CZR
ENVIRONMENTAL CONSULTANTS

4709 COLLEGE ACRES DRIVE
SUITE 2
WILMINGTON, NC 28403

TEL (910) 392-9253
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czrwilm@czr-inc.com

27 September 2023

Mr. Ty Crowder
Sand Dollar Homes, LLC
1705 Ivory Gull Drive
Morehead City, NC 28557

Re: Reconnaissance and delineation of potential Section 404/401 wetland jurisdictional areas on a 27.29-acre parcel (PIN# 536518217675) near Swansboro in Onslow County, NC.

Dear Mr. Crowder

Thank you for contacting CZR Incorporated (CZR) in regard to the above referenced project. At your request CZR has completed an evaluation of wetlands and Waters of the United States (WOTUS) for an approximate 27.29-acre parcel (PIN# 536518217675) located at the intersection of Swansboro Loop Road and Rooster Run Road near Swansboro, Onslow County, NC. Fieldwork was conducted on 12 September 2023.

Background Research
Prior to field efforts online available resources were reviewed for the project area including:

- U.S. Geological Survey (USGS) 7.5 minute topographic quadrangle of Hubert, NC.
- Natural Resource Conservation Service (NRCS) published Soil Surveys of Onslow County, NC.
- Aerial photography.

Topography
The project area is generally flat. Elevations range from a low of 30 feet above mean sea level (MSL) to a high of approximately 32 feet above MSL based on a review of the USGS topographic map (Figure 1).

Soils
The NRCS Soil Survey for Onslow County depicts two mapped soil units, Onslow loamy fine sand and Rains fine sandy loam (0-2% slopes) (Figure 2). Onslow loamy fine sand is a non-hydric soil mapping unit that may contain inclusions of hydric soils. Rains fine sandy loam (0-2% slopes) is a hydric soil mapping unit.

Wetlands and Surface Waters
The project area was reviewed for the presence/absence of wetland areas in accordance with the *1987 Corps of Engineers Wetlands Delineation Manual and the Regional Supplement (Atlantic and Gulf Coast – November 2010*) and the 2023 Revised Definition of "Waters of the United States" Final Rule (September 8, 2023).

Results of Field Visit
No Section 404 jurisdictional wetlands were identified in the study area; however, three potential isolated wetlands were identified in the study. These features are surrounded by uplands with no direct connection to surface waters and appear to be isolated wetlands. Although these features are not under federal jurisdiction, they may be considered wetlands under the State's 401 wetland jurisdiction administered by the N.C. Division of Water Resources (NCDWR). These areas were delineated in the field with sequentially numbered pink flagging (Figure 3 and Table 1).

Table 1. Summary of Results

Feature ID.	Cowardin Classification	NCWAM Classification	Regulatory Authority	Approximate Area (acres)
WA	PFO	Basin Wetland	NCDWR	0.42
WB[1]	PFO[1]	Basin Wetland[1]	NCDWR[1]	0.03
WC[1]	PFO[1]	Basin Wetland[1]	NCDWR[1]	0.21

[1] Features WB and WC lack sufficient indicators of wetland hydrology and therefore may not classified as wetlands subject to state or federal wetland regulations.

One wetland area (WA) has evidence of wetland hydrology, hydrophytic vegetation, and hydric soils (3 parameters needed to be considered a wetland) but is surrounded by uplands with no direct connection to surface waters. Hydrologic indicators were limited to geomorphic position and vegetation that passes the FAC-Neutral Test. Soils in this area are hydric (Munsell color 2.5Y 2.5/1) along with hydrophytic vegetation including sweet bay (*Magnolia virginiana*), little-leaf titi (*Cyrilla racemiflora*), and greater bladder sedge (*Carex intumescens*).

