WETLAND DELINEATION

MIMOSA STREET SITE

MIMOSA STREET
CLEVELAND, NORTH CAROLINA 27013

ECS PROJECT NO. 49:21727

FOR: ROWAN EDC

NOVEMBER 27, 2023

November 27, 2023

Mr. Scott Shelton
Rowan EDC
204 East Innes Street
Salisbury, North Carolina, 28144

ECS Project No. 49:21727

Reference: Waters of the U.S. Delineation Report, Mimosa Street Site, Mimosa Street, Cleveland, Rowan County North Carolina

Dear Mr. Shelton:

ECS Southeast, LLC (ECS) is pleased submit this report of the Waters of the U.S. (WOUS) services for the above-referenced site. ECS services were provided in general accordance with ECS Proposal No. 49:40712P authorized on November 15, 2023 and generally meets the requirements of the 1987 U.S. Army Corps of Engineers (USACE) Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont. ***Based on our field reconnaissance, potentially jurisdictional WOUS are present onsite.***

If there are questions regarding this report, or a need for further information, please contact the undersigned.

ECS Southeast, LLC

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1.0 INTRODUCTION

This report presents the findings of a wetland delineation study conducted by ECS Southeast, LLC (ECS) for Rowan EDC at the Mimosa Street Site located at Mimosa Street, Cleveland, Rowan County, North Carolina. According to the Rowan County Geographic Information System (GIS) website, the Parcel Identification Number (PIN) is: 272023. The site includes approximately 57 acres, as shown on the Site Location Map (Appendix I, Figure 1). The site currently consists of undeveloped woodlands. The purpose of this study was to identify and delineate jurisdictional Waters of the U.S. (WOUS) within the project study area (PSA).

Wetlands are defined by the United States Army Corps of Engineers (USACE) and the United States Environmental Protection Agency (EPA) as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and under normal circumstances, do support a prevalence of vegetation typically adapted for life in saturated soil conditions." In order for an area to be classified as wetland, hydrophytic vegetation, hydric soils, and wetland hydrology indicators must be present described in the 1987 "Corps of Engineers Wetlands Delineation Manual" and the Appropriate Regional Supplement.

2.0 METHODOLOGY

The findings of the WOUS delineation is based on ECS' professional judgment and application of the technical criteria presented in the 1987 USACE Wetlands Delineation Manual and the Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Eastern Mountains and Piedmont Regional Supplement.

ECS completed the following tasks to identify and delineate potentially jurisdictional WOUS boundaries onsite:

2.1 Literature Review

ECS reviewed supporting information from publicly-available databases to identify possible ecological effects the project may have on potential state- and/or federally-jurisdictional water resources. During the desktop review, ECS documented relevant, site-specific details (e.g., topographic characteristics, soil composition, recent precipitation, level of disturbance, plant community structure, etc.) and integrated the obtained information with the onsite delineation effort.

2.2 Methodology for Field Investigation

Wetland boundaries were delineated using the routine onsite determination method described in the USACE Manual and Regional Supplement, in conjunction with the Eastern Mountains and Piedmont 2020 Regional Wetland Plant List and the USDA Soil Survey.

ECS performed onsite wetland delineations as described above. First, site hydrology was observed and the plant community within the data plot was characterized. The dominant plant species within each community were then identified, and it was determined whether or not hydrophytic (wetland) plants dominated the plant community. The USFWS has defined five wetland plant indicator categories including:

- Obligate wetland (OBL) – has >99% probability of occurring in wetlands
- Facultative wetland (FACW) – has 66% to 99% chance of occurring in wetlands
- Facultative (FAC) – has 33% to 66% chance of occurring in wetlands
- Facultative upland (FACU) – has 1 to 33% chance of occurring in wetlands
- Upland (UPL) – has <1% chance of occurring in wetlands
- No Indicator (NI) – no wetland indicator for the specified species, considered UPL

Plants identified as OBL, FACW, or FAC are considered wetland plants (or hydrophytes) by USACE.

In areas determined to have hydrophytic vegetation and potential wetland hydrology, an approximately 16-24 inch hand auger soil boring or shovel test pit was completed to determine if hydric soils were present. The soil boring was also inspected to determine if indicators of wetland hydrology (inundation, soil saturation, etc.) were present.

Once an area is determined to be a wetland, further testing was performed to locate the wetland/ upland (non-wetland) boundary. A second soil data point was completed in the upland area to document non-wetland conditions. Wetland boundaries were marked with consecutively numbered surveyor's ribbon flags.

Data forms specified in the Regional Supplement were completed for each wetland and non-wetland soil data point location. The data forms recorded the vegetation, soils, and hydrology observations used in making the wetland determinations.

2.3 Methodology for Delineating Streams

During the field investigation for wetlands, ECS identified streams onsite that could be considered jurisdictional by state and federal regulatory agencies. ECS used field indicators such as flow, substrate composition, presence/absence of defined bed and banks, origin of hydrologic source, presence/absence of vegetation in the stream channel, and composition and relative abundance of resident benthic macroinvertebrates to classify onsite streams into three stream types: ephemeral, intermittent, and perennial.

RGL No. 05-05 provides guidance on identifying physical indicators of Ordinary High Water Mark (OHWM) as defined in 33 CFR Sections 328.3(e) and 329.11(a)(1) and discusses implementation of other appropriate means that consider the characteristics of the surrounding areas to establish the lateral limits of jurisdiction over tidal and non-tidal waters. Per RGL No. 05-05, "the lateral limits of jurisdiction over non-tidal water bodies extend to the [OHWM], in the absence of adjacent wetlands. When adjacent wetlands are present, CWA jurisdiction extends beyond the OHWM to the limits of the adjacent wetlands".

3.0 FINDINGS

3.1 Literature Review

ECS professionals reviewed the U.S. Geological Survey (USGS) Topographic Map, U.S. Department of Agriculture Natural Resource Conservation Service (USDA-NRCS) Web Soil Survey, the Soil Data Access (SDA) Hydric Soils List, the Federal Emergency Management Agency (FEMA) Floodplain Mapping Service, U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper,

National Ocean and Atmospheric Administration (NOAA) Light Detecting and Ranging (LiDAR) data, and available aerial photographs to identify potentially jurisdictional Waters of the U.S. (i.e., streams, wetlands, natural ponds, lakes) and available watershed information.

