review area. [*Required*]

1. **Waters of the U.S.**
   a. **Indicate presence of waters of U.S. in review area (check all that apply):** [1]
   - ☐ TNWs, including territorial seas
   - ☐ Wetlands adjacent to TNWs
   - ☐ Relatively permanent waters[2] (RPWs) that flow directly or indirectly into TNWs
   - ☐ Non-RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands directly abutting RPWs that flow directly or indirectly into TNWs
   - ☐ Wetlands adjacent to but not directly abutting RPWs that flow directly or indirectly into TNWs
   - ☒ Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs
   - ☐ Impoundments of jurisdictional waters
   - ☐ Isolated (interstate or intrastate) waters, including isolated wetlands

   b. **Identify (estimate) size of waters of the U.S. in the review area:**
   Non-wetland waters: linear feet: width (ft) and/or acres.
   Wetlands: 11.19 acres.

   c. **Limits (boundaries) of jurisdiction** based on: **1987 Delineation Manual**
   Elevation of established OHWM (if known): .

2. **Non-regulated waters/wetlands (check if applicable):**[3]
   ☒ Potentially jurisdictional waters and/or wetlands were assessed within the review area and determined to be not jurisdictional.
   Explain: **Approximately 2.68 acres of preamble waters (upland dug sand pits).**

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[1] Boxes checked below shall be supported by completing the appropriate sections in Section III below.
[2] For purposes of this form, an RPW is defined as a tributary that is not a TNW and that typically flows year-round or has continuous flow at least "seasonally" (e.g., typically 3 months).
[3] Supporting documentation is presented in Section III.F.

SECTION III: CWA ANALYSIS

A. TNWs AND WETLANDS ADJACENT TO TNWs

The agencies will assert jurisdiction over TNWs and wetlands adjacent to TNWs. If the aquatic resource is a TNW, complete Section III.A.1 and Section III.D.1. only; if the aquatic resource is a wetland adjacent to a TNW, complete Sections III.A.1 and 2 and Section III.D.1.; otherwise, see Section III.B below.

1. TNW
Identify TNW: .

Summarize rationale supporting determination: .

2. Wetland adjacent to TNW
Summarize rationale supporting conclusion that wetland is "adjacent": .

B. CHARACTERISTICS OF TRIBUTARY (THAT IS NOT A TNW) AND ITS ADJACENT WETLANDS (IF ANY):

This section summarizes information regarding characteristics of the tributary and its adjacent wetlands, if any, and it helps determine whether or not the standards for jurisdiction established under *Rapanos* have been met.

The agencies will assert jurisdiction over non-navigable tributaries of TNWs where the tributaries are "relatively permanent waters" (RPWs), i.e. tributaries that typically flow year-round or have continuous flow at least seasonally (e.g., typically 3 months). A wetland that directly abuts an RPW is also jurisdictional. If the aquatic resource is not a TNW, but has year-round (perennial) flow, skip to Section III.D.2. If the aquatic resource is a wetland directly abutting a tributary with perennial flow, skip to Section III.D.4.

A wetland that is adjacent to but that does not directly abut an RPW requires a significant nexus evaluation. Corps districts and EPA regions will include in the record any available information that documents the existence of a significant nexus between a relatively permanent tributary that is not perennial (and its adjacent wetlands if any) and a traditional navigable water, even though a significant nexus finding is not required as a matter of law.

If the waterbody[4] is not an RPW, or a wetland directly abutting an RPW, a JD will require additional data to determine if the waterbody has a significant nexus with a TNW. If the tributary has adjacent wetlands, the significant nexus evaluation must consider the tributary in combination with all of its adjacent wetlands. This significant nexus evaluation that combines, for analytical purposes, the tributary and all of its adjacent wetlands is used whether the review area identified in the JD request is the tributary, or its adjacent wetlands, or both. If the JD covers a tributary with adjacent wetlands, complete Section III.B.1 for the tributary, Section III.B.2 for any onsite wetlands, and Section III.B.3 for all wetlands adjacent to that tributary, both onsite and offsite. The determination whether a significant nexus exists is determined in Section III.C below.

1. Characteristics of non-TNWs that flow directly or indirectly into TNW

(i) General Area Conditions:
Watershed size: 53362**acres**
Drainage area: 100 **acres**
Average annual rainfall: 56 inches
Average annual snowfall: 0 inches

(ii) Physical Characteristics:
(a) Relationship with TNW:
☐ Tributary flows directly into TNW.
☒ Tributary flows through **3** tributaries before entering TNW.

Project waters are **5-10** river miles from TNW.
Project waters are **5-10** river miles from RPW.
Project waters are **5-10** aerial (straight) miles from TNW.
Project waters are **5-10** aerial (straight) miles from RPW.
Project waters cross or serve as state boundaries. Explain: .

Identify flow route to TNW[5]: Wetlands A-C flow through a series of wetland sloughs that flow to Santa Fe Swamp, which flows into the headwaters of the Santa Fe.

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[4] Note that the Instructional Guidebook contains additional information regarding swales, ditches, washes, and erosional features generally and in the arid West.

[5] Flow route can be described by identifying, e.g., tributary a, which flows through the review area, to flow into tributary b, which then flows into TNW.

Tributary stream order, if known: .

(b) General Tributary Characteristics (check all that apply):

Tributary is: ☒ Natural
☐ Artificial (man-made). Explain: .
☒ Manipulated (man-altered). Explain: Several culvert crossings where roads cross wetlands.

Tributary properties with respect to top of bank (estimate):
Average width: 100-300 feet
Average depth: 3 feet
Average side slopes: **4:1 (or greater).**

Primary tributary substrate composition (check all that apply):

☐ Silts	☐ Sands	☐ Concrete
☐ Cobbles	☐ Gravel	☒ Muck
☐ Bedrock	☒ Vegetation. Type/% cover: Herbacious/40%	
☐ Other. Explain: .		

Tributary condition/stability [e.g., highly eroding, sloughing banks]. Explain: .
Presence of run/riffle/pool complexes. Explain: None.
Tributary geometry: **Meandering**
Tributary gradient (approximate average slope): 0-2 %

(c) Flow:
Tributary provides for: **Seasonal flow**
Estimate average number of flow events in review area/year: **11-20**
Describe flow regime: Flow is rainfall dependent.
Other information on duration and volume: .

Surface flow is: **Confined.** Characteristics: Surface flow is rainfall dependent,howver year round water is provided by the groundwater table..

Subsurface flow: **Yes**. Explain findings: Soil borings show shallow groundwater table is fairly consistant with depth as compaired with elevations of adjacent wetlands. Gradient of water flow across property is from northeast to southwest. Wetlands A, B, and C are connected via sub surface flow as evidenced by borings. Wetland A is connected via surface connection with downstream waters..

☐ Dye (or other) test performed: .

Tributary has (check all that apply):
☐ Bed and banks
☐ OHWM[6] (check all indicators that apply):

☐ clear, natural line impressed on the bank	☒ the presence of litter and debris
☐ changes in the character of soil	☐ destruction of terrestrial vegetation
☐ shelving	☐ the presence of wrack line
☐ vegetation matted down, bent, or absent	☐ sediment sorting
☐ leaf litter disturbed or washed away	☐ scour
☐ sediment deposition	☐ multiple observed or predicted flow events
☐ water staining	☐ abrupt change in plant community
☐ other (list):	

☒ Discontinuous OHWM.[7] Explain:Flow is subsurface or sheet flow with no clear channel.

If factors other than the OHWM were used to determine lateral extent of CWA jurisdiction (check all that apply):

☐ High Tide Line indicated by:	☐ Mean High Water Mark indicated by:
☐ oil or scum line along shore objects	☐ survey to available datum;
☐ fine shell or debris deposits (foreshore)	☐ physical markings;
☐ physical markings/characteristics	☐ vegetation lines/changes in vegetation types.
☐ tidal gauges	
☐ other (list):	

(iii) Chemical Characteristics:
Characterize tributary (e.g., water color is clear, discolored, oily film; water quality; general watershed characteristics, etc.).
Explain: .

[6]A natural or man-made discontinuity in the OHWM does not necessarily sever jurisdiction (e.g., where the stream temporarily flows underground, or where the OHWM has been removed by development or agricultural practices). Where there is a break in the OHWM that is unrelated to the waterbody's flow regime (e.g., flow over a rock outcrop or through a culvert), the agencies will look for indicators of flow above and below the break.
[7]Ibid.

Identify specific pollutants, if known: Likely polluted with Bacteria and Other Microbes based on adjacent drainage assesments in 2002, however significant agricultural fields are adjacent to this waterbody so it is highly likely that, nutrients, herbicides, and pesticides are also within this waterbody.

(iv) Biological Characteristics. Channel supports (check all that apply):

☐ Riparian corridor. Characteristics (type, average width): 100-300 feet.
☒ Wetland fringe. Characteristics: Hardwood Wetland Slough.
☒ Habitat for:
☐ Federally Listed species. Explain findings: .
☐ Fish/spawn areas. Explain findings: .
☐ Other environmentally-sensitive species. Explain findings: .
☒ Aquatic/wildlife diversity. Explain findings: Various wading birds, ducks, hawks, amphibians, fish.

2. Characteristics of wetlands adjacent to non-TNW that flow directly or indirectly into TNW

(i) Physical Characteristics:

(a) General Wetland Characteristics:
Properties:
Wetland size:11.19 acres
Wetland type. Explain: Freshwater Marsh/ Cypress Forest.
Wetland quality. Explain: .
Project wetlands cross or serve as state boundaries. Explain: Wetland is in good condition with fairly normal hydroperiod and species zonation.

(b) General Flow Relationship with Non-TNW:
Flow is: **Intermittent flow**. Explain: Flow from wetland is based on rain events.

Surface flow is**: Confined**
Characteristics: Flow from wetland is based on rain events.

Subsurface flow: **Yes**. Explain findings: Soil borings show groundwater table is fairly consistant with depth as compaired with elevations. Wetlands A, B, and C are connected via sub surface flow. Wetland A is connected via surface connection with downstream waters..
☐ Dye (or other) test performed: .

(c) Wetland Adjacency Determination with Non-TNW:
☐ Directly abutting
☒ Not directly abutting
☐ Discrete wetland hydrologic connection. Explain: .
☒ Ecological connection. Explain: Wetlands provide forage and breeding habitat for amphibians, reptiles, and mammals.
☒ Separated by berm/barrier. Explain: Sand ridge and logging roads seperates Wetland C from B, and B from A. However the onsite elevation slopes from Wetland C down to Wetland A. Subsurface flow is evedent in the information provided in the soil borings..

(d) Proximity (Relationship) to TNW
Project wetlands are **5-10** river miles from TNW.
Project waters are **5-10** aerial (straight) miles from TNW.
Flow is from: **Wetland to navigable waters.**
Estimate approximate location of wetland as within the **2-year or less** floodplain.

(ii) Chemical Characteristics:

Characterize wetland system (e.g., water color is clear, brown, oil film on surface; water quality; general watershed characteristics; etc.). Explain: Clear to tanic.
Identify specific pollutants, if known: Likely polluted with Bacteria and Other Microbes based on adjacent drainage assesments in 2002, however significant agricultural fields are adjacent to this waterbody so it is highly likely that, nutrients, herbicides, and pesticides are also within this waterbody.

