



U.S. Department of Transportation
Federal Railroad Administration

Aberdeen, Carolina & Western Railway Congestion Mitigation Project

Environmental Assessment - Appendices



July 2022

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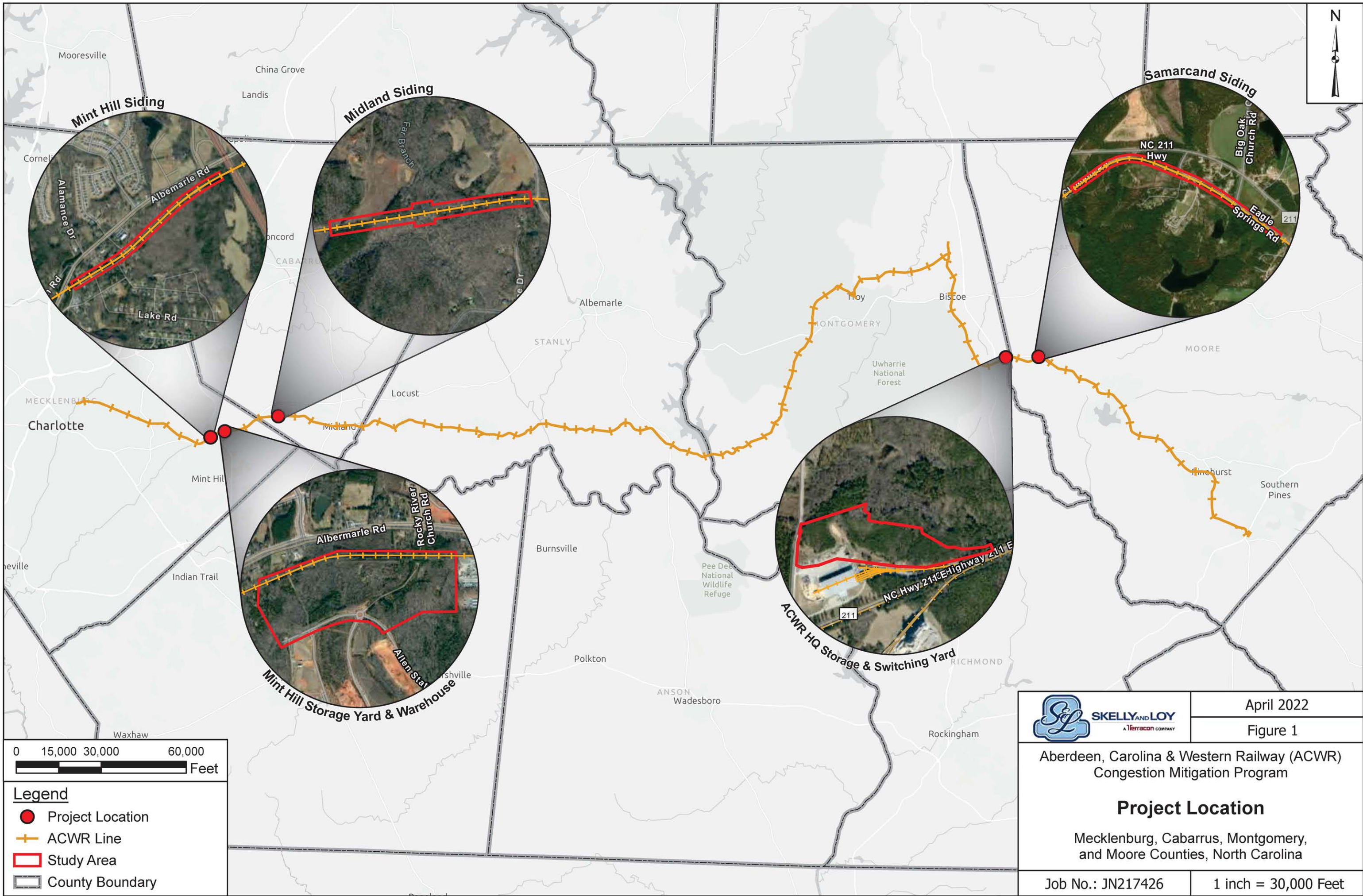
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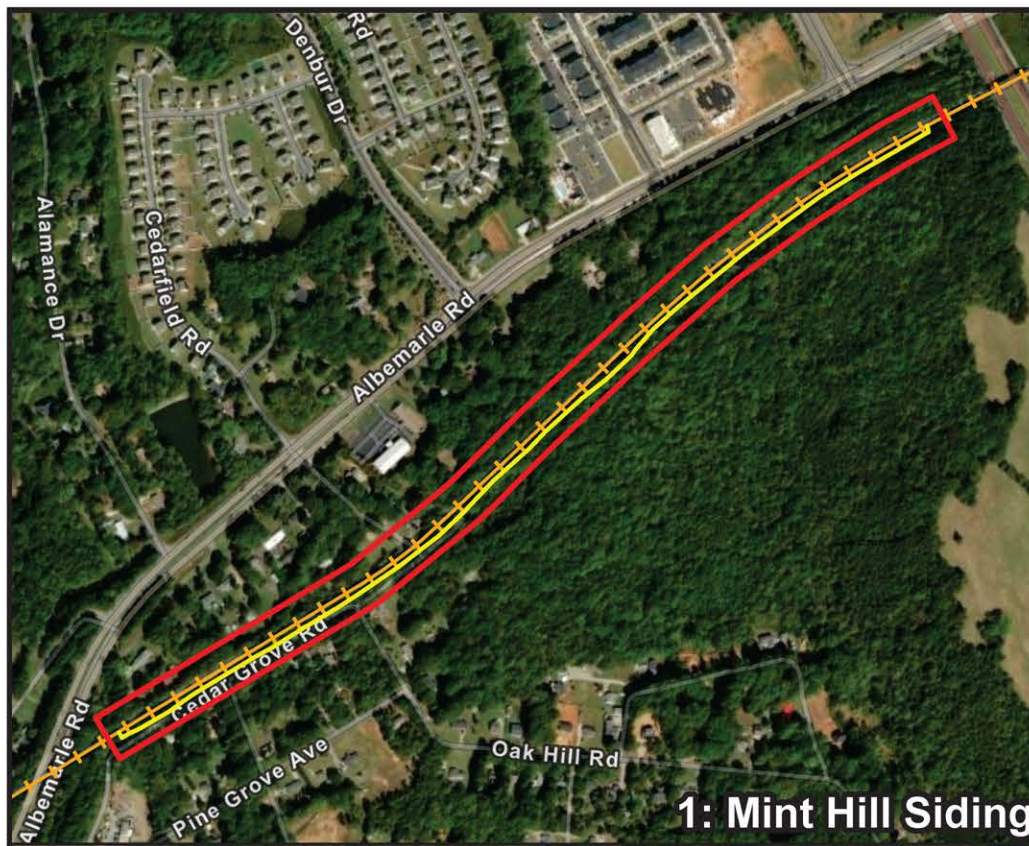
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Appendix A
Project Mapping



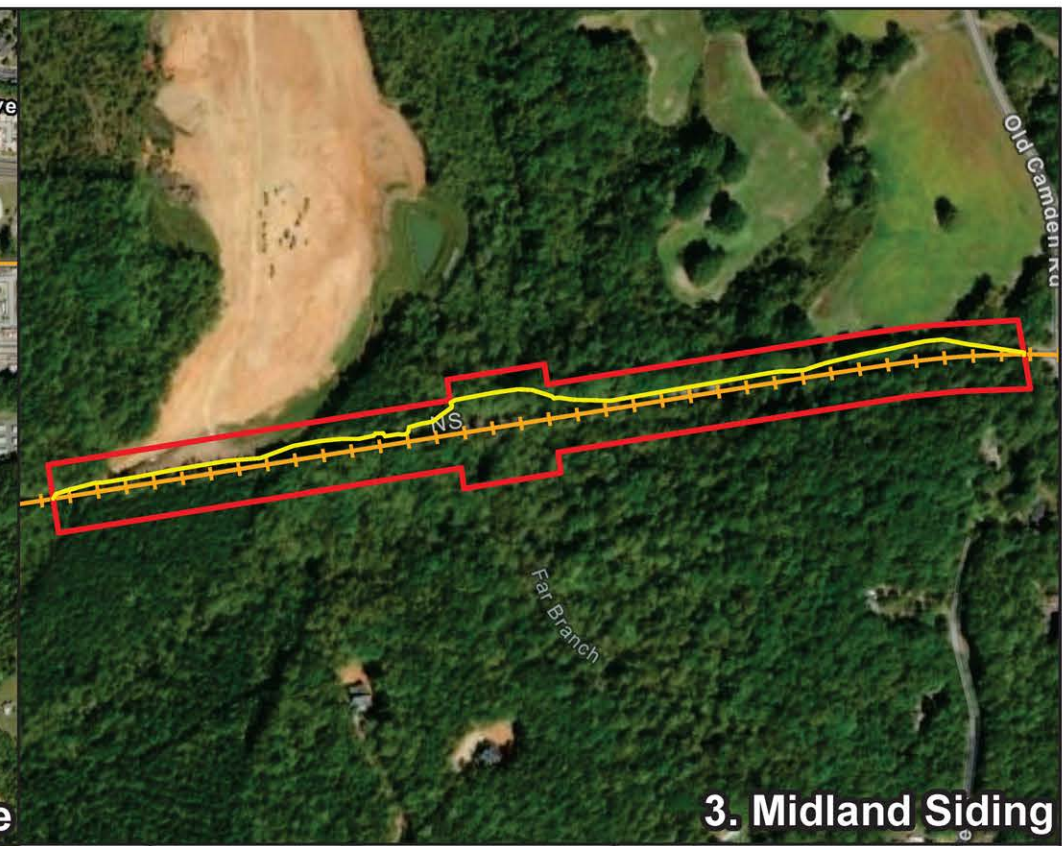
 SKELLY AND LOY <small>A TERRACON COMPANY</small>	April 2022
	Figure 1
Aberdeen, Carolina & Western Railway (ACWR) Congestion Mitigation Program	
Project Location	
Mecklenburg, Cabarrus, Montgomery, and Moore Counties, North Carolina	
Job No.: JN217426	1 inch = 30,000 Feet



1: Mint Hill Siding



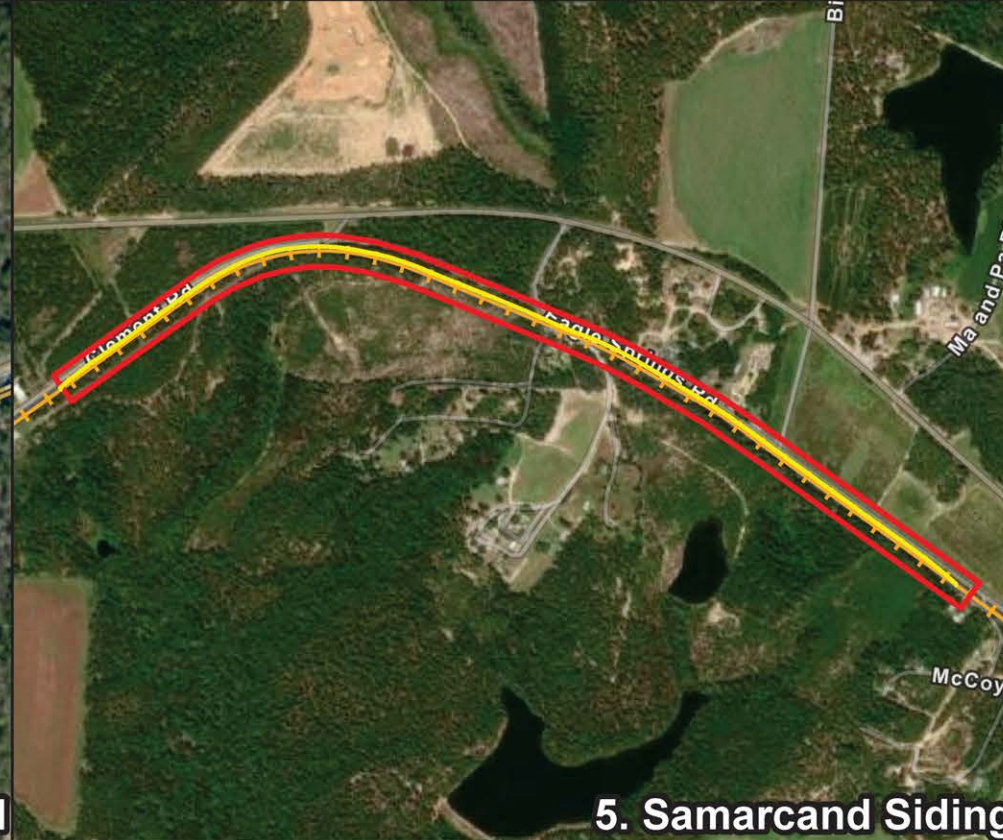
2. Mint Hill Storage Yard and Warehouse



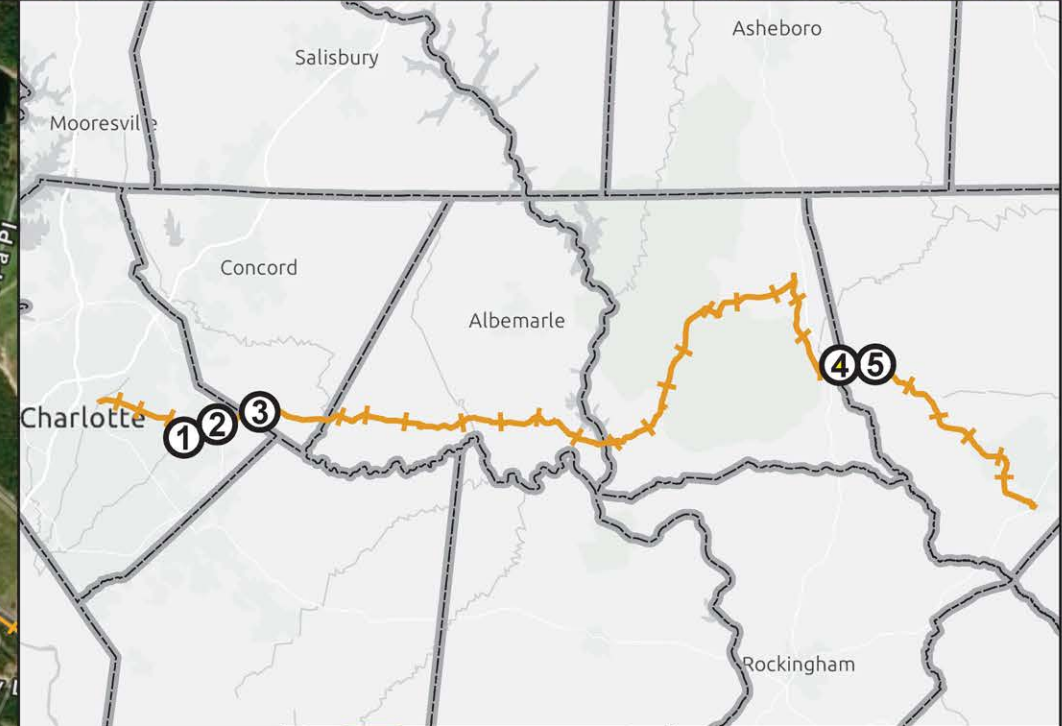
3. Midland Siding



4. ACWR HQ Storage & Switching Yard



5. Samarcand Siding



- Legend**
- Project Location
 - ACWR Line
 - ▭ Study Area
 - ▭ Limit of Disturbance
 - ▭ County Boundary

Data Sources:
 ESRI Community Map Contributions
 State of North Carolina DOT



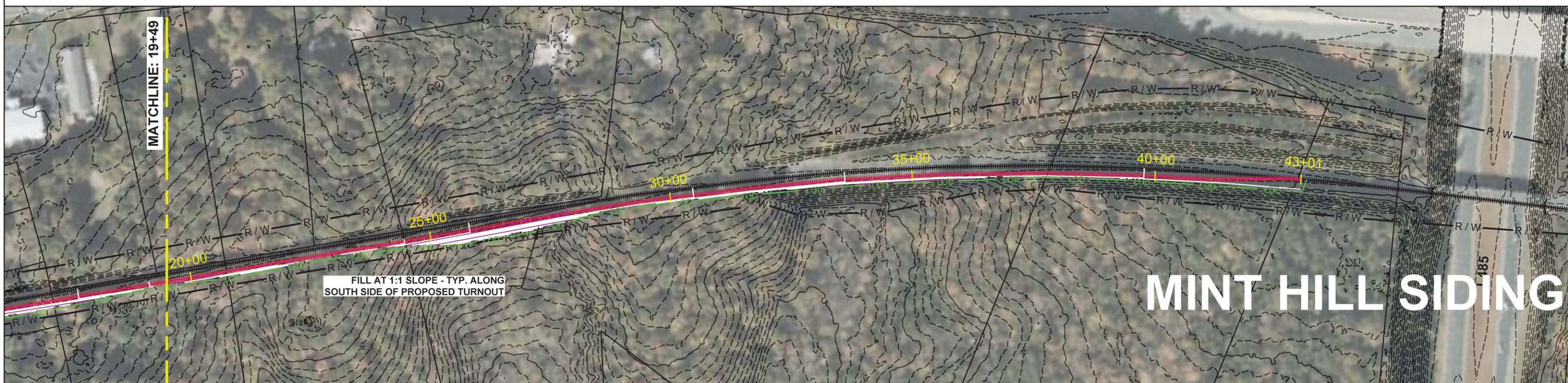
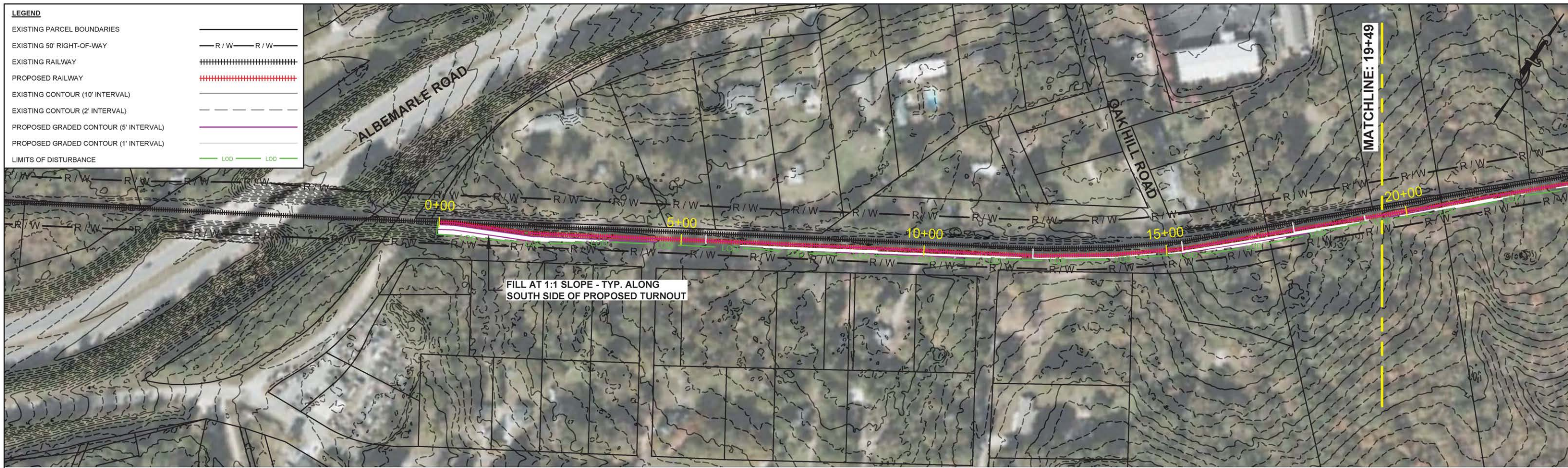
SKELLY AND LOY
 A TERRACON COMPANY

April 2022
 Figure 2

Aberdeen, Carolina & Western Railway (ACWR)
 Congestion Mitigation Program

Proposed Action
Study Area and Limits of Disturbance
 Mecklenburg, Cabarrus, Montgomery,
 and Moore Counties, North Carolina

Job No.: JN217426 Map Scale as Shown



- NOTES:**
- RIGHT-OF-WAY IN THIS AREA IS UNDERSTOOD WAS EXTENDED TO ACCOMMODATE A PRIOR EXISTING TURNOUT ACCORDING TO MECKLENBURG COUNTY GIS DEPARTMENT AND AERIAL IMAGERY RESEARCH.
 - ALL BOUNDARIES ARE APPROXIMATE.
 - EXISTING BOUNDARIES OBTAINED FROM MECKLENBURG COUNTY GIS DATABASE ON AUGUST 23, 2021.
 - TOPOGRAPHY OBTAINED FROM LIDAR IMAGERY FROM THE NORTH CAROLINA SPATIAL DATA DOWNLOAD ON AUGUST 23, 2021. LIDAR DATED MAY 31, 2018.
 - DRAWING HAS BEEN SET WITH A PROJECTION OF NAD83 NORTH CAROLINA STATE PLANE (US FOOT), EPSG: 2264.



JENNIFER WHITE
 PRESIDENT
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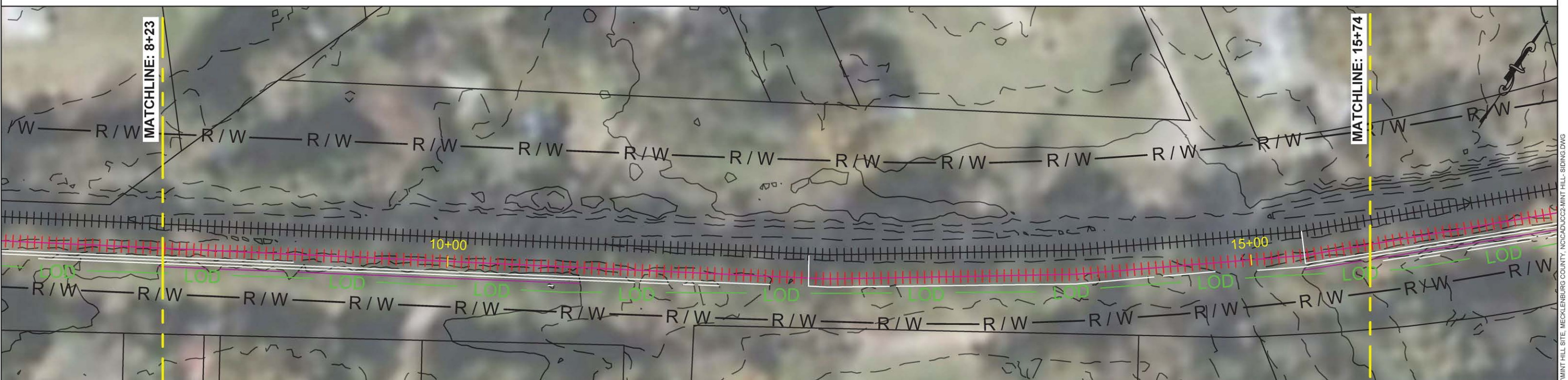
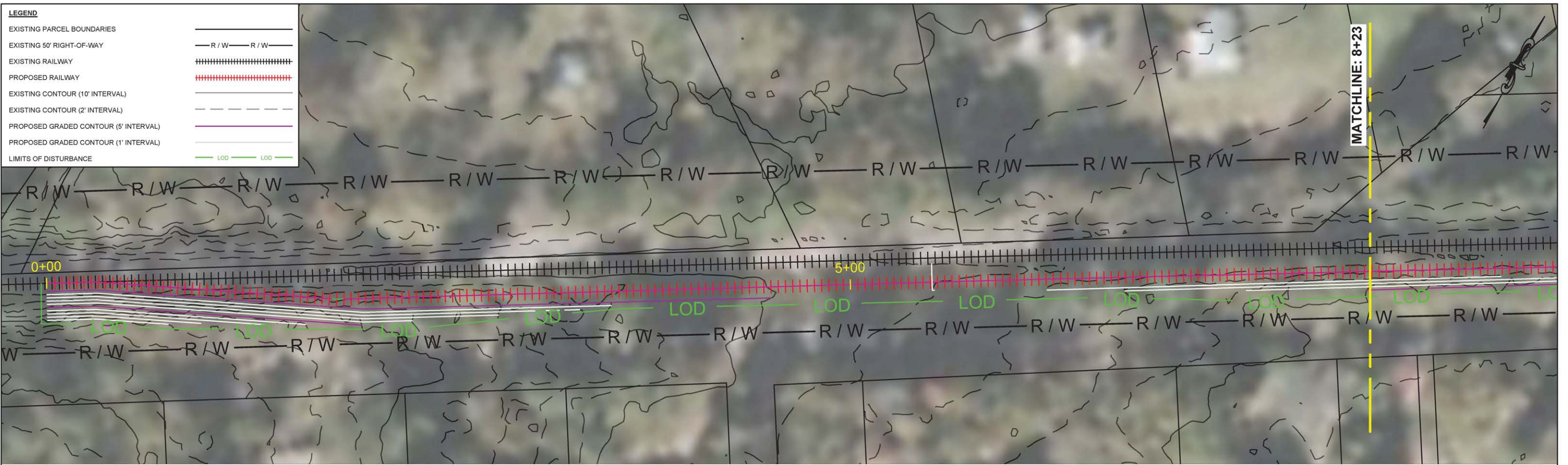
CIVIL ENGINEER:
 DANIEL S. WARRICK, P.E. (NC)
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 www.synterracorp.com

DRAWN BY: C. CURRIER / J. COLEMAN DATE: 08/30/2021
 CHECKED BY: C. COWN
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN

MINT HILL SIDING
 CONCEPTUAL SITE PLAN FOR THE
 PROPOSED ±4,300-LF SIDING
 LOCATED BETWEEN HIGHWAY 27 AND I-485
 MINT HILL, NORTH CAROLINA

P:\ABERDEEN CAROLINA & WESTERN RAILWAY\MINT HILL SITE - MECKLENBURG COUNTY, NC\CAD\C2\MINT HILL SIDING.DWG

LEGEND	
EXISTING PARCEL BOUNDARIES	— — — — —
EXISTING 50' RIGHT-OF-WAY	— R/W — R/W —
EXISTING RAILWAY	
PROPOSED RAILWAY	
EXISTING CONTOUR (10' INTERVAL)	- - - - -
EXISTING CONTOUR (2' INTERVAL)	- - - - -
PROPOSED GRADED CONTOUR (5' INTERVAL)	— — — — —
PROPOSED GRADED CONTOUR (1' INTERVAL)	— — — — —
LIMITS OF DISTURBANCE	— LOD — LOD —



- NOTES:**
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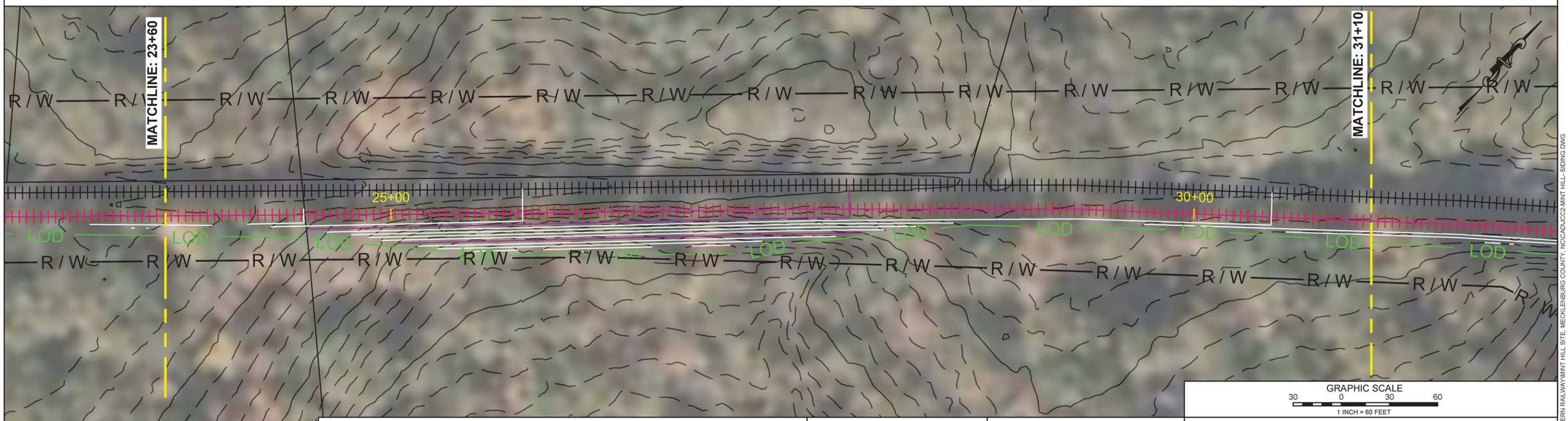
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DRAWN BY: C. CURRIER / J. COLEMAN DATE: 08/30/2021
 CHECKED BY: C. COWN
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN (2)

MINT HILL SIDING - 1 of 3
CONCEPTUAL SITE PLAN FOR THE
PROPOSED ±4,300-LF SIDING
LOCATED BETWEEN HIGHWAY 27 AND I-485
MINT HILL, NORTH CAROLINA

P:\ABERDEEN CAROLINA & WESTERN RAILWAY\MINT HILL SITE, MECKLENBURG COUNTY, NC\CAD\C2\MINT HILL - SIDING.DWG

LEGEND	
EXISTING PARCEL BOUNDARIES	— — — — —
EXISTING 50' RIGHT-OF-WAY	— R/W — R/W —
EXISTING RAILWAY	
PROPOSED RAILWAY	
EXISTING CONTOUR (10' INTERVAL)	- - - - -
EXISTING CONTOUR (2' INTERVAL)	- - - - -
PROPOSED GRADED CONTOUR (5' INTERVAL)	— — — — —
PROPOSED GRADED CONTOUR (1' INTERVAL)	— — — — —
LIMITS OF DISTURBANCE	— LOD — LOD —