3.1.1 Literature Review Summary

The following is a summary of the available desktop information that was reviewed as part of this study:

- According to the Cleveland (North Carolina) USGS Topographic Map Quadrangle dated 2016 (Appendix I, Figure 2) does not depict surface waters within the PSA. Based on the USGWS Topographic Map, the PSA ranges from approximately 735 to 815 feet above mean sea level (MSL)

- According to the USDA-NRCS Web Soil Survey (Appendix I, Figure 3), the PSA consists of the following soil map units: Enon fine sandy loam, 2-8 slopes (EnB), Mecklenburg clay loam, 2-8% slopes (MeB2), Poindexter-Rowan complex, 8-15% slopes (PxC), and Sedgefield fine sandy loam, 1-6% slopes (SeB). The aforementioned soil type SeB is listed on the SDA Hydric Soils List for Rowan County, North Carolina.

- The USFWS NWI map (Appendix I, Figure 4) does not depict streams or wetlands within the PSA. The site is located within the Yadkin Pee Dee watershed and is identified as Hydrologic Unit Code (HUC) 03040102.

- The FEMA Flood Insurance Rate Maps (FIRMs), Panel 3710570200J, dated June 16, 2023 (Appendix I, Figure 5) indicates the PSA is located in unshaded Zone X. These areas are determined to be outside of all regulated flood zones.

- ECS reviewed the NOAA LiDAR Elevation Data of the site (Appendix I, Figure 6). Based on the NOAA LiDAR data, the on-site elevations range from approximately 740 feet above MSL to approximately 810 feet above MSL.

- ECS queried the USACE-developed Antecedent Precipitation Tool (APT) to gain an understanding of typical moisture conditions in the PSA vicinity. Pre- and post-investigation reports used to demonstrate typical versus atypical climatic conditions for the Project locale were, then, generated for a comparative analysis of current and historical moisture conditions. The analysis indicated the investigation was conducted during the Wet Season during a mild drought and that conditions were Drier than Normal for the time of year (Appendix III).

3.2 Field Investigation Findings

ECS personnel conducted the field investigation on November 21, 2023. The last registered precipitation event prior to the site reconnaissance is greater than 30 days and precipitation data is not available; however, based on the results from the APT, site conditions indicated that we were in a mild drought and that conditions were drier than normal.

Potentially jurisdictional streams were marked with white and blue flagging tape and located using a Trimble Geo7X hand-held GPS unit capable of sub-meter accuracy. ECS identified two potentially jurisdictional streams and one upland drainage conveyance summarized in the table below:

Table 1: Potential WOUS Summary Table

Feature ID	GPS Coordinates (decimal degrees)	Approximate Acreage	Approximate Square Footage	Approximate Linear Feet (if applicable)
S1	35.726999, -80.673606	N/A	N/A	1,129
S2	35.727818, -80.672061	N/A	N/A	174

3.2.1 Wetland Summary

ECS did not identify wetland areas within the boundaries of the PSA during the site reconnaissance.

3.2.2 Stream Summary

Two potentially jurisdictional streams and one upland drainage conveyance were identified within the PSA. Stream 1 originates at a culvert beneath the railroad tracks at the center of the northern PSA boundary and flows through the central portion of the PSA, exiting at the southwest boundary; Stream 2 originates in the south central portion of the PSA at a headcut and exits at the south central PSA boundary; the upland drainage conveyance flows north to south and is located west of Stream 2. The upland drainage conveyance met criteria to be an ephemeral feature using the N.C. Division of Water Resources (NC DWR) Methodology for Identification of Intermittent and Perennial Streams and Their Origins. Stream 1 had well defined bed and banks, assorted substrate, an Ordinary High Water Mark (OHWM), and standing and/or flowing water was noted during the site reconnaissance. Stream 2 had strong to moderate geomorphology including defined bed and banks, headcuts, grade control, and silty and clayey substrate; moderate hydrology including baseflow, and iron oxidizing bacteria; and moderate biology including salamanders and diving beetles. The streams are depicted on the Waters of the U.S. Delineation Map (Appendix I, Figure 7). Photographs of the streams are presented in Appendix II.

4.0 REGULATORY DISCUSSION

After review of the findings in this report and at the client's request, ECS can coordinate with the USACE and the NCDWR to conduct a jurisdictional determination and field visit, if necessary. The timeline of this process is dependent on the availability of the regulatory agency. ECS recommends receipt of the formal jurisdictional determination letter from the necessary agencies prior to conducting any land-disturbance activities.

The USACE can issue an individual permit or a general permit to authorize activities in WoUS. There are two types of general permits - nationwide permits and regional general permits. If any potential impacts are proposed, we can assist you with permitting options and support to complete the process.

As part of the permitting process, we will conduct a preliminary review of state and federal agency records pertaining to Section 7 (Federal Endangered Species Act) and Section 106 (National Historic Preservation Act). If deemed necessary, we can assist you with targeted species surveys or cultural investigations to satisfy the requirements of the Nationwide Permit (NWP), Individual Permit (IP), or General Permit conditions.

Section 404 of the Clean Water Act regulates the discharge of dredge and fill materials into waters of the United States (lakes, rivers, ponds, streams, etc.), including wetlands. Waters of the United States include territorial seas, navigable coastal and inland lakes, rivers, perennial streams, intermittent streams, and wetlands. The EPA and the U.S. Army Corps of Engineers jointly administer the Section 404 program. Section 401 of the Clean Water Act grants each state the authority to approve, condition, or deny any Federal permits that could result in a discharge to State waters. Mitigation and stormwater management plans will be a condition of permits issued for the Site. Buffers may be required adjacent to streams and water bodies.