(iii) Biological Characteristics. Wetland supports (check all that apply):

☐ Riparian buffer. Characteristics (type, average width): .
☒ Vegetation type/percent cover. Explain: Cypress .
☒ Habitat for:
☒ Federally Listed species. Explain findings:Frosted Salamander, Indigo Snake.
☐ Fish/spawn areas. Explain findings: .
☒ Other environmentally-sensitive species. Explain findings:Gopher Frog, Striped Newt.
☒ Aquatic/wildlife diversity. Explain findings: .

3. Characteristics of all wetlands adjacent to the tributary (if any)

All wetland(s) being considered in the cumulative analysis: **3**
Approximately (100) acres in total are being considered in the cumulative analysis.

For each wetland, specify the following:

Directly abuts? (Y/N)	Size (in acres)	Directly abuts? (Y/N)	Size (in acres)
Wetland A Y	6.74		
Wetkand B N	2.67		
Wetland C N	1.78		
Downstream Wetlands Y	88.81		

Summarize overall biological, chemical and physical functions being performed: Downstream wetlands contribute to functions of the stream.

Physical: The wetlands perform important flow maintenance functions including storage of flood waters and a release of these waters into the downstream tributary in a more even and consistent manner. Therefore, the wetlands directly affect the duration, frequency, and volume of flow in the downstream tributary and the downstream navigable water. The wetlands reduce local flooding. Storage of surface waters provides groundwater recharge that contributes to baseflow in the tributary that is vital to sustain aquatic life in downstream waters.

Chemical: The wetlands improve water quality by removing sediment and nutrients that would otherwise reach downstream waters and have a negative effect on aquatic resources.

Biological: The wetlands are of utmost importance biologically since the majority of other non-wetland areas in the watershed have been altered for agriculture, residential, or other purposes. These wetlands have a high abundance and diversity of species due to their transitional location between terrestrial and aquatic systems. Productivity in downstream waters can depend on the exchange of nutrients within the floodplains. Watersheds dominated by riparian wetlands export a large amount of carbon that is essential to downstream ecosystems. Particulate carbon is important for shredders and filter-feeders while dissolved carbon is important for microorganisms within these systems..

C. SIGNIFICANT NEXUS DETERMINATION

A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by any wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of a TNW. For each of the following situations, a significant nexus exists if the tributary, in combination with all of its adjacent wetlands, has more than a speculative or insubstantial effect on the chemical, physical and/or biological integrity of a TNW. Considerations when evaluating significant nexus include, but are not limited to the volume, duration, and frequency of the flow of water in the tributary and its proximity to a TNW, and the functions performed by the tributary and all its adjacent wetlands. It is not appropriate to determine significant nexus based solely on any specific threshold of distance (e.g. between a tributary and its adjacent wetland or between a tributary and the TNW). Similarly, the fact an adjacent wetland lies within or outside of a floodplain is not solely determinative of significant nexus.

Draw connections between the features documented and the effects on the TNW, as identified in the *Rapanos* Guidance and discussed in the Instructional Guidebook. Factors to consider include, for example:

- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to carry pollutants or flood waters to TNWs, or to reduce the amount of pollutants or flood waters reaching a TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), provide habitat and lifecycle support functions for fish and other species, such as feeding, nesting, spawning, or rearing young for species that are present in the TNW?
- Does the tributary, in combination with its adjacent wetlands (if any), have the capacity to transfer nutrients and organic carbon that support downstream foodwebs?
- Does the tributary, in combination with its adjacent wetlands (if any), have other relationships to the physical, chemical, or biological integrity of the TNW?

Note: the above list of considerations is not inclusive and other functions observed or known to occur should be documented below:

1. **Significant nexus findings for non-RPW that has no adjacent wetlands and flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary itself, then go to Section III.D: .

2. **Significant nexus findings for non-RPW and its adjacent wetlands, where the non-RPW flows directly or indirectly into TNWs.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

3. **Significant nexus findings for wetlands adjacent to an RPW but that do not directly abut the RPW.** Explain findings of presence or absence of significant nexus below, based on the tributary in combination with all of its adjacent wetlands, then go to Section III.D: .

D. DETERMINATIONS OF JURISDICTIONAL FINDINGS. THE SUBJECT WATERS/WETLANDS ARE (CHECK ALL THAT APPLY):

1. **TNWs and Adjacent Wetlands.** Check all that apply and provide size estimates in review area:
   - ☐ TNWs: linear feet width (ft), Or, acres.
   - ☐ Wetlands adjacent to TNWs: acres.

2. **RPWs that flow directly or indirectly into TNWs.**
   - ☐ Tributaries of TNWs where tributaries typically flow year-round are jurisdictional. Provide data and rationale indicating that tributary is perennial: .
   - ☐ Tributaries of TNW where tributaries have continuous flow "seasonally" (e.g., typically three months each year) are jurisdictional. Data supporting this conclusion is provided at Section III.B. Provide rationale indicating that tributary flows seasonally: .

   Provide estimates for jurisdictional waters in the review area (check all that apply):
   - ☐ Tributary waters: linear feet width (ft).
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: .

3. **Non-RPWs[8] that flow directly or indirectly into TNWs.**
   - ☐ Waterbody that is not a TNW or an RPW, but flows directly or indirectly into a TNW, and it has a significant nexus with a TNW is jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional waters within the review area (check all that apply):
   - ☐ Tributary waters: linear feet width (ft).
   - ☐ Other non-wetland waters: acres.
     Identify type(s) of waters: .

4. **Wetlands directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands directly abut RPW and thus are jurisdictional as adjacent wetlands.
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow year-round. Provide data and rationale indicating that tributary is perennial in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .
     - ☐ Wetlands directly abutting an RPW where tributaries typically flow "seasonally." Provide data indicating that tributary is seasonal in Section III.B and rationale in Section III.D.2, above. Provide rationale indicating that wetland is directly abutting an RPW: .

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

5. **Wetlands adjacent to but not directly abutting an RPW that flow directly or indirectly into TNWs.**
   - ☐ Wetlands that do not directly abut an RPW, but when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisidictional. Data supporting this conclusion is provided at Section III.C.

   Provide acreage estimates for jurisdictional wetlands in the review area: acres.

6. **Wetlands adjacent to non-RPWs that flow directly or indirectly into TNWs.**
   - ☒ Wetlands adjacent to such waters, and have when considered in combination with the tributary to which they are adjacent and with similarly situated adjacent wetlands, have a significant nexus with a TNW are jurisdictional. Data supporting this conclusion is provided at Section III.C.

   Provide estimates for jurisdictional wetlands in the review area: **100** acres.

7. **Impoundments of jurisdictional waters.[9]**
   As a general rule, the impoundment of a jurisdictional tributary remains jurisdictional.

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[8] See Footnote # 3.
[9] To complete the analysis refer to the key in Section III.D.6 of the Instructional Guidebook.

- ☐ Demonstrate that impoundment was created from "waters of the U.S.," or
- ☐ Demonstrate that water meets the criteria for one of the categories presented above (1-6), or
- ☐ Demonstrate that water is isolated with a nexus to commerce (see E below).

E. ISOLATED [INTERSTATE OR INTRA-STATE] WATERS, INCLUDING ISOLATED WETLANDS, THE USE, DEGRADATION OR DESTRUCTION OF WHICH COULD AFFECT INTERSTATE COMMERCE, INCLUDING ANY SUCH WATERS (CHECK ALL THAT APPLY):[10]

- ☐ which are or could be used by interstate or foreign travelers for recreational or other purposes.
- ☐ from which fish or shellfish are or could be taken and sold in interstate or foreign commerce.
- ☐ which are or could be used for industrial purposes by industries in interstate commerce.
- ☐ Interstate isolated waters. Explain: .
- ☐ Other factors. Explain: .

Identify water body and summarize rationale supporting determination: .

Provide estimates for jurisdictional waters in the review area (check all that apply):

- ☐ Tributary waters: linear feet width (ft).
- ☐ Other non-wetland waters: acres.
  - Identify type(s) of waters: .
- ☐ Wetlands: acres.

F. NON-JURISDICTIONAL WATERS, INCLUDING WETLANDS (CHECK ALL THAT APPLY):

- ☐ If potential wetlands were assessed within the review area, these areas did not meet the criteria in the 1987 Corps of Engineers Wetland Delineation Manual and/or appropriate Regional Supplements.
- ☐ Review area included isolated waters with no substantial nexus to interstate (or foreign) commerce.
  - ☐ Prior to the Jan 2001 Supreme Court decision in "*SWANCC*," the review area would have been regulated based solely on the "Migratory Bird Rule" (MBR).
- ☐ Waters do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction. Explain: .
- ☒ Other: (explain, if not covered above): **Approximately 2.68 acres of preamble waters (upland dug sand pits).**

Provide acreage estimates for non-jurisdictional waters in the review area, where the sole potential basis of jurisdiction is the MBR factors (i.e., presence of migratory birds, presence of endangered species, use of water for irrigated agriculture), using best professional judgment (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

Provide acreage estimates for non-jurisdictional waters in the review area that do not meet the "Significant Nexus" standard, where such a finding is required for jurisdiction (check all that apply):

- ☐ Non-wetland waters (i.e., rivers, streams): linear feet, width (ft).
- ☐ Lakes/ponds: acres.
- ☐ Other non-wetland waters: acres. List type of aquatic resource: .
- ☐ Wetlands: acres.

SECTION IV: DATA SOURCES.

A. SUPPORTING DATA. Data reviewed for JD (check all that apply - checked items shall be included in case file and, where checked and requested, appropriately reference sources below):

- ☒ Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant: .
- ☒ Data sheets prepared/submitted by or on behalf of the applicant/consultant.
  - ☒ Office concurs with data sheets/delineation report.
  - ☐ Office does not concur with data sheets/delineation report.
- ☐ Data sheets prepared by the Corps: .
- ☐ Corps navigable waters' study: .
- ☐ U.S. Geological Survey Hydrologic Atlas: .
  - ☐ USGS NHD data.

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[10] Prior to asserting or declining CWA jurisdiction based solely on this category, Corps Districts will elevate the action to Corps and EPA HQ for review consistent with the process described in the Corps/EPA *Memorandum Regarding CWA Act Jurisdiction Following Rapanos.*

☐ USGS 8 and 12 digit HUC maps.
☒ U.S. Geological Survey map(s). Cite scale & quad name:1:24,000; Keystone Heights, FL.
☒ USDA Natural Resources Conservation Service Soil Survey. Citation:Florida Soils Map digital data from the Natural Resources Conservation Service. Date (13 August 2018). Web Soil Survey website. U.S. Department of Agriculture, Natural Resources Conservation Service, Washington, D.C.
☒ National wetlands inventory map(s). Cite name:Wetland digital data from U. S. Fish and Wildlife Service. Date (13 August 2018). National Wetlands Inventory website. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C.
☐ State/Local wetland inventory map(s): .
☒ FEMA/FIRM maps:12007C0290E - 5/1/2012.
☐ 100-year Floodplain Elevation is: (National Geodectic Vertical Datum of 1929)
☒ Photographs: ☒ Aerial (Name & Date):2017 Google Earth Pro.
or ☒ Other (Name & Date):1957, 1972, 1980, 1993, 1999, 2002, 2006, 2009, 2015, 2016.
☐ Previous determination(s). File no. and date of response letter: .
☐ Applicable/supporting case law: .
☐ Applicable/supporting scientific literature: .
☐ Other information (please specify): .