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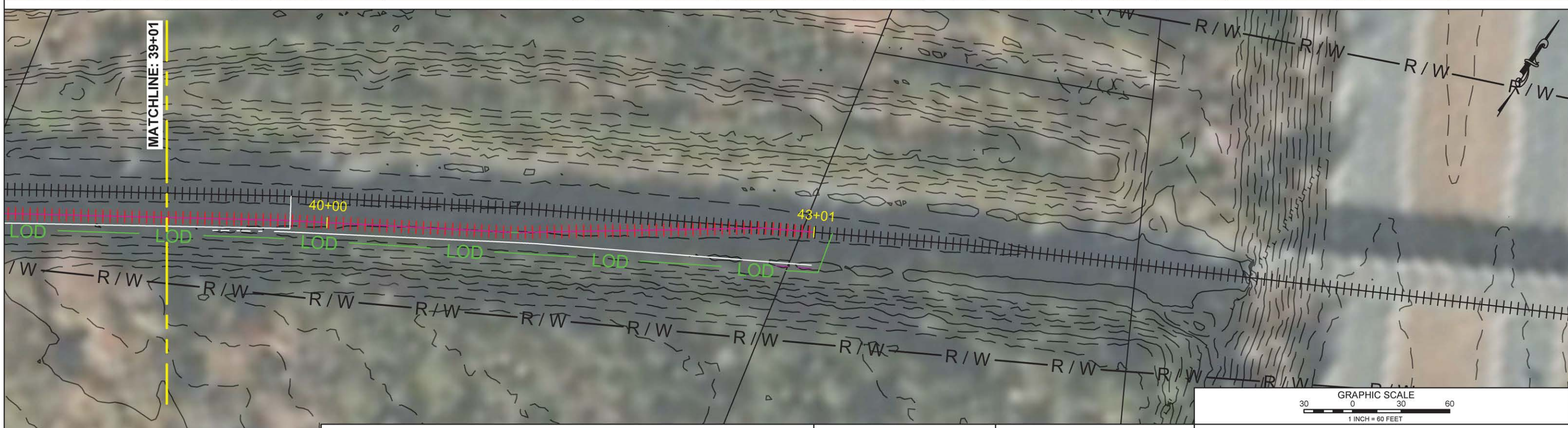
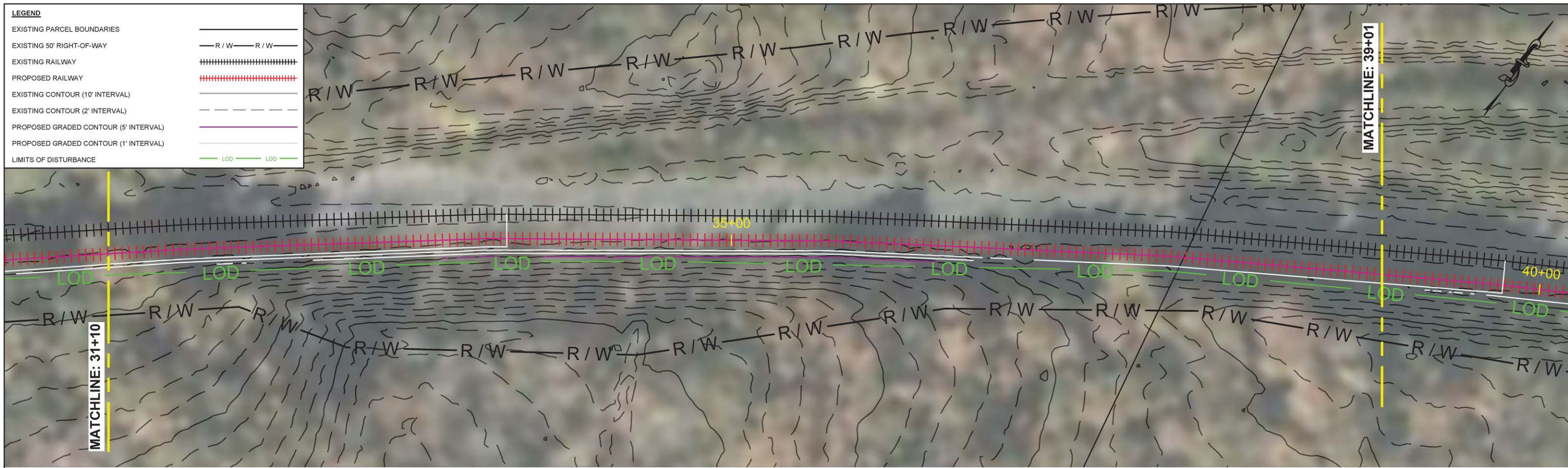
DRAWN BY: C. CURRIER / J. COLEMAN DATE: 08/30/2021
 CHECKED BY: C. COWN
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN (3)



MINT HILL SIDING - 2of3
CONCEPTUAL SITE PLAN FOR THE
PROPOSED ±4,300-LF SIDING
LOCATED BETWEEN HIGHWAY 27 AND I-485
MINT HILL, NORTH CAROLINA

P:\ABERDEEN CAROLINA & WESTERN RAILWAY\MINT HILL SITE, MECKLENBURG COUNTY, NC\CAD\DC2\MINT HILL SIDING.DWG

LEGEND	
EXISTING PARCEL BOUNDARIES	— — — — —
EXISTING 50' RIGHT-OF-WAY	— R/W — R/W —
EXISTING RAILWAY	
PROPOSED RAILWAY	
EXISTING CONTOUR (10' INTERVAL)	— — — — —
EXISTING CONTOUR (2' INTERVAL)	- - - - -
PROPOSED GRADED CONTOUR (5' INTERVAL)	— — — — —
PROPOSED GRADED CONTOUR (1' INTERVAL)	— — — — —
LIMITS OF DISTURBANCE	— LOD — LOD —



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DRAWN BY: C. CURRIER / J. COLEMAN DATE: 08/30/2021
 CHECKED BY: C. COWN
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN (4)



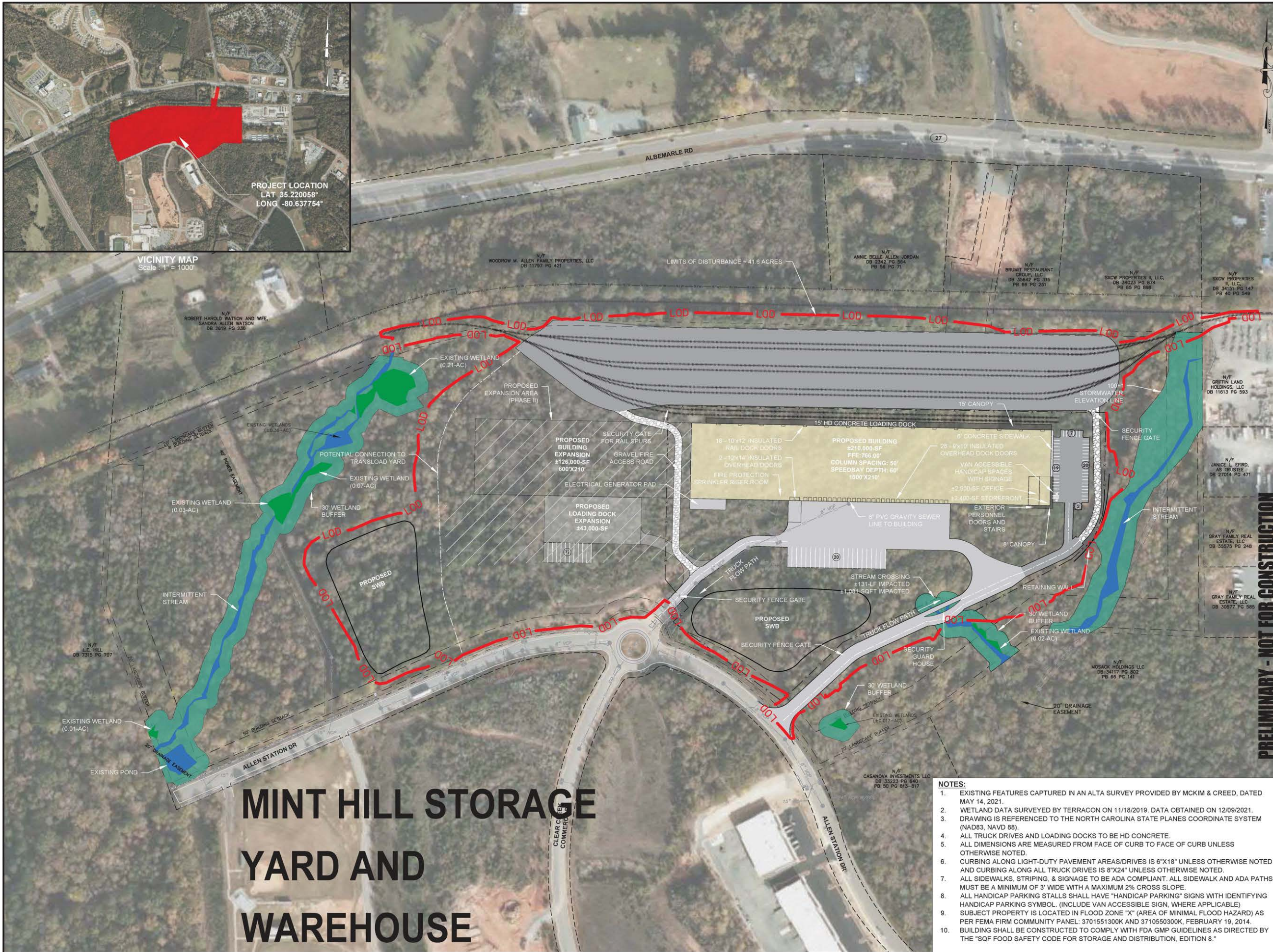
MINT HILL SIDING 3of3
CONCEPTUAL SITE PLAN FOR THE
PROPOSED ±4,300-LF SIDING
LOCATED BETWEEN HIGHWAY 27 AND I-485
MINT HILL, NORTH CAROLINA

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VICINITY MAP
Scale: 1" = 1000'

PROJECT LOCATION
LAT 35.220058°
LONG -80.637754°



MINT HILL STORAGE YARD AND WAREHOUSE

LEGEND

- EXISTING STORMWATER PIPING
- - - ADJACENT PROPERTY LINE
- - - PROPERTY LINE
- ||||| EXISTING OVERHEAD ELECTRIC
- ||||| EXISTING RAILWAY
- EXISTING STORMWATER PIPING
- EXISTING WATER PIPING
- EXISTING SANITARY SEWER
- EXISTING UNDERGROUND ELECTRIC
- LIMITS OF DISTURBANCE (=39.9-AC)
- RAILWAY RIGHT-OF-WAY
- PROPOSED STORMWATER PIPING
- PROPOSED RAILWAY SPUR
- W PROPOSED WATER PIPING
- PROPOSED SANITARY SEWER
- PROPOSED UNDERGROUND ELECTRIC
- GAS
- SECURITY FENCE
- HD CONCRETE
- ASPHALT
- GRAVEL
- CANOPY
- STREAM
- WETLAND
- WETLAND BUFFER

CAUTION



THE UTILITIES SHOWN ARE SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

FOR CLIENT REVIEW

REV.	DATE	DESCRIPTION	BY	CHK	APV
A	9/21/2021	FOR CLIENT REVIEW	AMS	CCC	CWH



5015 W. WT.HARRIS BLVD, SUITE C
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DRAWN BY:	A. SMITH	DATE:	9/21/2021
CHECKED BY:	C. COWN	DATE:	9/21/2021
PROJECT MANAGER:	S. DENEALE		
LAYOUT NAME:	C01		

ABERDEEN CAROLINA & WESTERN RAILWAY
967 NC HIGHWAY 211-E
CANDOR, NORTH CAROLINA 27229

**MINT HILL TRANSLOAD & PROJECT MILKY WAY
CIVIL ENGINEERING SITE DESIGN**

SITE PLAN		
00.3192.00 DRAWING	SHEET	REVISION
C01	1	A

- NOTES:**
- EXISTING FEATURES CAPTURED IN AN ALTA SURVEY PROVIDED BY MCKIM & CREED, DATED MAY 14, 2021.
 - WETLAND DATA SURVEYED BY TERRACON ON 11/18/2019. DATA OBTAINED ON 12/09/2021. DRAWING IS REFERENCED TO THE NORTH CAROLINA STATE PLANES COORDINATE SYSTEM (NAD83, NAVD 88).
 - ALL TRUCK DRIVES AND LOADING DOCKS TO BE HD CONCRETE.
 - ALL DIMENSIONS ARE MEASURED FROM FACE OF CURB TO FACE OF CURB UNLESS OTHERWISE NOTED.
 - CURBING ALONG LIGHT-DUTY PAVEMENT AREAS/DRIVES IS 8"x24" UNLESS OTHERWISE NOTED.
 - ALL SIDEWALKS, STRIPING, & SIGNAGE TO BE ADA COMPLIANT. ALL SIDEWALK AND ADA PATHS MUST BE A MINIMUM OF 3' WIDE WITH A MAXIMUM 2% CROSS SLOPE.
 - ALL HANDICAP PARKING STALLS SHALL HAVE "HANDICAP PARKING" SIGNS WITH IDENTIFYING HANDICAP PARKING SYMBOL. (INCLUDE VAN ACCESSIBLE SIGN, WHERE APPLICABLE)
 - SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE "X" (AREA OF MINIMAL FLOOD HAZARD) AS PER FEMA FIRM COMMUNITY PANEL: 3701551300K AND 3710550300K, FEBRUARY 19, 2014.
 - BUILDING SHALL BE CONSTRUCTED TO COMPLY WITH FDA GMP GUIDELINES AS DIRECTED BY THE "SQF FOOD SAFETY CODE FOR STORAGE AND DISTRIBUTION, EDITION 8."

PRELIMINARY - NOT FOR CONSTRUCTION

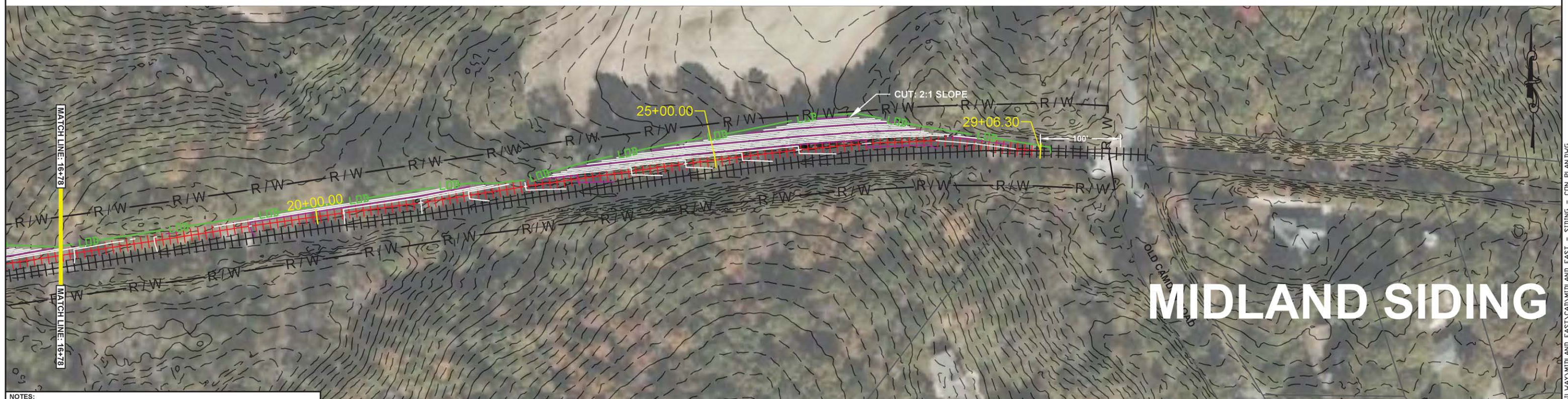
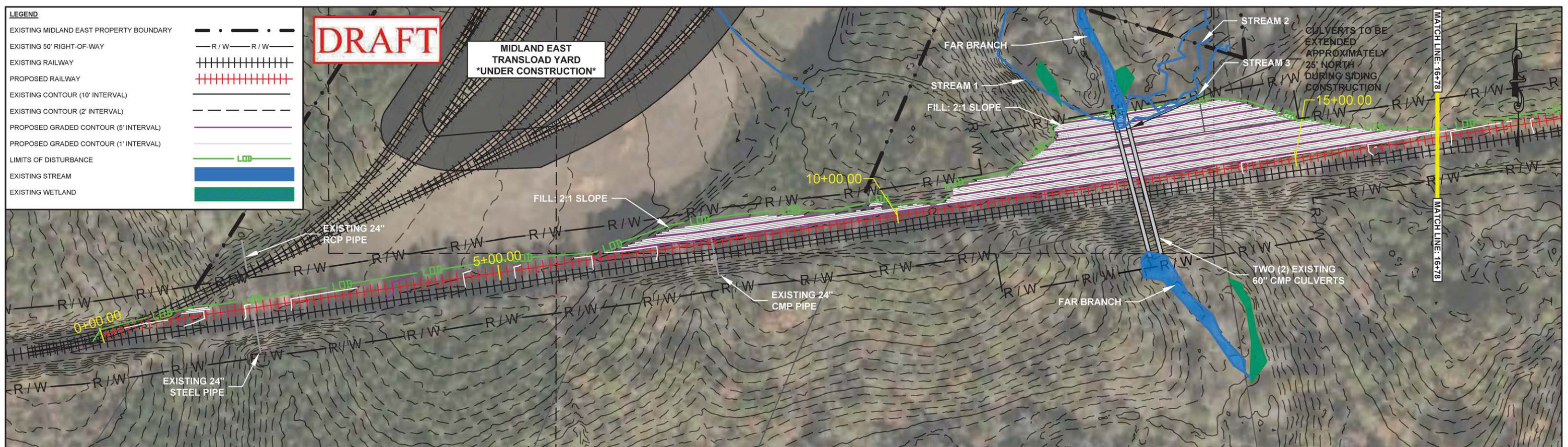
P:\Aberdeen Carolina & Western Railway\Mint Hill Site, Mecklenburg County, NC\CAD\PROJECT\MILKY WAY - SITE PLAN.dwg

LEGEND

- EXISTING MIDLAND EAST PROPERTY BOUNDARY
- EXISTING 50' RIGHT-OF-WAY
- EXISTING RAILWAY
- PROPOSED RAILWAY
- EXISTING CONTOUR (10' INTERVAL)
- EXISTING CONTOUR (2' INTERVAL)
- PROPOSED GRADED CONTOUR (5' INTERVAL)
- PROPOSED GRADED CONTOUR (1' INTERVAL)
- LIMITS OF DISTURBANCE
- EXISTING STREAM
- EXISTING WETLAND

DRAFT

**MIDLAND EAST
TRANSLOAD YARD
"UNDER CONSTRUCTION"**



- NOTES:**
1. STREAM DATA SYMBOLIZED AS POLYLINES ARE GIVEN A 3' STREAMBED WIDTH FOR AREA CALCULATIONS.
 2. RIGHT-OF-WAY IN THIS AREA IS UNDERSTOOD TO BE EXTENDED TO 100' FROM CENTERLINE OF THE MAIN RAIL ACCORDING TO ACRW. COUNTY GIS DATABASE DOES NOT ACCOUNT FOR THIS CHANGE. SURVEY WILL BE NEEDED TO VERIFY THE AMENDED RIGHT-OF-WAY.
 3. ALL BOUNDARIES ARE APPROXIMATE.
 4. EXISTING BOUNDARIES OBTAINED FROM CABARRUS COUNTY GIS DATABASE ON AUGUST 26, 2021.
 5. TOPOGRAPHY OBTAINED FROM LIDAR IMAGERY FROM THE NORTH CAROLINA SPATIAL DATA DOWNLOAD ON JULY 30, 2021. LIDAR DATED MAY 31, 2018.
 6. WETLAND AND STREAM DATA SURVEYED BY TERRACON ON DECEMBER 3, 2021. DATA RECEIVED ON DECEMBER 17, 2021.
 7. EXISTING PIPE/CULVERT SIZE AND LOCATIONS BASED ON SURVEY PROVIDED BY DENT H TURNER JR SURVEYOR ON JULY 22, 2021.
 8. DRAWING HAS BEEN SET WITH A PROJECTION OF NAD83 NORTH CAROLINA STATE PLANE (US FOOT), EPSG:2264.



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DRAWN BY: C. CURRIER
 CHECKED BY: S. DENEALE
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN

DATE: 12/20/2021



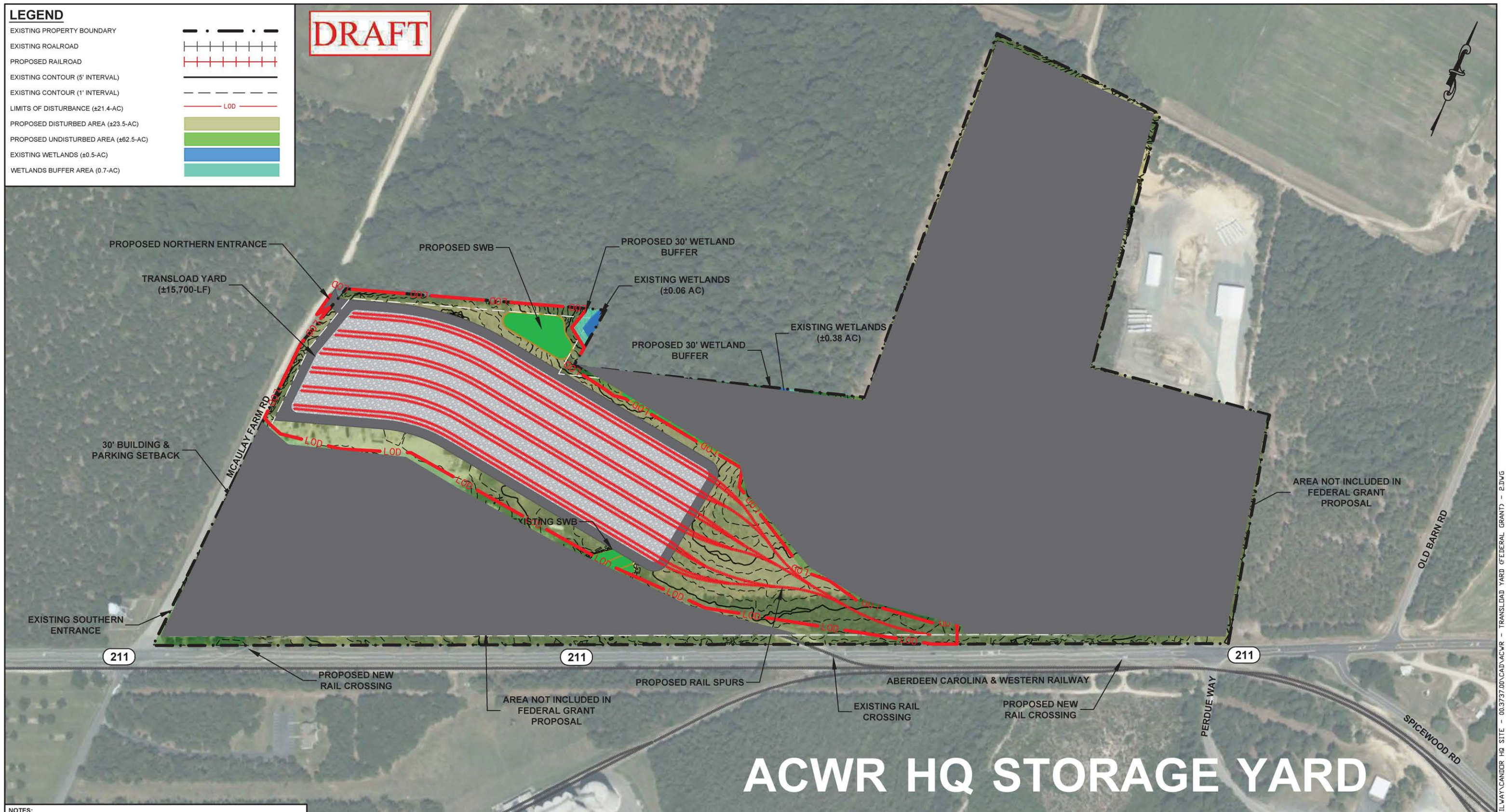
CONCEPTUAL SITE PLAN FOR THE ±2,900-LF SIDING AT THE ±70-ACRE MIDLAND EAST SITE LOCATED AT 375 NC HIGHWAY 24-27 TOWN OF MIDLAND, NORTH CAROLINA
PARCEL ID#: 55249624860000, 55248671110000, 55248580180000

P:\ABERDEEN CAROLINA & WESTERN RAILWAY\MIDLAND EAST\CAD\MIDLAND EAST - SIDING - CON PLANDWG

LEGEND

- EXISTING PROPERTY BOUNDARY
- EXISTING ROADROAD
- PROPOSED RAILROAD
- EXISTING CONTOUR (5' INTERVAL)
- EXISTING CONTOUR (1' INTERVAL)
- LIMITS OF DISTURBANCE (±21.4-AC)
- PROPOSED DISTURBED AREA (±23.5-AC)
- PROPOSED UNDISTURBED AREA (±62.5-AC)
- EXISTING WETLANDS (±0.5-AC)
- WETLANDS BUFFER AREA (0.7-AC)

DRAFT



ACWR HQ STORAGE YARD

- NOTES:**
1. ALL LOCATIONS ARE APPROXIMATE.
 2. EXISTING WETLANDS DATA SURVEYED BY TERRACON ON JUNE 17, 2019. DATA OBTAINED DECEMBER 09, 2021.
 3. BOUNDARIES AND DIMENSIONS BASED ON INFORMATION OBTAINED FROM MONTGOMERY COUNTY GIS DEPARTMENT ON MARCH 18, 2021.
 4. TOPOGRAPHY BASED ON LIDAR DATA OBTAINED FROM THE NORTH CAROLINA SPATIAL DATA DOWNLOAD ON MARCH 18, 2021.
 5. A TOTAL OF ±20,000-LF OF NEW RAIL IS PROPOSED.
 6. AERIAL IMAGERY OBTAINED FROM BING MAPS ON JULY 7, 2021.
 7. DRAWING HAS BEEN SET WITH A PROJECTION OF NORTH CAROLINA STATE PLANE EPSG: 2264 (NAD83).



PAUL HOBEN
 DIRECTOR OF BUSINESS DEVELOPMENT
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DRAWN BY: A. SMITH
 CHECKED BY: S. DENEALE
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN

DATE: 09/21/2021

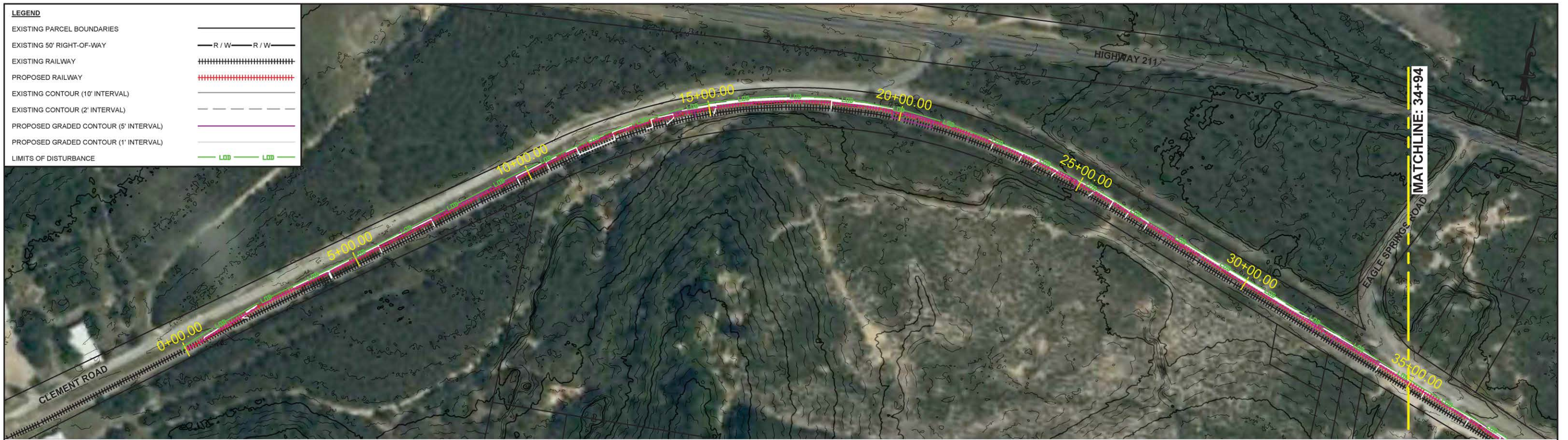
GRAPHIC SCALE

150 0 150 300
 1 INCH = 300 FEET

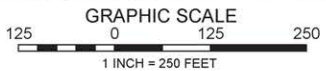
**ACWR HQ STORAGE YARD
 ACWR HEADQUARTERS SITE
 LOCATED AT 967 NC HIGHWAY 211
 MONTGOMERY COUNTY, NORTH CAROLINA
 PARCEL ID#: 7586 00 65 7848**

P:\ABERDEEN CAROLINA & WESTERN RAILWAY\CANDOR HQ SITE - 00373700\CAD\ACWR - TRANSLOAD YARD (FEDERAL GRANT) - 2.DWG

LEGEND	
EXISTING PARCEL BOUNDARIES	—
EXISTING 50' RIGHT-OF-WAY	— R / W — R / W —
EXISTING RAILWAY	
PROPOSED RAILWAY	
EXISTING CONTOUR (10' INTERVAL)	—
EXISTING CONTOUR (2' INTERVAL)	- - - - -
PROPOSED GRADED CONTOUR (5' INTERVAL)	—
PROPOSED GRADED CONTOUR (1' INTERVAL)	—
LIMITS OF DISTURBANCE	— L ₀ — L ₀ —



SAMARCAND SIDING



- NOTES:**
- ALL CUT AND FILL SLOPES HAVE BEEN GRADED AT 2 VERTICAL TO 1 HORIZONTAL, UNLESS OTHERWISE NOTED.
 - ALL BOUNDARIES ARE APPROXIMATE.
 - EXISTING BOUNDARIES OBTAINED FROM MOORE COUNTY GIS DATABASE ON AUGUST 23, 2021.
 - TOPOGRAPHY OBTAINED FROM LIDAR IMAGERY FROM THE NORTH CAROLINA SPATIAL DATA DOWNLOAD ON AUGUST 23, 2021. LIDAR DATED FEBRUARY 28, 2016.
 - AERIAL OBTAINED FROM BING MAPS / MAXAR AERIAL IMAGERY SERVICE ON AUGUST 31, 2021.
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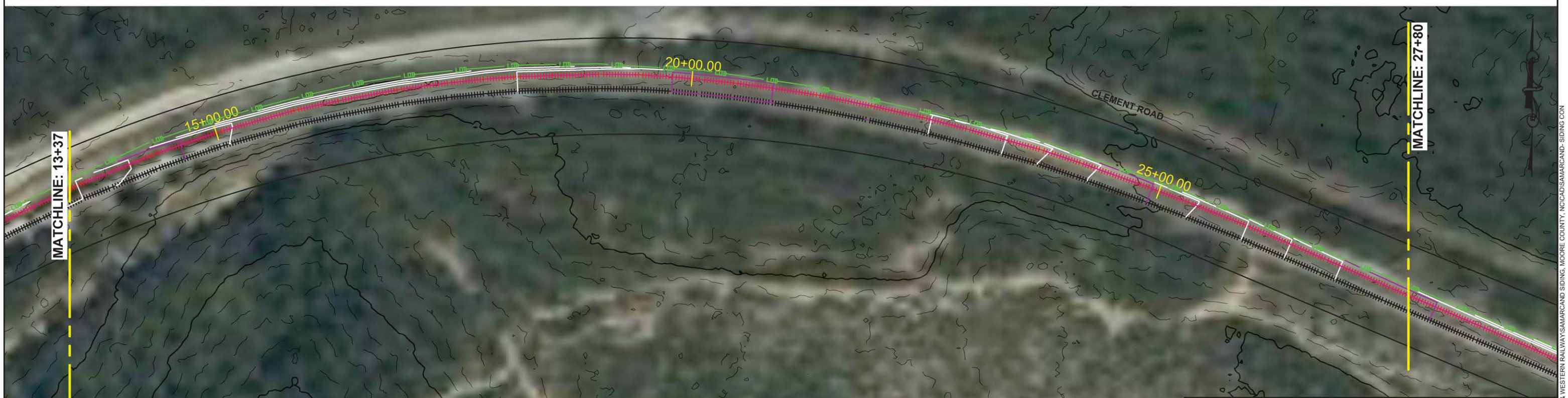
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DRAWN BY: C. CURRIER
 CHECKED BY: C. COWN
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN

DATE: 8/28/2021

**CONCEPTUAL SITE PLAN FOR THE
 PROPOSED ±6,550-LF SIDING
 LOCATED ALONG CLEMENT ROAD
 AND EAGLE SPRINGS ROAD
 MOORE COUNTY, NORTH CAROLINA**

LEGEND	
EXISTING PARCEL BOUNDARIES	
EXISTING 50' RIGHT-OF-WAY	
EXISTING RAILWAY	
PROPOSED RAILWAY	
EXISTING CONTOUR (10' INTERVAL)	
EXISTING CONTOUR (2' INTERVAL)	
PROPOSED GRADED CONTOUR (5' INTERVAL)	
PROPOSED GRADED CONTOUR (1' INTERVAL)	
LIMITS OF DISTURBANCE	



- NOTES:**
- ALL CUT AND FILL SLOPES HAVE BEEN GRADED AT 2 VERTICAL TO 1 HORIZONTAL, UNLESS OTHERWISE NOTED.
 - ALL BOUNDARIES ARE APPROXIMATE.
 - EXISTING BOUNDARIES OBTAINED FROM MOORE COUNTY GIS DATABASE ON AUGUST 23, 2021.
 - TOPOGRAPHY OBTAINED FROM LIDAR IMAGERY FROM THE NORTH CAROLINA SPATIAL DATA DOWNLOAD ON AUGUST 23, 2021. LIDAR DATED FEBRUARY 28, 2016.
 - AERIAL OBTAINED FROM BING MAPS / MAXAR AERIAL IMAGERY SERVICE ON AUGUST 31, 2021.
 - DRAWING HAS BEEN SET WITH A PROJECTION OF NAD83 NORTH CAROLINA STATE PLANE (US FOOT), EPSG: 2264.