Two additional areas (WB and WC) have evidence of hydrophytic vegetation and hydric soils but lacked evidence of wetland hydrology (only one secondary indicator of wetland hydrology was observed) and are surrounded by uplands with no direct connection to surface waters. Hydrologic indicators were limited to vegetation that passes the FAC-Neutral Test. Soils in this area are hydric (Munsell color 2.5Y 2.5/1) along with hydrophytic vegetation including red maple (*Acer rubrum*) and little-leaf titi.

Recommendations

The results of the delineation should be considered preliminary until reviewed and approved by the U.S. Army Corps of Engineers (USACE) and NCDWR. No Section 404 jurisdictional wetlands were identified in the study area and isolated depressional wetlands (potential 401 jurisdiction) were identified in the study area. Isolated wetlands are not regulated by the U.S. Army Corps of Engineers (USACE) however, isolated wetlands are regulated by NCDWR and a permit may be required from NCDWR for any potential impacts to isolated wetlands. Depending on your plans, and if needed and/or requested; CZR can coordinate with the USACE to seek concurrence for the field delineation. We recommend your surveyor/builder document the wetland/upland boundary and evaluate options for use.

Please contact us with any questions or items you wish to discuss. We appreciate the opportunity to assist you with this project.

Sincerely,

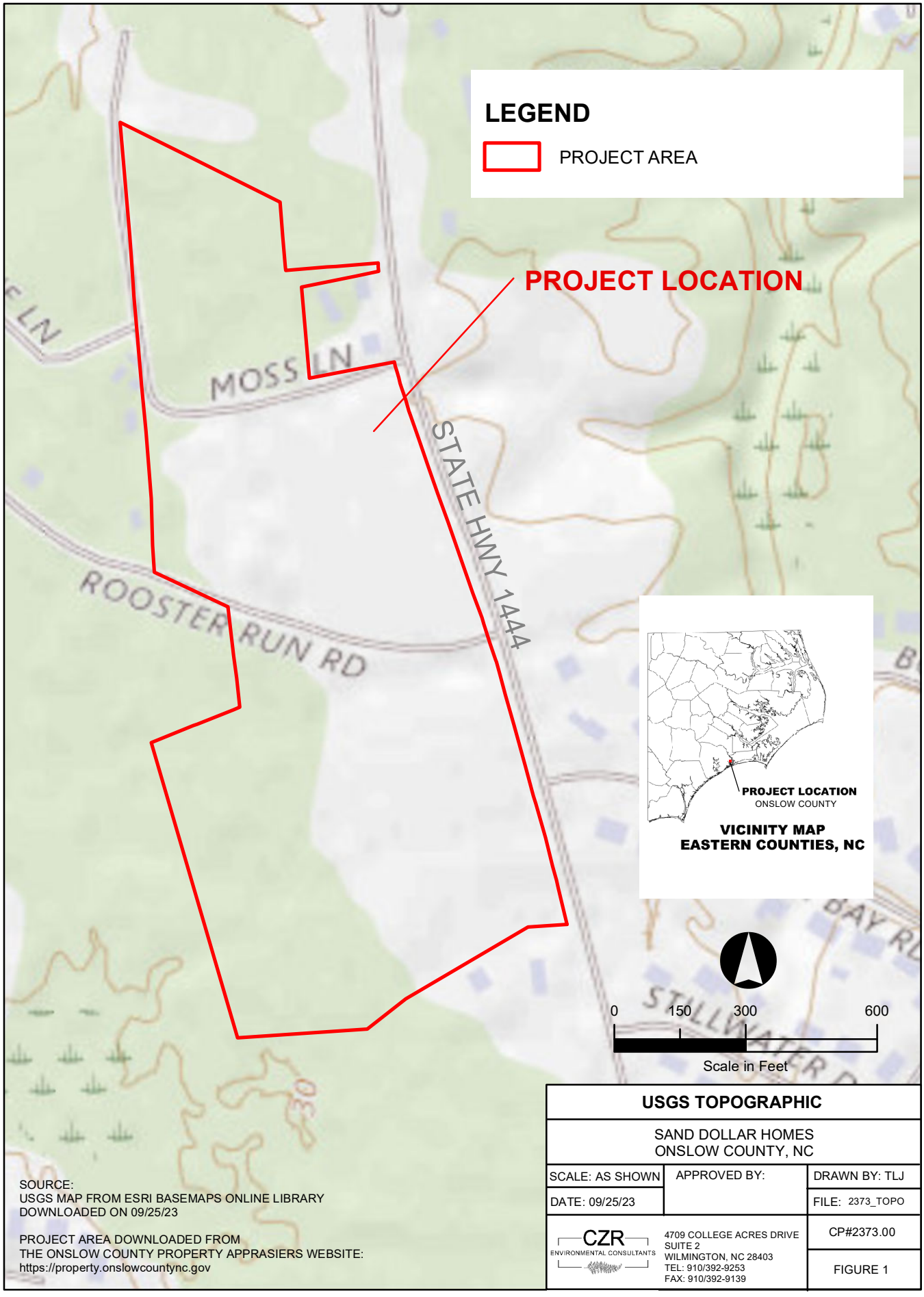
CZR INCORPORATED

Matt Smith
Senior Environmental Scientist
Wilmington, NC

CP# 2373

CC: Sam Cooper, CZR Incorporated

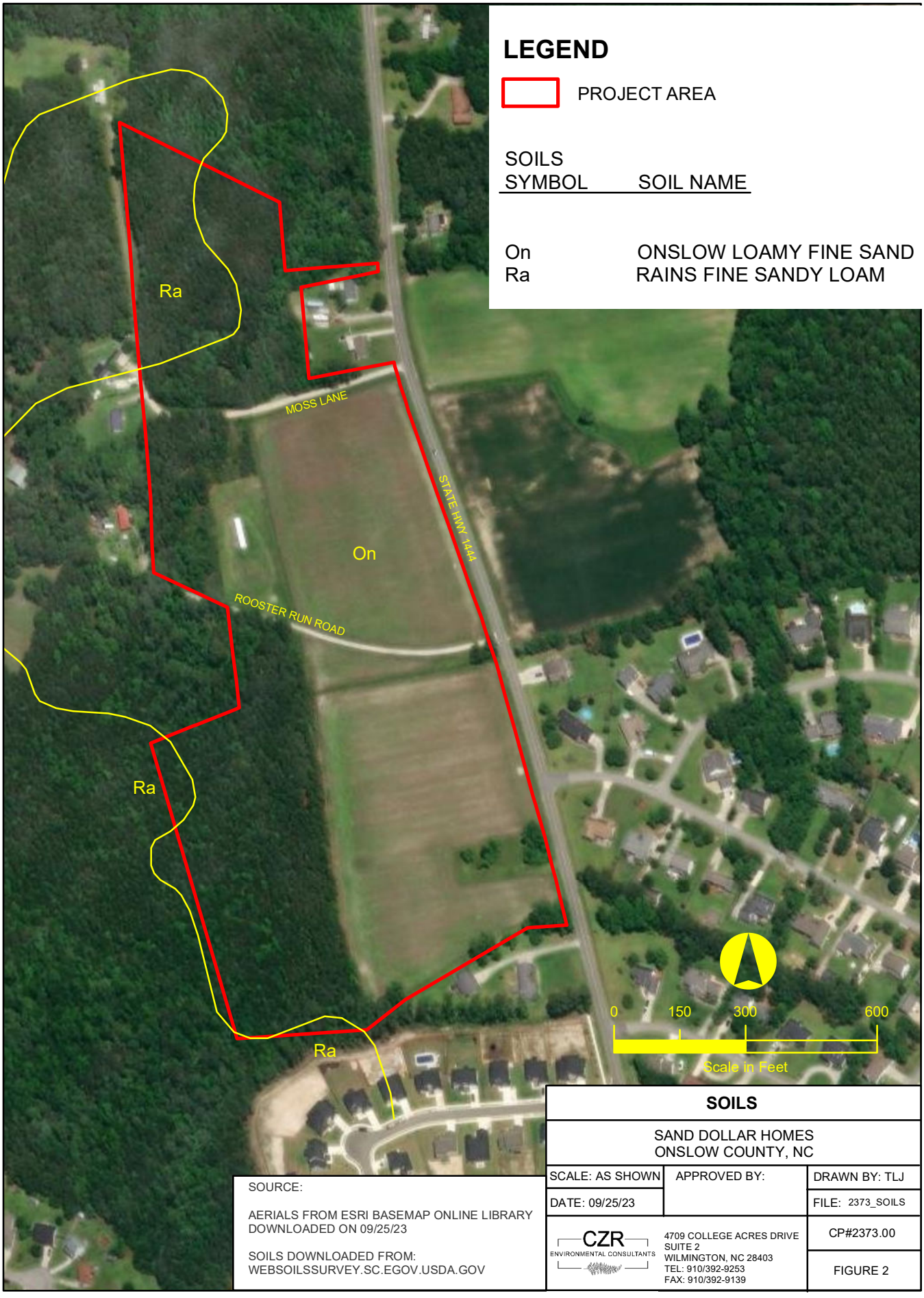
Attachments:
Figures (1-topo, 2-soils, 3-wetland delineation results)
Routine onsite data forms of site conditions
Characteristic photos of the site