B. ADDITIONAL COMMENTS TO SUPPORT JD: The determination of USACE jurisdiction on the subject site for the 2 non-jurisdictional waters was based on guidance regarding the Corp's the intended exclusion of certain waters by the USACE as being classified as “Waters of the United States (WOTUS)” referenced in the Corps 1986 preamble [51 FR 41250, Nov. 13, 1986, as amended at 58 FR 45036, Aug. 25, 1993;

Riparian Wetlands

Physical: The wetlands perform important flow maintenance functions including storage of flood waters1, 2 and a release of these waters into the tributary in a more even and consistent manner2. Therefore, the wetlands directly affect the duration, frequency, and volume of flow in the downstream tributary and the downstream navigable water2. The wetlands reduce local flooding1. Storage of surface waters provides groundwater recharge that contributes to baseflow in the tributary that is vital to sustain aquatic life in downstream waters1.

Chemical: The wetlands improve water quality by removing sediment and nutrients that would otherwise reach downstream waters and have a negative effect on aquatic resources1, 2.

Biological: The wetlands are of utmost importance biologically since the majority of other non-wetland areas in the watershed have been altered for agriculture, residential, or other purposes1. These wetlands have a high abundance and diversity of species due to their transitional location between terrestrial and aquatic systems1. Productivity in downstream waters can depend on the exchange of nutrients within the floodplains1. Watersheds dominated by riparian wetlands export a large amount of carbon that is essential to downstream ecosystems1. Particulate carbon is important for shredders and filter-feeders while dissolved carbon is important for microorganisms within these systems1.

1The Clean Water Act Jurisdictional Handbook, Second Edition. 2012. Environmental Law Institute, Washington, DC, 126 pp.

2Clean Water Act Jurisdiction Following the U.S. Supreme Court’s Decision in Rapanos v. United States & Carabell v. United States. 2007. US Department of the Army and US Environmental Protection Agency. 12 pp..

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Keystone Heights RV Resort City/County: Keystone Heights/Bradford Sampling Date: 6-19-18

Applicant/Owner: Vincent Esson State: FL Sampling Point: WET-A

Investigator(s): Kevin OKane Section, Township, Range: Sec 11 & 14, T 8S, R 22E

Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): gentle slope Slope (%): 2-5%

Subregion (LRR or MLRA): LRR T 153A Lat: 29 48' 8'' Long: 82 4' Datum: NGVD

Soil Map Unit Name: Starke Mucky Fine Sand Depressional NWI classification: PFO4/PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation yes, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes yes	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes yes	No _____	
Wetland Hydrology Present?	Yes yes	No _____	

Remarks:
The site has been disturbed by previous intensive silvicultural activities. The vegetative cover is recovering from a clearcut that occurred between 2006-2009. On-site soils are moderately disturbed by harvesting procedures. This data sheet is focused on an approximate 700 foot walking evaluation of the wetland line approved by the SRWMD for the east side of Wetland A Numerous test pits were dug at the approximate location of the SRWMD accepted JD line and slightly upslope (i.e., 10-20 feet). A separate data sheet has been prepared to characterize the upslope conditions (see UP-A) data sheet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☑ High Water Table (A2)
- ☑ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☑ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes x	No _____	Depth (inches): 12 to 14"
Saturation Present? (includes capillary fringe)	Yes x	No _____	Depth (inches): 9 to 12"

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
Aerial photo with JD line depicted provided by McAlpine Environmental Consulting, Inc.

Remarks:
A range is given above for depth to water table and depth to soil saturation because numerous test pits were dug along the evaluation

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET-A

Tree Stratum (Plot size: 700' transect)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 700' transect)			
1. Ilex glabra	15%	yes	FACW
2. Cliftonia monophylla	10%	yes	OBL
3. Magnolia virginiana	5%	yes	FACW
4.			
5.			
6.			
7.			
8.			
	30% = Total Cover		

50% of total cover: 15% 20% of total cover: 6%

Herb Stratum (Plot size: 700' transect)			
1. Juncus polycephalos	15%	yes	OBL
2. Juncus elliottii	15%	yes	OBL
3. Polygala lutea	10%	yes	FACW
4. Woodwardia virginiana	10%	yes	OBL
5. Lacnanthes caroliniana	10%	yes	OBL
6. Lachnocaulon anceps	5%	no	FACW
7. Thelypteris palustris	5%	no	OBL
8.			
9.			
10.			
11.			
12.			
	70% = Total Cover		

50% of total cover: 35% 20% of total cover: 14%

Woody Vine Stratum (Plot size: 700' transect)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		135 (B)

Prevalence Index = B/A = 1.35

Hydrophytic Vegetation Indicators:

- [x] 1 - Rapid Test for Hydrophytic Vegetation
- [x] 2 - Dominance Test is >50%
- [x] 3 - Prevalence Index is ≤3.0[1]
- [ ] Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 6"	10YR 2/1	>70%	N/A				fine sand	Starke Mucky Fine Sand
6 to 16"	10YR 6/2	0	N/A				fine sand	Starke Mucky Fine Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☑ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks: As noted above in remarks, numerous test pits were dug along an approximate 700' evaluation transect. The transect began within about 20-30 feet of the applicant's southern property line and generally followed the alignment of the JD line approved by SRWMD. The results noted above confirm the presence of a hydric soil at the approximate location of the JD line approved by the SRWMD for the eastern side of Wetland A. For the test pits just upslope of the flagged line, the

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Keystone Heights RV Resort City/County: Keystone Heights/Bradford Sampling Date: 6-19-18

Applicant/Owner: Vincent Esson State: FL Sampling Point: WET-A

Investigator(s): Kevin OKane Section, Township, Range: Sec 11 & 14, T 8S, R 22E

Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): gentle slope Slope (%): 2-5%

Subregion (LRR or MLRA): LRR T 153A Lat: 29 48' 8" Long: 82 4' Datum: NGVD

Soil Map Unit Name: Starke Mucky Fine Sand Depressional NWI classification: PFO4/PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation yes, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes yes	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes yes	No _____	
Wetland Hydrology Present?	Yes yes	No _____	

Remarks:

The site has been disturbed by previous intensive silvicultural activities. The vegetative cover is recovering from a clearcut that occurred between 2006-2009. On-site soils are moderately disturbed by harvesting procedures. This data sheet is focused on an approximate 700 foot walking evaluation of the wetland line approved by the SRWMD for the east side of Wetland A Numerous test pits were dug at the approximate location of the SRWMD accepted JD line and slightly upslope (i.e., 10-20 feet). A separate data sheet has been prepared to characterize the upslope conditions (see UP-A) data sheet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes x	No _____	Depth (inches): 12 to 14"
Saturation Present? (includes capillary fringe)	Yes x	No _____	Depth (inches): 9 to 12"

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photo with JD line depicted provided by McAlpine Environmental Consulting, Inc.

Remarks:

A range is given above for depth to water table and depth to soil saturation because numerous test pits were dug along the evaluation transect noted in the Remarks section above. As such, different depths were noted in different holes.

Downslope of the JD line accepted by SRWMD, water in a test pit rose to near the surrounding soil surface. Upslope of the SRWMD JD line, free water dropped to below 12 inches beneath the surrounding soil surface.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET-A

Tree Stratum (Plot size: 700' transect)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 700' transect)			
1. Ilex glabra	15%	yes	FACW
2. Cliftonia monophylla	10%	yes	OBL
3. Magnolia virginiana	5%	yes	FACW
4.			
5.			
6.			
7.			
8.			
	30% = Total Cover		

50% of total cover: 15% 20% of total cover: 6%

Herb Stratum (Plot size: 700' transect)			
1. Juncus polycephalos	15%	yes	OBL
2. Juncus elliottii	15%	yes	OBL
3. Polygala lutea	10%	yes	FACW
4. Woodwardia virginiana	10%	yes	OBL
5. Lacnanthes caroliniana	10%	yes	OBL
6. Lachnocaulon anceps	5%	no	FACW
7. Thelypteris palustris	5%	no	OBL
8.			
9.			
10.			
11.			
12.			
	70% = Total Cover		

50% of total cover: 35% 20% of total cover: 14%

Woody Vine Stratum (Plot size: 700' transect)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		135 (B)

Prevalence Index = B/A = 1.35

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 6"	10YR 2/1	>70%	N/A				fine sand	Starke Mucky Fine Sand
6 to 16"	10YR 6/2	0	N/A				fine sand	Starke Mucky Fine Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

As noted above in remarks, numerous test pits were dug along an approximate 700' evaluation transect. The transect began within about 20-30 feet of the applicant's southern property line and generally followed the alignment of the JD line approved by SRWMD. The results noted above confirm the presence of a hydric soil at the approximate location of the JD line approved by the SRWMD for the eastern side of Wetland A. For the test pits just upslope of the flagged line, the thickness of the dark surface diminished to less than 4 inches and did not meet the requirements for a dark surface (S7).

Wetlands A, B, C are mapped in the Bradford County Soil Survey as Starke Mucky Fine Sand l(Soil #24).The parent material is sandy and loamy marine deposits. The typical soil profile is 0 to 7 inches of mucky fine sand, 7 to 46 inches of fine sand, and 46 to 80 inches of sandy clay loam. Due to the depth of sand in the upper portion of the typical soil profile, it is considered inappropriate to use loamy soil indicators to make hydric soil determinations. of Starke mucky fine sand.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Keystone Heights RV Resort City/County: Keystone Heights/Bradford Sampling Date: 6-19-18

Applicant/Owner: Vincent Esson State: FL Sampling Point: WET-A

Investigator(s): Kevin OKane Section, Township, Range: Sec 11 & 14, T 8S, R 22E

Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): gentle slope Slope (%): 2-5%

Subregion (LRR or MLRA): LRR T 153A Lat: 29 48' 8" Long: 82 4' Datum: NGVD

Soil Map Unit Name: Starke Mucky Fine Sand Depressional NWI classification: PFO4/PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation yes, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes yes	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes yes	No _____	
Wetland Hydrology Present?	Yes yes	No _____	

Remarks:

The site has been disturbed by previous intensive silvicultural activities. The vegetative cover is recovering from a clearcut that occurred between 2006-2009. On-site soils are moderately disturbed by harvesting procedures. This data sheet is focused on an approximate 700 foot walking evaluation of the wetland line approved by the SRWMD for the east side of Wetland A Numerous test pits were dug at the approximate location of the SRWMD accepted JD line and slightly upslope (i.e., 10-20 feet). A separate data sheet has been prepared to characterize the upslope conditions (see UP-A) data sheet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes x	No _____	Depth (inches): 12 to 14"
Saturation Present? (includes capillary fringe)	Yes x	No _____	Depth (inches): 9 to 12"

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photo with JD line depicted provided by McAlpine Environmental Consulting, Inc.

Remarks:

A range is given above for depth to water table and depth to soil saturation because numerous test pits were dug along the evaluation transect noted in the Remarks section above. As such, different depths were noted in different holes.