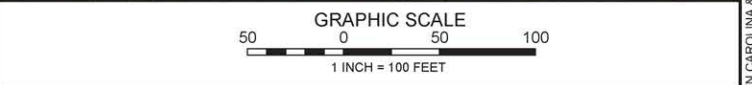


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 PRESIDENT
 ABERDEEN CAROLINA & WESTERN RAILWAY
 967 NC HIGHWAY 211
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 JWHITE@ACWR.COM
 PHONE 910-974-4219



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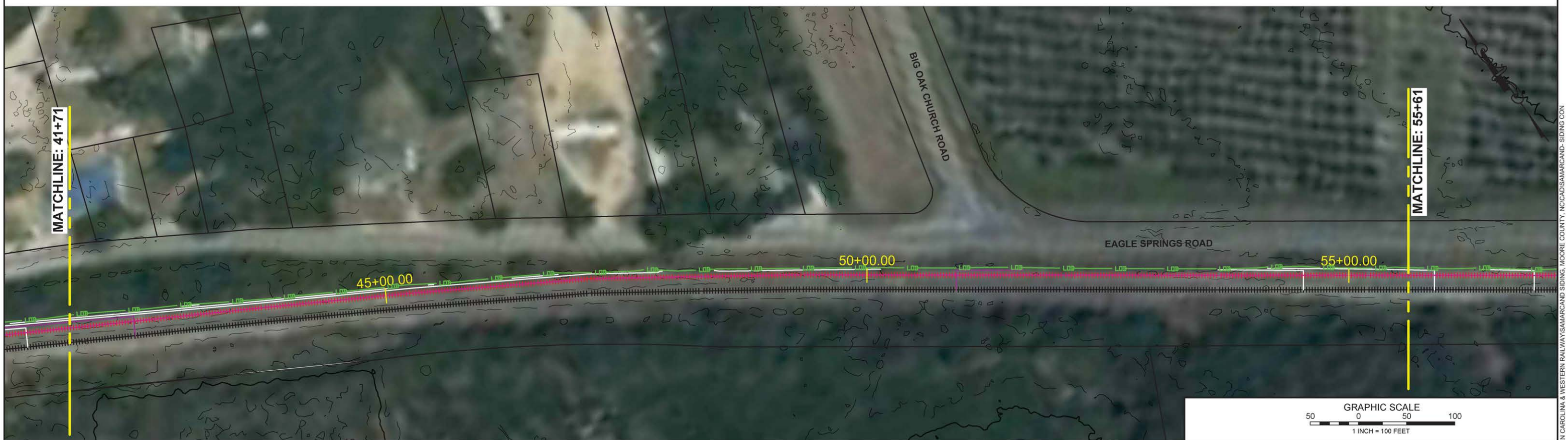
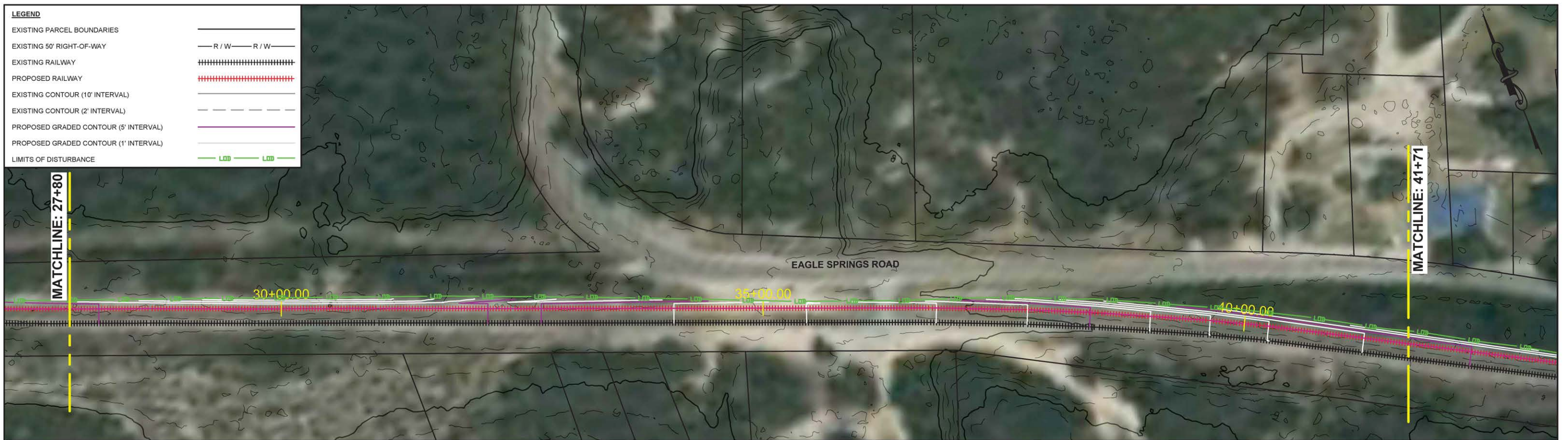
DRAWN BY: C. CURRIER / C. NEWELL DATE: 8/28/2021
 CHECKED BY: C. COWN
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN



SAMARCAND SIDING
 CONCEPTUAL SITE PLAN FOR THE
 PROPOSED ±6,550-LF SIDING LOCATED
 ALONG CLEMENT ROAD AND EAGLE
 SPRINGS ROAD
 MOORE COUNTY, NORTH CAROLINA

P:\ABERDEEN CAROLINA & WESTERN RAILWAY\SAMARCAND SIDING, MOORE COUNTY, NC\CAD\SAMARCAND SIDING CON 9/3/2021 2:38 PM

LEGEND	
EXISTING PARCEL BOUNDARIES	
EXISTING 50' RIGHT-OF-WAY	
EXISTING RAILWAY	
PROPOSED RAILWAY	
EXISTING CONTOUR (10' INTERVAL)	
EXISTING CONTOUR (2' INTERVAL)	
PROPOSED GRADED CONTOUR (5' INTERVAL)	
PROPOSED GRADED CONTOUR (1' INTERVAL)	
LIMITS OF DISTURBANCE	



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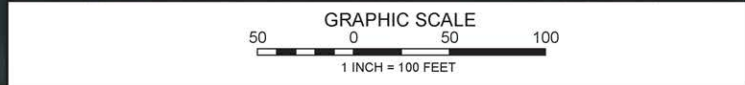


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DRAWN BY: C. CURRIER / C. NEWELL DATE: 8/28/2021
 CHECKED BY: C. COWN
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN



SAMARCAND SIDING
CONCEPTUAL SITE PLAN FOR THE
PROPOSED ±6,550-LF SIDING LOCATED
ALONG CLEMENT ROAD AND EAGLE
SPRINGS ROAD
MOORE COUNTY, NORTH CAROLINA

LEGEND	
EXISTING PARCEL BOUNDARIES	
EXISTING 50' RIGHT-OF-WAY	
EXISTING RAILWAY	
PROPOSED RAILWAY	
EXISTING CONTOUR (10' INTERVAL)	
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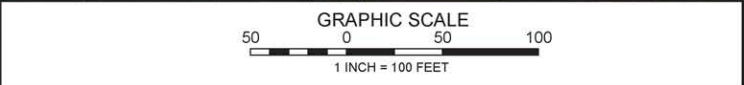


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DRAWN BY: C. CURRIER / C. NEWELL DATE: 8/28/2021
 CHECKED BY: C. COWN
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN



SAMARCAND SIDING
CONCEPTUAL SITE PLAN FOR THE
PROPOSED ±6,550-LF SIDING
LOCATED ALONG CLEMENT ROAD
AND EAGLE SPRINGS ROAD
MOORE COUNTY, NORTH CAROLINA



VICINITY MAP
Scale: 1" = 1000'

IMPACTS TO WATERS OF THE STATE		
WATER FEATURE	LENGTH	AREA
STREAM	131 LF	1081 SQFT



Mint Hill Storage Yard and Warehouse Wetlands and Watercourse Impacts
Figure 7

LEGEND	
	EXISTING STORMWATER PIPING
	ADJACENT PROPERTY LINE
	PROPERTY LINE
	EXISTING OVERHEAD ELECTRIC
	EXISTING STORMWATER PIPING
	EXISTING WATER PIPING
	EXISTING SANITARY SEWER
	EXISTING UNDERGROUND ELECTRIC
	LIMITS OF DISTURBANCE (=39.9-AC)
	RAILWAY RIGHT-OF-WAY
	PROPOSED STORMWATER PIPING
	PROPOSED RAILWAY SPUR
	PROPOSED WATER PIPING
	PROPOSED SANITARY SEWER
	PROPOSED UNDERGROUND ELECTRIC
	PROPOSED GAS
	SECURITY FENCE
	HD CONCRETE
	ASPHALT
	GRAVEL
	CANOPY
	STREAM
	WETLAND
	WETLAND BUFFER

CAUTION

A ONE CALL SYSTEM FOR COMMUNITY AND JOB SAFETY.

THE UTILITIES SHOWN ARE SHOWN FOR THE CONTRACTOR'S CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY THE LOCATIONS OF ALL UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

FOR CLIENT REVIEW

REV.	DATE	DESCRIPTION	BY	CHK	APV
A	9/21/2021	FOR CLIENT REVIEW	AMS	CCC	CWH

GRAPHIC SCALE: 1" = 100'



5015 W. WT.HARRIS BLVD, SUITE C
Charlotte, North Carolina 28269
980-312-5999
www.synterracorp.com

DRAWN BY: A. SMITH DATE: 9/21/2021
CHECKED BY: C. COWN DATE: 9/21/2021
PROJECT MANAGER: S. DENEALE
LAYOUT NAME: C01

ABERDEEN CAROLINA & WESTERN RAILWAY
967 NC HIGHWAY 211-E
CANDOR, NORTH CAROLINA 27229

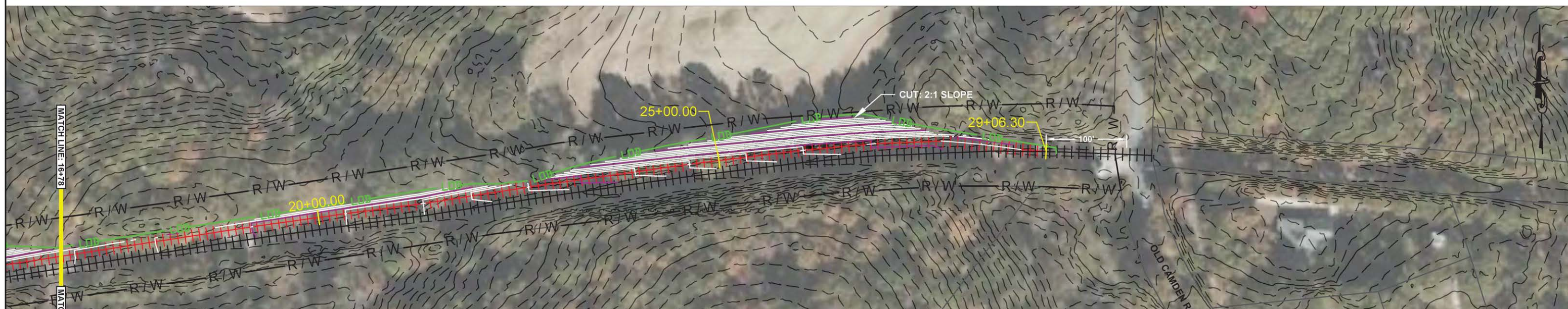
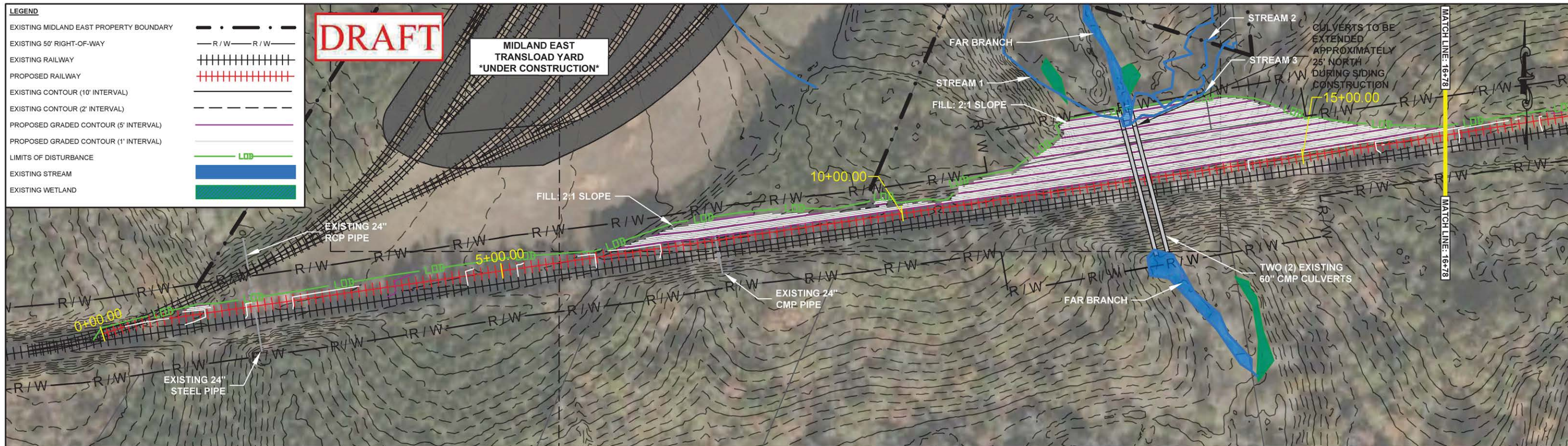
MINT HILL TRANSLOAD & PROJECT MILKY WAY CIVIL ENGINEERING SITE DESIGN

SITE PLAN		
00.3192.00 DRAWING	SHEET	REVISION
C01	1	A

- NOTES:**
- EXISTING FEATURES CAPTURED IN AN ALTA SURVEY PROVIDED BY MCKIM & CREED, DATED MAY 14, 2021.
 - WETLAND DATA SURVEYED BY TERRACON ON 11/18/2019. DATA OBTAINED ON 12/09/2021. DRAWING IS REFERENCED TO THE NORTH CAROLINA STATE PLANES COORDINATE SYSTEM (NAD83, NAVD 88).
 - ALL TRUCK DRIVES AND LOADING DOCKS TO BE HD CONCRETE.
 - ALL DIMENSIONS ARE MEASURED FROM FACE OF CURB TO FACE OF CURB UNLESS OTHERWISE NOTED.
 - CURBING ALONG LIGHT-DUTY PAVEMENT AREAS/DRIVES IS 8"x18" UNLESS OTHERWISE NOTED AND CURBING ALONG ALL TRUCK DRIVES IS 8"x24" UNLESS OTHERWISE NOTED.
 - ALL SIDEWALKS, STRIPING, & SIGNAGE TO BE ADA COMPLIANT. ALL SIDEWALK AND ADA PATHS MUST BE A MINIMUM OF 3' WIDE WITH A MAXIMUM 2% CROSS SLOPE.
 - ALL HANDICAP PARKING STALLS SHALL HAVE "HANDICAP PARKING" SIGNS WITH IDENTIFYING HANDICAP PARKING SYMBOL. (INCLUDE VAN ACCESSIBLE SIGN, WHERE APPLICABLE)
 - SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE "X" (AREA OF MINIMAL FLOOD HAZARD) AS PER FEMA FIRM COMMUNITY PANEL: 3701551300K AND 3710550300K, FEBRUARY 19, 2014.
 - BUILDING SHALL BE CONSTRUCTED TO COMPLY WITH FDA GMP GUIDELINES AS DIRECTED BY THE "SQF FOOD SAFETY CODE FOR STORAGE AND DISTRIBUTION, EDITION 8."

PRELIMINARY - NOT FOR CONSTRUCTION

P:\Aberdeen Carolina & Western Railway\Mint Hill Site, Mecklenburg County, NC\CAD\PROJECT\MILKY WAY - SITE PLAN.dwg



IMPACTS TO WATERS OF THE STATE

WATER FEATURE	LENGTH	AREA
FAR BRANCH	22 LF	209 SQFT
STREAM 1	31 LF	93 SQFT
STREAM 2	25 LF	75 SQFT
STREAM 3	92 LF	276 SQFT
TOTAL	170 LF	653 SQFT

Midland Siding Wetland and Watercourse Impacts Figure 7

- NOTES:**
1. STREAM DATA SYMBOLIZED AS POLYLINES ARE GIVEN A 3' STREAMBED WIDTH FOR AREA CALCULATIONS.
 2. RIGHT-OF-WAY IN THIS AREA IS UNDERSTOOD TO BE EXTENDED TO 100' FROM CENTERLINE OF THE MAIN RAIL ACCORDING TO ACWR. COUNTY GIS DATABASE DOES NOT ACCOUNT FOR THIS CHANGE. SURVEY WILL BE NEEDED TO VERIFY THE AMENDED RIGHT-OF-WAY.
 3. ALL BOUNDARIES ARE APPROXIMATE.
 4. EXISTING BOUNDARIES OBTAINED FROM CABARRUS COUNTY GIS DATABASE ON AUGUST 26, 2021.
 5. TOPOGRAPHY OBTAINED FROM LIDAR IMAGERY FROM THE NORTH CAROLINA SPATIAL DATA DOWNLOAD ON JULY 30, 2021. LIDAR DATED MAY 31, 2018.
 6. WETLAND AND STREAM DATA SURVEYED BY TERRACON ON DECEMBER 3, 2021. DATA RECEIVED ON DECEMBER 17, 2021.
 7. EXISTING PIPE/CULVERT SIZE AND LOCATIONS BASED ON SURVEY PROVIDED BY DENT H TURNER JR SURVEYOR ON JULY 22, 2021.
 8. DRAWING HAS BEEN SET WITH A PROJECTION OF NAD83 NORTH CAROLINA STATE PLANE (US FOOT), EPSG:2264.



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DRAWN BY: C. CURRIER
CHECKED BY: S. DENEALE
PROJECT MANAGER: D. WARRICK
LAYOUT: CONCEPTUAL SITE PLAN

DATE: 12/20/2021



**CONCEPTUAL SITE PLAN FOR THE ±2,900-LF SIDING AT
THE ±70-ACRE MIDLAND EAST SITE
LOCATED AT 375 NC HIGHWAY 24-27
TOWN OF MIDLAND, NORTH CAROLINA
PARCEL ID#: 55249624860000, 55248671110000,
55248580180000**

P:\NABERDEEN CAROLINA & WESTERN RAILWAY\MIDLAND EAST\CAD\MIDLAND EAST - SIDING - CON PLANDWG

LEGEND

- EXISTING PROPERTY BOUNDARY
- EXISTING ROADROAD
- PROPOSED RAILROAD
- EXISTING CONTOUR (5' INTERVAL)
- EXISTING CONTOUR (1' INTERVAL)
- LIMITS OF DISTURBANCE (±21.4-AC)
- PROPOSED DISTURBED AREA (±23.5-AC)
- PROPOSED UNDISTURBED AREA (±62.5-AC)
- EXISTING WETLANDS (±0.5-AC)
- WETLANDS BUFFER AREA (0.7-AC)

DRAFT



ACWR HQ Storage Yard Wetland and Watercourse Impacts

Figure 8

- NOTES:**
1. ALL LOCATIONS ARE APPROXIMATE.
 2. EXISTING WETLANDS DATA SURVEYED BY TERRACON ON JUNE 17, 2019. DATA OBTAINED DECEMBER 09, 2021.
 3. BOUNDARIES AND DIMENSIONS BASED ON INFORMATION OBTAINED FROM MONTGOMERY COUNTY GIS DEPARTMENT ON MARCH 18, 2021.
 4. TOPOGRAPHY BASED ON LIDAR DATA OBTAINED FROM THE NORTH CAROLINA SPATIAL DATA DOWNLOAD ON MARCH 18, 2021.
 5. A TOTAL OF ±20,000-LF OF NEW RAIL IS PROPOSED.
 6. AERIAL IMAGERY OBTAINED FROM BING MAPS ON JULY 7, 2021.
 7. DRAWING HAS BEEN SET WITH A PROJECTION OF NORTH CAROLINA STATE PLANE EPSG: 2264 (NAD83).



PAUL HOBEN
 DIRECTOR OF BUSINESS DEVELOPMENT
 ABERDEEN CAROLINA & WESTERN RAILWAY
 967 NC HIGHWAY 211
 CANDOR, NORTH CAROLINA 27229
 PHOBEN@ACWR.COM
 PHONE 910-974-4219



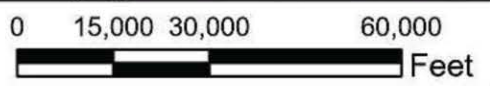
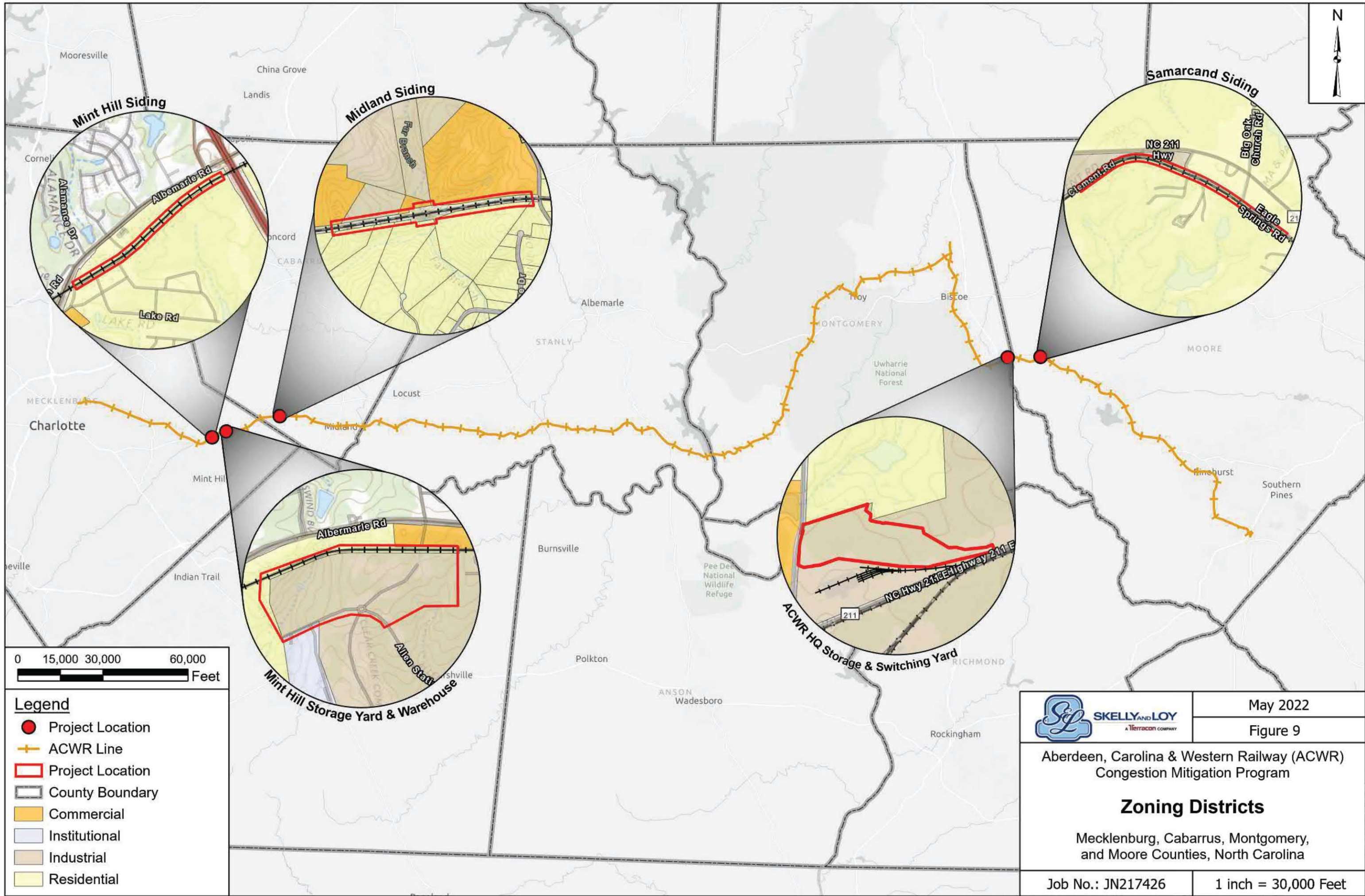
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 www.synTerraCorp.com

DRAWN BY: A. SMITH
 CHECKED BY: S. DENEALE
 PROJECT MANAGER: D. WARRICK
 LAYOUT: CONCEPTUAL SITE PLAN


DATE: 09/21/2021

GRAPHIC SCALE
 150 0 150 300
 1 INCH = 300 FEET

**CONCEPTUAL MASTER PLAN FOR THE ±86-ACRE
 ACWR HEADQUARTERS SITE
 LOCATED AT 967 NC HIGHWAY 211
 MONTGOMERY COUNTY, NORTH CAROLINA
 PARCEL ID#: 7586 00 65 7848**



- Legend**
- Project Location
 - + ACWR Line
 - ▭ Project Location
 - ▭ County Boundary
 - Commercial
 - Institutional
 - Industrial
 - Residential

 SKELLY AND LOY <small>A TERRACON COMPANY</small>	May 2022
	Figure 9
Aberdeen, Carolina & Western Railway (ACWR) Congestion Mitigation Program	
Zoning Districts	
Mecklenburg, Cabarrus, Montgomery, and Moore Counties, North Carolina	
Job No.: JN217426	1 inch = 30,000 Feet

Appendix B
USDA NRCS Coordination



Natural Resources
Conservation Service

North Carolina
State Office

4407 Bland Rd.
Suite 117
Raleigh, NC 27609
Voice (919) 873-2158
Fax (844) 325-6833

December 13, 2021

Jon Schmidt

Environmental Science and Engineering Division, V-326
US. DOT Volpe National Transportation Systems Center
55 Broadway, Cambridge MA 02142 | Kendall Square
jonathan.schmidt@dot.gov

Dear Mr. Schmidt,

The following information is in response to your request soliciting comments regarding the ACWR Storage and Switching Yard Project in Montgomery County, NC.

Projects are subject to Farmland Protection Policy Act (FPPA) requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.

For the purpose of FPPA, farmland includes prime farmland, unique farmland, and land of statewide or local importance. Farmland subject to FPPA requirements does not have to be currently used for cropland. It can be forest land, pastureland, cropland, or other land, but not water or urban built-up land. Farmland means prime or unique farmlands as defined in section 1540(c)(1) of the Act or farmland that is determined by the appropriate state or unit of local government agency or agencies with concurrence of the Secretary to be farmland of statewide or local importance.

"Farmland" does not include land already in or committed to urban development or water storage. Farmland "already in" urban development or water storage includes all such land with a density of 30 structures per 40-acre area. Farmland already in urban development also includes lands identified as "urbanized area" (UA) on the Census Bureau Map, or as urban area mapped with a "tint overprint" on the USGS topographical maps, or as "urban-built-up" on the USDA Important Farmland Maps. See over for more information.

The area in question **does include** land classified as Prime Farmland. In accordance with the Code of Federal Regulations 7CFR 658, Farmland Protection Policy Act, the AD-1006 was initiated. NRCS has completed Parts II, IV, V of the form, and returned for completion by the requesting agency. The requesting federal agency will determine next steps when funding is initiated.

If you have any questions, please feel free to call me at (919) 873-2158.

Sincerely,

Laurie F. Muzzy
Resource Soil Scientist

cc:

Mike Jones, State Soil Scientist, NRCS, Raleigh, NC
Shauntae Britt, District Conservationist, NRCS, Monroe, NC

The Natural Resources Conservation Service
is an agency of the Department of Agriculture's
Farm Production and Conservation (FPAC).