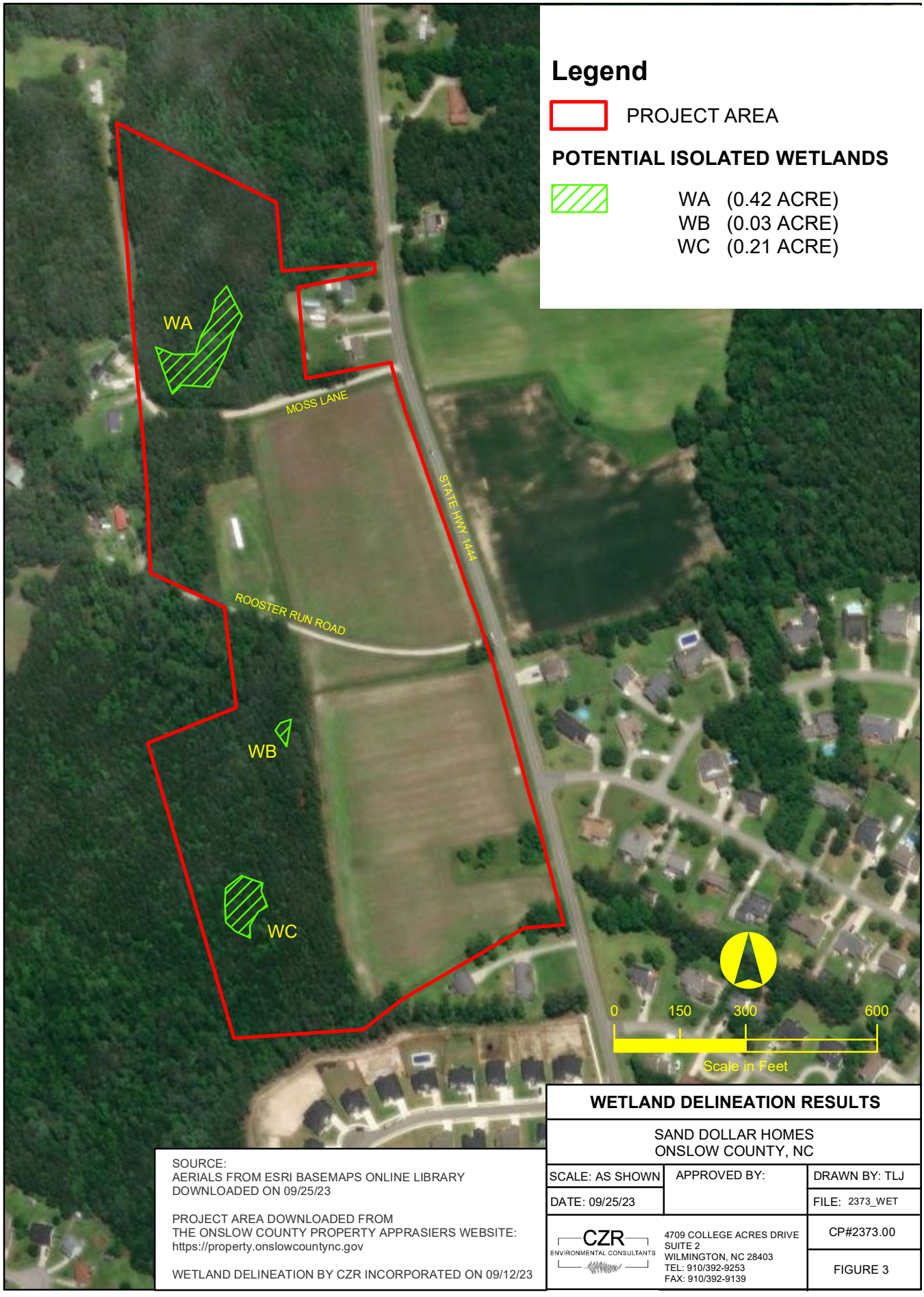


SOURCE:
USGS MAP FROM ESRI BASEMAPS ONLINE LIBRARY
DOWNLOADED ON 09/25/23

PROJECT AREA DOWNLOADED FROM
THE ONSLOW COUNTY PROPERTY APPRASIERS WEBSITE:
https://property.onslowcountync.gov

USGS TOPOGRAPHIC		
SAND DOLLAR HOMES ONSLOW COUNTY, NC		
SCALE: AS SHOWN	APPROVED BY:	DRAWN BY: TLJ
DATE: 09/25/23		FILE: 2373_TOPO
CZR ENVIRONMENTAL CONSULTANTS 4709 COLLEGE ACRES DRIVE SUITE 2 WILMINGTON, NC 28403 TEL: 910/392-9253 FAX: 910/392-9139		CP#2373.00
		FIGURE 1


LEGEND
PROJECT AREA
SOILS
SYMBOL SOIL NAME
On ONSLOW LOAMY FINE SAND
Ra RAINS FINE SANDY LOAM
Ra
MOSS LANE
STATE HWY 1444
On
ROOSTER RUN ROAD
Ra
Ra
0 150 300 600
Scale in Feet
SOURCE:
AERIALS FROM ESRI BASEMAP ONLINE LIBRARY
DOWNLOADED ON 09/25/23
SOILS DOWNLOADED FROM:
WEBSOILSSURVEY.SC.EGOV.USDA.GOV
SOILS
SAND DOLLAR HOMES
ONSLOW COUNTY, NC
SCALE: AS SHOWN
APPROVED BY:
DRAWN BY: TLJ
DATE: 09/25/23
FILE: 2373_SOILS
CZR
ENVIRONMENTAL CONSULTANTS
4709 COLLEGE ACRES DRIVE
SUITE 2
WILMINGTON, NC 28403
TEL: 910/392-9253
FAX: 910/392-9139
CP#2373.00
FIGURE 2



SOURCE:
AERIALS FROM ESRI BASEMAPS ONLINE LIBRARY
DOWNLOADED ON 09/25/23

PROJECT AREA DOWNLOADED FROM
THE ONSLOW COUNTY PROPERTY APPRASIERS WEBSITE:
https://property.onslowcountync.gov