Downslope of the JD line accepted by SRWMD, water in a test pit rose to near the surrounding soil surface. Upslope of the SRWMD JD line, free water dropped to below 12 inches beneath the surrounding soil surface.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET-A

Tree Stratum (Plot size: 700' transect)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 700' transect)			
1. Ilex glabra	15%	yes	FACW
2. Cliftonia monophylla	10%	yes	OBL
3. Magnolia virginiana	5%	yes	FACW
4.			
5.			
6.			
7.			
8.			
	30% = Total Cover		

50% of total cover: 15% 20% of total cover: 6%

Herb Stratum (Plot size: 700' transect)			
1. Juncus polycephalos	15%	yes	OBL
2. Juncus elliottii	15%	yes	OBL
3. Polygala lutea	10%	yes	FACW
4. Woodwardia virginiana	10%	yes	OBL
5. Lacnanthes caroliniana	10%	yes	OBL
6. Lachnocaulon anceps	5%	no	FACW
7. Thelypteris palustris	5%	no	OBL
8.			
9.			
10.			
11.			
12.			
	70% = Total Cover		

50% of total cover: 35% 20% of total cover: 14%

Woody Vine Stratum (Plot size: 700' transect)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		135 (B)

Prevalence Index = B/A = 1.35

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 6"	10YR 2/1	>70%	N/A				fine sand	Starke Mucky Fine Sand
6 to 16"	10YR 6/2	0	N/A				fine sand	Starke Mucky Fine Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

As noted above in remarks, numerous test pits were dug along an approximate 700' evaluation transect. The transect began within about 20-30 feet of the applicant's southern property line and generally followed the alignment of the JD line approved by SRWMD. The results noted above confirm the presence of a hydric soil at the approximate location of the JD line approved by the SRWMD for the eastern side of Wetland A. For the test pits just upslope of the flagged line, the thickness of the dark surface diminished to less than 4 inches and did not meet the requirements for a dark surface (S7).

Wetlands A, B, C are mapped in the Bradford County Soil Survey as Starke Mucky Fine Sand l(Soil #24).The parent material is sandy and loamy marine deposits. The typical soil profile is 0 to 7 inches of mucky fine sand, 7 to 46 inches of fine sand, and 46 to 80 inches of sandy clay loam. Due to the depth of sand in the upper portion of the typical soil profile, it is considered inappropriate to use loamy soil indicators to make hydric soil determinations. of Starke mucky fine sand.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Keystone Heights RV Resort City/County: Keystone Heights/Bradford Sampling Date: 6-19-18

Applicant/Owner: Vincent Esson State: FL Sampling Point: WET-A

Investigator(s): Kevin OKane Section, Township, Range: Sec 11 & 14, T 8S, R 22E

Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): gentle slope Slope (%): 2-5%

Subregion (LRR or MLRA): LRR T 153A Lat: 29 48' 8" Long: 82 4' Datum: NGVD

Soil Map Unit Name: Starke Mucky Fine Sand Depressional NWI classification: PFO4/PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation yes, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes yes	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes yes	No _____	
Wetland Hydrology Present?	Yes yes	No _____	

Remarks:

The site has been disturbed by previous intensive silvicultural activities. The vegetative cover is recovering from a clearcut that occurred between 2006-2009. On-site soils are moderately disturbed by harvesting procedures. This data sheet is focused on an approximate 700 foot walking evaluation of the wetland line approved by the SRWMD for the east side of Wetland A Numerous test pits were dug at the approximate location of the SRWMD accepted JD line and slightly upslope (i.e., 10-20 feet). A separate data sheet has been prepared to characterize the upslope conditions (see UP-A) data sheet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes x	No _____	Depth (inches): 12 to 14"
Saturation Present? (includes capillary fringe)	Yes x	No _____	Depth (inches): 9 to 12"

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photo with JD line depicted provided by McAlpine Environmental Consulting, Inc.

Remarks:

A range is given above for depth to water table and depth to soil saturation because numerous test pits were dug along the evaluation transect noted in the Remarks section above. As such, different depths were noted in different holes.

Downslope of the JD line accepted by SRWMD, water in a test pit rose to near the surrounding soil surface. Upslope of the SRWMD JD line, free water dropped to below 12 inches beneath the surrounding soil surface.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET-A

Tree Stratum (Plot size: 700' transect)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 700' transect)			
1. Ilex glabra	15%	yes	FACW
2. Cliftonia monophylla	10%	yes	OBL
3. Magnolia virginiana	5%	yes	FACW
4.			
5.			
6.			
7.			
8.			
	30% = Total Cover		

50% of total cover: 15% 20% of total cover: 6%

Herb Stratum (Plot size: 700' transect)			
1. Juncus polycephalos	15%	yes	OBL
2. Juncus elliottii	15%	yes	OBL
3. Polygala lutea	10%	yes	FACW
4. Woodwardia virginiana	10%	yes	OBL
5. Lacnanthes caroliniana	10%	yes	OBL
6. Lachnocaulon anceps	5%	no	FACW
7. Thelypteris palustris	5%	no	OBL
8.			
9.			
10.			
11.			
12.			
	70% = Total Cover		

50% of total cover: 35% 20% of total cover: 14%

Woody Vine Stratum (Plot size: 700' transect)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		135 (B)

Prevalence Index = B/A = 1.35

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 6"	10YR 2/1	>70%	N/A				fine sand	Starke Mucky Fine Sand
6 to 16"	10YR 6/2	0	N/A				fine sand	Starke Mucky Fine Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

As noted above in remarks, numerous test pits were dug along an approximate 700' evaluation transect. The transect began within about 20-30 feet of the applicant's southern property line and generally followed the alignment of the JD line approved by SRWMD. The results noted above confirm the presence of a hydric soil at the approximate location of the JD line approved by the SRWMD for the eastern side of Wetland A. For the test pits just upslope of the flagged line, the thickness of the dark surface diminished to less than 4 inches and did not meet the requirements for a dark surface (S7).

Wetlands A, B, C are mapped in the Bradford County Soil Survey as Starke Mucky Fine Sand l(Soil #24).The parent material is sandy and loamy marine deposits. The typical soil profile is 0 to 7 inches of mucky fine sand, 7 to 46 inches of fine sand, and 46 to 80 inches of sandy clay loam. Due to the depth of sand in the upper portion of the typical soil profile, it is considered inappropriate to use loamy soil indicators to make hydric soil determinations. of Starke mucky fine sand.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Keystone Heights RV Resort City/County: Keystone Heights/Bradford Sampling Date: 6-19-18

Applicant/Owner: Vincent Esson State: FL Sampling Point: WET-A

Investigator(s): Kevin OKane Section, Township, Range: Sec 11 & 14, T 8S, R 22E

Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): gentle slope Slope (%): 2-5%

Subregion (LRR or MLRA): LRR T 153A Lat: 29 48' 8" Long: 82 4' Datum: NGVD

Soil Map Unit Name: Starke Mucky Fine Sand Depressional NWI classification: PFO4/PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation yes, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes yes	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes yes	No _____	
Wetland Hydrology Present?	Yes yes	No _____	

Remarks:

The site has been disturbed by previous intensive silvicultural activities. The vegetative cover is recovering from a clearcut that occurred between 2006-2009. On-site soils are moderately disturbed by harvesting procedures. This data sheet is focused on an approximate 700 foot walking evaluation of the wetland line approved by the SRWMD for the east side of Wetland A Numerous test pits were dug at the approximate location of the SRWMD accepted JD line and slightly upslope (i.e., 10-20 feet). A separate data sheet has been prepared to characterize the upslope conditions (see UP-A) data sheet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes x	No _____	Depth (inches): 12 to 14"
Saturation Present? (includes capillary fringe)	Yes x	No _____	Depth (inches): 9 to 12"

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photo with JD line depicted provided by McAlpine Environmental Consulting, Inc.

Remarks:

A range is given above for depth to water table and depth to soil saturation because numerous test pits were dug along the evaluation transect noted in the Remarks section above. As such, different depths were noted in different holes.

Downslope of the JD line accepted by SRWMD, water in a test pit rose to near the surrounding soil surface. Upslope of the SRWMD JD line, free water dropped to below 12 inches beneath the surrounding soil surface.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET-A

Tree Stratum (Plot size: 700' transect)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 700' transect)			
1. Ilex glabra	15%	yes	FACW
2. Cliftonia monophylla	10%	yes	OBL
3. Magnolia virginiana	5%	yes	FACW
4.			
5.			
6.			
7.			
8.			
	30% = Total Cover		

50% of total cover: 15% 20% of total cover: 6%

Herb Stratum (Plot size: 700' transect)			
1. Juncus polycephalos	15%	yes	OBL
2. Juncus elliottii	15%	yes	OBL
3. Polygala lutea	10%	yes	FACW
4. Woodwardia virginiana	10%	yes	OBL
5. Lacnanthes caroliniana	10%	yes	OBL
6. Lachnocaulon anceps	5%	no	FACW
7. Thelypteris palustris	5%	no	OBL
8.			
9.			
10.			
11.			
12.			
	70% = Total Cover		

50% of total cover: 35% 20% of total cover: 14%

Woody Vine Stratum (Plot size: 700' transect)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		135 (B)

Prevalence Index = B/A = 1.35

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 6"	10YR 2/1	>70%	N/A				fine sand	Starke Mucky Fine Sand
6 to 16"	10YR 6/2	0	N/A				fine sand	Starke Mucky Fine Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
- ☐ Loamy Gleyed Matrix (F2)
- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): _____

Hydric Soil Present? Yes X No _____

Remarks:

As noted above in remarks, numerous test pits were dug along an approximate 700' evaluation transect. The transect began within about 20-30 feet of the applicant's southern property line and generally followed the alignment of the JD line approved by SRWMD. The results noted above confirm the presence of a hydric soil at the approximate location of the JD line approved by the SRWMD for the eastern side of Wetland A. For the test pits just upslope of the flagged line, the thickness of the dark surface diminished to less than 4 inches and did not meet the requirements for a dark surface (S7).

Wetlands A, B, C are mapped in the Bradford County Soil Survey as Starke Mucky Fine Sand l(Soil #24).The parent material is sandy and loamy marine deposits. The typical soil profile is 0 to 7 inches of mucky fine sand, 7 to 46 inches of fine sand, and 46 to 80 inches of sandy clay loam. Due to the depth of sand in the upper portion of the typical soil profile, it is considered inappropriate to use loamy soil indicators to make hydric soil determinations. of Starke mucky fine sand.

WETLAND DETERMINATION DATA FORM – Atlantic and Gulf Coastal Plain Region

Project/Site: Keystone Heights RV Resort City/County: Keystone Heights/Bradford Sampling Date: 6-19-18

Applicant/Owner: Vincent Esson State: FL Sampling Point: WET-A

Investigator(s): Kevin OKane Section, Township, Range: Sec 11 & 14, T 8S, R 22E

Landform (hillslope, terrace, etc.): gentle slope Local relief (concave, convex, none): gentle slope Slope (%): 2-5%

Subregion (LRR or MLRA): LRR T 153A Lat: 29 48' 8" Long: 82 4' Datum: NGVD

Soil Map Unit Name: Starke Mucky Fine Sand Depressional NWI classification: PFO4/PEM1

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No _____ (If no, explain in Remarks.)