An Equal Opportunity Provider, Employer, and Lender

FARMLAND CONVERSION IMPACT RATING

PART I (To be completed by Federal Agency)		Date Of Land Evaluation Request 12/9/2021				
Name of Project Aberdeen Carolina and Western Railroad		Federal Agency Involved Federal Railroad Administration				
Proposed Land Use Transportation/Storage		County and State Montgomery County, NC				
PART II (To be completed by NRCS)		Date Request Received By NRCS 12/9/2021		Person Completing Form: Laurie F. Muzzy		
Does the site contain Prime, Unique, Statewide or Local Important Farmland? (If no, the FPPA does not apply - do not complete additional parts of this form)		YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>	Acres Irrigated 0	Average Farm Size 140	
Major Crop(s) corn	Farmable Land In Govt. Jurisdiction Acres: 69.4 % 222,907	Amount of Farmland As Defined in FPPA Acres: 69.4 % 222,907				
Name of Land Evaluation System Used Montgomery County LESA	Name of State or Local Site Assessment System none	Date Land Evaluation Returned by NRCS 12/13/2021				
PART III (To be completed by Federal Agency)		Alternative Site Rating				
		Site A	Site B	Site C	Site D	
A. Total Acres To Be Converted Directly		20.4				
B. Total Acres To Be Converted Indirectly		0				
C. Total Acres In Site		20.4				
PART IV (To be completed by NRCS) Land Evaluation Information						
A. Total Acres Prime And Unique Farmland		0				
B. Total Acres Statewide Important or Local Important Farmland		18.9				
C. Percentage Of Farmland in County Or Local Govt. Unit To Be Converted		0.008%				
D. Percentage Of Farmland in Govt. Jurisdiction With Same Or Higher Relative Value		69.7%				
PART V (To be completed by NRCS) Land Evaluation Criterion Relative Value of Farmland To Be Converted (Scale of 0 to 100 Points)		62.9				
PART VI (To be completed by Federal Agency) Site Assessment Criteria (Criteria are explained in 7 CFR 658.5 b. For Corridor project use form NRCS-CPA-106)		Maximum Points	Site A	Site B	Site C	Site D
1. Area In Non-urban Use		(15)	13			
2. Perimeter In Non-urban Use		(10)	8			
3. Percent Of Site Being Farmed		(20)	0			
4. Protection Provided By State and Local Government		(20)	0			
5. Distance From Urban Built-up Area		(15)	13			
6. Distance To Urban Support Services		(15)	0			
7. Size Of Present Farm Unit Compared To Average		(10)	0			
8. Creation Of Non-farmable Farmland		(10)	0			
9. Availability Of Farm Support Services		(5)	3			
10. On-Farm Investments		(20)	0			
11. Effects Of Conversion On Farm Support Services		(10)	0			
12. Compatibility With Existing Agricultural Use		(10)	0			
TOTAL SITE ASSESSMENT POINTS		160	37	0	0	0
PART VII (To be completed by Federal Agency)						
Relative Value Of Farmland (From Part V)		100	62.9	0	0	0
Total Site Assessment (From Part VI above or local site assessment)		160	37	0	0	0
TOTAL POINTS (Total of above 2 lines)		260	99.9	0	0	0
Site Selected:	Date Of Selection	Was A Local Site Assessment Used? YES <input type="checkbox"/> NO <input type="checkbox"/>				
Reason For Selection:						
Name of Federal agency representative completing this form:					Date:	

(See Instructions on reverse side)

Form AD-1006 (03-02)

STEPS IN THE PROCESSING THE FARMLAND AND CONVERSION IMPACT RATING FORM

- Step 1 - Federal agencies (or Federally funded projects) involved in proposed projects that may convert farmland, as defined in the Farmland Protection Policy Act (FPPA) to nonagricultural uses, will initially complete Parts I and III of the form. For Corridor type projects, the Federal agency shall use form NRCS-CPA-106 in place of form AD-1006. The Land Evaluation and Site Assessment (LESA) process may also be accessed by visiting the FPPA website, <http://fppa.nrcs.usda.gov/lesa/>.
- Step 2 - Originator (Federal Agency) will send one original copy of the form together with appropriate scaled maps indicating location(s) of project site(s), to the Natural Resources Conservation Service (NRCS) local Field Office or USDA Service Center and retain a copy for their files. (NRCS has offices in most counties in the U.S. The USDA Office Information Locator may be found at http://offices.usda.gov/scripts/ndISAPI.dll/oip_public/USA_map, or the offices can usually be found in the Phone Book under U.S. Government, Department of Agriculture. A list of field offices is available from the NRCS State Conservationist and State Office in each State.)
- Step 3 - NRCS will, within 10 working days after receipt of the completed form, make a determination as to whether the site(s) of the proposed project contains prime, unique, statewide or local important farmland. (When a site visit or land evaluation system design is needed, NRCS will respond within 30 working days.
- Step 4 - For sites where farmland covered by the FPPA will be converted by the proposed project, NRCS will complete Parts II, IV and V of the form.
- Step 5 - NRCS will return the original copy of the form to the Federal agency involved in the project, and retain a file copy for NRCS records.
- Step 6 - The Federal agency involved in the proposed project will complete Parts VI and VII of the form and return the form with the final selected site to the servicing NRCS office.
- Step 7 - The Federal agency providing financial or technical assistance to the proposed project will make a determination as to whether the proposed conversion is consistent with the FPPA.

INSTRUCTIONS FOR COMPLETING THE FARMLAND CONVERSION IMPACT RATING FORM

(For Federal Agency)

Part I: When completing the "County and State" questions, list all the local governments that are responsible for local land use controls where site(s) are to be evaluated.

Part III: When completing item B (Total Acres To Be Converted Indirectly), include the following:

1. Acres not being directly converted but that would no longer be capable of being farmed after the conversion, because the conversion would restrict access to them or other major change in the ability to use the land for agriculture.
2. Acres planned to receive services from an infrastructure project as indicated in the project justification (e.g. highways, utilities planned build out capacity) that will cause a direct conversion.

Part VI: Do not complete Part VI using the standard format if a State or Local site assessment is used. With local and NRCS assistance, use the local Land Evaluation and Site Assessment (LESA).

1. Assign the maximum points for each site assessment criterion as shown in § 658.5(b) of CFR. In cases of corridor-type project such as transportation, power line and flood control, criteria #5 and #6 will not apply and will, be weighted zero, however, criterion #8 will be weighed a maximum of 25 points and criterion #11 a maximum of 25 points.
2. Federal agencies may assign relative weights among the 12 site assessment criteria other than those shown on the FPPA rule after submitting individual agency FPPA policy for review and comment to NRCS. In all cases where other weights are assigned, relative adjustments must be made to maintain the maximum total points at 160. For project sites where the total points equal or exceed 160, consider alternative actions, as appropriate, that could reduce adverse impacts (e.g. Alternative Sites, Modifications or Mitigation).

Part VII: In computing the "Total Site Assessment Points" where a State or local site assessment is used and the total maximum number of points is other than 160, convert the site assessment points to a base of 160.

Example: if the Site Assessment maximum is 200 points, and the alternative Site "A" is rated 180 points:

$$\frac{\text{Total points assigned Site A}}{\text{Maximum points possible}} = \frac{180}{200} \times 160 = 144 \text{ points for Site A}$$

For assistance in completing this form or FPPA process, contact the local NRCS Field Office or USDA Service Center.

NRCS employees, consult the FPPA Manual and/or policy for additional instructions to complete the AD-1006 form.

Appendix C
Wetland and Watercourse Documentation

Wetland Delineation Report

Candor Site

N.C. Highway 211

Candor, Montgomery County, North Carolina

July 25, 2019
Terracon Project No. 7019432



Prepared for:
Aberdeen Carolina and Western Railway
Candor, North Carolina

Prepared by:
Terracon Consultants, Inc.
Raleigh, NC

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

July 25, 2019

Ms. Jennifer White
Aberdeen Carolina and Western Railway
967 NC Highway 211
Candor, North Carolina 27229

Attn: Ms. Jennifer White

Re: Wetland Delineation Report
Candor Site
967 NC Highway 211
Candor, Montgomery County, North Carolina
Terracon Project No. 70197432

Dear Ms. White,

Terracon is pleased to submit the wetland delineation report for the above referenced site. Based on the results of the assessment, Terracon observed evidence of Waters of the U.S. (WOTUS), including wetlands within the site boundary. This report summarizes our findings and recommendations for the site.

Terracon appreciates the opportunity to have worked for you on this project. If you have any questions regarding the content of this report, please contact me at (984) 202-4065 or via email at cory.darnell@terracon.com.

Sincerely,
Terracon Consultants, Inc.


Cory Darnell, PWS
Department Manager, Natural Resources


FOR: Andy Ruocco, PWS
Environmental Department Manager, APR


FOR: Emma Craig
Assistant Scientist, Natural Resources

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- Exhibit 1 – Site Location Map
- Exhibit 2 – USGS Topographic Map
- Exhibit 3 – NRCS Soil Survey Map
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- Exhibit 6 – Wetland Delineation Map

APPENDIX B – WETLAND DETERMINATION DATA FORMS

APPENDIX C – PHOTOGRAPHS

Wetland Delineation Report

Aberdeen Carolina Western Railroad ■ Candor, North Carolina
July 25, 2019 ■ Terracon Project: 70197432



1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon) was retained by the Aberdeen Carolina & Western Railway to perform a wetland delineation to determine if Waters of the U.S. (WOTUS), including wetlands under the jurisdiction of the United States Army Corps of Engineers (USACE) are present within the approximately 78.67-acre site. According to the Montgomery County Geographic Information Systems (GIS) website, the Parcel Identification Number (PIN) is 758600657848. Based on current aerial imagery, the site consists of a commercial building, railyard, and undeveloped wooded land. The project site is located along NC Highway 211 in Candor, Montgomery County, North Carolina. The project site location is depicted on Exhibit 1 in Appendix A.

The purpose of performing this wetland delineation was to characterize the existing site conditions, observe the project site for suspected aquatic resources including but not limited to wetlands, streams, and ponds that could be considered jurisdictional by the USACE and the North Carolina Department of Natural Resources Department of Water Resources (NCDWR).

It is important to note that the findings presented in this report represent Terracon's professional opinion, based upon field observations made during the site visit and our experience with current regulatory guidance under the Clean Water Act. In order to verify the delineation boundaries and jurisdictional classifications presented in this report, the USACE and NCDWR must review this report and make a jurisdictional determination.

2.0 SCOPE OF SERVICES

Terracon performed the following scope of work:

- Reviewed the United States Geologic Survey (USGS) Topographical Maps, the United States Department of Agriculture (USDA) Natural Resources Conservation Services (NRCS) Soil Survey for Montgomery County, United States Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Maps, Federal Emergency Management Agency (FEMA) Flood Insurance Risk Maps (FIRM), and aerial photographs to assist with identifying suspected jurisdictional WOTUS within the site boundary.
- Mobilized to the project site to conduct a wetland/stream delineation.
- Prepared a map showing approximate locations of WOTUS.
- Completed a wetland delineation report that included site characterization information, a discussion of applicable data, and recommendations for the project site.

3.0 PRELIMINARY DATA GATHERING AND ANALYSIS

Prior to performing the delineation, several maps and aerial photograph resources were reviewed to assist in identifying potential wetland areas at the project site. Each source of data is described in detail below.

3.1 USGS Topographic Map

The USGS 7.5-minute topographic map of the project site was accessed through the USGS Web Map Service and reviewed to identify potential drainages, wetlands, streams, and ponds within the site boundary. The USGS topographic map does not depict surface waters on site. However, three drainage swales are depicted along the eastern and central portions of the site. Elevation ranges from approximately 700-730 feet throughout the site. The USGS Topographic Map is included in Appendix A, Exhibit 2.

3.2 USDA-NRCS Soil Survey Map

Data from the 2019 USDA-NRCS Web Soil Survey was reviewed to identify soil types, including hydric soils. The 1930 USDA-NRCS survey was unavailable for download. Hydric soils information was gathered from the 'National Hydric Soils List' maintained by the USDA Natural Resource Conservation Service. The soil survey map is included in Appendix A, Exhibit 3.

The following soil types were identified within the project site on the soil survey map:

- Ailey loamy sand (AaB) is generally found in the middle and upper coastal plain including the sandhills. It can be found in marine terraces and low hills and is well drained with slopes ranging from 2 to 8 percent.
- Augusta fine sandy loam (AuA) is generally found in the coastal plain. It can be found in low hills and is well drained with slopes ranging from 0 to 3 percent.
- Candor Sand (CdB) is generally found in the upper coastal plain including the sandhills. It can be found in low hills and flood plains and is undrained with slopes ranging from 0 to 8 percent.

According to the North Carolina Hydric Soils List for Montgomery County, Candor Sand (CdB) is identified as hydric. Reference section 5.2 for a more detailed description of soils found on site.

3.3 National Wetlands Inventory Map

The NWI Map of the project site was reviewed to identify potential wetland areas. The map was published by the U.S. Department of the Interior's USFWS and depicts probable wetland areas based on stereoscopic analysis of high-altitude aerial photographs and analysis of infrared bands from remotely-sensed imagery. A freshwater forested/shrub wetlands (PFO1A) are depicted within the site boundaries. The majority of the identified features in the vicinity of the site appear

Wetland Delineation Report

Aberdeen Carolina Western Railroad ■ Candor, North Carolina
July 25, 2019 ■ Terracon Project: 70197432



to correspond with surface water bodies observed during the site reconnaissance. The NWI map for the project site is included in Appendix A, Exhibit 4.

3.4 FEMA-FIRM Floodplain Map

The Federal Emergency Management Act (FEMA) Flood Insurance Risk Map (FIRM) of the site boundary was reviewed to identify potential floodplain hazards on site. Based on data obtained from panel 3710758600K (dated January 1, 2008), the site is located in zone X, which are areas considered outside the 0.2% annual chance floodplain. The floodplain map is included in Appendix A, Exhibit 5.

4.0 FIELD TECHNIQUES

Terracon personnel conducted a site reconnaissance on July 17, 2019 to characterize the existing site conditions and evaluate the site for the presence of wetlands and potential jurisdictional WOTUS. Characteristics of jurisdictional waters and wetland areas were assessed utilizing the criteria detailed in sections 4.1 and 4.2 of this report. The evaluation methods generally followed the routine on-site determination method referenced in the 1987 USACE Manual and the Eastern Mountains and Piedmont Regional Supplement, Version 2.0.

4.1 Wetland Observations

Wetlands have three essential characteristics: hydrophytic vegetation, hydric soils, and wetland hydrology. Based on NWI data, aerial imagery, and topographical data, on-site areas were investigated for potential WOTUS. Additional areas were investigated, based on field observations made during the site reconnaissance. Data regarding the three essential characteristics were gathered within suspected wetland, stream, and pond areas to further delineate wetland boundaries.

4.2 Plant Community Assessment

Suspect areas were visually observed to determine the species, when possible, and absolute percentage of ground cover for four stratum of plant community types. The four stratum, trees, shrubs/saplings, herbs, and vines were all observed within a thirty-foot radius of the observation location.

For each species of vegetation observed, their wetland indicator status was evaluated. Indicator status was determined using the NRCS Plants Database. Indicator categories for vegetation are presented below:

- Obligate Wetland (OBL) - occur almost always (estimated probability greater than 99%) under natural conditions in wetlands.

Wetland Delineation Report

Aberdeen Carolina Western Railroad ■ Candor, North Carolina
July 25, 2019 ■ Terracon Project: 70197432



- Facultative Wetland (FACW) - usually occur in wetlands (estimated probability 67% - 99%) but occasionally found in non-wetlands.
- Facultative (FAC) - equally likely to occur in wetlands or non-wetlands (estimated probability 34% - 66%).
- Facultative Upland (FACU) - usually occur in non-wetlands (estimated probability 67% - 99%) but occasionally found in wetlands.
- Upland (UPL) – rarely occur in wetlands but occur almost always (estimated probability greater than 99%) under natural conditions in non-wetlands.

The percent cover of each stratum was determined and dominance was evaluated. Dominant species were the most abundant species that accounted for more than 20 percent of the absolute percent coverage of the stratum. The number of dominant species with an indicator status of OBL, FACW, and/or FAC was compared to the total number of dominant species across strata. Typically, when more than 50 percent of the dominant species had an indicator status of OBL, FACW, and/or FAC, hydrophytic vegetation was present.

If the percentage of dominant species with an indicator status of OBL, FACW, and/or FAC was less than 50 percent, prevalence index and morphological adaptations may have been evaluated to confirm if hydrophytic vegetation was present or absent.

4.3 Hydric Soils Assessment

After Terracon evaluated wetland vegetation, subsurface soil samples were collected using a soil probe or similar method. The samples were collected to a depth of approximately 20 inches below ground surface and were visually compared to Munsell Soil Color Charts (Munsell, 2009), which aided in the evaluation of hydric soil characteristics. The soil samples were further examined for hydric soil indicators including, but not limited to, histosol, thick dark surface, sandy gleyed matrix, sandy redox, loamy gleyed matrix, redox dark surface, and/or redox depressions. If these or other hydric soil indicators were observed in the subsurface soil sample, the observation location was considered to have hydric soil.

4.4 Wetland Hydrology Assessment

Visual indicators of wetland hydrology were evaluated. Examples of primary wetland hydrology indicators include, but are not limited to, surface water, high water table, soil saturation, water marks, sediment deposits, drift deposits, iron deposits, inundation visible on aerial imagery, sparsely vegetated concave surface, and water-stained leaves. If at least one primary or two secondary indicators were observed, the observation location was considered to have wetland hydrology.

Wetland Delineation Report

Aberdeen Carolina Western Railroad ■ Candor, North Carolina
July 25, 2019 ■ Terracon Project: 70197432



4.5 Classification of Wetlands

Upon completion of the review of the three wetland criteria at each area, a wetland determination was made. Under normal circumstances, if one or more of the wetland criteria were not identified, the area was not considered to be a wetland. If the three wetland indicators were identified, the area was classified as a wetland. Additional observations were made throughout the wetland area to define the wetland/non-wetland boundaries. Vegetation, soil, and hydrology assessment data from at least one location within the wetland and one upland location outside of the wetland were recorded on a USACE Wetland Determination Data Form (Data Sheet).

4.6 Other Waters Observations

Terracon also made observations of site features that may be considered a jurisdictional waterbody. If a potential jurisdictional waterbody was identified, observations regarding its characteristics were recorded. Potential jurisdictional waterbodies were evaluated based on the observation of the following characteristics:

- Flow Characteristics:
 - Perennial: contains water year-round except during extreme drought.
 - Intermittent: carries water a considerable portion of the time, but ceases to flow occasionally or seasonally.
 - Ephemeral: carries water during and immediately after periods of rainfall or snowmelt.
- Ordinary High Water Mark:
 - The limit line on the shore established by the fluctuation of the water surface. It is shown by such things as a clear line impressed on the bank, shelving, changes in soil character, destruction of terrestrial vegetation, the presence of litter and debris or other features influenced by the surrounding area.
- Bank Shape Descriptions:
 - Undercut: banks that overhang the stream channel
 - Steep: bank slope of approximately greater than 30 degrees
 - Gradual: bank slope of approximately 30 degrees or less
- Aquatic Habitat Descriptions:
 - Pool: deeper portion of a stream where water flows slower than in neighboring, shallower portions, smooth surface, and finer substrate.
 - Riffle: shallow area in a stream where water flows swiftly over gravel and rock or other coarse substrate resulting in a rough flow and a turbulent surface.
 - Run: section of a stream with a low or high velocity and with little or no turbulence on the surface of the water.

5.0 FIELD OBSERVATION RESULTS

Field observations were collected on July 17, 2019 by Mr. Cory Darnell and Ms. Emma Craig with Terracon. The project site consists of a commercial building, railyard, undeveloped, wooded land, and cleared land. Wetland determination data forms included in Appendix B and Photographs included in Appendix C, provide an indication of the physical characteristics observed during the site visit. Descriptions of the observed areas are listed in the following sections.

5.1 Plant Communities Found at Project Site

Terracon evaluated multiple plant and soil types on site. To further help delineate wetlands from uplands, several wetland determination data forms were completed. The attached wetland determination data forms (DP-1 through DP-4) describes in further detail the vegetation, hydrology, and soils encountered on site. These data forms distinguish the boundaries between upland areas and wetlands.

5.2 Waters of the U.S. Description, Watershed Classification, and Buffers

Wetlands exhibiting hydrology, hydrophytic vegetation, and hydric soils were identified on site. Terracon identified two wetlands (W1:1-23 and W2:1-4) and one marginal wetland (MW0-7) (Reference Exhibit 6 in Appendix A). Wetland determination data forms (DP1- DP4) are attached in Appendix B. The data obtained during the site reconnaissance should be used for preliminary planning purposes.

The site is located in the Cape Fear River Basin. Surface waters within the Cape Fear River Basin are not subject to mandatory state riparian buffer requirements. According the NC Surface Water Classification Online GIS website, surface waters that drain to Mill Creek are classified as WS-III. WS-III waters are used as sources of water supply for drinking, culinary, or food processing purposes where a more protective WS-I or II classification is not feasible. These waters are also protected for Class C uses. WS-III waters are generally in low to moderately developed watersheds. Class C waters are waters protected for uses such as secondary recreation, fishing, wildlife, fish consumption, aquatic life including propagation, survival and maintenance of biological integrity, and agriculture. Stormwater buffer requirements may apply. According to NCDEQ freshwater surface quality standards for Class III waters, 24 percent or less built-upon area requires a 30-foot vegetative buffer along perennial waters as indicated on the most recent USGS topographic map or a local government survey. If new development density exceeds 24 percent, a minimum 100-foot vegetative buffer is required along perennial waters. Terracon recommends consultation with a civil engineer to confirm stormwater setbacks on site.

Additionally, on July 18, 2019, Terracon contacted the Montgomery County Planning Department to confirm local buffer requirements. According to the planning department, Montgomery County does not have buffer requirements.

Wetland Delineation Report

Aberdeen Carolina Western Railroad ■ Candor, North Carolina
July 25, 2019 ■ Terracon Project: 70197432



6.0 USACE/NCDNR VERIFICATION REVIEW

Terracon is currently working with USACE and NCDWR to confirm our findings on site. Once the site has been verified, Terracon will provide an updated WOTUS map if our delineation lines are changed.

7.0 SUMMARY AND CONCLUSIONS

A wetland delineation was conducted at the approximate 78.67-acre Aberdeen Carolina Western Railway site located in Candor, Montgomery County, North Carolina on July 17, 2019. A review of the project site was conducted utilizing readily available information including, but not limited to, topographical, aerial, soils, floodplain, and wetland data. In addition, a preliminary site visit was performed to characterize the existing site conditions and observe the project site for suspected waterbodies and wetlands. According to our preliminary site investigation, WOTUS were observed on site. A summary of the field observations and delineation of aquatic features are depicted on Exhibit 6 in Appendix A and listed below:

- Wetland (W1) – 0.38 Acres
- Wetland (W2) – 0.06 Acres

8.0 RECOMMENDATIONS

If impacts to jurisdictional waters are expected, Terracon recommends consultation with the USACE and NCDWR prior to site development activities. Impacts to jurisdictional surface waters are regulated by the USACE and NCDWR and may require a Clean Water Act Section 404/401 permit from both agencies. 404/401 permitting and additional meetings are not presently considered within the scope of this project.

9.0 GENERAL COMMENTS

The wetland delineation was performed in accordance with generally accepted practices of this profession undertaken in similar studies at the same time and in the same geographical area. A wetland delineation, such as the one performed at this site, is of limited scope, is noninvasive, and cannot eliminate the potential that wetlands or waterbodies are present at the site beyond what is identified by the limited scope of this preliminary assessment. In conducting the limited scope of services described herein, certain sources of information and public records were not reviewed. No biological assessment can wholly eliminate uncertainty regarding the potential for concerns in connection with a project. The limitations of this preliminary assessment should be recognized.

Wetland Delineation Report

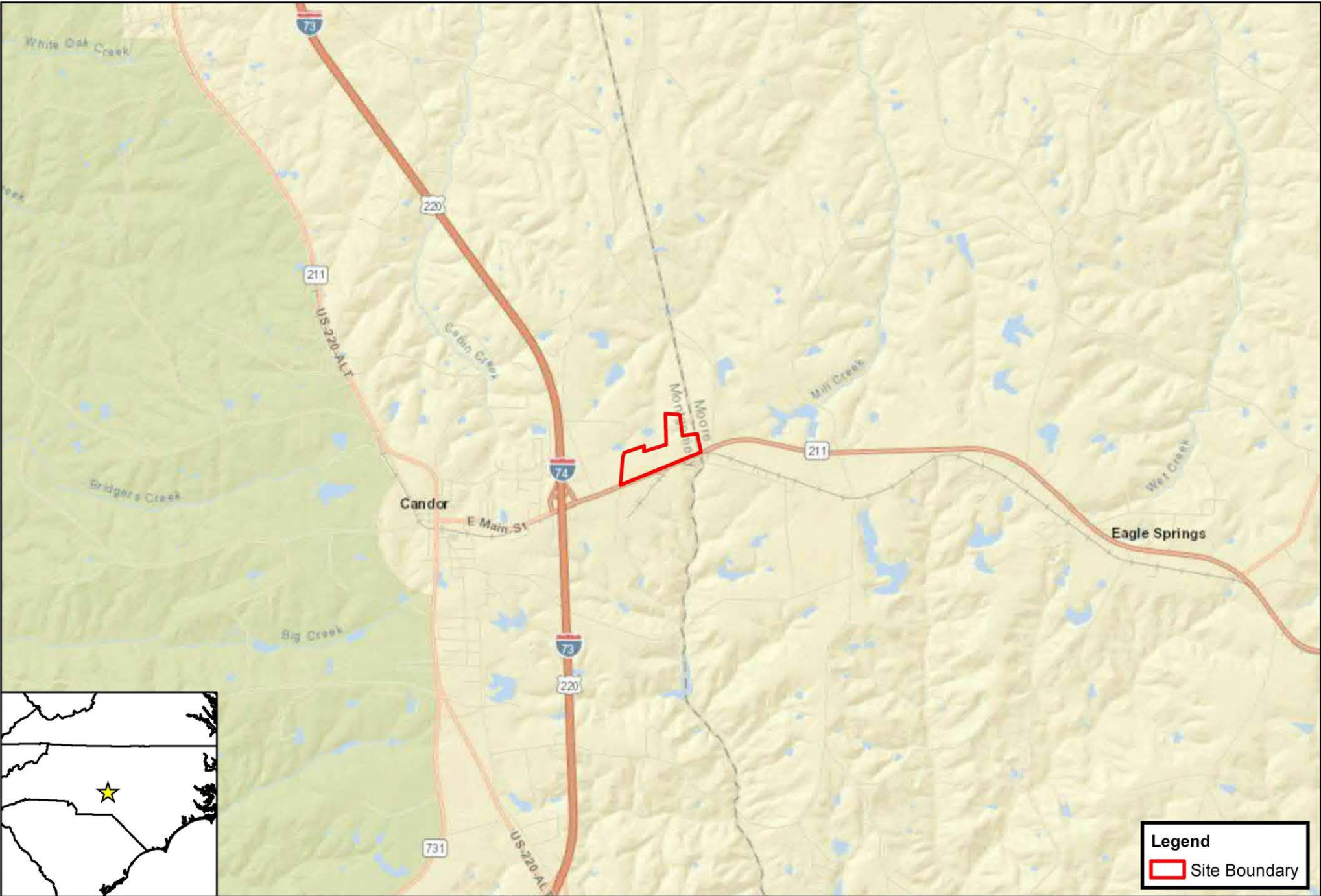
Aberdeen Carolina Western Railroad ■ Candor, North Carolina
July 25, 2019 ■ Terracon Project: 70197432



This report has been prepared in accordance with generally accepted scientific and engineering evaluation practices. This report is for the exclusive use of the client for the project being discussed. No warranties, either expressed or implied, are intended or made.