In North Carolina, compensatory mitigation will be required for all wetland losses that exceed 1/10 (0.1) acre and for stream bed losses of 2/100 (0.02) acre. Mechanisms for providing compensatory mitigation under Section 404 of the Clean Water Act include mitigation banks, in-lieu fee programs, and permittee-responsible mitigation.

- *Mitigation Banks*: sites, or a suite of sites, where resources (e.g., wetlands, streams, riparian areas) are restored, established, enhanced, and/or preserved for the purpose of providing compensatory mitigation for impacts authorized under USACE permits. In general, a mitigation bank sells compensatory mitigation credits to permittees whose obligation to provide compensatory mitigation is then transferred to the mitigation bank sponsor. Means of establishing the required number of mitigation credits to purchase varies state to state and between regulatory districts, but may entail estimating linear feet and/or acreage of impact and completing state-specific calculation worksheets.

- *Permittee-responsible Mitigation*: enables a developer to create their own mitigation project to offset ecosystem loss when there are no eligible mitigation banks in a specific area.

- *In-lieu Fee Program*: a program involving the restoration, establishment, enhancement, and/or preservation of aquatic resources through funds paid to a governmental or non-profit natural resources management entity to satisfy compensatory mitigation requirements.

To qualify for a general permit, a project must comply with all general, regional or case-specific conditions imposed by the USACE. If all applicable conditions of the general permit cannot be met, the prospective permittee may require authorization under an individual permit (IP). The following list provides examples of activities that would require an IP authorization (*Please note: this list is not comprehensive*):

1) the proposed cumulative impact to WoUS (i.e., jurisdictional wetlands, streams, lakes, ponds, etc.) is greater than 0.5 acre; or

2) the proposed loss of stream bed is greater than 0.05 acre.

IP authorizations generally take 4 to 18 months to obtain, due to conditions that may arise during the USACE review and public comment period and additional permit requirements, which entail detailed habitat analyses, alternative site analysis, project justification, impact avoidance and minimization plans, and a mitigation plan. A subsequent Environmental Impact Statement may be required by the USACE, pursuant to the findings of these analyses and scale of impact.

Regional conditions applicable to NWP 29 (Residential Development) include:

a. Discharges in streams and wetlands for stormwater management facilities are prohibited under this NWP.

b. Discharges of dredged or fill material into Waters of the U.S., including wetlands, within the floodway* or mapped FEMA 100-year floodplain resulting in permanent above-grade fills are not authorized by this NWP.

* NOTE: Floodway means the area designated and/or regulated by Federal, State, or local requirements to provide for the discharge of the base flood so the cumulative increase in water surface elevation is no more than a designated height identified by the regulating entity within the 100-year floodplain.

5.0 WATERSHED CLASSIFICATION/BUFFER REQUIREMENTS

Surface waters in North Carolina are assigned a primary classification by the NC DWR. Surface Water Classifications are designations applied to surface water bodies, such as streams, rivers and lakes, which define the best uses to be protected within these waters. According to the NC DWR's Find Your HUC in North Carolina webmap and NC Surface Water Classifications website, the PSA occurs in the Yadkin Pee Dee Basin, within 8-digit Hydrologic Unit Code (HUC) 03040102 (Yadkin Pee-Dee) and 12-digit HUC 030401020502 (Withrow Creek).

The nearest named receiving waterbody is Beaverdam Creek, which has a Class C NC DWR surface water designation (defined hereafter).

- Class C: Waters protected for uses such as aquatic life propagation, survival and maintenance of biological integrity (including fishing and fish), wildlife, secondary contact recreation, and agriculture. Secondary contact recreation means wading, boating, other uses not involving human body contact with water, and activities involving human body contact with water where such activities take place on an infrequent, unorganized, or incidental basis.

5.1 State Riparian Buffer Requirements

The PSA occurs in the Yadkin PeeDee River Basin. According to the NC Riparian Buffer Areas webmap, no regulated riparian buffer areas have been established by the NC DWR for the Yadkin PeeDee River Basin.

5.2 Local Buffer Requirements

ECS reviewed the Rowan County Unified Development Ordinance (UDO) with regard to local lake and stream vegetative buffers. According to the Rowan County UDO, A minimum one hundred (100) foot vegetative buffer is required for all new development activities that exceed the low density option; otherwise, a minimum thirty (30) foot vegetative buffer for development activities is required along all perennial waters indicated on the most recent versions of U.S.G.S. 1:24,000 (7.5 minute) scale topographic maps or as determined by local government studies. Desirable artificial streambank or shoreline stabilization is permitted. No new development is allowed in the buffer except for water dependent structures, other structures such as flag poles, signs and security lights which result in only diminutive increases in impervious area and public projects such as road crossings and greenways where no practical alternative exists. These activities should minimize built-upon surface area, direct runoff away from the surface waters and maximize the utilization of stormwater Best Management Practices. No perennial streams are mapped within the PSA on the most recent USGS Topographic Map.

ECS recommends consultation with a civil engineer to determine if mandatory vegetative buffers and/or regulated development (impervious surfaces) setbacks are required for the site in addition to those mentioned above.