Are Vegetation yes, Soil no, or Hydrology no significantly disturbed? Are "Normal Circumstances" present? Yes _____ No X

Are Vegetation no, Soil no, or Hydrology no naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes yes	No _____	**Is the Sampled Area within a Wetland?** **Yes** X **No** _____
Hydric Soil Present?	Yes yes	No _____	
Wetland Hydrology Present?	Yes yes	No _____	

Remarks:

The site has been disturbed by previous intensive silvicultural activities. The vegetative cover is recovering from a clearcut that occurred between 2006-2009. On-site soils are moderately disturbed by harvesting procedures. This data sheet is focused on an approximate 700 foot walking evaluation of the wetland line approved by the SRWMD for the east side of Wetland A Numerous test pits were dug at the approximate location of the SRWMD accepted JD line and slightly upslope (i.e., 10-20 feet). A separate data sheet has been prepared to characterize the upslope conditions (see UP-A) data sheet.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ☐ Surface Water (A1)
- ☐ High Water Table (A2)
- ☐ Saturation (A3)
- ☐ Water Marks (B1)
- ☐ Sediment Deposits (B2)
- ☐ Drift Deposits (B3)
- ☐ Algal Mat or Crust (B4)
- ☐ Iron Deposits (B5)
- ☐ Inundation Visible on Aerial Imagery (B7)
- ☐ Water-Stained Leaves (B9)
- ☐ Aquatic Fauna (B13)
- ☐ Marl Deposits (B15) **(LRR U)**
- ☐ Hydrogen Sulfide Odor (C1)
- ☐ Oxidized Rhizospheres along Living Roots (C3)
- ☐ Presence of Reduced Iron (C4)
- ☐ Recent Iron Reduction in Tilled Soils (C6)
- ☐ Thin Muck Surface (C7)
- ☐ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ☐ Surface Soil Cracks (B6)
- ☐ Sparsely Vegetated Concave Surface (B8)
- ☐ Drainage Patterns (B10)
- ☐ Moss Trim Lines (B16)
- ☐ Dry-Season Water Table (C2)
- ☐ Crayfish Burrows (C8)
- ☐ Saturation Visible on Aerial Imagery (C9)
- ☐ Geomorphic Position (D2)
- ☐ Shallow Aquitard (D3)
- ☐ FAC-Neutral Test (D5)
- ☐ Sphagnum moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes _____	No X	Depth (inches): _____
Water Table Present?	Yes x	No _____	Depth (inches): 12 to 14"
Saturation Present? (includes capillary fringe)	Yes x	No _____	Depth (inches): 9 to 12"

Wetland Hydrology Present? **Yes** X **No** _____

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Aerial photo with JD line depicted provided by McAlpine Environmental Consulting, Inc.

Remarks:

A range is given above for depth to water table and depth to soil saturation because numerous test pits were dug along the evaluation transect noted in the Remarks section above. As such, different depths were noted in different holes.

Downslope of the JD line accepted by SRWMD, water in a test pit rose to near the surrounding soil surface. Upslope of the SRWMD JD line, free water dropped to below 12 inches beneath the surrounding soil surface.

VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: WET-A

Tree Stratum (Plot size: 700' transect)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Sapling/Shrub Stratum (Plot size: 700' transect)			
1. Ilex glabra	15%	yes	FACW
2. Cliftonia monophylla	10%	yes	OBL
3. Magnolia virginiana	5%	yes	FACW
4.			
5.			
6.			
7.			
8.			
	30% = Total Cover		

50% of total cover: 15% 20% of total cover: 6%

Herb Stratum (Plot size: 700' transect)			
1. Juncus polycephalos	15%	yes	OBL
2. Juncus elliottii	15%	yes	OBL
3. Polygala lutea	10%	yes	FACW
4. Woodwardia virginiana	10%	yes	OBL
5. Lacnanthes caroliniana	10%	yes	OBL
6. Lachnocaulon anceps	5%	no	FACW
7. Thelypteris palustris	5%	no	OBL
8.			
9.			
10.			
11.			
12.			
	70% = Total Cover		

50% of total cover: 35% 20% of total cover: 14%

Woody Vine Stratum (Plot size: 700' transect)			
1.			
2.			
3.			
4.			
5.			
	= Total Cover		

50% of total cover: _____ 20% of total cover: _____

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 8 (A)

Total Number of Dominant Species Across All Strata: 8 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	65	x 1 =	65
FACW species	35	x 2 =	70
FAC species	0	x 3 =	0
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	100 (A)		135 (B)

Prevalence Index = B/A = 1.35

Hydrophytic Vegetation Indicators:

- ☐ 1 - Rapid Test for Hydrophytic Vegetation
- ☐ 2 - Dominance Test is >50%
- ☐ 3 - Prevalence Index is ≤3.0[1]
- ☐ Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Definitions of Four Vegetation Strata:

Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.

Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than 3.28 ft (1 m) tall.

Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.

Woody vine – All woody vines greater than 3.28 ft in height.

Hydrophytic Vegetation Present? Yes X No _____

Remarks: (If observed, list morphological adaptations below).

SOIL

Sampling Point: WET-A

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox %	Type[1]	Loc[2]	Texture	Remarks
0 - 6"	10YR 2/1	>70%	N/A				fine sand	Starke Mucky Fine Sand
6 to 16"	10YR 6/2	0	N/A				fine sand	Starke Mucky Fine Sand

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators: (Applicable to all LRRs, unless otherwise noted.)

- ☐ Histosol (A1)
- ☐ Histic Epipedon (A2)
- ☐ Black Histic (A3)
- ☐ Hydrogen Sulfide (A4)
- ☐ Stratified Layers (A5)
- ☐ Organic Bodies (A6) **(LRR P, T, U)**
- ☐ 5 cm Mucky Mineral (A7) **(LRR P, T, U)**
- ☐ Muck Presence (A8) **(LRR U)**
- ☐ 1 cm Muck (A9) **(LRR P, T)**
- ☐ Depleted Below Dark Surface (A11)
- ☐ Thick Dark Surface (A12)
- ☐ Coast Prairie Redox (A16) **(MLRA 150A)**
- ☐ Sandy Mucky Mineral (S1) **(LRR O, S)**
- ☐ Sandy Gleyed Matrix (S4)
- ☐ Sandy Redox (S5)
- ☐ Stripped Matrix (S6)
- ☐ Dark Surface (S7) **(LRR P, S, T, U)**
- ☐ Polyvalue Below Surface (S8) **(LRR S, T, U)**
- ☐ Thin Dark Surface (S9) **(LRR S, T, U)**
- ☐ Loamy Mucky Mineral (F1) **(LRR O)**
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- ☐ Depleted Matrix (F3)
- ☐ Redox Dark Surface (F6)
- ☐ Depleted Dark Surface (F7)
- ☐ Redox Depressions (F8)
- ☐ Marl (F10) **(LRR U)**
- ☐ Depleted Ochric (F11) **(MLRA 151)**
- ☐ Iron-Manganese Masses (F12) **(LRR O, P, T)**
- ☐ Umbric Surface (F13) **(LRR P, T, U)**
- ☐ Delta Ochric (F17) **(MLRA 151)**
- ☐ Reduced Vertic (F18) **(MLRA 150A, 150B)**
- ☐ Piedmont Floodplain Soils (F19) **(MLRA 149A)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 149A, 153C, 153D)**

Indicators for Problematic Hydric Soils[3]:

- ☐ 1 cm Muck (A9) **(LRR O)**
- ☐ 2 cm Muck (A10) **(LRR S)**
- ☐ Reduced Vertic (F18) **(outside MLRA 150A,B)**
- ☐ Piedmont Floodplain Soils (F19) **(LRR P, S, T)**
- ☐ Anomalous Bright Loamy Soils (F20) **(MLRA 153B)**
- ☐ Red Parent Material (TF2)
- ☐ Very Shallow Dark Surface (TF12)
- ☐ Other (Explain in Remarks)

[3]Indicators of hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):

Type: none

Depth (inches): _____

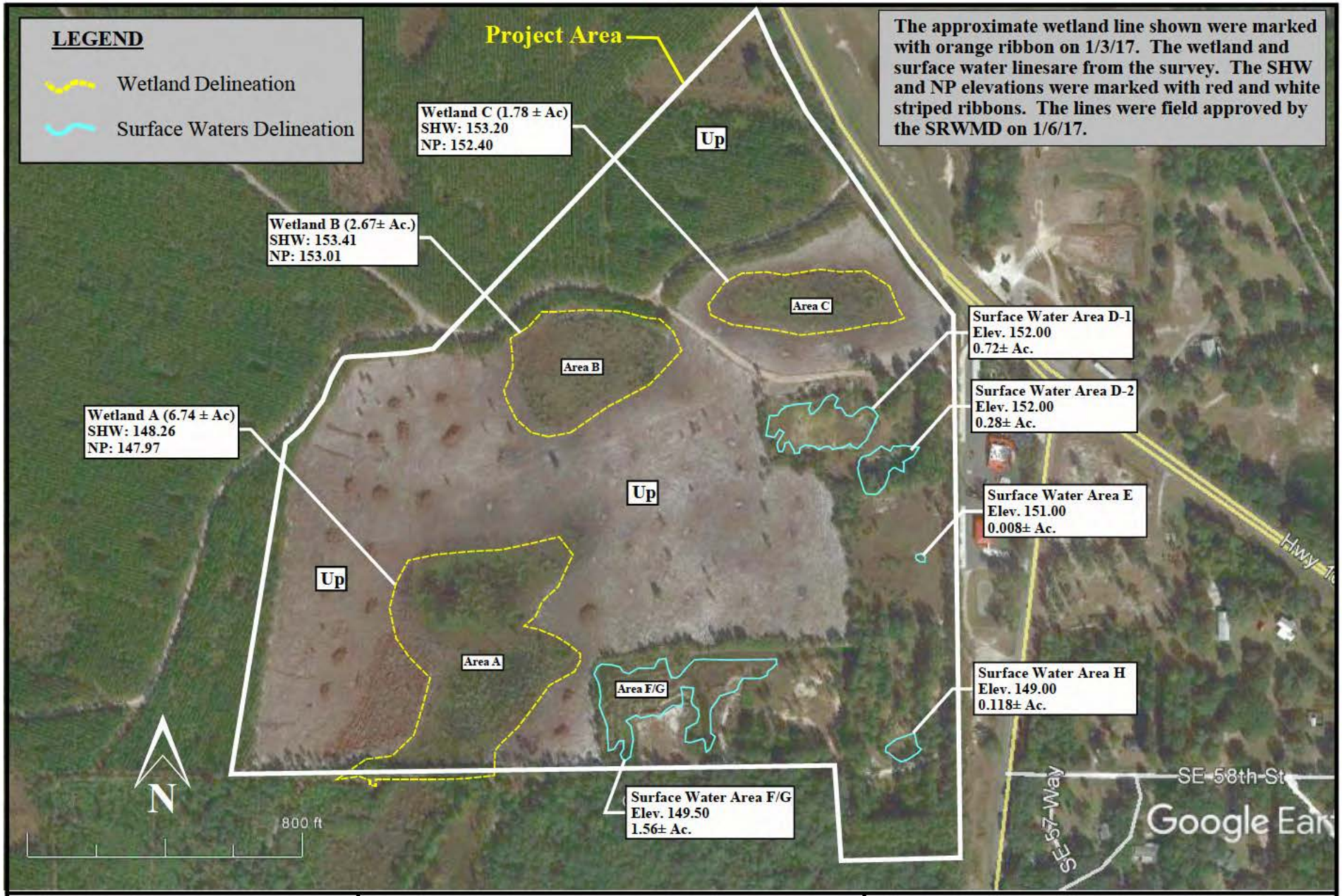
Hydric Soil Present? Yes X No _____

Remarks:

As noted above in remarks, numerous test pits were dug along an approximate 700' evaluation transect. The transect began within about 20-30 feet of the applicant's southern property line and generally followed the alignment of the JD line approved by SRWMD. The results noted above confirm the presence of a hydric soil at the approximate location of the JD line approved by the SRWMD for the eastern side of Wetland A. For the test pits just upslope of the flagged line, the thickness of the dark surface diminished to less than 4 inches and did not meet the requirements for a dark surface (S7).