APPENDIX A

EXHIBITS



Legend
 Site Boundary



Source: ESRI World Street Basemap

Project No.
70197432
 Drawn By:
MRW
 Checked By:
CBD
 Date:
July 2019



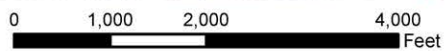
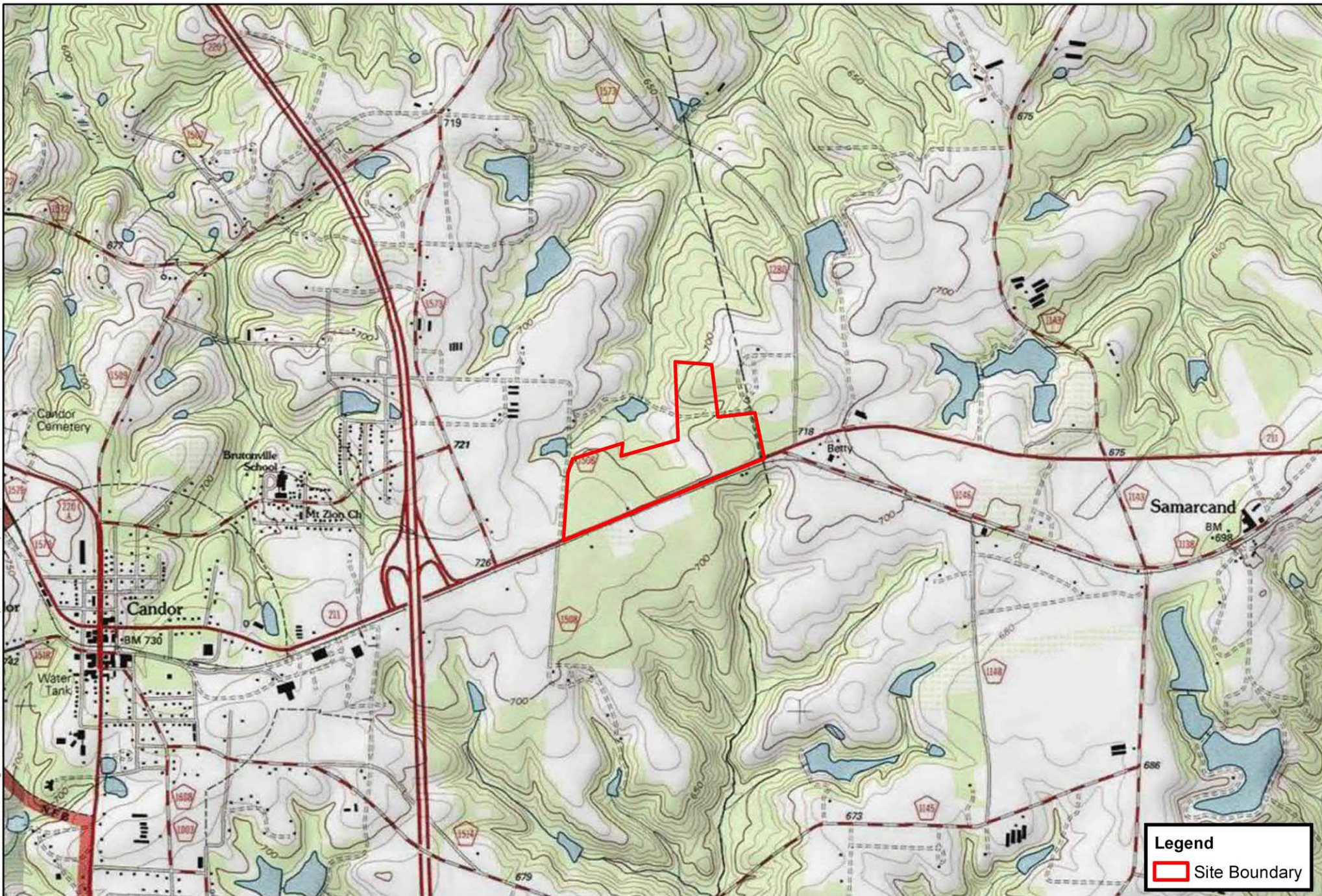
2401 Brentwood Road, Suite 107 Raleigh, NC 27604
 Phone: 919-873-2211 Fax: 919-873-9555

Vicinity Map

ACWR - 80 Acre Site
 NC Highway 211
 Candor, Montgomery County, North Carolina

EXHIBIT NO.
1

Document Path: N:\Projects\2019\70197432\Working Files\Westland Delineation\GIS Maps\Exhibit 2 - Topo Map.mxd



Source: USGS QUADRANGLE - CANDOR, NC (1994)
Contour Interval: 10FT

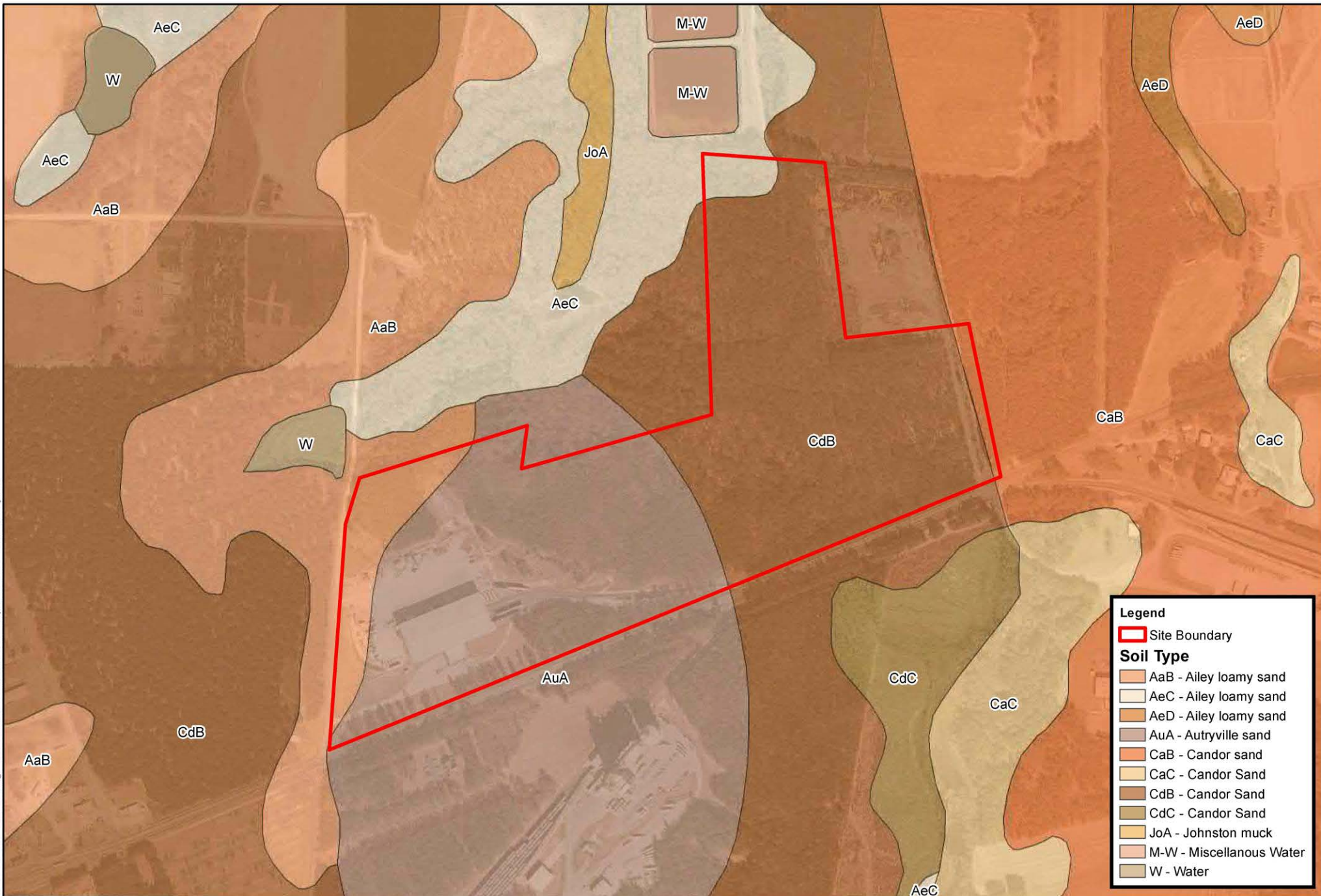
Project No:
70197432
Drawn By:
MRW
Checked By:
CBD
Date:
July 2019



2401 Brentwood Road, Suite 107 Raleigh, NC 27604
Phone: 919-873-2211 Fax: 919-873-9555

Topographic Map		EXHIBIT NO.
ACWR - 80 Acre Site NC Highway 211 Candor, Montgomery County, North Carolina		2

Document Path: N:\Projects\2019\70197432\Working Files\Westland Delineation\GIS Maps\Exhibit 3 - Soil Survey.mxd



Legend

Site Boundary

Soil Type

- AaB - Ailey loamy sand
- AeC - Ailey loamy sand
- AeD - Ailey loamy sand
- AuA - Autryville sand
- CaB - Candor sand
- CaC - Candor Sand
- CdB - Candor Sand
- CdC - Candor Sand
- JoA - Johnston muck
- M-W - Miscellaneous Water
- W - Water



Source: USDA Web Soil Survey Spatial Version
(December 16, 2013)

Project No:
70197432
Drawn By:
MRW
Checked By:
CBD
Date:
July 2019



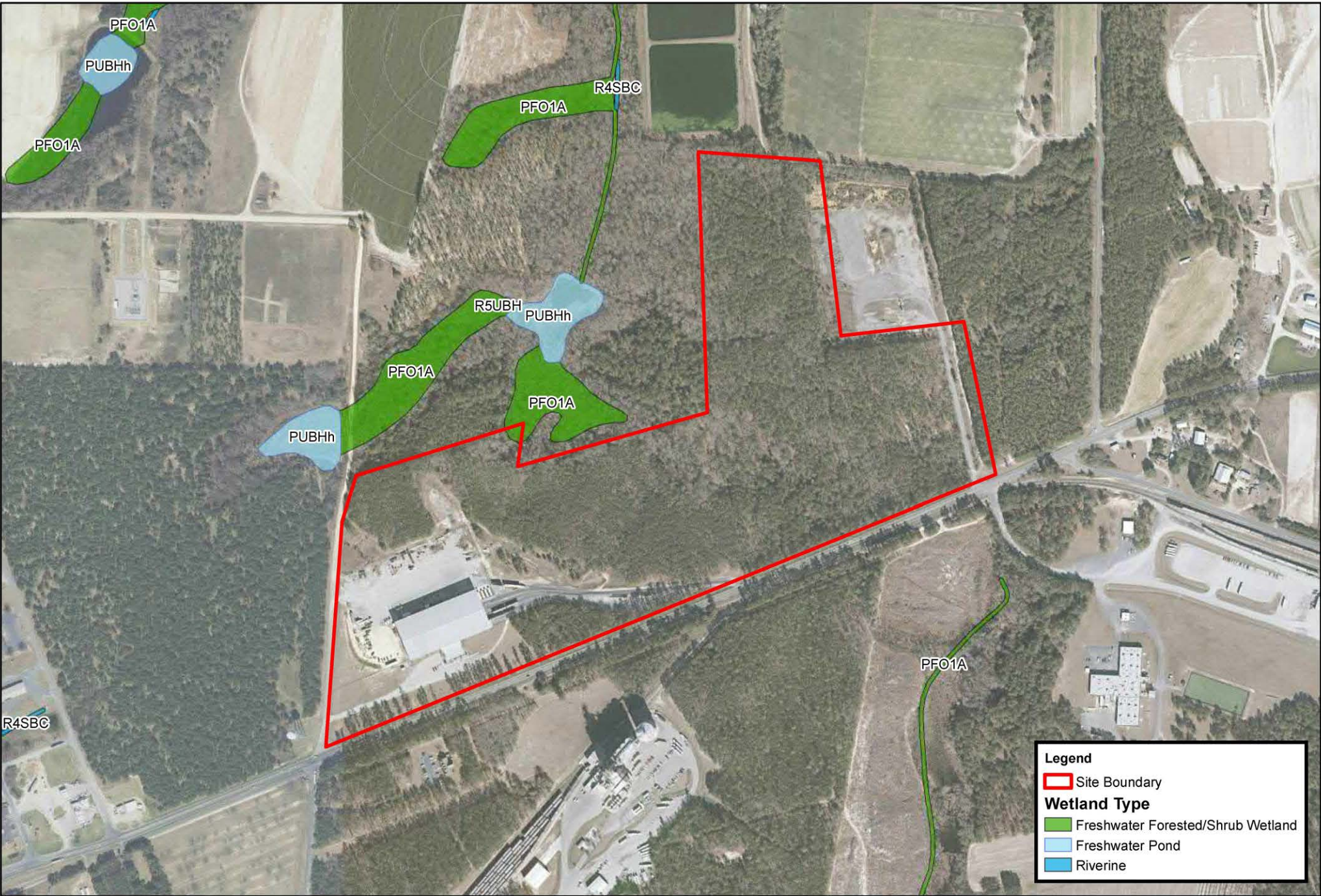
2401 Brentwood Road, Suite 107 Raleigh, NC 27604
Phone: 919-873-2211 Fax: 919-873-9555

USDA NRCS Soil Survey Map

ACWR - 80 Acre Site
NC Highway 211
Candor, Montgomery County, North Carolina

EXHIBIT NO.
3

Document Path: N:\Projects\2019\70197432\Working Files\Wetland Delineation\GIS Maps\Exhibit 4 - NWI Map.mxd



Legend

- Site Boundary
- Wetland Type**
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine



Source: National Wetland Inventory GIS Database

Project No:
70197432
Drawn By:
MRW
Checked By:
CBD
Date:
July 2019



2401 Brentwood Road, Suite 107 Raleigh, NC 27604
Phone: 919-873-2211 Fax: 919-873-9555

National Wetland Inventory Map

ACWR - 80 Acre Site
NC Highway 211
Candor, Montgomery County, North Carolina

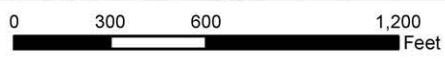
EXHIBIT NO.

4

Document Path: N:\Projects\2019\70197432\Working Files\Westland Delineation\GIS Maps\Exhibit 5 - Floodplain Map.mxd



Legend
 Site Boundary



Source: FEMA FIRM Panel 3710758600K (eff.01/01/2008)

Project No:
70197432
 Drawn By:
MRW
 Checked By:
CBD
 Date:
July 2019



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 Phone: 919-873-2211 Fax: 919-873-9555

FEMA FIRM Floodplain Map

ACWR - 80 Acre Site
 NC Highway 211
 Candor, Montgomery County, North Carolina

EXHIBIT NO.
5

The Waters of the U.S. (WOTUS) were delineated and GPS'd by Terracon wetland professionals on 06/17/19. Terracon's findings and delineation have not been verified by the USACE or NCDWR. This is not a licensed survey. The delineated features were GPS'd using a Trimble Geo 7x unit which has sub-foot accuracy. Prior to development activities, Terracon recommends our findings be verified by the USACE and NCDWR. Terracon also recommends consultation with a civil engineer to determine stormwater setbacks, if required, prior to site development. Local buffers may be applicable.

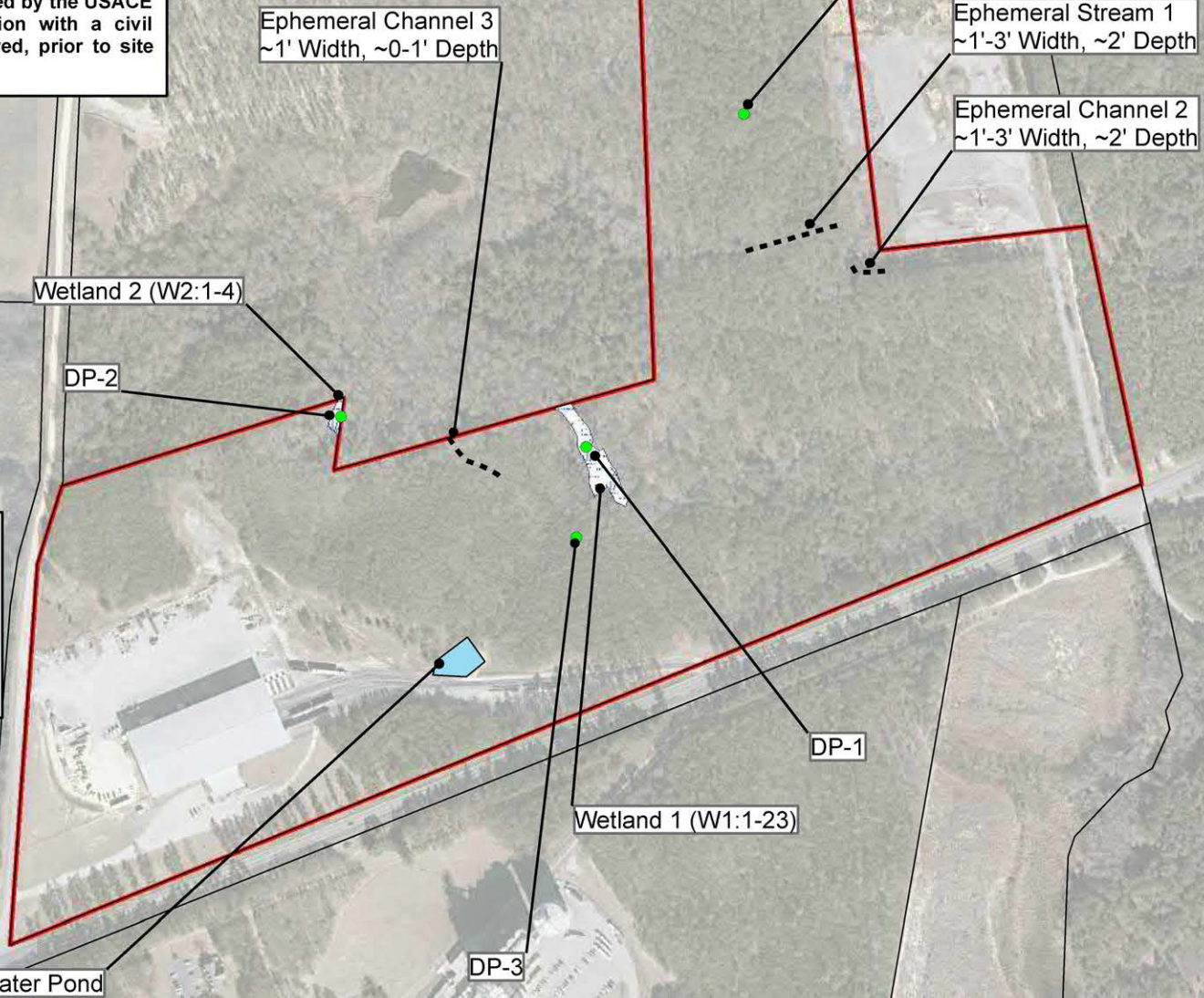
WOTUS Areas:
 JD Wetland 1 - 0.379 acres
 JD Wetland 2 - 0.060 acres
 Non-JD Stormwater Pond - 0.225 acres

WOTUS Lengths:
 Non-JD Ephemeral Channel 1 - 306.5 feet
 Non-JD Ephemeral Channel 2 - 108.2 feet
 Non-JD Ephemeral Channel 3 - 205.2 feet

WOTUS Locations:
 JD Wetland 1 - 35.303072, -79.715301
 JD Wetland 2 - 35.303387, -79.717771
 Non-JD Stormwater Pond - 35.301483, -79.716578
 Non-JD Eph. Channel 1 - 35.304812, -79.713423
 Non-JD Eph. Channel 2 - 35.304549, -79.712698
 Non-JD Eph. Channel 3 - 35.303031, -79.716453

Surface Water Classification:
 Nearest Tributary: Mill Creek
 River Basin: Cape Fear
 Classification: WS-III
 State Buffers: None
 Stormwater Requirements:
 Low Density: ≤24% impervious coverage: 30 foot buffer
 High Density: >24% impervious coverage: 100 foot buffer

- Legend**
- Site Boundary
 - Wetland
 - Stormwater Pond
 - Ephemeral Channel
 - Data Points



Scale: 0 250 500 1,000 Feet

Source: Terracon GPS Data

Project No: 70197432
 Drawn By: MRW
 Checked By: CBD
 Date: July 2019

Terracon

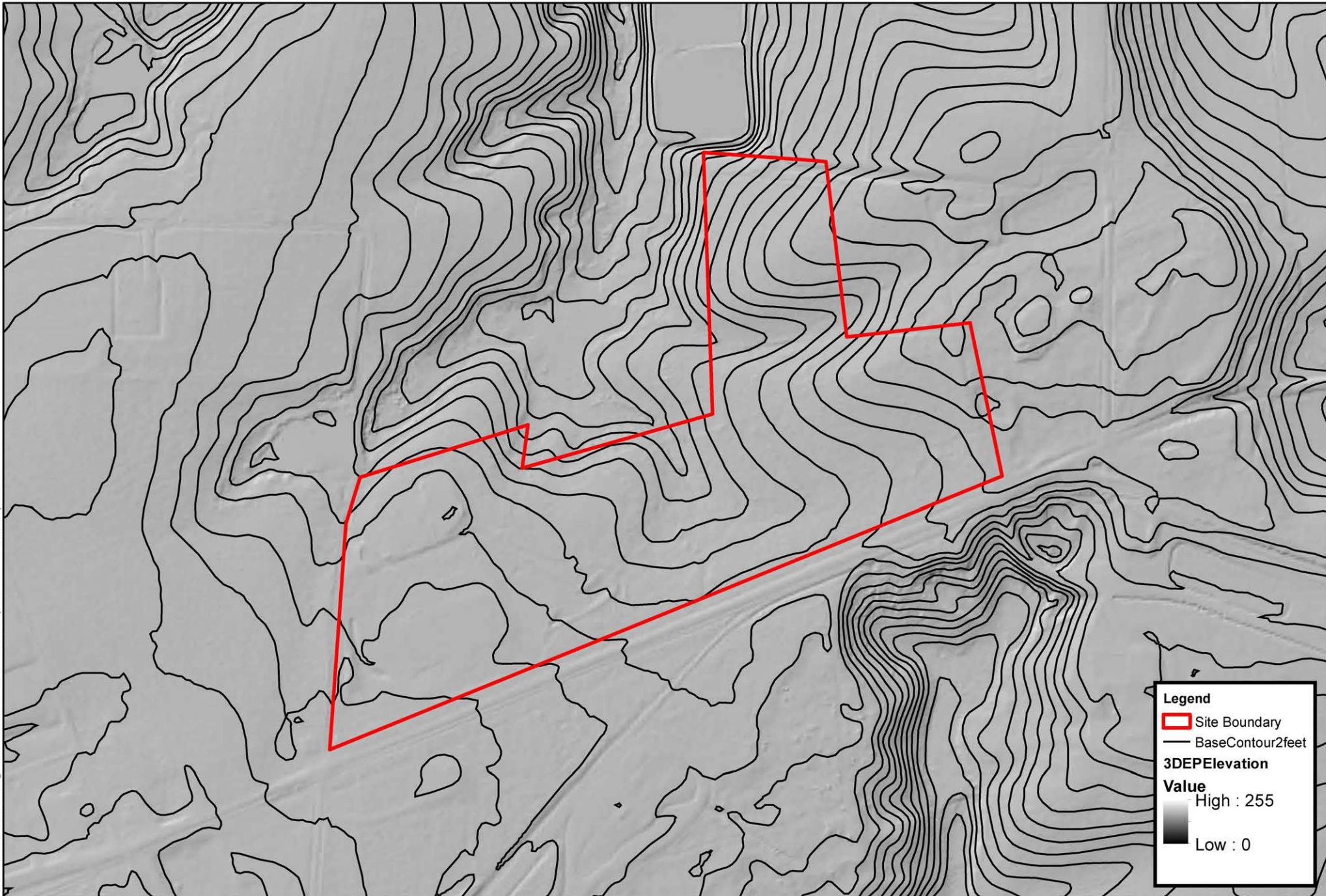
2401 Brentwood Road, Suite 107 Raleigh, NC 27604
 Phone: 919-873-2211 Fax: 919-873-9555

WOTUS Delineation Map

ACWR - 80 Acre Site
 NC Highway 211
 Candor, Montgomery County, North Carolina

Document Path: N:\Projects\2019\70197432\Working Files\Wetland Delineation\GIS Maps\Exhibit 6 - WOTUS Map.mxd

Document Path: N:\Projects\2019\70197432\Working Files\Wetland Delineation\GIS Maps\Exhibit 7 - DEM Map.mxd



Legend

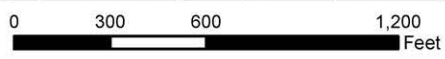
- Site Boundary
- BaseContour2feet

3DEPElevation

Value

High : 255

Low : 0



Source: USGS 3D Elevation Program (3DEP) Map Service

Project No:
P70197403

Drawn By:
MRW

Checked By:
CBD

Date:
July 2019



2401 Brentwood Road, Suite 107 Raleigh, NC 27604

Phone: 919-873-2211 Fax: 919-873-9555

Digital Elevation Model Map

ACWR - 80 Acre Site
NC Highway 211
Candor, Montgomery County, North Carolina

EXHIBIT NO.

7

APPENDIX B

WETLAND DETERMINATION DATA FORMS

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Candor Site City/County: Candor / Montgomery Sampling Date: 3/2/19
 Applicant/Owner: Aberdeen Carolina & Western Railway Company State: NC Sampling Point: DP-1
 Investigator(s): Burnell, Craig Section, Township, Range: Candor
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR or MLRA): P Lat: 36.303166 Long: -79.715381 Datum: NAD83
 Soil Map Unit Name: CdB NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12"</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>16"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>12"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: DP-1

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Liquidambar styraciflua</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
3. <u>Persea borbonia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
4. <u>Pinus taeda</u>	<u>10</u>		<u>FAC</u>
5. _____			
6. _____			
<u>100</u> = Total Cover			
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>			
Sapling Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Liquidambar styraciflua</u>	<u>10</u>		<u>FAC</u>
3. _____			
4. _____			
5. _____			
6. _____			
<u>25</u> = Total Cover			
50% of total cover: <u>13</u> 20% of total cover: <u>5</u>			
Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Ligustrum sinense</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>VPL</u>
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			
<u>30</u> = Total Cover			
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>			
Herb Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Microstegium vimineum</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Boehmeria cylindrica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>
3. <u>Carex grisea</u>	<u>15</u>		<u>OBL</u>
4. <u>Carex comosa</u>	<u>15</u>		<u>OBL</u>
5. <u>Chasmanthium laxum</u>	<u>5</u>		<u>FAC</u>
6. <u>Vitis rotundifolia</u>	<u>5</u>		<u>FAC</u>
7. <u>Smitax rotundifolia</u>	<u>5</u>		<u>FAC</u>
8. <u>Toxicodendron radicans</u>	<u>5</u>		<u>FAC</u>
9. <u>Woodwardia areolata</u>	<u>5</u>		<u>FACW</u>
10. <u>Asplenium platyneuron</u>	<u>5</u>		<u>FACU</u>
11. _____			
<u>125</u> = Total Cover			
50% of total cover: <u>63</u> 20% of total cover: <u>25</u>			
Woody Vine Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Vitis rotundifolia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Toxicodendron radicans</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
3. <u>Parthenocissus quinquefolia</u>	<u>5</u>		<u>FACU</u>
4. _____			
5. _____			
<u>35</u> = Total Cover			
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>			

Dominance Test worksheet:

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

Total Number of Dominant Species Across All Strata: 9 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 88.9% (A/B)

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

Hydrophytic Vegetation Present? Yes No

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP-1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10yr 2/1	100					clay loam	
3-12	10yr 4/1	90	10yr 6/6	10	C	M	clay loam	
12-24	10yr 4/2	90	10yr 5/6	10	C	M	clay loam	

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	

³Indicators 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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Candor Site City/County: Candor/Montgomery Sampling Date: 3/17/19
 Applicant/Owner: Aberdeen Carolina & Western Railway Company State: NC Sampling Point: DP-2
 Investigator(s): Darnell, Craig Section, Township, Range: Candor
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR or MLRA): P Lat: 35.303389 Long: -79.717727 Datum: NAD83
 Soil Map Unit Name: AuA NWI classification: PFO1A

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Remarks:	

HYDROLOGY

<p>Wetland Hydrology Indicators:</p> <p><u>Primary Indicators (minimum of one is required; check all that apply)</u></p> <input checked="" type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<p><u>Secondary Indicators (minimum of two required)</u></p> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
<p>Field Observations:</p> Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>0</u> Water Table Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>+6"</u> Saturation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Depth (inches): <u>+2"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: DP-2

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. <u>Acer rubrum</u>	<u>40</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Number of Dominant Species That Are OBL, FACW, or FAC: <u>8</u> (A)
2. <u>Liquidambar styraciflua</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Total Number of Dominant Species Across All Strata: <u>9</u> (B)
3. <u>Persea borbonia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>88.9%</u> (A/B)
4. <u>Pinus taeda</u>	<u>10</u>		<u>FAC</u>	
5. _____				
6. _____				
<u>100</u> = Total Cover				Prevalence Index worksheet:
50% of total cover: <u>50</u> 20% of total cover: <u>20</u>				Total % Cover of: _____ Multiply by:
Sapling Stratum (Plot size: _____)				OBL species _____ x 1 = _____
1. <u>Acer rubrum</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	FACW species _____ x 2 = _____
2. <u>Liquidambar styraciflua</u>	<u>10</u>		<u>FAC</u>	FAC species _____ x 3 = _____
3. _____				FACU species _____ x 4 = _____
4. _____				UPL species _____ x 5 = _____
5. _____				Column Totals: _____ (A) _____ (B)
6. _____				Prevalence Index = B/A = _____
<u>25</u> = Total Cover				Hydrophytic Vegetation Indicators:
50% of total cover: <u>13</u> 20% of total cover: <u>5</u>				<input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation
Shrub Stratum (Plot size: _____)				<input checked="" type="checkbox"/> 2 - Dominance Test is >50%
1. <u>Lingustrum sinense</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>UPL</u>	<input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹
2. _____				<input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet)
3. _____				<input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
4. _____				¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
5. _____				Definitions of Five Vegetation Strata:
6. _____				Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).
<u>30</u> = Total Cover				Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.
50% of total cover: <u>15</u> 20% of total cover: <u>6</u>				Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.
Herb Stratum (Plot size: _____)				Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.
1. <u>Microstegium vimineum</u>	<u>45</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	Woody vine – All woody vines, regardless of height.
2. <u>Boehmeria cylindrica</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FACW</u>	
3. <u>Carex glauca</u>	<u>15</u>		<u>OBL</u>	
4. <u>Carex comosa</u>	<u>15</u>		<u>OBL</u>	
5. <u>Chasmanthium laxum</u>	<u>5</u>		<u>FAC</u>	
6. <u>Vitex rotundifolia</u>	<u>5</u>		<u>FAC</u>	
7. <u>Smilax rotundifolia</u>	<u>5</u>		<u>FAC</u>	
8. <u>Toxicodendron radicans</u>	<u>5</u>		<u>FAC</u>	
9. <u>Woodwardia areolata</u>	<u>5</u>		<u>FACW</u>	
10. <u>Asplenium platyneuron</u>	<u>5</u>		<u>FACU</u>	
11. _____				
<u>125</u> = Total Cover				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
50% of total cover: <u>63</u> 20% of total cover: <u>25</u>				
Woody Vine Stratum (Plot size: _____)				
1. <u>Vitis rotundifolia</u>	<u>20</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Toxicodendron radicans</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
3. <u>Parthenocissus quinquefolia</u>	<u>5</u>		<u>FACU</u>	
4. _____				
5. _____				
<u>35</u> = Total Cover				
50% of total cover: <u>18</u> 20% of total cover: <u>7</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: DP-2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10yr 2/1	100					clay loam	
3-12	10yr 4/1	90	10yr 6/6	10	C	M	clay loam	
12-24	10yr 4/2	90	10yr 5/6	10	C	M	clay loam	

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

Hydric Soil Indicators:		Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> Dark Surface (S7)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Loamy Gleyed Matrix (F2)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input checked="" type="checkbox"/> Depleted Matrix (F3)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Thick Dark Surface (A12)	<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Sandy Redox (S5)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Stripped Matrix (S6)	<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	

³Indicators 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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Candor Site City/County: Candor/Montgomery Sampling Date: 9/17/19
 Applicant/Owner: Aberdeen Carolina of Western Railway Company State: NC Sampling Point: DP-3
 Investigator(s): Darnell, Craig Section, Township, Range: Candor
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): None Slope (%): 0
 Subregion (LRR or MLRA): P Lat: 35.302454 Long: -79.715491 Datum: NAD83
 Soil Map Unit Name: AUA NWI classification: None

Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks: <u>Rainfall documented within 24 hours of site visit.</u>	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>0</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>+24"</u> Saturation Present? (includes capillary fringe) Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>+24"</u>	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: Remarks: <u>Rainfall documented within 24 hrs of site visit.</u>	

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

Sampling Point: DP-3

Tree Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>30</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Liquidambar styraciflua</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
3. <u>Pinus taeda</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
4. _____			
5. _____			
6. _____			

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 9 (A)

Total Number of Dominant Species Across All Strata: 10 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 90% (A/B)

50% of total cover: 25 20% of total cover: 10

50 = Total Cover

Sapling Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Acer rubrum</u>	<u>10</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Liquidambar styraciflua</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
3. _____			
4. _____			
5. _____			
6. _____			

Prevalence Index worksheet:

Total % Cover of: _____ Multiply by:

OBL species _____ x 1 = _____

FACW species _____ x 2 = _____

FAC species _____ x 3 = _____

FACU species _____ x 4 = _____

UPL species _____ x 5 = _____

Column Totals: _____ (A) _____ (B)

Prevalence Index = B/A = _____

50% of total cover: 8 20% of total cover: 3

15 = Total Cover

Shrub Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Lingustrum sinense</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>UPL</u>
2. _____			
3. _____			
4. _____			
5. _____			
6. _____			

Hydrophytic Vegetation Indicators:

1 - Rapid Test for Hydrophytic Vegetation

2 - Dominance Test is >50%

3 - Prevalence Index is ≤3.0¹

4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

Problematic Hydrophytic Vegetation¹ (Explain)

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

50% of total cover: 8 20% of total cover: 3

15 = Total Cover

Herb Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Toxicodendron radicans</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Smilax rotundifolia</u>	<u>15</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
3. <u>Eupatorium capillifolium</u>	<u>5</u>		<u>FACU</u>
4. <u>Erechtites hieracifolius</u>	<u>5</u>		<u>FACU</u>
5. <u>Carex comosa</u>	<u>5</u>		<u>OBL</u>
6. <u>Carex glauca</u>	<u>5</u>		<u>OBL</u>
7. <u>Chasmanthium laxum</u>	<u>5</u>		<u>FAC</u>
8. <u>Boehmeria cylindrica</u>	<u>5</u>		<u>FACW</u>
9. _____			
10. _____			
11. _____			

Definitions of Five Vegetation Strata:

Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH).

Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH.

Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height.

Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height.

Woody vine – All woody vines, regardless of height.

50% of total cover: 30 20% of total cover: 12

60 = Total Cover

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Toxicodendron radicans</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
2. <u>Vitis rotundifolia</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>
3. _____			
4. _____			
5. _____			

50% of total cover: 5 20% of total cover: 2

10 = Total Cover

Hydrophytic Vegetation Present? Yes No _____

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: DP-3

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-4"	10yr 3/2	100					Clay loam	
4-24"	10yr 5/2	100					clay loam	

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

Hydric Soil Indicators:	Indicators for Problematic Hydric Soils ³ :
<input type="checkbox"/> Histosol (A1)	<input type="checkbox"/> 2 cm Muck (A10) (MLRA 147)
<input type="checkbox"/> Histic Epipedon (A2)	<input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148)
<input type="checkbox"/> Black Histic (A3)	<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147)
<input type="checkbox"/> Hydrogen Sulfide (A4)	<input type="checkbox"/> Very Shallow Dark Surface (TF12)
<input type="checkbox"/> Stratified Layers (A5)	<input type="checkbox"/> Other (Explain in Remarks)
<input type="checkbox"/> 2 cm Muck (A10) (LRR N)	
<input type="checkbox"/> Depleted Below Dark Surface (A11)	
<input type="checkbox"/> Thick Dark Surface (A12)	
<input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148)	
<input type="checkbox"/> Sandy Gleyed Matrix (S4)	
<input type="checkbox"/> Sandy Redox (S5)	
<input type="checkbox"/> Stripped Matrix (S6)	
<input type="checkbox"/> Dark Surface (S7)	
<input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148)	
<input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148)	
<input type="checkbox"/> Loamy Gleyed Matrix (F2)	
<input checked="" type="checkbox"/> Depleted Matrix (F3)	
<input type="checkbox"/> Redox Dark Surface (F6)	
<input type="checkbox"/> Depleted Dark Surface (F7)	
<input type="checkbox"/> Redox Depressions (F8)	
<input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136)	
<input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122)	
<input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148)	
<input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147)	

³Indicators 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

Remarks:

WETLAND DETERMINATION DATA FORM – Eastern Mountains and Piedmont Region

Project/Site: Candor site City/County: Candor/Montgomery Sampling Date: 7/17/19
 Applicant/Owner: Aberdeen Carolina w/ Western Railway Company State: J Sampling Point: DP-4
 Investigator(s): Darnell, Craig Section, Township, Range: Candor
 Landform (hillslope, terrace, etc.): Flat Local relief (concave, convex, none): NONE Slope (%): 0
 Subregion (LRR or MLRA): P Lat: 35.305981 Long: -79.713894 Datum: NAD83
 Soil Map Unit Name: CdB NWI classification: None
 Are climatic / hydrologic conditions on the site typical for this time of year? Yes No (If no, explain in Remarks.)
 Are Vegetation , Soil , or Hydrology significantly disturbed? Are "Normal Circumstances" present? Yes 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 <input checked="" type="checkbox"/> No <input type="checkbox"/> Hydric Soil Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>	Is the Sampled Area within a Wetland? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>0</u> Water Table Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>+24"</u> Saturation Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/> Depth (inches): <u>+24"</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <input type="checkbox"/> No <input checked="" type="checkbox"/>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: DP-4

Tree Stratum (Plot size: <u>30'</u>)	Absolute % Cover	Dominant Species?	Indicator Status	Dominance Test worksheet:
1. _____	_____	_____	_____	Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A)
2. <u>None observed</u>	_____	_____	_____	Total Number of Dominant Species Across All Strata: <u>4</u> (B)
3. _____	_____	_____	_____	Percent of Dominant Species That Are OBL, FACW, or FAC: <u>75%</u> (A/B)
4. _____	_____	_____	_____	Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	OBL species _____ x 1 = _____
_____ = Total Cover				FACW species _____ x 2 = _____
50% of total cover: <u>-</u> 20% of total cover: <u>-</u>				FAC species _____ x 3 = _____
Sapling Stratum (Plot size: <u>30'</u>)				FACU species _____ x 4 = _____
1. _____	_____	_____	_____	UPL species _____ x 5 = _____
2. <u>None observed</u>	_____	_____	_____	Column Totals: _____ (A) _____ (B)
3. _____	_____	_____	_____	Prevalence Index = B/A = _____
4. _____	_____	_____	_____	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain)
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
_____ = Total Cover				Definitions of Five Vegetation Strata: Tree – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and 3 in. (7.6 cm) or larger in diameter at breast height (DBH). Sapling – Woody plants, excluding woody vines, approximately 20 ft (6 m) or more in height and less than 3 in. (7.6 cm) DBH. Shrub – Woody plants, excluding woody vines, approximately 3 to 20 ft (1 to 6 m) in height. Herb – All herbaceous (non-woody) plants, including herbaceous vines, regardless of size, and woody plants, except woody vines, less than approximately 3 ft (1 m) in height. Woody vine – All woody vines, regardless of height.
50% of total cover: <u>-</u> 20% of total cover: <u>-</u>				
Shrub Stratum (Plot size: <u>30'</u>)				Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>
1. _____	_____	_____	_____	
2. <u>None observed</u>	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>-</u> 20% of total cover: <u>-</u>				
Herb Stratum (Plot size: <u>30'</u>)				
1. <u>Vituc rotundifolia</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
2. <u>Quercus cerris</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FACU</u>	
3. <u>Acer rubrum</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
4. <u>Liquidambar styraciflua</u>	<u>5</u>	<input checked="" type="checkbox"/>	<u>FAC</u>	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>10</u> 20% of total cover: <u>4</u>				
Woody Vine Stratum (Plot size: <u>30'</u>)				
1. _____	_____	_____	_____	
2. <u>None observed</u>	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
_____ = Total Cover				
50% of total cover: <u>-</u> 20% of total cover: <u>-</u>				
Remarks: (Include photo numbers here or on a separate sheet.)				

SOIL

Sampling Point: DP-4

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10yr 4/3	100					Sandy	
3-24	10yr 5/6	100					Sandy	

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

- | | | |
|--|--|--|
| Hydric Soil Indicators: | | Indicators for Problematic Hydric Soils³: |
| <input type="checkbox"/> Histosol (A1) | <input type="checkbox"/> Dark Surface (S7) | <input type="checkbox"/> 2 cm Muck (A10) (MLRA 147) |
| <input type="checkbox"/> Histic Epipedon (A2) | <input type="checkbox"/> Polyvalue Below Surface (S8) (MLRA 147, 148) | <input type="checkbox"/> Coast Prairie Redox (A16) (MLRA 147, 148) |
| <input type="checkbox"/> Black Histic (A3) | <input type="checkbox"/> Thin Dark Surface (S9) (MLRA 147, 148) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 136, 147) |
| <input type="checkbox"/> Hydrogen Sulfide (A4) | <input type="checkbox"/> Loamy Gleyed Matrix (F2) | <input type="checkbox"/> Very Shallow Dark Surface (TF12) |
| <input type="checkbox"/> Stratified Layers (A5) | <input type="checkbox"/> Depleted Matrix (F3) | <input type="checkbox"/> Other (Explain in Remarks) |
| <input type="checkbox"/> 2 cm Muck (A10) (LRR N) | <input type="checkbox"/> Redox Dark Surface (F6) | |
| <input type="checkbox"/> Depleted Below Dark Surface (A11) | <input type="checkbox"/> Depleted Dark Surface (F7) | |
| <input type="checkbox"/> Thick Dark Surface (A12) | <input type="checkbox"/> Redox Depressions (F8) | |
| <input type="checkbox"/> Sandy Mucky Mineral (S1) (LRR N, MLRA 147, 148) | <input type="checkbox"/> Iron-Manganese Masses (F12) (LRR N, MLRA 136) | |
| <input type="checkbox"/> Sandy Gleyed Matrix (S4) | <input type="checkbox"/> Umbric Surface (F13) (MLRA 136, 122) | |
| <input type="checkbox"/> Sandy Redox (S5) | <input type="checkbox"/> Piedmont Floodplain Soils (F19) (MLRA 148) | |
| <input type="checkbox"/> Stripped Matrix (S6) | <input type="checkbox"/> Red Parent Material (F21) (MLRA 127, 147) | |

³Indicators 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

Remarks:

APPENDIX C

PHOTOGRAPHS

Wetland Delineation Report

Candor Site ■ Candor, NC

Photos Taken: 7/17/19 ■ Terracon Project No. 70197432



Photo #1: Typical site conditions in central portion of the site, facing west.



Photo #2: View of Ephemeral Channel 1 & 2 located along the eastern portion of the site, facing east.

Wetland Delineation Report

Candor Site ■ Candor, NC

Photos Taken: 7/17/19 ■ Terracon Project No. 70197432



Photo #3: View of Ephemeral Channel 3 located in northern portion of the site.

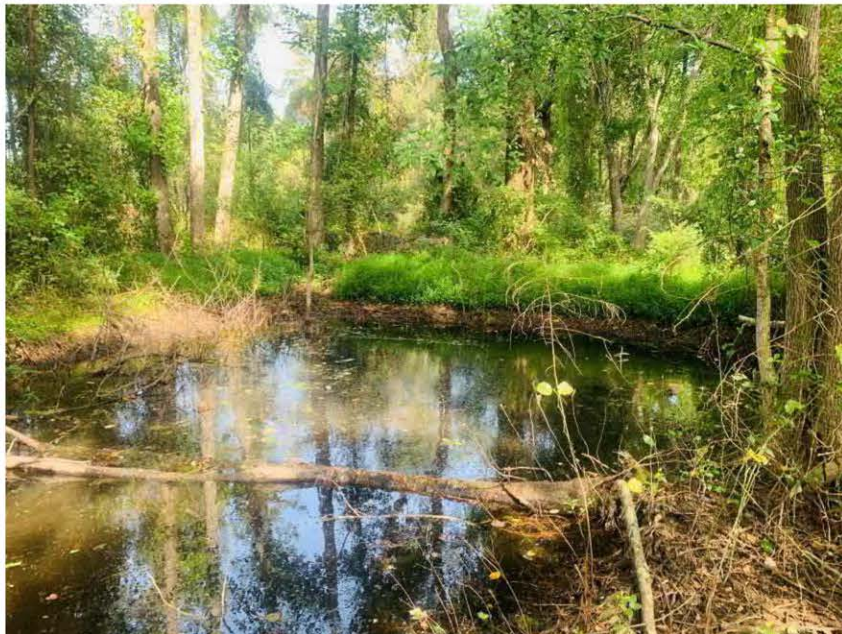


Photo #4: View of Wetland 1 located in central portion of the site.

Wetland Delineation Report



Candor Site ■ Candor, NC

Photos Taken: 7/17/19 ■ Terracon Project No. 70197432



Photo #5: View of Wetland 2 located in the northwestern portion of the site.



Photo #6: View of stormwater pond located in the southwestern portion of the site.

Wetland Delineation Report

Candor Site ■ Candor, NC

Photos Taken: 7/17/19 ■ Terracon Project No. 70197432



Photo #7: View of typical hydric soils encountered at the site.



Photo #8: View of typical upland soils encountered at the site.

Wetland Delineation Report
Mint Hill Industrial Site
11730 Allen Station Drive
Mint Hill, Mecklenburg County, North Carolina

November 22, 2019
Terracon Project No. 71197757



Prepared for:
Aberdeen Carolina and Western Railway
Candor, North Carolina

Prepared by:
Terracon Consultants, Inc.
Charlotte, North Carolina

terracon.com

Terracon

Environmental



Facilities



Geotechnical



Materials

November 22, 2019

Aberdeen Carolina and Western Railway
976 NC Highway 211 E
Candor, North Carolina 27229

Attn: Mr. Paul Hoben
P: (910) 974-4219
E: phoben@acwr.com

Re: Wetland Delineation Report
Mint Hill Industrial Site
Mint Hill, Mecklenburg County, North Carolina
Terracon Project No. 71197757

Dear Mr. Hoben,

Terracon is pleased to submit the wetland delineation report for the above referenced site. Based on the results of the assessment, Terracon observed wetlands, potentially jurisdictional non-wetland waters, and non-jurisdictional non-wetlands waters on the project site.

A copy of this report and a Preliminary Jurisdictional Determination Package will be submitted, pending your approval, to the USACE by Terracon Consultants, Inc. The USACE can be reached at the following address:

David Shaeffer
US Army Corps of Engineers
151 Patton Avenue, Room 208
Asheville, North Carolina 28801-5006
General Number: (828) 271-7980

Terracon appreciates the opportunity to have worked for you on this project. If you have any questions regarding the content of this report, please contact me at (704) 509-1777 or via email at jc.weaver@terracon.com

Sincerely,
Terracon Consultants, Inc.

JC Weaver
Project Scientist

Patrick R. Korn, PWS
NCR Group Manager

 For
Andy Ruocco, PWS
Environmental Department Manager

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APPENDIX A – EXHIBITS

- Exhibit 1 – Depiction of Aquatic Resources
- Exhibit 2 – USGS Topographic Map
- Exhibit 3 – 1998 Infrared Aerial Imagery
- Exhibit 4 – USFWS NWI Map
- Exhibit 5 – NRCS Web Soil Survey with Hydric Ratings

APPENDIX B – GROUND PHOTOGRAPHS

APPENDIX C – DATA SHEETS & PROPERTY DATA

Wetland Delineation Report

Mint Hill Industrial Site ■ Mint Hill, Mecklenburg County, North Carolina
November 22, 2019 ■ Terracon Project: 71197757



1.0 INTRODUCTION

Terracon Consultants, Inc. (Terracon) was retained by Aberdeen Carolina and Western Railway to perform a wetland delineation to determine if wetlands or other waters under the jurisdiction of the United States Army Corps of Engineers (USACE) are present at the approximately 65.7-acre project site. The project site is located at 11730 Allen Station Drive in Mint Hill, North Carolina. The parcel number associated with this site is 13715210.

The purpose of performing this wetland delineation of the project site was to characterize the existing site conditions, observe the project site for suspect waterbodies and wetlands and provide a recommendation regarding whether suspect waterbodies would be considered jurisdictional by the USACE. Delineated waterbodies and wetlands are depicted on Exhibit 1 in Appendix A.

It is important to note that the findings presented in this report represent Terracon's professional opinion, based upon field observations made during the site visit and our experience with current regulatory guidance under the Clean Water Act. In order to verify the delineation boundaries and jurisdictional classifications presented in this report, the USACE must review this report and make a jurisdictional determination.

2.0 SCOPE OF SERVICES

Terracon performed the following scope of work:

- Reviewed United States Geologic Survey (USGS) topographical maps, National Wetlands Inventory (NWI) maps, United States Department of Agriculture (USDA) National Resource Conservation Service (NRCS) Soil Survey Geographic Database (SSURGO) soil maps and surveys, and aerial photographs to assist with identifying suspect jurisdictional waterbodies and wetland areas at the project site;
- Mobilized to the project site to conduct the preliminary site visit;
- Delineated the wetlands, streams, and tributary using colored flagging;
- Prepared a map showing approximate locations of suspect waterbodies or wetland areas observed during the site visit;
- Completed a wetland delineation report that included site characterization information, a discussion of applicable data, and recommendations for the project site; and
- Completed a Preliminary Jurisdictional Determination report to be submitted to the USACE.

3.0 PRELIMINARY DATA GATHERING AND ANALYSIS

Prior to performing the delineation, several maps and aerial photograph resources were reviewed to assist with identifying potential wetland areas at the project site. Each source of data is described in detail below.

3.1 Topographic Map

The USGS Topographic Map of the project site was accessed through the USGS Web Map Service and reviewed to identify drainages or potential wetlands within the project site. The USGS map depicts the project site as ranging from approximately 710 to 780 feet in elevation. The topographic map shows a ridge in the central portion of the site and decreasing in elevation to the west and east. One unnamed intermittent stream feature is depicted on the western portion of the site, originating in the north of the project area and flowing south and eventually off site. A pond is depicted in the northwestern portion of the site and intersecting the unnamed intermittent stream. The USGS Topographic Map can be seen as Exhibit 2 in Appendix A.

3.2 Infrared Aerial Photographs

Infrared aerial imagery from 2016 was reviewed to determine land use and evaluate vegetative cover. The aerial photograph shows the majority of the project site to be wooded. A non-vegetated strip, indicating a roadway, is depicted in the south central to the northeastern portion of the site. A non-vegetated patch is visible in the northwestern and eastern portions of the site indicating cleared vegetation. A stormwater retention basin is visible in the central eastern portion of the site. North of the project area and railroad tracks, a pond is visible at the start of RPW-1. The infrared aerial photograph has been included as Exhibit 3 in Appendix A.

3.3 National Wetlands Inventory Map

The NWI Map of the project site was reviewed to identify potential wetland areas. The map for the project site was published by the U.S. Department of the Interior's Fish and Wildlife Service (USFWS) and depicts probable wetland areas based on stereoscopic analysis of high-altitude aerial photographs and analysis of infrared bands from remotely-sensed imagery. The NWI map depicts a PUBHh (palustrine unconsolidated bottom permanently flooded diked/impounded) wetland, a R5UBH (riverine unknown perennial unconsolidated bottom) stream, and a R4SBC (riverine intermittent streambed seasonally flooded) stream. The NWI map for the project site can be seen as Exhibit 4 in Appendix A.

3.4 Soil Survey

Data from the soil survey of Mecklenburg County, North Carolina was reviewed to identify soil types, including hydric soils. Data for the soil survey was compiled by the USDA NRCS in 1982. Hydric soils information was gathered from the 'National Hydric Soils List' (USDA Natural

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Resource Conservation Service¹). A soil survey and hydric soils map is included as Exhibit 5 in Appendix A.

The following soil types were identified within the project site on the soil survey map:

- Cecil (CeB2): This soil type is found in hillslopes and ridge areas with slopes between 2-8%, it has a sandy clay loam texture, and is a well-drained soil. Its parent material consists of saprolite derived from granite and gneiss and/or schist. CeB2 has a hydric rating of 0%;
- Cecil (CeD2): This soil type is found in hillslopes and ridge areas with slopes between 8-15%, it has a sandy clay loam texture, and is a well-drained soil. Its parent material consists of saprolite derived from granite and gneiss and/or schist. CeD2 has a hydric rating of 0%;
- Enon (EnB): This soil type is found on interfluvial and summits with slopes between 2-8%, it has a sandy loam texture, and is well drained. Its parent material consists of saprolite derived from diorite and/or gabbro and/or diabase and/or gneiss EnB has a hydric rating of 0%;
- Enon (EnD): This soil type is found on interfluvial and summits with slopes between 8-15%, it has a sandy loam texture, and is well drained. Its parent material consists of saprolite derived from diorite and/or gabbro and/or diabase and/or gneiss EnD has a hydric rating of 0%;
- Helena (HeB): This soil type is found in summits and ridges with a slope between 2-8%, it has a sandy loam texture, and is a moderately well drained soil. Its parent material consists of saprolite derived from granite and gneiss and/or schist. HeB has a hydric rating of 1%; and
- Wilkes (WkD): This soil type is found in hillslopes and ridge areas with slopes between 8-15%, it has a loamy fine sand texture, and is a well-drained soil. Its parent material consists residuum weathered from diorite and/or gabbro and/or diabase and/or gneiss. WkD has a hydric rating of 0%.

4.0 FIELD TECHNIQUES

Terracon scientists conducted a reconnaissance of the project site on November 11, 14, and 15 to characterize the existing site conditions and observe for the presence of wetlands and potential jurisdictional waters. Characteristics of jurisdictional waters and wetland areas were assessed utilizing the criteria detailed in sections 4.1 and 4.2 of this report. The evaluation methods generally followed the routine on-site determination method referenced in the 1987 USACE Manual and The Eastern Mountains and Piedmont Regional Supplement.

4.1 Wetland Observations

Wetlands have three essential characteristics: hydrophytic (wetland) vegetation, hydric soils, and wetland hydrology. Based on NWI data, aerial imagery and topographical data, on-site areas were investigated for potential wetland properties. Additional areas were investigated, based on observations made during the site reconnaissance. Data regarding the three essential

¹ <https://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/use/hydric/>

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characteristics was gathered within observed suspect wetland areas to further delineate boundaries.

4.1.1 Plant Community Assessment

Suspect areas were visually observed to determine the species, when possible, and absolute percentage of ground cover for four stratum of plant community types. The four stratum, trees, shrubs/saplings, herbs, and vines were all observed within a thirty-foot radius of the observation location.

For each species of vegetation observed, their wetland indicator status was evaluated. Indicator status was determined using the NRCS Plants Database. Indicator categories for vegetation are presented below:

- Obligate Wetland (OBL) - occur almost always (estimated probability greater than 99%) under natural conditions in wetlands;
- Facultative Wetland (FACW) - usually occur in wetlands (estimated probability 67% - 99%) but occasionally found in non-wetlands;
- Facultative (FAC) - equally likely to occur in wetlands or non-wetlands (estimated probability 34% - 66%);
- Facultative Upland (FACU) - usually occur in non-wetlands (estimated probability 67% - 99%) but occasionally found in wetlands; and
- Obligate Upland (UPL) – rarely occur in wetlands but occur almost always (estimated probability greater than 99%) under natural conditions in non-wetlands.

The percent cover of each stratum was determined, and dominance was evaluated. Dominant species were the most abundant species that accounted for more than 20 percent of the absolute percent coverage of the stratum. The number of dominant species with an indicator status of OBL, FACW, and/or FAC was compared to the total number of dominant species across all strata. Typically, when more than 50 percent of the dominant species had an indicator status of OBL, FACW, and/or FAC, hydrophytic vegetation was present.

If the percentage of dominant species with an indicator status of OBL, FACW, and/or FAC was less than 50 percent, prevalence index and morphological adaptations were evaluated to confirm if hydrophytic vegetation was present or absent.

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4.2 Hydric Soils Assessment

After Terracon evaluated wetland vegetation, subsurface soil samples were collected using a soil probe or similar method. The samples were collected to a depth of approximately 20 inches below ground surface and were visually compared to Munsell Soil Color Charts (Munsell, 2009), which aided in the evaluation of hydric soil characteristics. The soil samples were further examined for hydric soil indicators including, but not limited to muck, thick dark surface, depleted matrix, sandy gleyed matrix, umbric surface, loamy gleyed matrix, redox dark surface, and/or Piedmont floodplain soils. If these or other hydric soil indicators were observed in the subsurface soil sample, the observation location was considered to have hydric soil.

4.3 Wetland Hydrology Assessment

Visual indicators of wetland hydrology were evaluated. Examples of primary wetland hydrology indicators include, but are not limited to, surface water, high water table, soil saturation, water marks, sediment deposits, drift deposits, iron deposits, inundation visible on aerial imagery, sparsely vegetated concave surface, and water-stained leaves. If at least one primary or two secondary indicators were observed, the observation location was considered to have wetland hydrology.

4.4 Classification of Wetlands

Upon completion of the review of the three wetland criteria at each area, a wetland determination was made. Under normal circumstances, if one or more of the wetland criteria were not identified, the area was not considered to be a wetland. If all three wetland indicators were identified, the area was classified as wetland. Additional observations were made throughout the wetland area to define the wetland/non-wetland boundary. Vegetation, soil and hydrology assessment data from at least one location within the wetland and one upland location outside of the wetland were recorded on a USACE Wetland Determination Form (Data Sheet).

4.5 Other Waters Observations

Terracon also made observations of site features that may be considered a jurisdictional waterbody. If a potential jurisdictional waterbody was identified, observations regarding its characteristics were recorded. Potential jurisdictional waterbodies were evaluated based on the observation of the following characteristics:

- Flow Characteristics:
 - Perennial: contains water at all times except during extreme drought;
 - Intermittent: carries water a considerable portion of the time but ceases to flow occasionally or seasonally; and
 - Ephemeral: carries water only during and immediately after periods of rainfall or snowmelt.
- Ordinary High Water Mark (OHWM):
 - The limit line on the shore established by the fluctuation of the water surface. It is shown by such things as a clear line impressed on the bank, shelving, changes in soil

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character, destruction of terrestrial vegetation, the presence of litter and debris or other features influenced by the surrounding area;

- Bank Shape Descriptions:
 - Undercut: banks that overhang the stream channel;
 - Steep: bank slope of approximately greater than 30 degrees; and
 - Gradual: bank slope of approximately 30 degrees or less.
- Aquatic Habitat Descriptions:
 - Pool: deeper portion of a stream where water flows slower than in neighboring, shallower portions, smooth surface, and finer substrate;
 - Riffle: shallow area in a stream where water flows swiftly over gravel and rock or other coarse substrate resulting in a rough flow and a turbulent surface; and
 - Run: section of a stream with a low or high velocity and with little or no turbulence on the surface of the water.

5.0 FIELD OBSERVATIONS RESULTS

On November 11, 14, and 15, 2019 Terracon performed field observations at the project site. The project site consists of parcel number 13715210, in Mint Hill, Mecklenburg County, North Carolina. Totalling approximately 65.7-acres of wooded land of varying maturity and woody species along the eastern and western portions of the site and a mixed habitat of grassland, shrub thickets, and old field successional woody species within the central portion of the site. Ground photographs, included in Appendix B, provide an indication of the physical characteristics observed during the site visit. Descriptions of the observed areas are listed in the following sections.

5.1 Plant Communities Found at Project Site

The following four vegetative strata were used in determining hydrophytic vegetation on the project site:

- Tree: Woody plants, excluding vines, 3 inches (7.6 centimeters) or more in diameter at breast height (DBH), regardless of height;
- Sapling/Shrub: Woody plants, excluding vines, less than 3 inches (7.6 cm) in DBH and greater than 3.28 feet (1 meter) tall;
- Herb: All herbaceous (non-woody) plants, regardless of size, and all other plants less than 3.28 feet tall; and
- Woody Vine: All woody vines greater than 3.28 feet in height.

5.1.1 Forested and Mixed Habitat Uplands

Based on plant communities, the majority of the site consists of upland areas as identified during Terracon's site reconnaissance on November 11, 14, and 15, 2019. The upland areas are referred to as Upland Data Points #s 1-5 in Exhibit 1 and U 1-5 on the Wetland Determination Data Forms.

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The majority upland dominant tree species observed within the forested areas were white oak (*Quercus alba*), sweetgum (*Liquidambar styraciflua*), tulip (or yellow) poplar (*Liriodendron tulipifera*), pignut hickory (*Carya glabra*), American beech (*Fagus grandifolia*), and red maple (*Acer rubrum*). The dominant shrub and herb observed was southern blackberry (*Rubus pensilvanicus*), Chinese privet (*Ligustrum sinense*), autumn olive (*Elaeagnus umbellata*), goldenrod (*Solidago spp.*) and Japanese stilt grass (*Microstegium vimineum*). Saplings were also observed but were not considered to be a dominant species. Japanese honeysuckle (*Lonicera japonica*) was the dominant woody vine observed in the upland area.

The majority upland dominant plant species observed in the mixed habitat areas were persimmon (*Diospyros virginiana*), honey locust (*Gleditsia triacanthos*), loblolly pine (*Pinus taeda*), sericea lespedeza (*Lespedeza cuneate*), field goldenrod (*Solidago canadensis (altissima)*), grass species (*Poa* and *Festuca spp.*), and blackberry (*Rubus spp.*).

5.2 Wetland Area Description

Terracon identified a total of 0.36-acres of forested palustrine wetlands (PUBh, R5UBH, and R4SBC) in the western and southeastern forested portions of the site, they are referred to as "Wetland #" in "Depiction of Aquatic Resources", Exhibit 1 and W1- W5 on the Wetland Determination Data Forms (Appendix C). Wetland 1 (Wetland 1, see Exhibit 1) at 0.017-acres in the southeastern portion of the site and near to the southern property boundary, Wetland 2 (Wetland 2, see Exhibit 1) at 0.010-acres in the northwestern portion of the site, Wetland 3 (Wetland 3, see Exhibit 1) at 0.10-acres in the northwestern portion of the site and near to the northern property boundary, Wetland 4 (Wetland 4, see Exhibit 1) at 0.21-acres in the southeastern portion of the site and near to the southern property boundary, Wetland 5 (Wetland 5, see Exhibit 1) at 0.023-acres in the northern portion of the site and near to the northern property boundary.

The majority dominant tree species identified within the potential wetlands were American elm (*Ulmus americana*), sweetgum (*Liquidambar styraciflua*), green ash (*Fraxinus pennsylvanica*), ironwood (*Carpinus caroliniana*) and red maple (*Acer rubrum*). The dominant sapling/shrub species observed include Chinese privet (*Ligustrum sinense*) and autumn olive (*Elaeagnus umbellata*). The dominant herb species observed was Japanese stilt grass (*Microstegium vimineum*). The Japanese honeysuckle (*Lonicera japonica*) was the dominant woody vine observed within the wetland areas. The wetlands observed on site appears to be fed by runoff from ground seeps, precipitation events, and adjacent RPWs; these wetlands are located in topographically low areas, have landforms that pond water, or experience a sufficiently high-water table to support the three criteria necessary to define a wetland. These wetlands have a significant nexus to Clear Creek, and it is Terracon's opinion that the wetlands will be considered to be under the jurisdiction of the USACE.

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Delineated Wetlands

Name	Area	
	(acres)	Type
W1	0.017	PFO
W2	0.01	PFO
W3	0.1	PFO
W4	0.21	PFO
W5	0.023	PFO
Total	0.36	PFO

PFO – Palustrine Forested Wetland

5.3 Stream and Tributary Area Description

Terracon observed multiple streams and tributaries totaling 2,992 linear feet, in the eastern and western portions of the site. They are referred to as are “RPW #” in “Depiction of Aquatic Resources”, Exhibit 1 and as represented as “Stream #” on the North Carolina Division of Water Quality Stream Identification Form (Version 4.11) (Appendix C). These tributaries follow the downward sloping gradient generally to the southwest where they flow off site. The stream and tributaries appear to originate from the adjacent properties and demonstrated a base flow. Terracon gauged the stream and tributaries using the *Methodology for Identification on Intermittent and Perennial Streams and Their Origins* prepared by the North Carolina Division of Water Quality to characterize the streams and tributaries. Based on geomorphology, hydrology, and biology, it is Terracon’s opinion that these streams and tributaries are at least intermittent and would be considered under the jurisdiction of the USACE.

Delineated Non-Wetland Waters

Name	Length (Linear Feet (LF))	Flow	Approximate Average Stream Width at Top of Bank (feet)
S	2,992	Perennial/ Intermittent	3-5
E	295	Ephemeral	1-3
Pond	0.099-acres	Stormwater Retention Basin	--

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Total	3,287 LF		
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5.4 Other Waters

A stormwater retention basin was observed in the southeastern portion of the site and is shown in Exhibit 1 as Pond 1. This basin was constructed adjacent to RPW 1 sometime in 2006-2007 in response to nearby grading activities to serve as a water quality improvement structure and measuring approximately 0.099-acres in size.