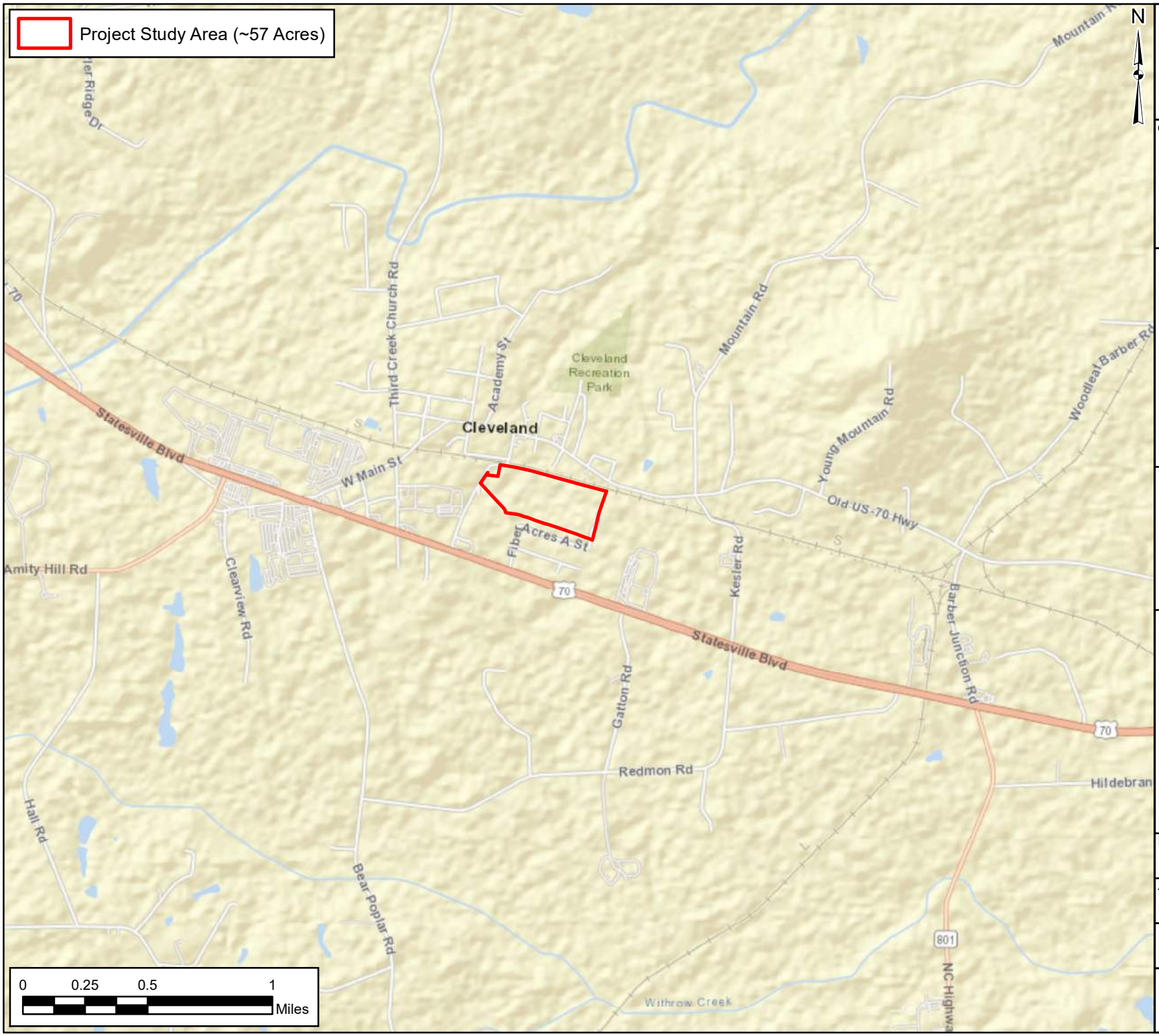
6.0 CONCLUSIONS

Two potentially jurisdictional streams totaling approximately 1,303 linear feet were identified and delineated within the project study area. The locations and boundaries of the potentially jurisdictional Waters of the U.S. are illustrated on the attached Waters of the U.S. Delineation Map (Appendix I, Figure 7).

The findings summarized in this report represent our best professional judgment concerning the presence of potential jurisdictional aquatic resources in the PSA at the time of the study. These findings are only to be considered preliminary and are for planning purposes only, as they have not yet been verified by the regulatory agencies and are, therefore, subject to change pending their review. ECS cannot guarantee that field conditions and/or WoUS boundaries will not change over time.

Prior to conducting construction-related activities onsite, ECS recommends requesting a Preliminary Jurisdictional Determination from the USACE for verification of these results to satisfy the requirements of Section 404 of The Clean Water Act (33 U.S.C. 1344). No earth-disturbing activities should be conducted within the PSA until a USACE Determination has been issued.

Appendix I: Figures



Client:

ROWANEDC

Project:

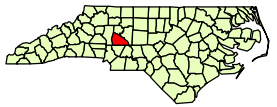
MIMOSA STREET SITE

MIMOSA STREET,
CLEVELAND,
ROWAN COUNTY,
NORTH CAROLINA

Title:

SITE LOCATION MAP

ROWAN COUNTY



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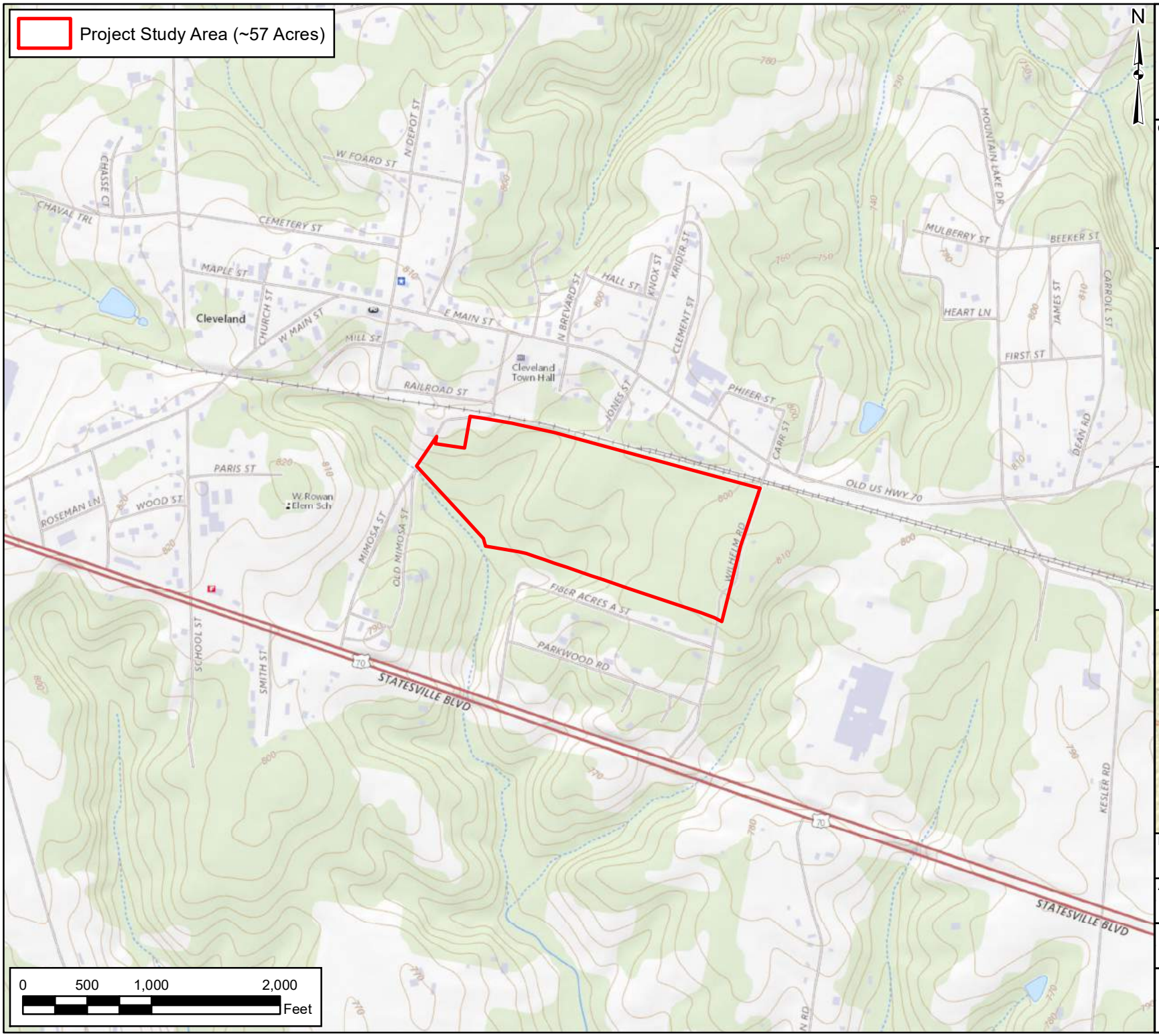
KEW	1"=0.5 Mi
Approved By:	**Date:**
WBF	11/16/2023

ECS Project No.

49: 21727

FIGURE 1



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Client:

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MIMOSA STREET SITE

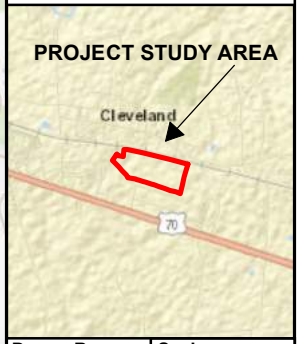
MIMOSA STREET,
CLEVELAND,
ROWAN COUNTY,
NORTH CAROLINA

Title:

USGS TOPOGRAPHIC MAP

CLEVELAND, NC QUADRANGLE DATED 2016

PROJECT STUDY AREA



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KEW	1 " = 1,000 '
Approved By:	**Date:**
WBF	11/16/2023

ECS Project No.

49: 21727

FIGURE 2

Client:

ROWANEDC

Project:

MIMOSA STREET SITE

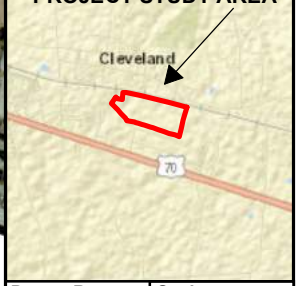
MIMOSA STREET,
CLEVELAND,
ROWAN COUNTY,
NORTH CAROLINA

Title:

USDA-NRCS SPATIAL SOIL SURVEY

DATED:2019

PROJECT STUDY AREA



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WBF	11/16/2023

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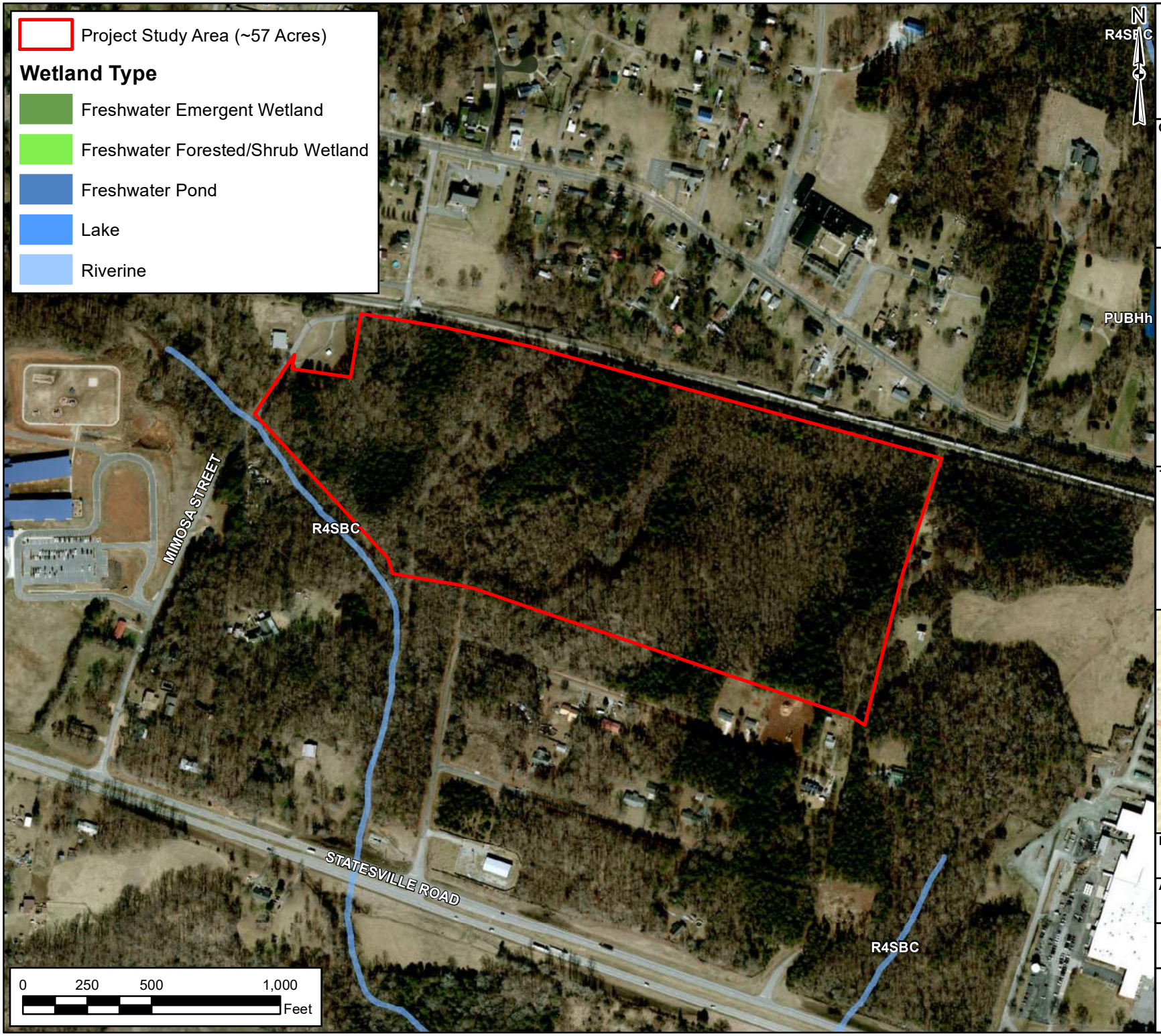
49: 21727