Wetlands A, B, C are mapped in the Bradford County Soil Survey as Starke Mucky Fine Sand l(Soil #24).The parent material is sandy and loamy marine deposits. The typical soil profile is 0 to 7 inches of mucky fine sand, 7 to 46 inches of fine sand, and 46 to 80 inches of sandy clay loam. Due to the depth of sand in the upper portion of the typical soil profile, it is considered inappropriate to use loamy soil indicators to make hydric soil determinations. of Starke mucky fine sand.

EXHIBIT 2



McAlpine Environmental Consulting, Inc.
18312 Cortez Boulevard, Brooksville, FL 34601
352-585-2033 (Mobile)
davidmec7@gmail.com

73.4± Acre Bradford County R/V Park Site
Listed Species and Habitat Study

Figure: 4 Wetland and Surface Waters
Image From: Google Earth
Image Date: 11/20/16

EXHIBIT 3

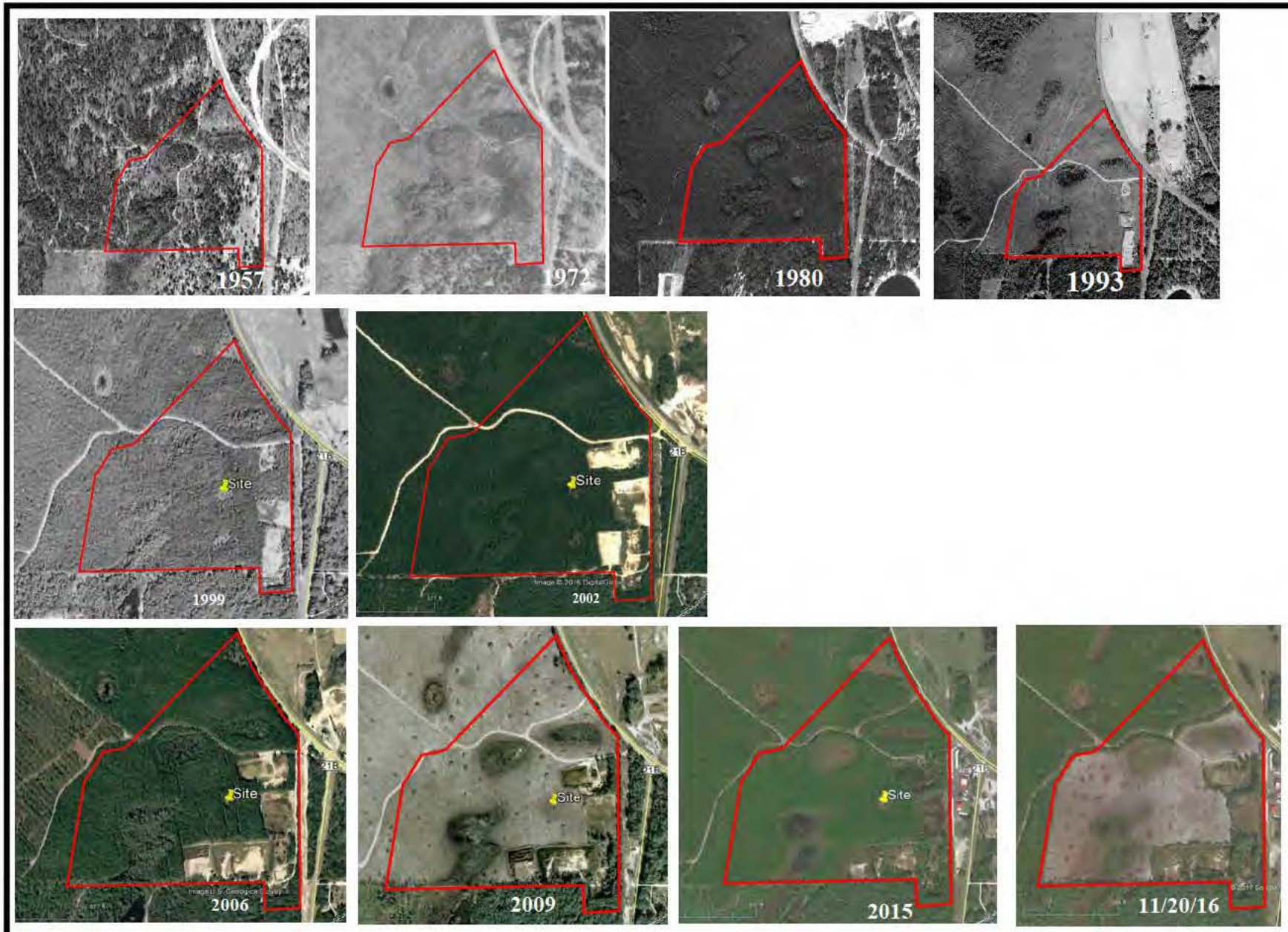


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Figure 6: Historical Aerials

EXHIBIT 4

Map Unit Symbol	Map Unit Name
2*	Albany fine sand, 0 to 5 percent slopes
3	Ocilla fine sand, 0 to 5 percent slopes
5*	Penney sand, 0 to 5 percent slopes
7	Surrency and Pantego soils, depressional
12*	Sapelo sand
14	Pamlico and Croatan mucks
16*	Foxworth fine sand, 0 to 5 percent slopes
17*	Blanton fine sand, 0 to 5 percent slopes
22	Chipley fine sand, 0 to 5 percent slopes
24*	Starke mucky fine sand, depressional
28	Arents, moderately wet, 0 to 5 percent slopes
30	Troup sand, 0 to 5 percent slopes
37	Pamlico and Croatan mucks, frequently flooded
38	Penney sand, rolling
40	Troup sand, rolling
99	Water

*** Onsite soils**
See attached soil descriptions

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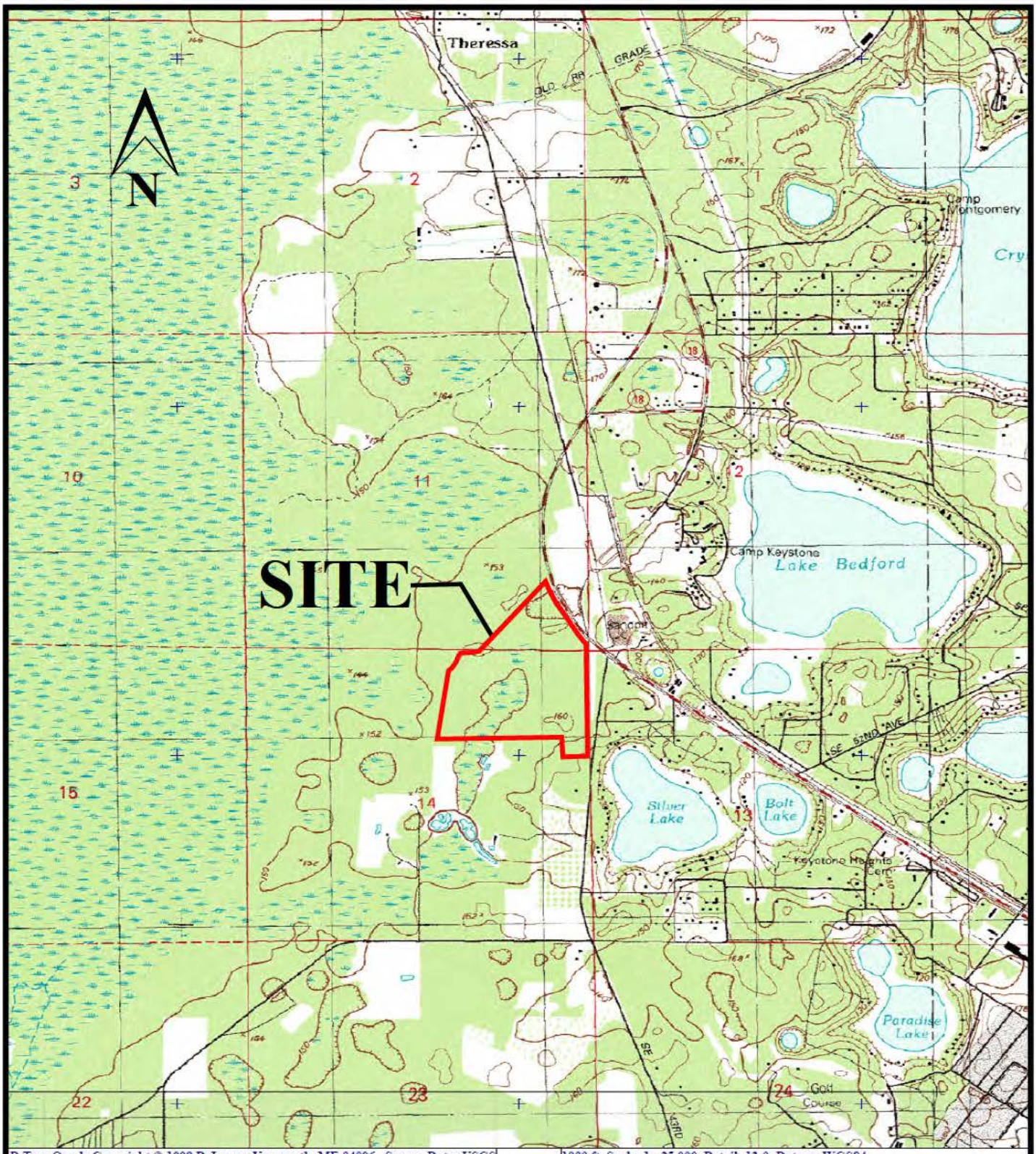
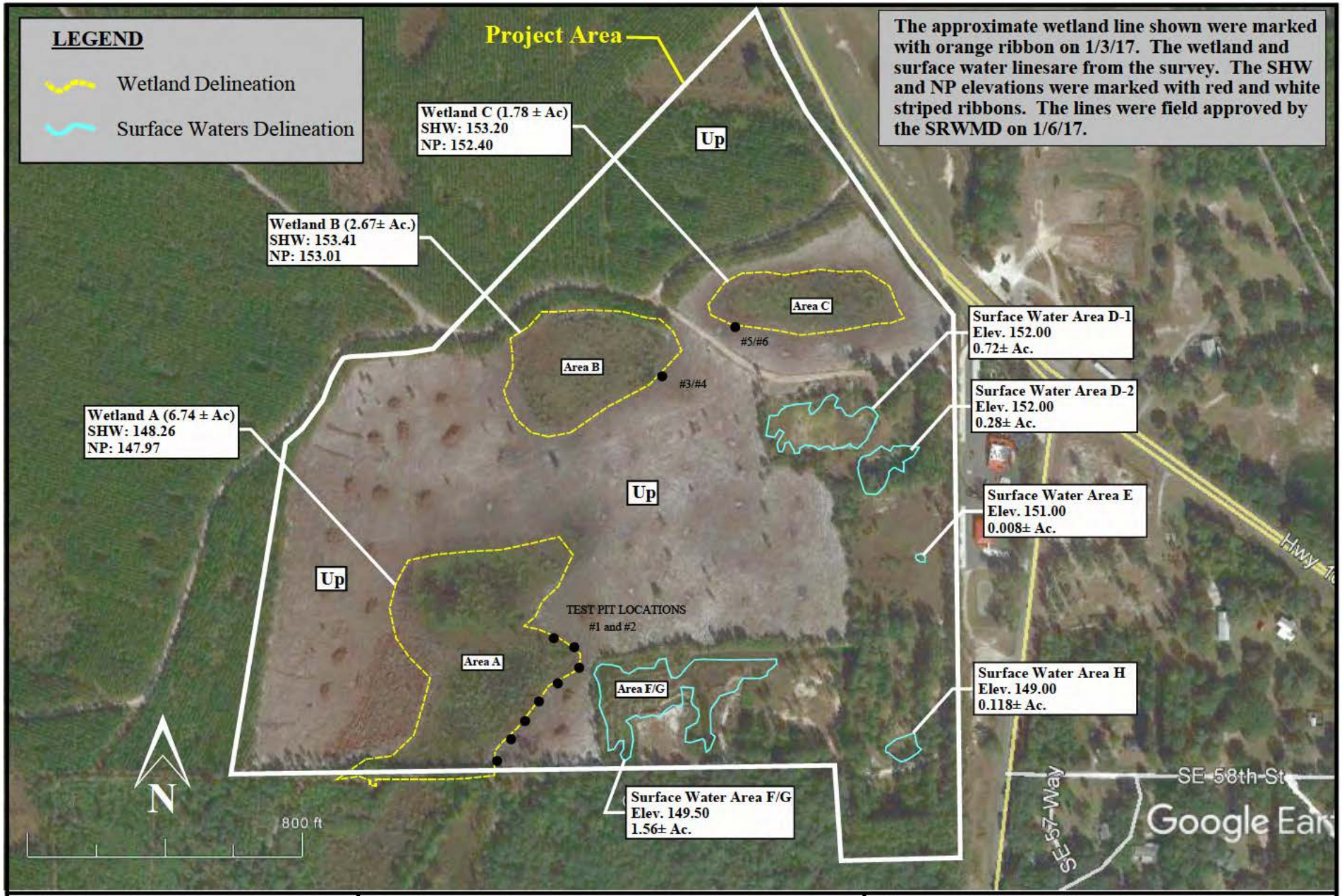
Figure 5: Soil Map
From USDA Web Soil Survey
http://websoilsurvey.nrcs.usda.gov