Terracon observed multiple ephemeral features totaling 295 linear feet, in the eastern and western portions of the site. They are referred to as “Ephemeral #” in “Depiction of Aquatic Resources”, Exhibit 1 and represented as “Ephemeral #” on the North Carolina Division of Water Quality Stream Identification Form (Version 4.11) (Appendix C). These tributaries follow the downward sloping gradient generally to the southwest where they flow off site or connect to identified RPWs or Wetlands. The ephemeral features appear to originate as upland drainage features or as an overflow conveyance between RPWs. By definition ephemeral features do not meet the criteria necessary for classification as an RPW due to the lack of features such as an OHWM or presence of perennial or intermittent base flow. Ephemeral features could be considered jurisdictional by the ACOE if they deem the feature serve as a hydrological connection between a wetland and a RPW or between two RPW’s.

Multiple ditches were observed in the upland areas throughout the site and flowing towards the southeast and southwest. As these ditches did not exhibit an Ordinary High-Water Mark (OHWM) or biological, chemical, or physical connectivity to RPW’s, it is Terracon’s opinion that these ditches would not be considered to be under the jurisdiction of the USACE because it does not meet the definition of “Waters of the U.S.” under section 404 of the Clean Water Act. According to guidance from the Environmental Protection Agency (EPA) Memorandum Clean Water Act Jurisdiction following the U.S. Supreme Court’s Decision in *Rapanos v. United States & Carabell v. United States (Rapanos)*, the USACE will generally not take jurisdiction over ditches (including roadside ditches) excavated entirely within and draining only uplands. Therefore, it is the opinion of Terracon that these ditches would likely not considered WOTUS subject to Section 404 of the Clean Water Act.

6.0 SUMMARY AND CONCLUSIONS OF FIELD OBSERVATIONS

A wetland delineation was conducted on November 11, 14, and 15, 2019 at an approximately 65.7-acre site located in Mint Hill, Mecklenburg County, North Carolina. A review of the project site was conducted utilizing readily available information including, but not limited to, topographical, aerial, soils, floodplain, and wetland data. In addition, a preliminary site visit was performed to characterize the existing site conditions and observe the project site for suspect waterbodies and wetlands. A summary of field observations and conclusions concerning jurisdictional status is outlined in the following sections.

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6.1 Wetlands

Terracon identified a total of 0.36-acres of forested palustrine wetlands; Wetland 1 (Wetland 1, see Exhibit 1) at 0.017-acres in the southeastern portion of the site and near to the southern property boundary, Wetland 2 (Wetland 2, see Exhibit 1) at 0.010-acres in the northwestern portion of the site, Wetland 3 (Wetland 3, see Exhibit 1) at 0.10-acres in the northwestern portion of the site and near to the northern property boundary, Wetland 4 (Wetland 4, see Exhibit 1) at 0.21-acres in the southeastern portion of the site and near to the southern property boundary, Wetland 5 (Wetland 5, see Exhibit 1) at 0.023-acres in the northern portion of the site and near to the northern property boundary. These wetlands have a significant nexus to Clear Creek, which meets the jurisdictional definition of "Traditional Navigable Waterway (TNW)", pursuant to Section 404 of the Clean Water Act. Due to this significant nexus, it is Terracon's opinion that the wetland will be considered to be under the jurisdiction of the USACE.

6.2 Streams and Tributaries

Streams and tributaries totaling 2,992 linear feet were observed within the project boundaries during the site reconnaissance. Based on geomorphology, hydrology, and biology, it is Terracon's opinion that these streams and tributaries are at least intermittent and would be considered to be under the jurisdiction of the USACE.

6.3 Other Waters

A pond was observed in the southeastern portion of the site and is shown in Exhibit 1 as Pond 1. This basin was constructed adjacent to RPW 1 sometime in 2006-2007 in response to nearby site grading activities to serve as a water quality improvement structure and measuring approximately 0.099-acres in size. It is Terracon's opinion that this basin would not be considered to be under the jurisdiction of the USACE because it does not meet the definition of "Waters of the U.S." under section 404 of the Clean Water Act. According to guidance from the Environmental Protection Agency (EPA) Memorandum Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States* (Rapanos), the USACE will generally not take jurisdiction over ditches (including roadside ditches) excavated entirely within and draining only uplands. Therefore, it is the opinion of Terracon that the ditch would likely not be considered WOTUS subject to Section 404 of the Clean Water Act.

Terracon observed multiple ephemeral features totaling 295 linear feet, in the eastern and western portions of the site. They are referred to as "Ephemeral #" in "Depiction of Aquatic Resources", Exhibit 1 and represented as "Ephemeral #" on the North Carolina Division of Water Quality Stream Identification Form (Version 4.11) (Appendix C). These tributaries follow the downward sloping gradient generally to the southeast and southwest where they flow off site or connect to identified RPWs or Wetlands. The ephemeral features appear to originate as upland drainage features or as an overflow conveyance between RPWs. By definition ephemeral features do not meet the criteria necessary for classification as an RPW due to the lack of features such as an OHWM or presence of perennial or intermittent base flow. However, ephemeral features

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could be considered jurisdictional by the USACE if they deem these features serve as a hydrological connection between wetlands and RPWs or between two RPW's.

Multiple ditches were observed in the upland areas throughout the site and flowing towards the southeast and southwest. As these ditches did not exhibit an Ordinary High-Water Mark (OWHM) or biological, chemical, or physical connectivity to RPW's, it is Terracon's opinion that these ditches would not be considered to be under the jurisdiction of the USACE because it does not meet the definition of "Waters of the U.S." under section 404 of the Clean Water Act. According to guidance from the Environmental Protection Agency (EPA) Memorandum Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in *Rapanos v. United States & Carabell v. United States (Rapanos)*, the USACE will generally not take jurisdiction over ditches (including roadside ditches) excavated entirely within and draining only uplands. Therefore, it is the opinion of Terracon that the ditch would likely not be considered WOTUS subject to Section 404 of the Clean Water Act.

7.0 RECOMMENDATIONS

According to our preliminary site investigation, wetlands, streams and tributaries, one pond, and ephemeral features are present on the project site. Terracon considers the wetlands, streams and tributaries, to be jurisdictional based on their significant nexus to Clear Creek. On site ephemeral features could be considered jurisdictional by the USACE if they deem these features serve as a hydrological connection between wetlands and RPWs or between two RPW's. Terracon does not consider the pond and ditches to be jurisdictional as they do not meet the definition of "Waters of the U.S." under section 404 of the Clean Water Act. However, for all on-site areas, only the USACE can make the final determination on the jurisdictional status of waterbodies, and on the need for permit processing and compensatory mitigation.

A copy of this report and a Preliminary Jurisdictional Determination Package will be submitted, pending your approval, to the USACE by Terracon Consultants, Inc. The USACE can be reached at the following address:

David Shaeffer
US Army Corps of Engineers
151 Patton Avenue, Room 208
Asheville, North Carolina 28801-5006
General Number: (828) 271-7980

8.0 GENERAL COMMENTS

The wetland delineation was performed in accordance with generally accepted practices of this profession undertaken in similar studies at the same time and in the same geographical area. A

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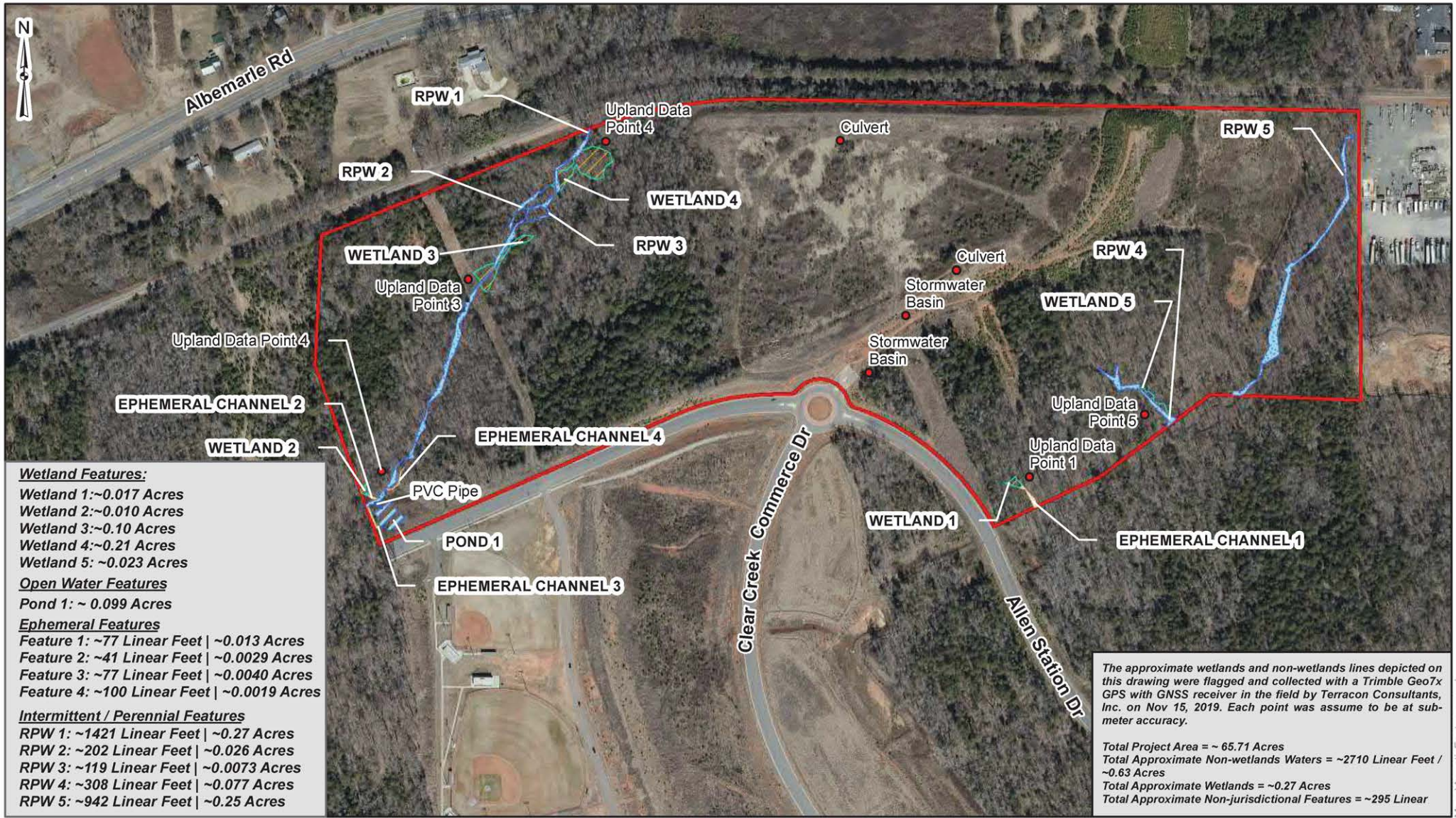
wetland delineation, such as the one performed at this site, is of limited scope, is noninvasive, and cannot eliminate the potential that wetlands or waterbodies are present at the site beyond what is identified by the limited scope of this preliminary assessment. In conducting the limited scope of services described herein, certain sources of information and public records were not reviewed. No biological assessment can wholly eliminate uncertainty regarding the potential for concerns in connection with a project. The limitations of this preliminary assessment should be recognized.

This report has been prepared in accordance with generally accepted scientific and engineering evaluation practices. This report is for the exclusive use of the client for the project being discussed. No warranties, either expressed or implied, are intended or made.

APPENDIX A

Exhibits

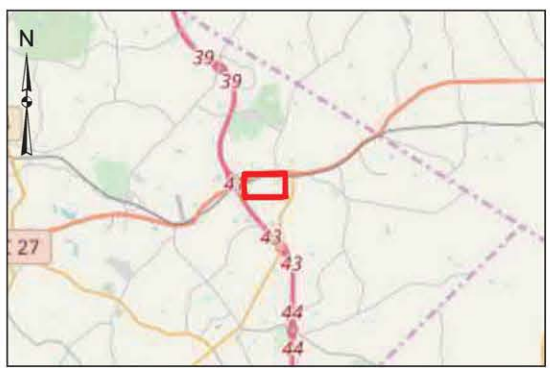
- *Depiction of Aquatic Resources*
- *USGS Topographic Map*
- *1998 Infrared Aerial Imagery*
- *USFWS NWI Map*
- *NRCS Web Soil Survey Map*



- Wetland Features:**
 Wetland 1: ~0.017 Acres
 Wetland 2: ~0.010 Acres
 Wetland 3: ~0.10 Acres
 Wetland 4: ~0.21 Acres
 Wetland 5: ~0.023 Acres
- Open Water Features**
 Pond 1: ~ 0.099 Acres
- Ephemeral Features**
 Feature 1: ~77 Linear Feet | ~0.013 Acres
 Feature 2: ~41 Linear Feet | ~0.0029 Acres
 Feature 3: ~77 Linear Feet | ~0.0040 Acres
 Feature 4: ~100 Linear Feet | ~0.0019 Acres
- Intermittent / Perennial Features**
 RPW 1: ~1421 Linear Feet | ~0.27 Acres
 RPW 2: ~202 Linear Feet | ~0.026 Acres
 RPW 3: ~119 Linear Feet | ~0.0073 Acres
 RPW 4: ~308 Linear Feet | ~0.077 Acres
 RPW 5: ~942 Linear Feet | ~0.25 Acres

The approximate wetlands and non-wetlands lines depicted on this drawing were flagged and collected with a Trimble GeoTx GPS with GNSS receiver in the field by Terracon Consultants, Inc. on Nov 15, 2019. Each point was assume to be at sub-meter accuracy.

Total Project Area = ~ 65.71 Acres
 Total Approximate Non-wetlands Waters = ~2710 Linear Feet / ~0.63 Acres
 Total Approximate Wetlands = ~0.27 Acres
 Total Approximate Non-jurisdictional Features = ~295 Linear



- Legend**
- Site Boundary
 - Pond
 - Ephemeral Channel
 - Wetland
 - RPW(Intermittent / Perennial)



DATA SOURCES:
 Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server, Site Boundary Based on Mecklenburg County Parcel Data.

Project No.:	71197757
Date:	Nov 2019
Drawn By:	CEW
Reviewed By:	JCW

Terracon

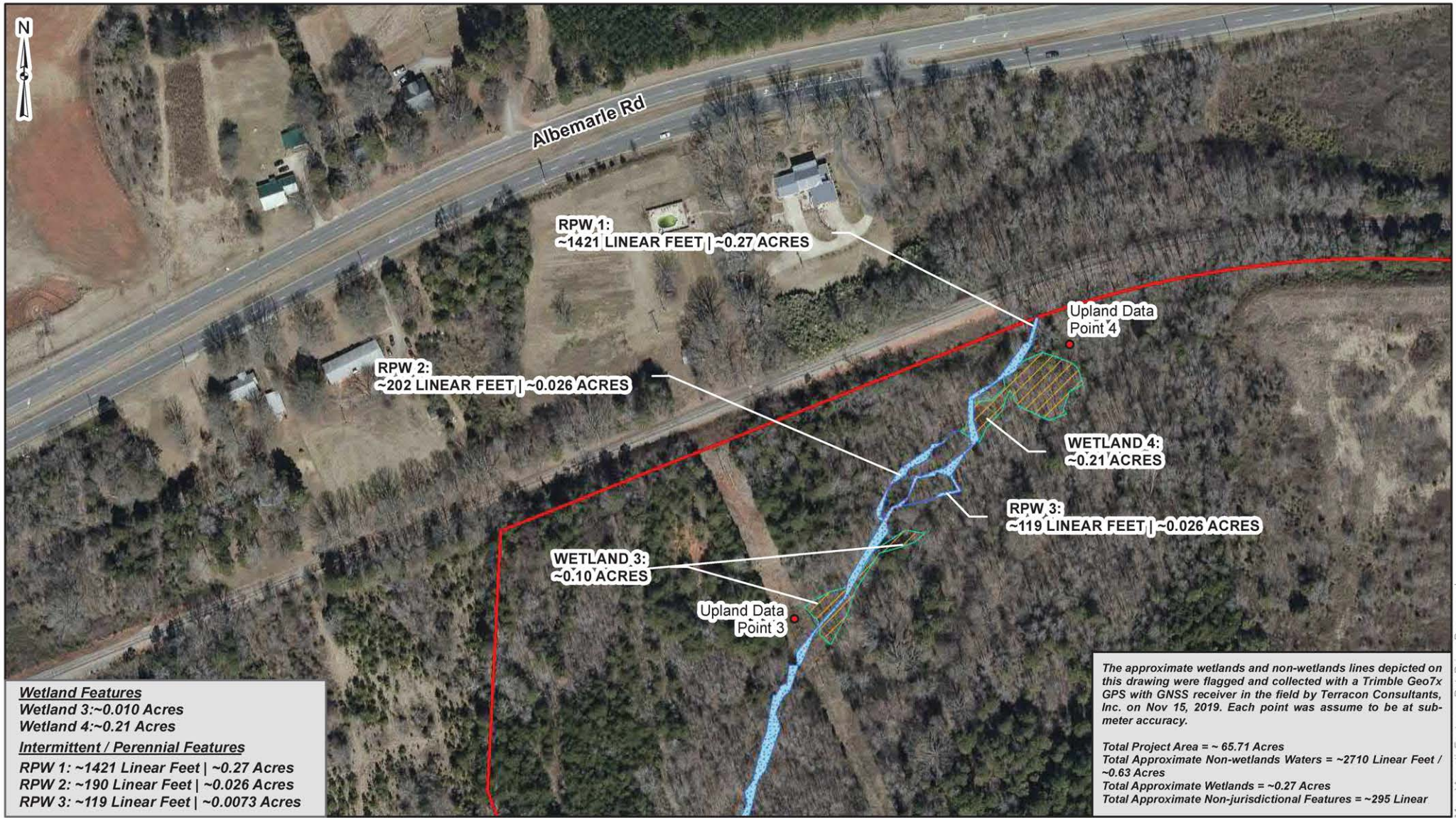
2701 Westport Road Charlotte, NC 28208
 PH. (704) 509-1777 terracon.com

DEPICTION OF AQUATIC RESOURCES

Mint Hill Industrial Site
 (35.22049, -80.64118)
 Charlotte, Mecklenburg County, NC

Exhibit
1

N:\ES\LegacyData\Geo\Gr\Projects\2019\1197757\Map\AquaticFeatures.mxd

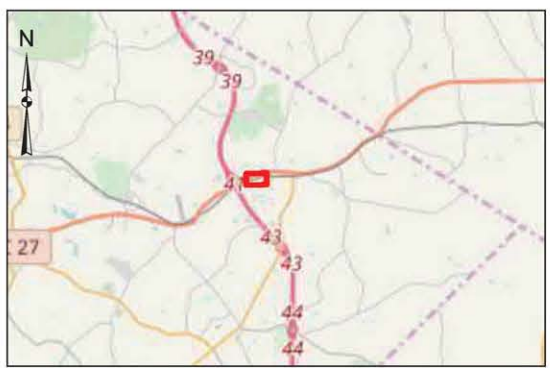


Wetland Features
 Wetland 3: ~0.010 Acres
 Wetland 4: ~0.21 Acres

Intermittent / Perennial Features
 RPW 1: ~1421 Linear Feet | ~0.27 Acres
 RPW 2: ~190 Linear Feet | ~0.026 Acres
 RPW 3: ~119 Linear Feet | ~0.0073 Acres

The approximate wetlands and non-wetlands lines depicted on this drawing were flagged and collected with a Trimble Geo7x GPS with GNSS receiver in the field by Terracon Consultants, Inc. on Nov 15, 2019. Each point was assume to be at sub-meter accuracy.

Total Project Area = ~ 65.71 Acres
 Total Approximate Non-wetlands Waters = ~2710 Linear Feet / ~0.63 Acres
 Total Approximate Wetlands = ~0.27 Acres
 Total Approximate Non-jurisdictional Features = ~295 Linear



- Legend**
- Site Boundary
 - Pond
 - Ephemeral Channel
 - Wetland
 - RPW(Intermittent / Perennial)



DATA SOURCES:
 Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server, Site Boundary Based on Mecklenburg County Parcel Data.

Project No.:	71197757
Date:	Nov 2019
Drawn By:	CEW
Reviewed By:	JCW

Terracon

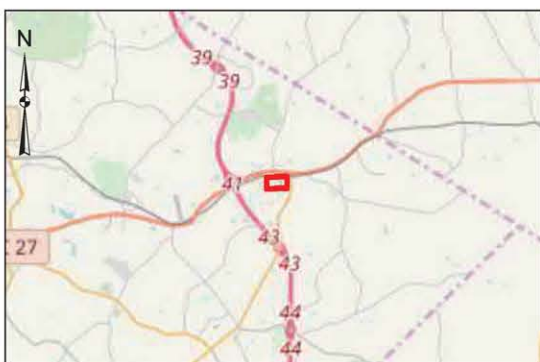
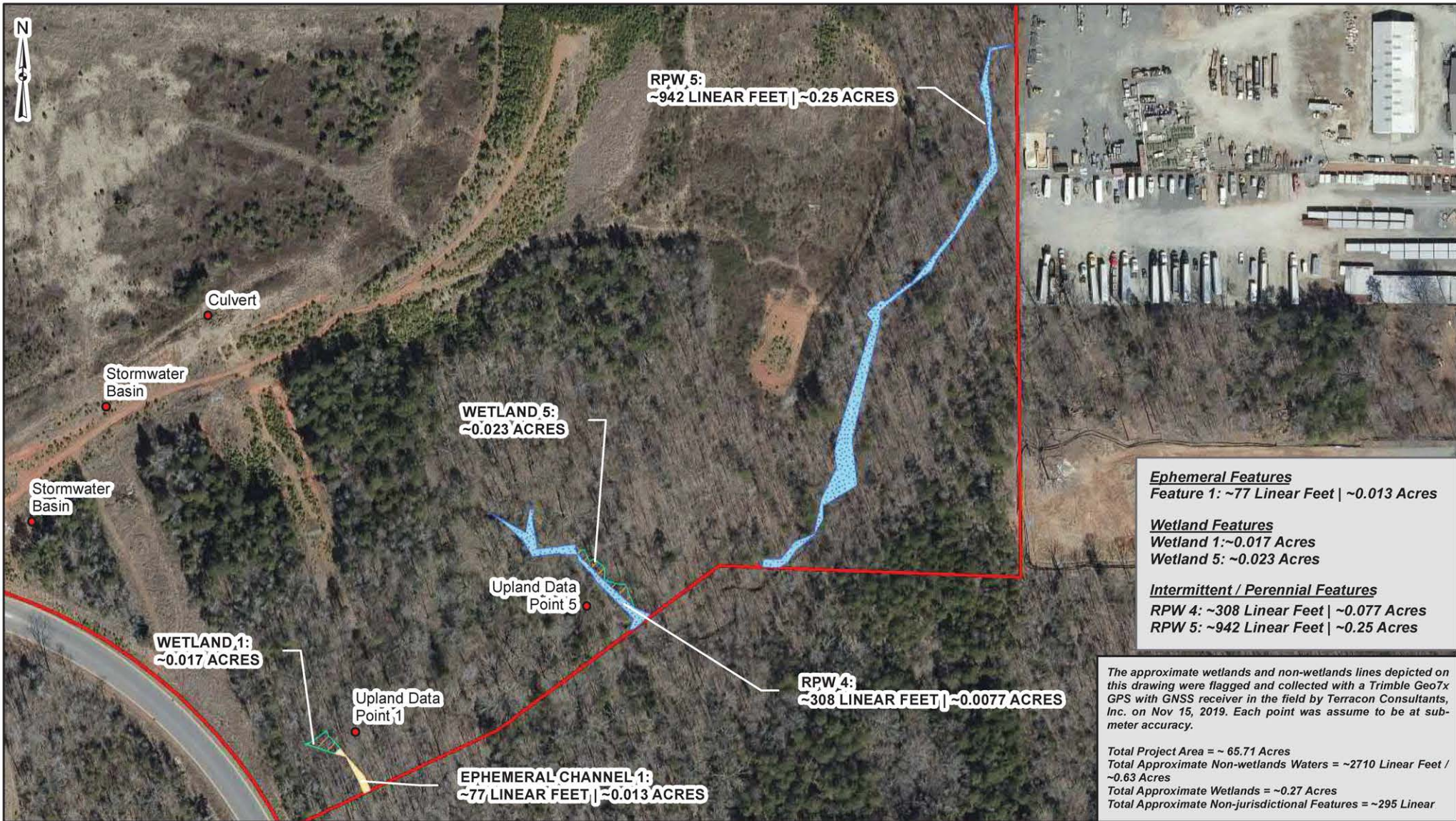
2701 Westport Road Charlotte, NC 28208
 PH. (704) 509-1777 terracon.com

DEPICTION OF AQUATIC RESOURCES

Mint Hill Industrial Site
 (35.22049, -80.64118)
 Charlotte, Mecklenburg County, NC

Exhibit

1A



Legend

- Site Boundary
- Pond
- Ephemeral Channel
- Wetland
- RPW(Intermittent / Perennial)



DATA SOURCES:
Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server, Site Boundary Based on Mecklenburg County Parcel Data.

Project No.:	71197757
Date:	Nov 2019
Drawn By:	CEW
Reviewed By:	JCW

Terracon

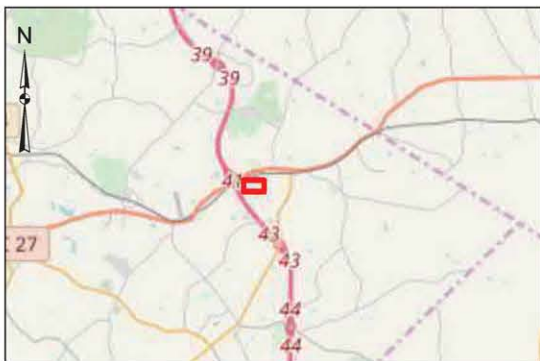
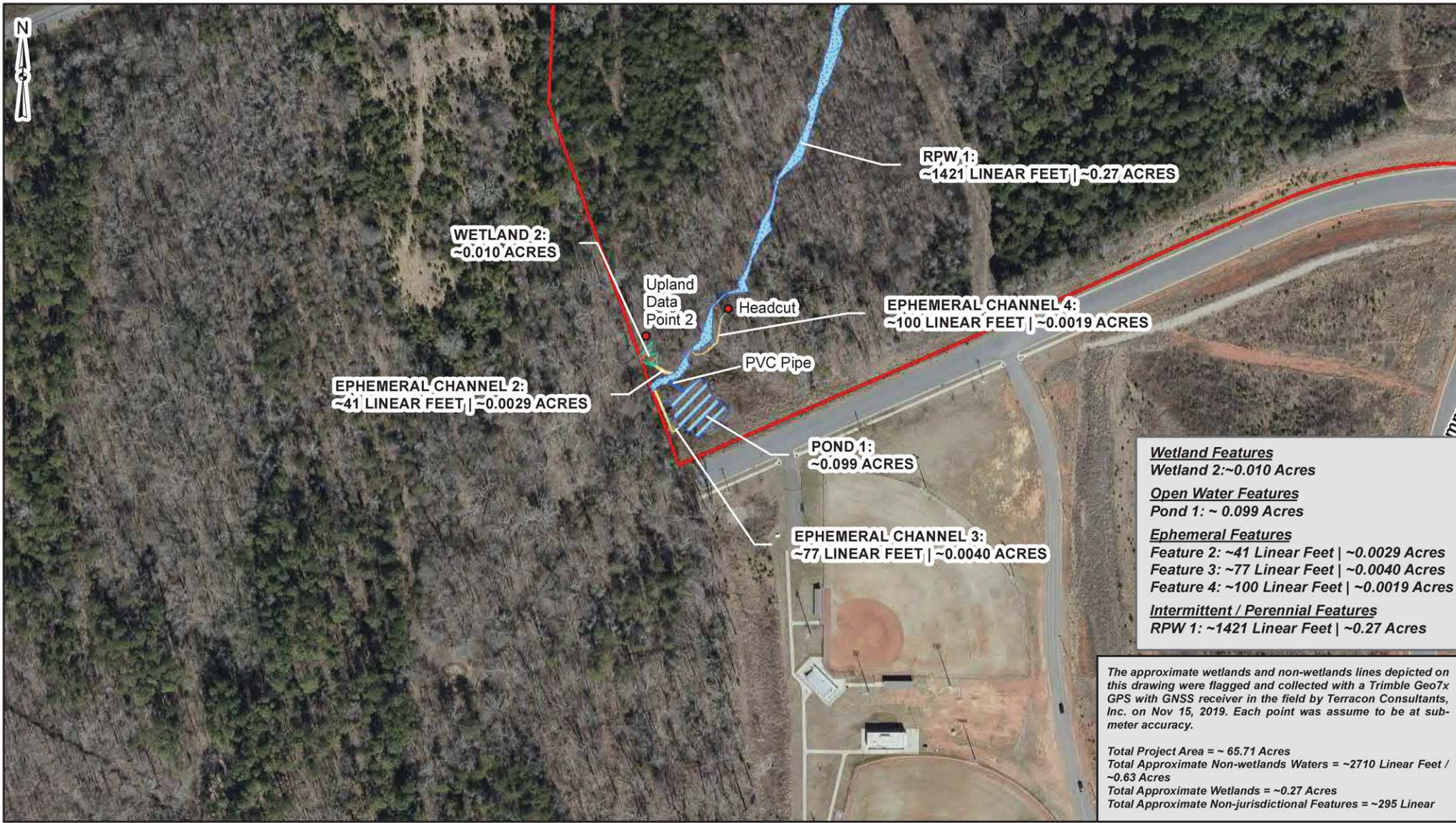
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DEPICTION OF AQUATIC RESOURCES

Mint Hill Industrial Site
(35.22049, -80.64118)
Charlotte, Mecklenburg County, NC

Exhibit

1B



Legend

- Site Boundary
- Wetland
- Ephemeral Channel
- Pond
- RPW(Intermittent / Perennial)



DATA SOURCES:
 Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server, Site Boundary Based on Mecklenburg County Parcel Data.