FIGURE 3



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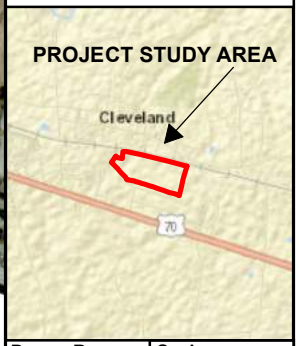
MIMOSA STREET SITE

MIMOSA STREET,
CLEVELAND,
ROWAN COUNTY,
NORTH CAROLINA

Title:

USFWS NATIONAL WETLAND INVENTORY MAP



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Approved By:	**Date:**
WBF	11/16/2023

ECS Project No.

49: 21727

FIGURE 4

ECS

Client:

ROWANEDC

Project:

MIMOSA STREET SITE

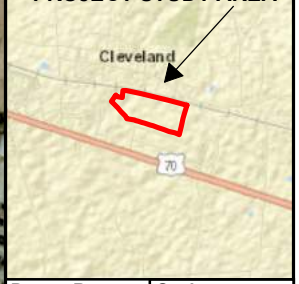
MIMOSA STREET,
CLEVELAND,
ROWAN COUNTY,
NORTH CAROLINA

Title:

FEMA FLOOD HAZARD ZONE MAP

PANEL:3710570200J
DATED:6/16/2009

PROJECT STUDY AREA



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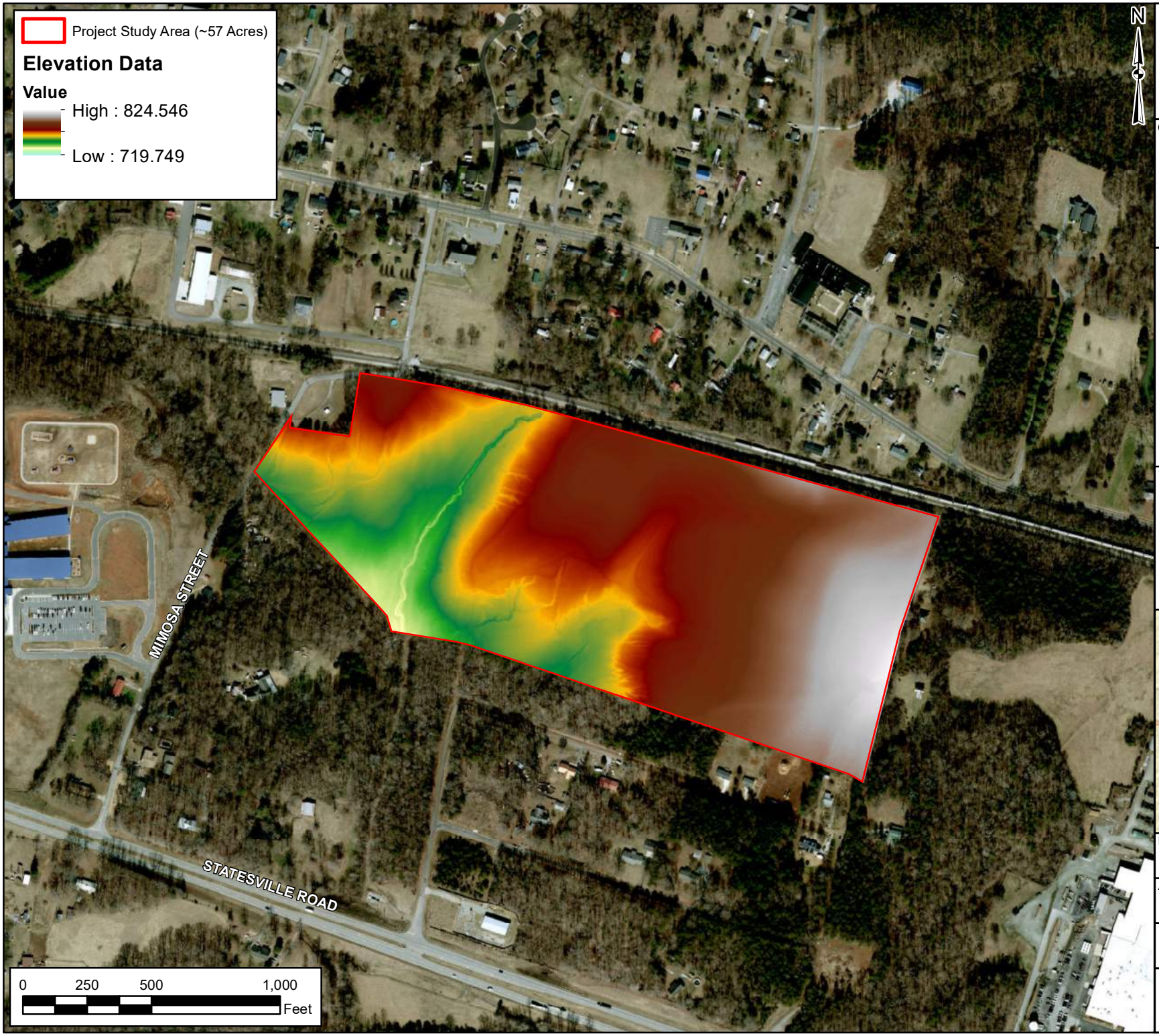
Approved By:	**Date:**
WBF	11/16/2023