EXHIBIT 5



McAlpine Environmental Consulting, Inc. 18312 Cortez Boulevard, Brooksville, FL 34601 352-585-2033 (Mobile) davidmec7@gmail.com	***73.4± Acre Bradford County R/V Park Site*** ***Listed Species and Habitat Study***	**Figure 2: Quad Map** Sec. 11 and 14, T-8S, R-22E, Bradford Co., Keystone Heights Quad



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73.4± Acre Bradford County R/V Park Site
Listed Species and Habitat Study

Figure: 4 Wetland and Surface Waters
Image From: Google Earth
Image Date: 11/20/16

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 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 Florida State Plane HARN North zone. The **horizontal datum** was NAD 83. Differences in datum, spheroid, projection or State Plane 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, N/NGS 12
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 derived from Florida Department of Revenue Orthophotos produced at a scale of 1:200 from photography dated 2007.

Based on updated topographic information, this map reflects more detailed and up-to-date **stream channel configurations and floodplain delineations** than those shown on the previous FIRM for this jurisdiction. 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. Also, the road to floodplain relationships for unrevised streams may differ from what is shown on previous maps.

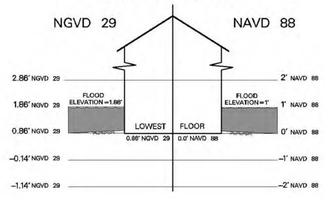
Corporate limits shown on this map are based on the best data available at the time of publication. Because changes due to annexations or de-annexations may have occurred after this map was published, map users should contact appropriate community officials to verify current corporate limit locations.

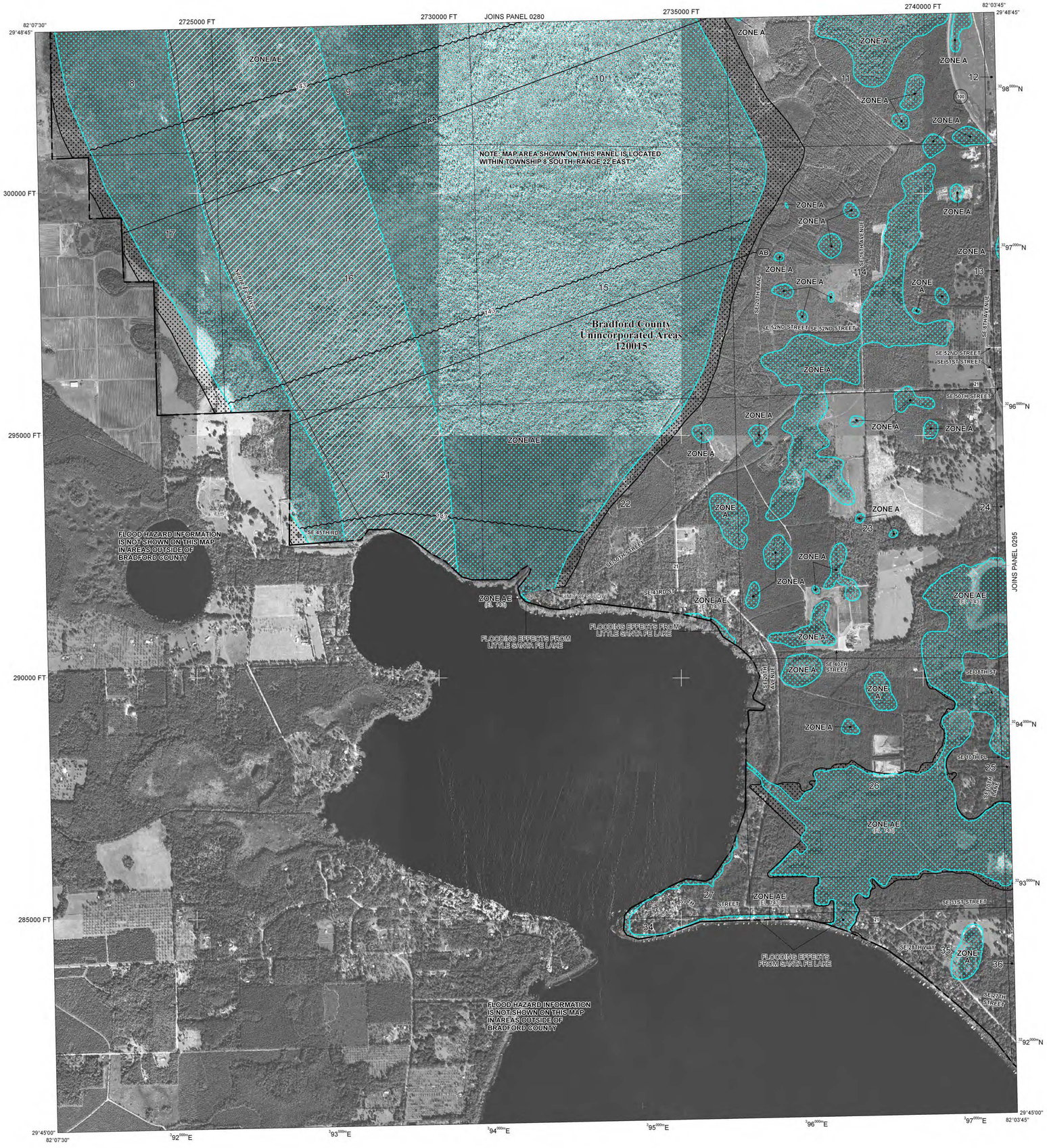
Please refer to the separately printed **Map Index** for an overview map of the county showing the layout of map panels; community map repository addresses; and a Listing of Communities table containing National Flood Insurance Program dates for each community as well as a listing of the panels on which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

For information on available products associated with this FIRM visit the **Map Service Center (MSC)** website at **http://msc.fema.gov**. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the MSC website.

If you have **questions about this map**, how to order products or the National Flood Insurance Program in general, please call the FEMA Map Information eXchange (FMIX) at **1-877-FEMA-MAP** (1-877-336-2627) or visit the FEMA website at **http://www.fema.gov/business/nfip**.

DATUM CONVERSION SCHEMATIC





LEGEND

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

The 1% annual 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 decertified. 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	Area to be protected from 1% annual chance flood 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.