WETLAND DELINEATION BY CZR INCORPORATED ON 09/12/23

WETLAND DELINEATION RESULTS

SAND DOLLAR HOMES
ONSLOW COUNTY, NC

SCALE: AS SHOWN	APPROVED BY:	DRAWN BY: TLJ
DATE: 09/25/23		FILE: 2373_WET
		CP#2373.00
		FIGURE 3

CZR ENVIRONMENTAL CONSULTANTS
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FAX: 910/392-9139

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Sand Dollar Homes Site City/County: Onslow Sampling Date: 9/12/2023

Applicant/Owner: Sand Dollar Homes, LLC State: NC Sampling Point: wetland

Investigator(s): CZR MKS Section, Township, Range: NA

Landform (hillside, terrace, etc.): depression Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR or MLRA): LRR T, MLRA 153A Lat: 34.703374 Long: -77.128087 Datum: WGS 84

Soil Map Unit Name: Rains fine sandy loam NWI classification: PFO

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ 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 X	No ____	**Is the Sampled Area within a Wetland?** **Yes** X **No** ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
According to the Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network, the site conditions were normal at the time of the field work.

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 on 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)
- X Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: wetland

Tree Stratum (Plot size: 30x30 ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	20	Yes	FAC
2. *Liquidambar styraciflua*	5	No	FAC
3. *Magnolia virginiana*	5	No	FACW
4. *Acer rubrum*	30	Yes	FAC
5. *Cyrilla racemiflora*	5	No	FACW
6.			
7.			
8.			
	65	=Total Cover	
50% of total cover: 33		20% of total cover:	13
Sapling/Shrub Stratum (Plot size: 30x30ft)			
1. *Cyrilla racemiflora*	15	Yes	FACW
2. *Acer rubrum*	10	Yes	FAC
3. *Liquidambar styraciflua*	5	No	FAC
4. *Persea borbonia*	10	Yes	FACW
5.			
6.			
7.			
8.			
	40	=Total Cover	
50% of total cover: 20		20% of total cover:	8
Herb Stratum (Plot size: 30x30ft)			
1. *Osmunda spectabilis*	2	No	OBL
2. *Pinus taeda*	10	Yes	FAC
3. *Woodwardia virginica*	2	No	OBL
4. *Carex intumescens*	15	Yes	FACW
5. *Acer rubrum*	2	No	FAC
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	31	=Total Cover	
50% of total cover: 16		20% of total cover:	7
Woody Vine Stratum (Plot size: 30x30ft)			
1. *Smilax laurifolia*	5	Yes	FACW
2.			
3.			
4.			
5.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	4	x 1 =	4
FACW species	55	x 2 =	110
FAC species	82	x 3 =	246
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	141 (A)		360 (B)
Prevalence Index = B/A =			2.55

Hydrophytic Vegetation Indicators:

___ 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: wetland

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

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-14	2.5Y 2.5/1	100					Loamy/Clayey	
14-20	10YR 5/1	90	10YR 6/8	10	C	PL	Loamy/Clayey	Prominent redox concentrations

[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)
- X 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)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ 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)**
- X 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 Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** X **No** ___

Remarks:

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Atlantic and Gulf Coastal Plain Region
See ERDC/EL TR-10-20; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 11/30/2024
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Sand Dollar Homes Site City/County: Onslow Sampling Date: 9/12/2023

Applicant/Owner: Sand Dollar Homes, LLC State: NC Sampling Point: upland

Investigator(s): CZR MKS Section, Township, Range: NA

Landform (hillside, terrace, etc.): flat Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR or MLRA): LRR T, MLRA 153A Lat: 34.703529 Long: -77.127862 Datum: WGS 84

Soil Map Unit Name: Rains fine sandy loam NWI classification: NA

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

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

Are Vegetation ____, Soil ____, or Hydrology ____ 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 X	No ____	**Is the Sampled Area**
Hydric Soil Present?	Yes ____	No X	**within a Wetland?** **Yes** ____ **No** X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
According to the Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network, the site conditions were normal at the time of the field work.