ECS Project No.
49: 21727

FIGURE 5



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Client:

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MIMOSA STREET,
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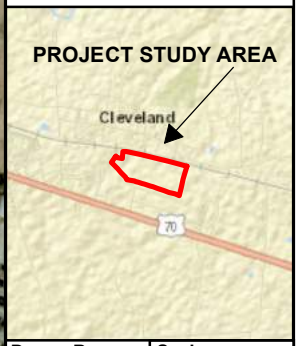
NORTH CAROLINA

Title:

NOAA LIDAR ELEVATION MAP



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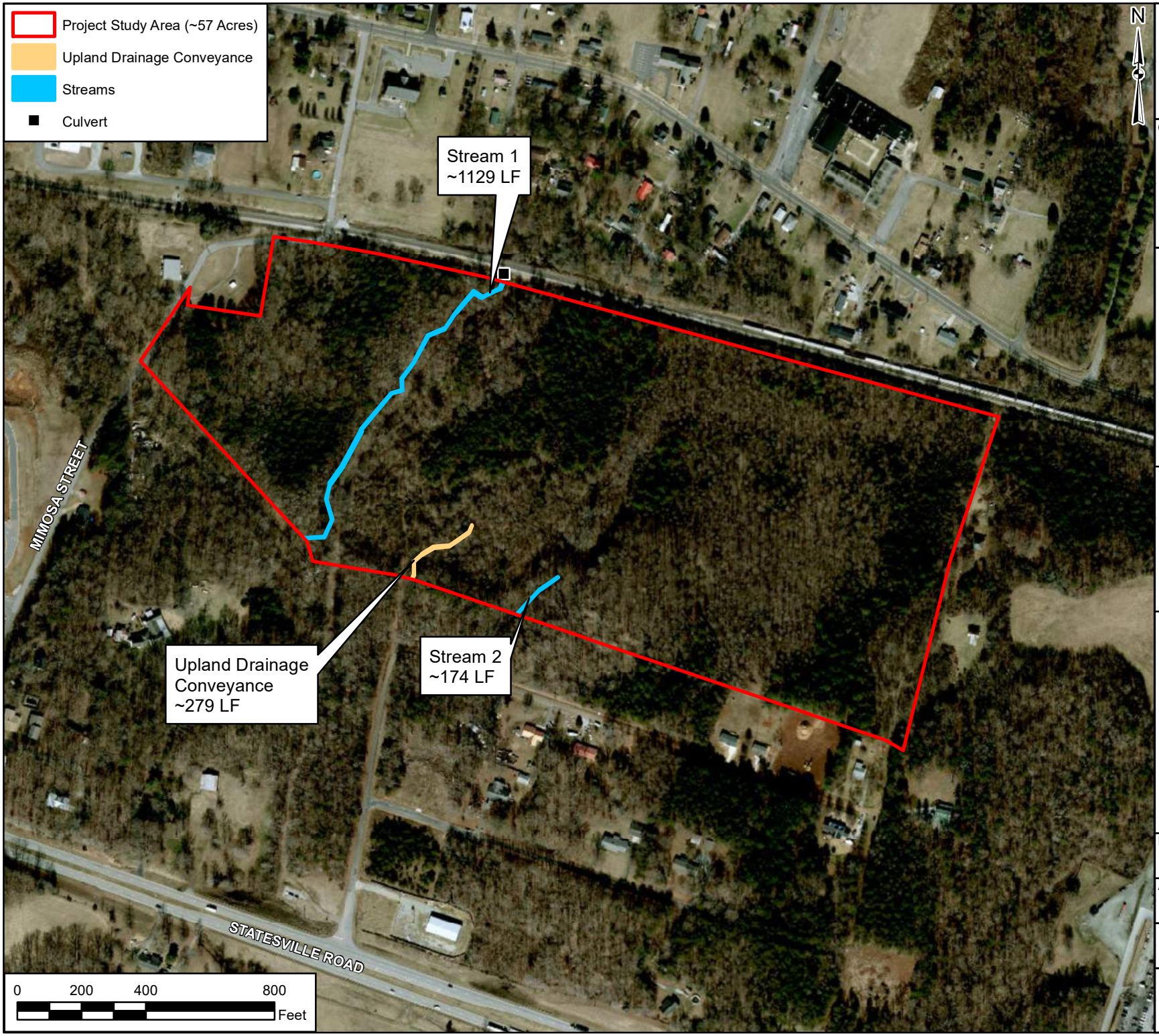
WBF	11/16/2023

ECS Project No.

49: 21727

FIGURE 6



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MIMOSA STREET,
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Title:

POTENTIAL WATERS OF THE US MAP

NOTES:
1. WATERS OF THE US WERE OBSERVED BY ECS ON NOVEMBER 21, 2023.

2. FEATURES DEPICTED ON THIS MAP HAVE NOT BEEN VERIFIED BY THE USACE OR NCDWR. THE DELINEATION FINDINGS ARE SUBJECT TO CHANGE BASED ON AGENCY VERIFICATION.