Limit of Moderate Wave Action

~~~ 513 ~~~ Base Flood Elevation line and value; elevation in feet*

(EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988

(A)———(A) Cross section line

(23)- - - - -(23) Transect line

87°07'45", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83), Western Hemisphere

3976000mN 1000-meter Universal Transverse Mercator grid values, zone 17

600000 FT 5000-foot grid values: Florida State Plane coordinate system, North zone (FIPSZONE 0903), Lambert Conformal Conic projection

DX5510 × Bench mark (see explanation in Notes to Users section of this FIRM panel)

● M1.5 River Mile

MAP REPOSITORY
Refer to listing of Map Repositories on Map Index

EFFECTIVE DATE OF COUNTYWIDE
FLOOD INSURANCE RATE MAP
November 15, 1989

EFFECTIVE DATE(S) OF REVISION(S) TO THIS PANEL
May 2, 2012 - to update corporate limits, to change Base Flood Elevations, to change Special Flood Hazard Areas, to change zone designations, to update map format, to update roads and road names, to reflect updated topographic information

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'

500 0 1000 2000 FEET

300 0 300 600 METERS

NFIP

NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0290E

FIRM

FLOOD INSURANCE RATE MAP

BRADFORD COUNTY, FLORIDA
AND INCORPORATED AREAS

PANEL 290 OF 310

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
BRADFORD COUNTY	120015	0290	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
12007C0290E

MAP REVISED
MAY 2, 2012

Federal Emergency Management Agency
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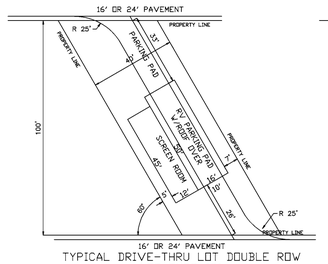
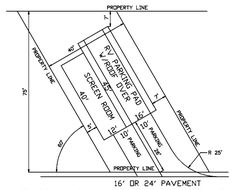
CURVE TABLE					
CURVE	ARC LENGTH	DELTA	RADIUS	CHORD	CH BEARING
C-1	61.24'	27°44'17"	39.00'	55.14'	N43°30'03"E
C-2					
C-3	61.26'	90°00'00"	39.00'	55.15'	N46°31'01"W
C-4	61.44'	31°25'58"	112.00'	60.68'	N17°14'00"W
C-5	36.68'	39°39'18"	53.00'	35.96'	N21°18'36"W
C-6	7.59'	11°12'36"	39.00'	7.57'	N46°42'38"W
C-7	11.94'	17°32'43"	39.00'	11.90'	N43°30'35"W
C-8	32.55'	47°49'51"	39.00'	31.61'	N58°38'39"W
C-9	37.27'	54°45'11"	39.00'	35.87'	S70°04'20"W
C-10	52.62'	77°18'15"	39.00'	48.72'	S38°39'07"E
C-11	38.83'	57°03'01"	39.00'	37.25'	S28°31'30"W
C-12	25.71'	42°05'33"	35.00'	25.14'	S63°44'11"W
C-13	34.62'	56°40'40"	35.00'	33.23'	S56°26'55"W
C-14	6.37'	9°26'00"	35.00'	6.36'	S33°19'32"W
C-15	18.78'	30°44'58"	35.00'	18.56'	S23°10'03"W
C-16	60.66'	80°41'25"	35.00'	53.35'	S41°51'44"E
C-17					
C-18					
C-19					
C-20	139.91'	27°44'17"	289.00'	138.55'	N70°55'09"E
C-21	18.78'	30°44'58"	35.00'	18.56'	N23°10'03"E
C-22	28.25'	46°14'41"	35.00'	27.49	N61°39'55"E
C-23	94.40'	27°44'17"	195.00'	93.48'	N70°55'09"E

LINE TABLE		
LINE	LENGTH	BEARING
L-1	276.50'	N88°51'23"E
L-2	233.22'	S01°28'52"E
L-3		
L-4		
L-5		
L-6		
L-7		
L-8	860.79'	N88°03'07"E
L-9	299.00'	N01°31'01"W
L-10		
L-11	938.95'	N88°28'59"E
L-12	174.00'	N01°28'52"W
L-13	939.08'	N88°28'59"E
L-14	174.00'	N01°31'01"W
L-15	174.00'	N01°28'52"W
L-16	958.07'	N88°28'59"E
L-17	111.59'	N01°31'01"W
L-18	4.69'	N32°56'58"W
L-19	162.20'	N32°56'58"W
L-20	166.89	N32°56'58"W
L-21	938.24'	N01°28'52"W
L-22	523.47'	N01°28'52"W
L-23	164.63'	N41°08'20"W
L-24	89.38'	N52°16'56"W
L-25	199.25'	N34°44'13"W
L-26	61.78'	N34°44'13"W
L-27	261.03'	N34°44'13"W
L-28	30.25'	N82°33'04"W
L-29	146.94'	N82°33'04"W
L-30	131.64'	N82°33'04"W
L-31	61.78'	N82°33'04"W
L-32	532.16'	S42°41'45"W
L-33	331.01'	S42°41'45"W
L-34	863.17'	S42°41'45"W
L-35	568.39'	S42°41'45"W
L-36	583.91'	S42°41'45"W
L-37	523.96'	S42°41'45"W
L-38	143.18'	S77°18'15"E
L-39	138.56'	S77°18'15"E
L-40	138.56'	S77°18'15"E
L-41	27.25'	S77°18'15"E
L-42	447.56'	N87°28'23"E
L-43	84.06'	S00°00'00"E
L-44	473.10'	S57°03'01"W
L-45	86.85'	S57°03'01"W
L-46	559.95'	S57°03'01"W
L-47	206.97'	N32°56'59"W
L-48	167.79'	N32°56'59"W
L-49	4.13'	N32°56'59"W
L-50	378.89	N32°56'59"W
L-51	57.67'	S42°41'45"W
L-52	217.92'	S84°47'18"W
L-53	52.79'	S28°06'32"W
L-54	152.07'	S38°32'32"W
L-55	808.49'	S07°47'34"W
L-56	124.98'	N88°28'59"E
L-57		
L-58		
L-59		
L-60		
L-61		
L-62	319.53'	N07°47'34"E
L-63	404.69'	N07°47'34"E
L-64	724.22'	N07°47'34"E
L-65	4.11'	N84°47'18"E
L-66	358.65'	N84°47'18"E
L-67	362.76'	N84°47'18"E
L-68	6.72'	N57°03'01"E
L-69	55.52'	N07°47'34"E
L-70	114.61'	N38°32'32"E
L-71	127.30'	N84°47'18"E
L-72	71.15'	N57°03'01"E
L-73	65.81'	N01°28'52"W
L-74	473.00	N01°31'01"W



TYPICAL DRIVE-THRU LOT DOUBLE ROW
LOT TYPE "C"

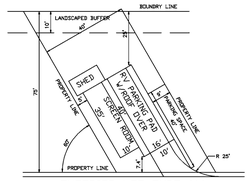
TYPICAL BACK-IN LOT OVER SIZED SINGLE
LOT TYPE "D"



TYPICAL BACK-IN LOT SINGLE ROW
INTERIOR LOT TYPE "A"

SEE SHEET ST-20 FOR EXTERIOR LOTS

TYPICAL BACK-IN LOT SINGLE ROW
INTERIOR LOT TYPE "B"



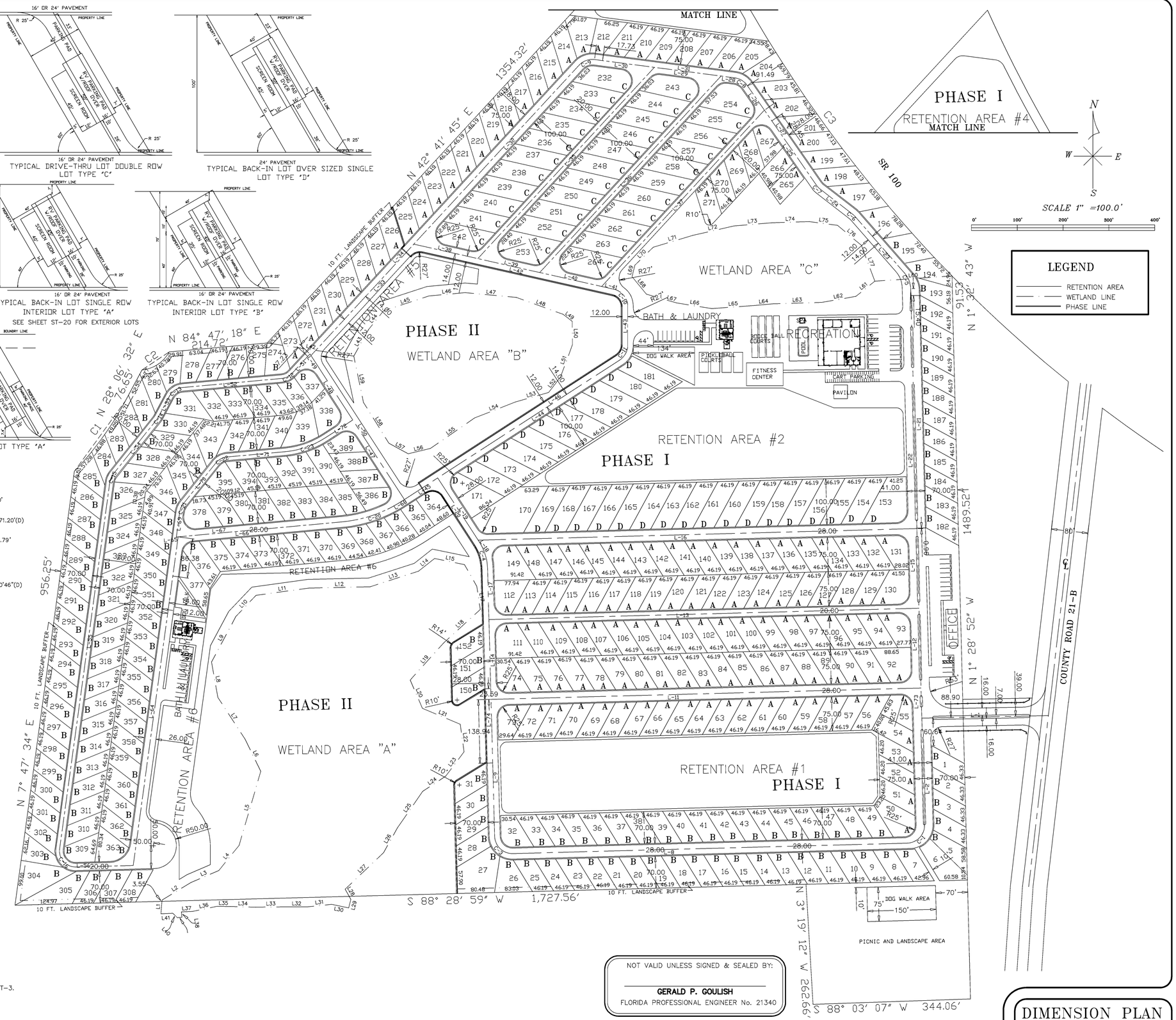
EXTERIOR LOT TYPE "A"

Curve Data:

C1: Radius – 698.87' (A) 71.20'(D)
Arc – 190.66'
Chord – N 35°55'27" E
Chord – 190.07' 2914.79'
Delta – 15°37'51"

C2: Radius – 75.00'
Arc – 74.77'(A) 74.19'(D)
Chord – N 56°26'55" E
Chord – 71.27'
Delta – 56°44'09"(A) 56°40'46"(D)

C3: Radius –
Arc – 1031.66'
Chord – N 34°12'02" W
Chord – 1026.28'
Delta – 20°16'45"



NOTE
THE WETLAND L1 THRU L77 LINE DIMENSIONS ARE ON SHEET ST-3.
BLOCK CORNER RADIUS 25 FT UNLESS OTHERWISE NOTED.

NOT VALID UNLESS SIGNED & SEALED BY:

GERALD P. GOULISH
FLORIDA PROFESSIONAL ENGINEER No. 21340

DIMENSION PLAN

DATE	REV.	BY

Design Services
4336 ST. LAWRENCE DRIVE
NEW PORT RICHEY, FL. 34655
(727)372-0566

PROJECT:
KEYSTONE RV RESORT
SECTIONS 11 & 14,
STATE ROAD 100
BRADFORD COUNTY, FLORIDA

CLIENT:
TOM'S HIGH ON THE HOG
REAL PIT BBQ
2250 LEE ROAD, SUTE 120
WINTER PARK, FLORIDA 32789
407-832-8725
cclaytonii@aol.com

DRAWN	RH
CHECKED	GPG
DATE	11-14-17
SCALE	1" = 100'
JOB NO.	16-008.00
SHEET	ST-5
	5 OF 33 SHEETS