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 on 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)
- X FAC-Neutral Test (D5)
- ___ Sphagnum Moss (D8) **(LRR T, U)**

Field Observations:

Surface Water Present?	Yes ____	No X	Depth (inches): ____
Water Table Present?	Yes ____	No X	Depth (inches): ____
Saturation Present? (includes capillary fringe)	Yes ____	No X	Depth (inches): ____

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

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

Remarks:

VEGETATION (Four Strata) – Use scientific names of plants. Sampling Point: upland

Tree Stratum (Plot size: 30x30ft)	Absolute % Cover	Dominant Species?	Indicator Status
1. *Pinus taeda*	50	Yes	FAC
2. *Liquidambar styraciflua*	30	Yes	FAC
3. *Acer rubrum*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
	90	=Total Cover	
50% of total cover: 45		20% of total cover:	18
Sapling/Shrub Stratum (Plot size: 30x30ft)			
1. *Liquidambar styraciflua*	30	Yes	FAC
2. *Acer rubrum*	10	Yes	FAC
3. *Persea borbonia*	5	No	FACW
4.			
5.			
6.			
7.			
8.			
	45	=Total Cover	
50% of total cover: 23		20% of total cover:	9
Herb Stratum (Plot size: 30x30ft)			
1. *Pinus taeda*	10	Yes	FAC
2. *Smilax rotundifolia*	5	No	FAC
3. *Gelsemium sempervirens*	10	Yes	FAC
4. *Liquidambar styraciflua*	10	Yes	FAC
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
	35	=Total Cover	
50% of total cover: 18		20% of total cover:	7
Woody Vine Stratum (Plot size: 30x30ft)			
1. *Vitis rotundifolia*	5	Yes	FAC
2.			
3.			
4.			
5.			
	5	=Total Cover	
50% of total cover: 3		20% of total cover:	1

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: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	5	x 2 =	10
FAC species	170	x 3 =	510
FACU species	0	x 4 =	0
UPL species	0	x 5 =	0
Column Totals:	175 (A)		520 (B)

Prevalence Index = B/A = 2.97

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 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: upland

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 Features %	Type[1]	Loc[2]	Texture	Remarks
0-12	10YR 3/2	100					Loamy/Clayey	
12-14	10YR 3/4	95	10YR 3/2	5			Loamy/Clayey	
14-20	2.5Y 5/2	100					Loamy/Clayey	

[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)**
- ___ Barrier Islands 1 cm Muck (S12) **(MLRA 153B, 153D)**
- ___ 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 Floodplain Soils (F20) **(MLRA 149A, 153C, 153D)**
- ___ Very Shallow Dark Surface (F22) **(MLRA 138, 152A in FL, 154)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR O)**
- ___ 2 cm Muck (A10) **(LRR S)**
- ___ Coast Prairie Redox (A16) **(outside MLRA 150A)**
- ___ Reduced Vertic (F18) **(outside MLRA 150A, 150B)**
- ___ Piedmont Floodplain Soils (F19) **(LRR P, T)**
- ___ Anomalous Bright Floodplain Soils (F20) **(MLRA 153B)**
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22) **(outside MLRA 138, 152A in FL, 154)**
- ___ Barrier Islands Low Chroma Matrix (TS7) **(MLRA 153B, 153D)**
- ___ Other (Explain in Remarks)

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

Restrictive Layer (if observed):

Type: _____

Depth (inches): _____

Hydric Soil Present? **Yes** ___ **No** X

Remarks:

Site Photos

Photo 1 – View of isolated wetland feature (WA) on 12 September 2023.

Photo 2 – View of upland adjacent to isolated wetland feature (WA) on 12 September 2023.

Photo 3 – View of non-wetland feature (WB) on 12 September 2023.

Photo 4 – View adjacent to non-wetland feature (WB) on 12 September 2023.

Photo 5 – View of non-wetland feature (WC) on 12 September 2023.

Photo 6 – View adjacent to non-wetland feature (WC) on 12 September 2023.