3. THIS MAP SHOULD BE USED FOR PRELIMINARY PLANNING PURPOSES.

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Approved By:	**Date:**
WBF	11/22/2023

ECS Project No.
49: 21727

FIGURE 7

Appendix II: Photographic Log

1 - Culvert North Boundary of S1

2 - Southwest view of S1 at top of stream

3 - South facing view of Stream 1 at top of stream

4 - South facing view of S1 northwest portion of PSA

5 - South facing view of S1 central portion of S1

6 - South facing view of S1 lower portion of PSA

7 - South facing view of S1 lower portion of Stream

8 - South facing view of S1 southwest portion of PSA

9 - Bottom of S1 southwest boundary of PSA

10 - Uppermost point of upland drainage conveyance

11 - North facing view of upland drainage conveyance southern portion of PSA

12 - Southernmost point of upland drainage conveyance; southern boundary of PSA

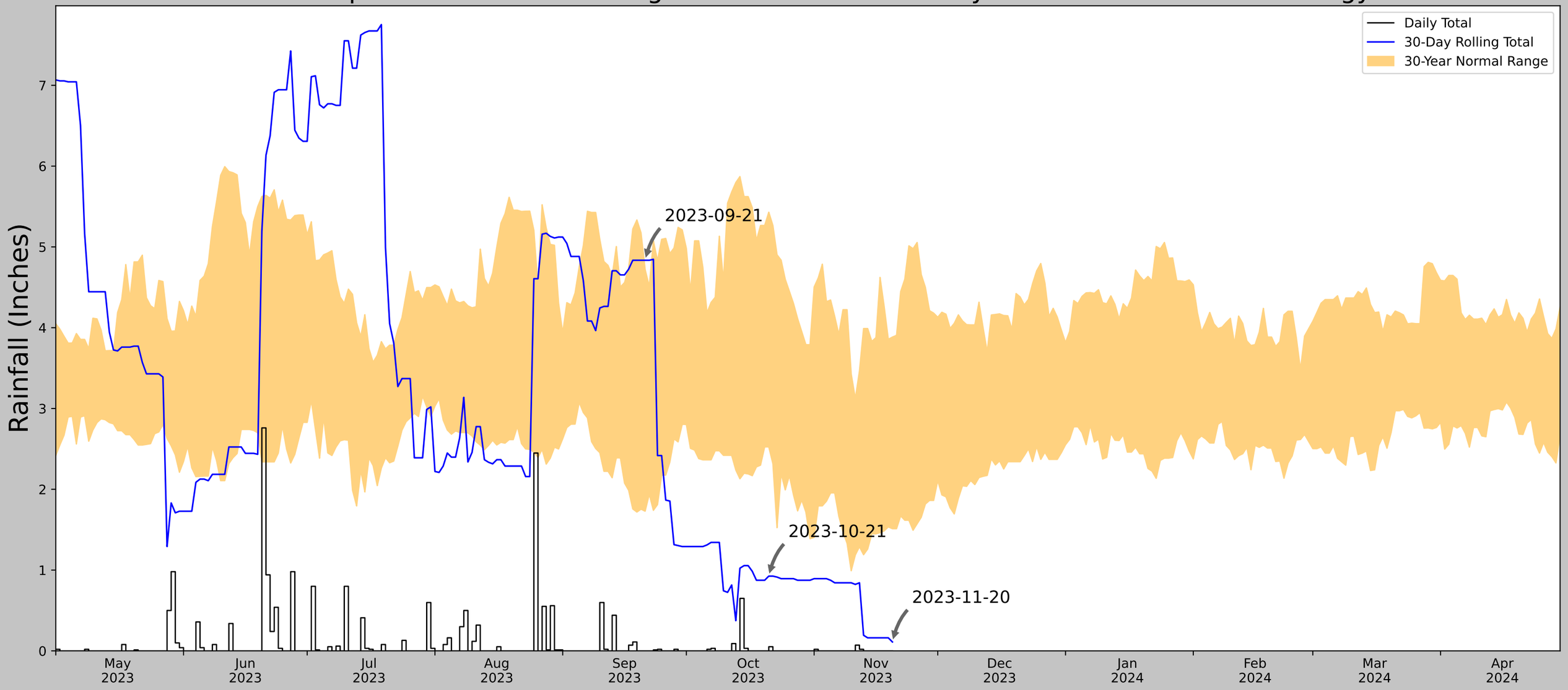
13 - Southwest facing view at top of S2

14 - Southwest facing view of S2 halfway down

15 - Lower portion of S2 southern boundary of PSA

Appendix III: APT

Antecedent Precipitation vs Normal Range based on NOAA's Daily Global Historical Climatology Network



Coordinates	35.729209, -80.672378
Observation Date	2023-11-20
Elevation (ft)	774.339
Drought Index (PDSI)	Mild drought (2023-10)
WebWIMP H_2O Balance	Wet Season

30 Days Ending	30^{th} %ile (in)	70^{th} %ile (in)	Observed (in)	Wetness Condition	Condition Value	Month Weight	Product
2023-11-20	1.512205	3.884252	0.110236	Dry	1	3	3
2023-10-21	2.52441	5.429921	0.925197	Dry	1	2	2
2023-09-21	1.72874	4.720473	4.834646	Wet	3	1	3
Result							Drier than Normal - 8

US Army Corps of Engineers

ERDC

Figures and tables made by the Antecedent Precipitation Tool Version 2.0

Developed by: U.S. Army Corps of Engineers and U.S. Army Engineer Research and Development Center

Weather Station Name	Coordinates	Elevation (ft)	Distance (mi)	Elevation Δ	Weighted Δ	Days Normal	Days Antecedent
SALISBURY 9 WNW	35.6967, -80.6225	725.066	3.588	49.273	1.791	11272	76
SALISBURY 4.8 W	35.668, -80.5684	771.982	3.626	46.916	1.802	3	0
SALISBURY 3.4 NW	35.6961, -80.5322	767.06	5.067	41.994	2.493	12	14
SALISBURY	35.6836, -80.4822	700.131	7.925	24.935	3.764	63	0
CHINA GROVE 4.4 W	35.5634, -80.6582	863.845	9.426	138.779	5.55	2	0