Project No.:	71197757
Date:	Nov 2019
Drawn By:	CEW
Reviewed By:	JCW



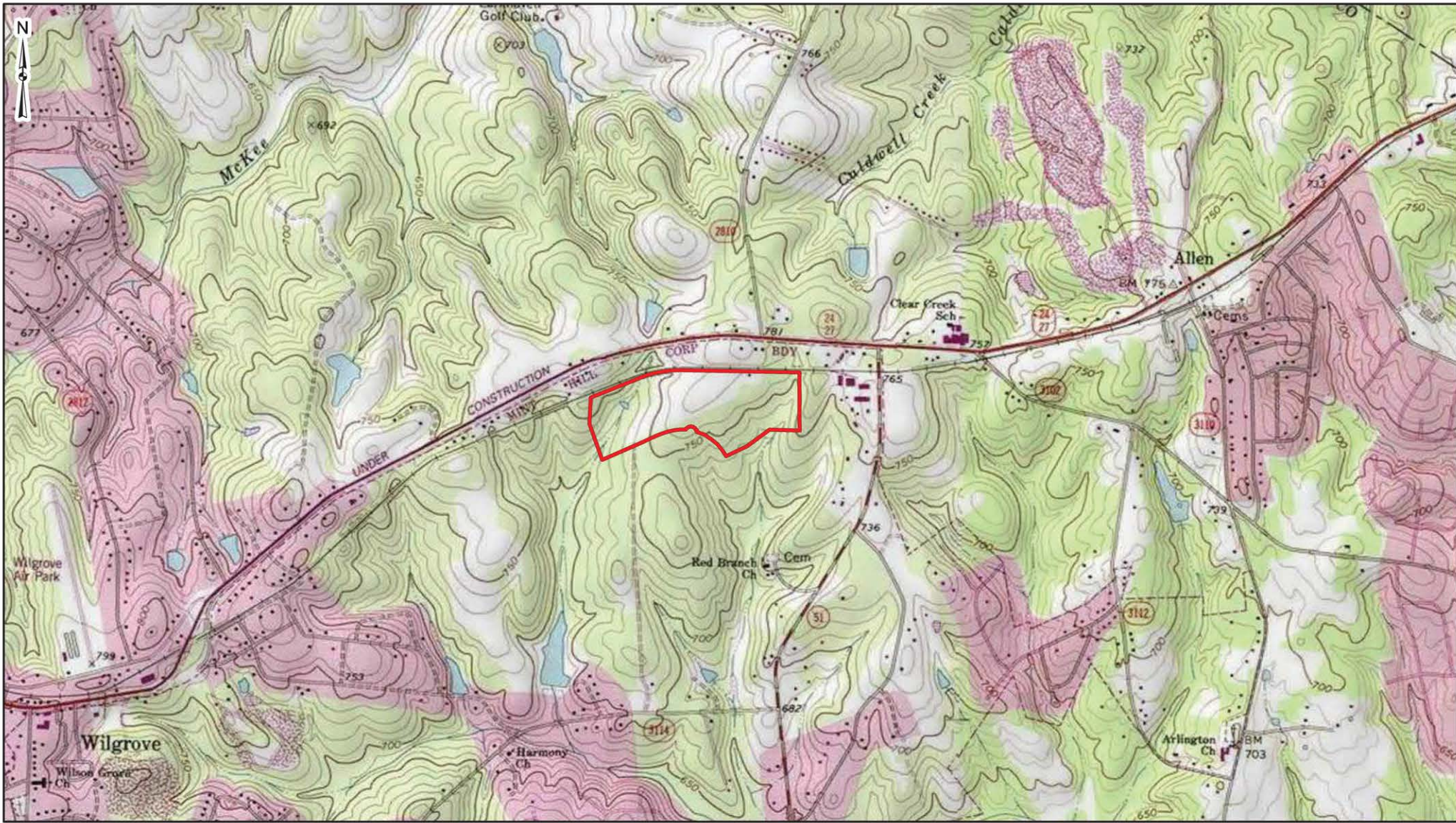
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DEPICTION OF AQUATIC RESOURCES


Mint Hill Industrial Site
 (35.22049, -80.64118)
 Charlotte, Mecklenburg County, NC

Exhibit

1C



Legend

 Site Boundary



DATA SOURCES:
2011 National Geographic Society/ESRI,
i-cubed seamless USGS quadrangles
(Mint Hill, NC); Site Boundary Based on

Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for and is not suitable for legal or engineering purposes. ESI does not warrant the work of regulatory agencies or other third parties data or information.

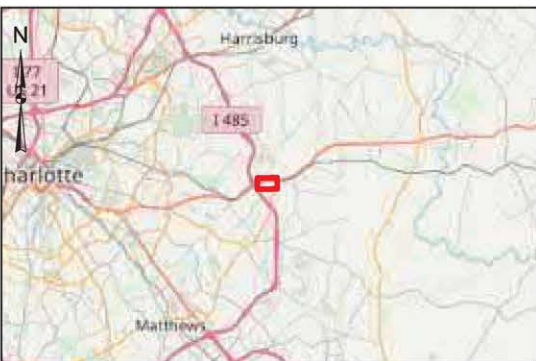
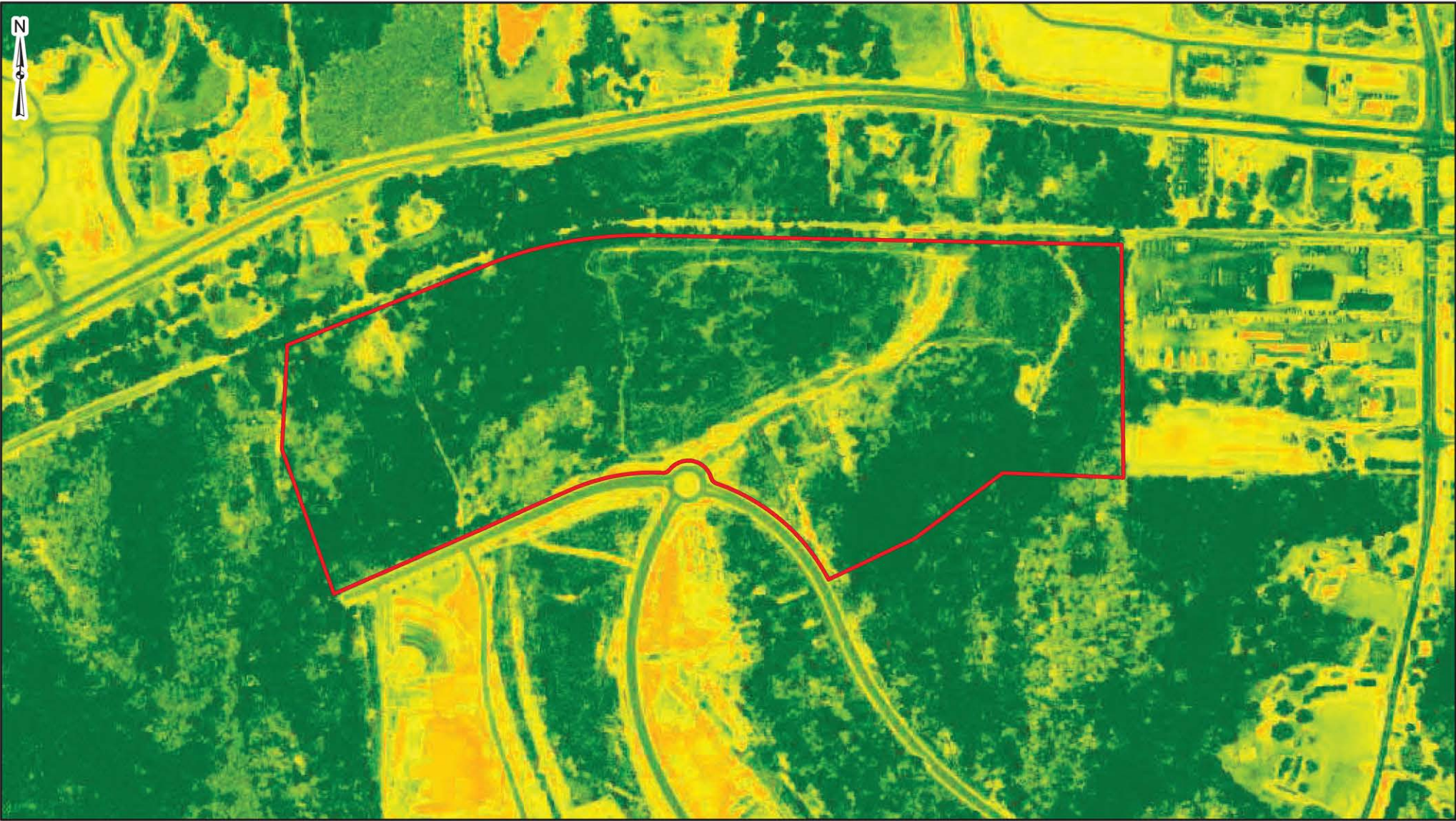
Project No.:	71197757
Date:	Nov 2019
Drawn By:	CEW
Reviewed By:	JCW



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USGS Topographic Map
Mint Hill Industrial Site (35.22049, -80.64118) Charlotte, Mecklenburg County, NC

Exhibit
2



Legend

 Site Boundary



DATA SOURCES:
 NC OneMap Server; 2016 NAIP Imagery; NDVI provided by the USDA FSA; Site Boundary based on Mecklenburg County Parcel Data.

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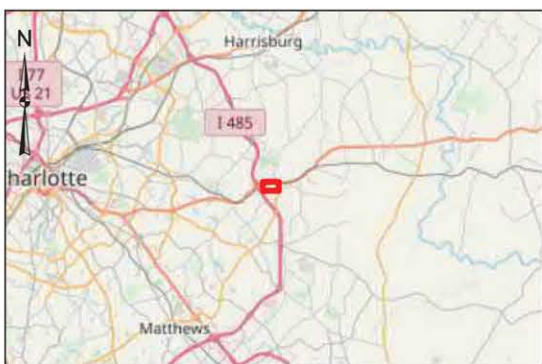
Project No.:	71197757
Date:	Nov 2019
Drawn By:	CEW
Reviewed By:	JCW



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2016 Infrared Aerial
<p>Mint Hill Industrial Site (35.22049, -80.64118) Charlotte, Mecklenburg County, NC</p>

Exhibit
3



Legend

- Site Boundary
- Riverine (R4SBC)
- Freshwater Pond (PUBHh)
- Riverine (R5UBH)

Project No.:	71197757
Date:	Nov 2019
Drawn By:	CEW
Reviewed By:	JCW



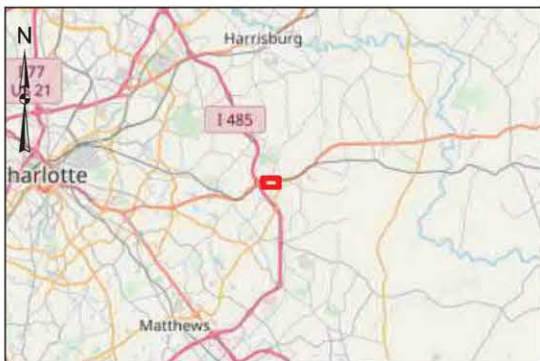
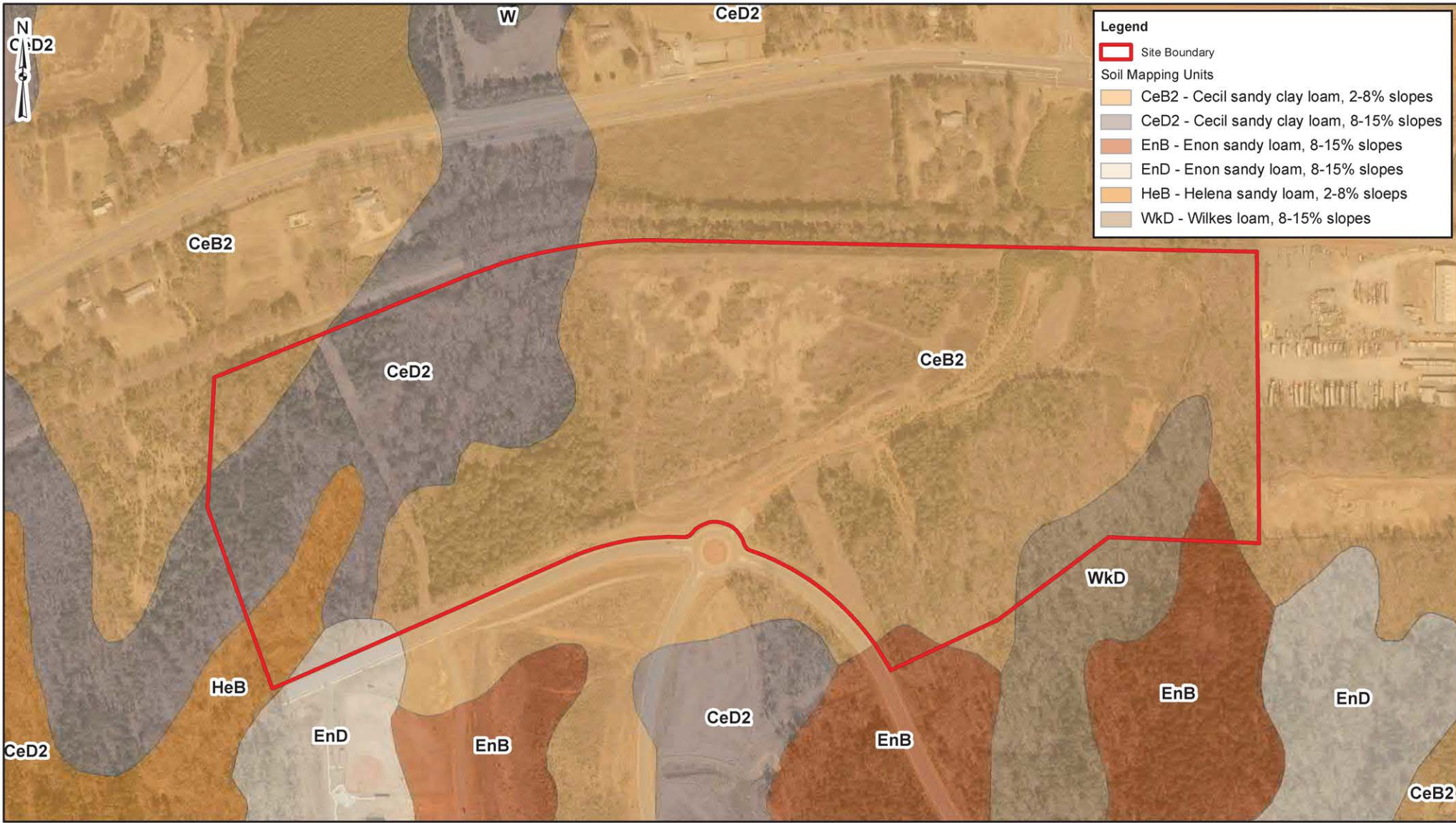
2701 Westport Road Charlotte, NC 28208
 PH. (704) 509-1777 terracon.com

DATA SOURCES:
 Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server; National Wetlands Inventory Data Set, 2009; Site Boundary Based on Mecklenburg County Parcel Data.

Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for and is not suitable for legal or engineering purposes. ESI does not warrant the work of regulatory agencies or other third parties data or information.

United States Forest Service National Wetland Inventory Data
Mint Hill Industrial Site (35.22049, -80.64118) Charlotte, Mecklenburg County, NC

Exhibit
4



DATA SOURCES:
 Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server; NRCS digital Soil Survey of Mecklenburg County, 2009; Site Boundary Based on Mecklenburg County Parcel Data.

Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for and is not suitable for legal or engineering purposes. ESI does not warrant the work of regulatory agencies or other third parties data or information.

Project No.:	71197757
Date:	Nov 2019
Drawn By:	CEW
Reviewed By:	JCW

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USDA NRCS Soils Data

Mint Hill Industrial Site
 (35.22049, -80.64118)
 Charlotte, Mecklenburg County, NC

Exhibit

5

APPENDIX B

Ground Photographs

North West Elevation

☉ 142°SE (T) ● 35.218507, -80.642537 ±25m ▲ 194 m



Photograph : View of Pond 1, southwestern portion of the property, draining into RPW 1, looking southeast.

North Elevation

☉ 201°S (T) ● 35.219026, -80.64256 ±24m ▲ 166 m



Photograph 2: View of RPW 1, western portion of the property, flowing to the south.

North West Elevation

☉ 156°SE (T) ● 35.219981, -80.634986 ±12m ▲ 211 m



Photograph : View of RPW 4, eastern portion of the property, facing southeast.

North East Elevation

☉ 244°SW (T) ● 35.221778, -80.64053 ±16m ▲ 210 m



Photograph : View of Wetland 3, western portion of the property, facing southwest.

South East Elevation

☉ 331°NW (T) ● 35.219745, -80.634185 ±27m ▲ 200 m



Photograph : View of RPW 5, eastern portion of the property, facing northwest.

North East Elevation

☉ 240°SW (T) ● 35.221056, -80.641183 ±10m ▲ 201 m



Photograph : View of Wetland 3, western portion of the property, facing southwest.

North East Elevation

☉ 244°SW (T) ☉ 35.221778, -80.64053 ±16m ▲ 210 m



Photograph 7: View of Wetland 4, northwestern portion of the property, facing southwest.

East Elevation

☉ 277°W (T) ☉ 35.220008, -80.634971 ±16m ▲ 209 m



Photograph 8: View of Wetland 5, southern portion of the site, facing west.

South Elevation

☉ 355°N (T) ● 35.219941, -80.634236 ±25m ▲ 193 m



Photograph 9: View of typical ephemeral feature, eastern portion of the property, facing north.

South West Elevation

☉ 47°NE (T) ● 35.220951, -80.635657 ±19m ▲ 181 m



Photograph 10: View of upland drainage feature in northeastern portion of the site, facing northeast.

South Elevation

☉ 32°N (T) ● 35.219981, -80.634986 ±12m ▲ 211 m



Photograph 11: View of typical wooded upland in the eastern portion of the site, facing north.

North West Elevation

☉ 142°SE (T) ● 35.22182, -80.640648 ±27m ▲ 226 m



Photograph 12: View of typical wooded upland in the western portion of the site, facing southeast.

APPENDIX C

Data Sheets & Property Data

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>Requirement Control Symbol</i> EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: Mint Hill Industrial 71197757 City/County: Charlotte/Mecklenburg Sampling Date: 11/14/19
 Applicant/Owner: Aberdeen Carolina and Western Railway State: NC Sampling Point: W1
 Investigator(s): JC Weaver Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Topographic low Local relief (concave, convex, none): concave Slope (%): 1-2%
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: Cecil, Enon, Helena, and Wilkes NWI classification: PUBHh, R5UBH, R4SBC
 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks: 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required: check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input checked="" type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> 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: W1

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Yellow Poplar (Liriodendron tulipifera)</u>	<u>20</u>	<u>Yes</u>	<u>FACU</u>
2. <u>Red Maple (Acer rubrum)</u>	<u>20</u>	<u>Yes</u>	<u>FACW</u>
3. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>15</u>	<u>Yes</u>	<u>FAC</u>
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>55</u> =Total Cover		
50% of total cover: <u>28</u>		20% of total cover: <u>11</u>	

Sapling/Shrub Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
	_____ =Total Cover		
50% of total cover: _____		20% of total cover: _____	

Herb Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	_____ =Total Cover		
50% of total cover: _____		20% of total cover: _____	

Woody Vine Stratum (Plot size: _____)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
	_____ =Total Cover		
50% of total cover: _____		20% of total cover: _____	

Remarks: (Include photo numbers here or on a separate sheet.)

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>0</u>	x 1 = <u>0</u>
FACW species <u>20</u>	x 2 = <u>40</u>
FAC species <u>15</u>	x 3 = <u>45</u>
FACU species <u>20</u>	x 4 = <u>80</u>
UPL species <u>0</u>	x 5 = <u>0</u>
Column Totals: <u>55</u> (A)	<u>165</u> (E)
Prevalence Index = B/A = <u>3.00</u>	

- Hydrophytic Vegetation Indicators:**
- 1 - Rapid Test for Hydrophytic Vegetation
 - 2 - Dominance Test is >50%
 - 3 - Prevalence Index is ≤3.0¹
 - 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)
 - Problematic Hydrophytic Vegetation¹ (Explain)
- ¹Indicators 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 or equal to 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 No

SOIL

Sampling Point: W1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 3/3	80	10YR 5/8	20	C	M	Loamy/Clayey	Prominent redox concentrations
3-8	10YR 5/2	80	10YR 5/8	20	C	M	Loamy/Clayey	Prominent redox concentrations
8-20	10YR 6/1	95	10YR 5/8	5	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators 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

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	Requirement Control Symbol EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: Mint Hill Industrial 71197757 City/County: Charlotte/Mecklenburg Sampling Date: 11/14/19
 Applicant/Owner: Aberdeen Carolina and Western Railway State: NC Sampling Point: U 1
 Investigator(s): JC Weaver Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Topographic high Local relief (concave, convex, none): convex Slope (%): 2-8%
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: Cecil, Enon, Helena, and Wilkes NWI classification: _____
 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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	Is the Sampled Area within a Wetland? Yes _____ No <u>X</u>
Remarks: _____ 	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required: check all that apply)</u> ___ Surface Water (A1) ___ True Aquatic Plants (B14) ___ High Water Table (A2) ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2) ___ Recent Iron Reduction in Tilled Soils (C6) ___ Drift Deposits (B3) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) ___ Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ 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) ___ Stunted or Stressed Plants (D1) ___ Geomorphic Position (D2) ___ Shallow Aquitard (D3) ___ Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available: _____ 	
Remarks: _____ 	

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

Sampling Point: U 1

	Absolute % Cover	Dominant Species?	Indicator Status																									
Tree Stratum (Plot size: <u>30</u>)																												
1. <u>Red Maple (Acer rubrum)</u>	<u>15</u>	No	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>2</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>40.0%</u> (A/B)																								
2. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>30</u>	Yes	FAC																									
3. <u>White Oak (Quercus alba)</u>	<u>45</u>	Yes	FACU																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
90 =Total Cover																												
50% of total cover: <u>45</u>		20% of total cover: <u>18</u>																										
Sapling/Shrub Stratum (Plot size: <u>30</u>)																												
1. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>15</u>	Yes	FAC	Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%;"></td> <td style="width:25%; text-align:center;">Total % Cover of:</td> <td style="width:25%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>60</u></td> <td style="text-align:center;"><u>60</u></td> <td style="text-align:center;">x 3 = <u>180</u></td> </tr> <tr> <td>FACU species <u>50</u></td> <td style="text-align:center;"><u>50</u></td> <td style="text-align:center;">x 4 = <u>200</u></td> </tr> <tr> <td>UPL species <u>30</u></td> <td style="text-align:center;"><u>30</u></td> <td style="text-align:center;">x 5 = <u>150</u></td> </tr> <tr> <td>Column Totals: <u>140</u> (A)</td> <td></td> <td style="text-align:center;"><u>530</u> (B)</td> </tr> <tr> <td colspan="3" style="text-align:right;">Prevalence Index = B/A = <u>3.79</u></td> </tr> </table> Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation ___ 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain)		Total % Cover of:	Multiply by:	OBL species <u>0</u>	<u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	<u>0</u>	x 2 = <u>0</u>	FAC species <u>60</u>	<u>60</u>	x 3 = <u>180</u>	FACU species <u>50</u>	<u>50</u>	x 4 = <u>200</u>	UPL species <u>30</u>	<u>30</u>	x 5 = <u>150</u>	Column Totals: <u>140</u> (A)		<u>530</u> (B)	Prevalence Index = B/A = <u>3.79</u>		
	Total % Cover of:	Multiply by:																										
OBL species <u>0</u>	<u>0</u>	x 1 = <u>0</u>																										
FACW species <u>0</u>	<u>0</u>	x 2 = <u>0</u>																										
FAC species <u>60</u>	<u>60</u>	x 3 = <u>180</u>																										
FACU species <u>50</u>	<u>50</u>	x 4 = <u>200</u>																										
UPL species <u>30</u>	<u>30</u>	x 5 = <u>150</u>																										
Column Totals: <u>140</u> (A)		<u>530</u> (B)																										
Prevalence Index = B/A = <u>3.79</u>																												
2. <u>Autumn olive (Elaeagnus umbellata)</u>	<u>30</u>	Yes	UPL																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
8. _____	_____	_____	_____																									
9. _____	_____	_____	_____																									
45 =Total Cover																												
50% of total cover: <u>23</u>		20% of total cover: <u>9</u>																										
Herb Stratum (Plot size: <u>30</u>)																												
1. _____	_____	_____	_____	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 or equal to 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.																								
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
7. _____	_____	_____	_____																									
8. _____	_____	_____	_____																									
9. _____	_____	_____	_____																									
10. _____	_____	_____	_____																									
11. _____	_____	_____	_____																									
_____ =Total Cover																												
50% of total cover: _____		20% of total cover: _____																										
Woody Vine Stratum (Plot size: <u>30</u>)																												
1. <u>Japanese honeysuckle (Lonicera japonica)</u>	<u>5</u>	Yes	FACU	Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																								
2. _____	_____	_____	_____																									
3. _____	_____	_____	_____																									
4. _____	_____	_____	_____																									
5. _____	_____	_____	_____																									
6. _____	_____	_____	_____																									
5 =Total Cover																												
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																										
Remarks: (Include photo numbers here or on a separate sheet.)																												

SOIL

Sampling Point: U 1

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 6/6	95					Loamy/Clayey	
5-10	10YR 4/6	95	10YR 6/6	5	C	M	Loamy/Clayey	Faint redox concentrations
10-15	10YR 4/6	80	10YR 4/6	20	C	M	Loamy/Clayey	Faint redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators 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:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	Requirement Control Symbol EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Mint Hill Industrial 71197757 City/County: Charlotte/Mecklenburg Sampling Date: 11/14/19
 Applicant/Owner: Aberdeen Carolina and Western Railway State: NC Sampling Point: W2
 Investigator(s): JC Weaver Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Topographic low Local relief (concave, convex, none): concave Slope (%): 1-2%
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: Cecil, Enon, Helena, and Wilkes NWI classification: PUBHh, R5UBH, R4SBC
 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> ___ Surface Water (A1) ___ True Aquatic Plants (B14) ___ High Water Table (A2) ___ Hydrogen Sulfide Odor (C1) ___ Saturation (A3) ___ Oxidized Rhizospheres on Living Roots (C3) ___ Water Marks (B1) ___ Presence of Reduced Iron (C4) ___ Sediment Deposits (B2) ___ Recent Iron Reduction in Tilled Soils (C6) <u>X</u> Drift Deposits (B3) ___ Thin Muck Surface (C7) ___ Algal Mat or Crust (B4) ___ Other (Explain in Remarks) ___ Iron Deposits (B5) ___ Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) ___ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> ___ Surface Soil Cracks (B6) <u>X</u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) ___ Moss Trim Lines (B16) ___ Dry-Season Water Table (C2) <u>X</u> Crayfish Burrows (C8) ___ Saturation Visible on Aerial Imagery (C9) ___ Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) ___ Shallow Aquitard (D3) <u>X</u> Microtopographic Relief (D4) ___ FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> 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: W2

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Red Maple (Acer rubrum)</u>	<u>45</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>3</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>60.0%</u> (A/B)
2. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>50</u>	Yes	FAC	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
	<u>95</u> =Total Cover			Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>0</u> x 2 = <u>0</u> FAC species <u>120</u> x 3 = <u>360</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>135</u> (A) <u>430</u> (B) Prevalence Index = B/A = <u>3.19</u>
50% of total cover: <u>48</u>	20% of total cover: <u>19</u>			
Sapling/Shrub Stratum (Plot size: <u>30</u>)				
1. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>25</u>	Yes	FAC	Hydrophytic Vegetation Indicators: ___ 1 - Rapid Test for Hydrophytic Vegetation <u>X</u> 2 - Dominance Test is >50% ___ 3 - Prevalence Index is ≤3.0 ¹ ___ 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) ___ Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Autumn olive (Elaeagnus umbellata)</u>	<u>10</u>	Yes	UPL	
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
	<u>35</u> =Total Cover			
50% of total cover: <u>18</u>	20% of total cover: <u>7</u>			
Herb Stratum (Plot size: <u>30</u>)				
1. _____				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 or equal to 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.
2. _____				
3. _____				
4. _____				
5. _____				
6. _____				
7. _____				
8. _____				
9. _____				
10. _____				
11. _____				
	_____ =Total Cover			
50% of total cover: _____	20% of total cover: _____			
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Japanese honeysuckle (Lonicera japonica)</u>	<u>5</u>	Yes	FACU	Hydrophytic Vegetation Present? Yes <u>X</u> No _____
2. _____				
3. _____				
4. _____				
5. _____				
	<u>5</u> =Total Cover			
50% of total cover: <u>3</u>	20% of total cover: <u>1</u>			

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W2

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-2	10YR 5/2	80	10YR 5/8	20	C	M	Loamy/Clayey	Prominent redox concentrations
2-6	10YR 5/2	80	10YR 4/6	50	C	M	Loamy/Clayey	Prominent redox concentrations
6-15	10YR 5/8	95	10YR 5/8	5	C	M	Loamy/Clayey	Faint redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators 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 _____

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	Requirement Control Symbol EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Mint Hill Industrial 71197757 City/County: Charlotte/Mecklenburg Sampling Date: 11/14/19
 Applicant/Owner: Aberdeen Carolina and Western Railway State: NC Sampling Point: U 2
 Investigator(s): JC Weaver Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Topographic high Local relief (concave, convex, none): convex Slope (%): 2-8%
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: Cecil, Enon, Helena, and Wilkes NWI classification: _____
 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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width: 60%; padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="width: 40%; padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: U 2

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Pignut Hickory (<i>Carya glabra</i>)</u>	<u>40</u>	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)																
2. <u>Sweetgum (<i>Liquidambar styraciflua</i>)</u>	<u>30</u>	Yes	FAC																	
3. <u>White Oak (<i>Quercus alba</i>)</u>	<u>45</u>	Yes	FACU																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
115 = Total Cover				Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>15</u></td> <td>x 5 = <u>75</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>525</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.89</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>15</u>	x 5 = <u>75</u>	Column Totals: <u>135</u> (A)	<u>525</u> (B)	Prevalence Index = B/A = <u>3.89</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>90</u>	x 4 = <u>360</u>																			
UPL species <u>15</u>	x 5 = <u>75</u>																			
Column Totals: <u>135</u> (A)	<u>525</u> (B)																			
Prevalence Index = B/A = <u>3.89</u>																				
50% of total cover: <u>58</u>		20% of total cover: <u>23</u>																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30</u>)																				
1. <u>Autumn olive (<i>Elaeagnus umbellata</i>)</u>	<u>15</u>	Yes	UPL	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
15 = Total Cover																				
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>																		
<u>Herb Stratum</u> (Plot size: <u>30</u>)																				
1. _____				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 or equal to 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.																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
= Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)																				
1. <u>Japanese honeysuckle (<i>Lonicera japonica</i>)</u>	<u>5</u>	Yes	FACU	Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
5 = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Remarks: (Include photo numbers here or on a separate sheet.)																				

SOIL

Sampling Point: U 2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 5/3	95					Loamy/Clayey	
3-8	10YR 4/6	95	10YR 6/6	5	C	M	Loamy/Clayey	Faint redox concentrations
8-15	10YR 4/6	80	10YR 4/6	20	C	M	Loamy/Clayey	Faint redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators 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:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	Requirement Control Symbol EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Mint Hill Industrial 71197757 City/County: Charlotte/Mecklenburg Sampling Date: 11/14/19
 Applicant/Owner: Aberdeen Carolina and Western Railway State: NC Sampling Point: W3
 Investigator(s): JC Weaver Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Topographic low Local relief (concave, convex, none): concave Slope (%): 1-2%
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: Cecil, Enon, Helena, and Wilkes NWI classification: PUBHh, R5UBH, R4SBC
 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required: check all that apply)</u> _____ Surface Water (A1) _____ True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ _____ Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) _____ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>4</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: W3

Tree Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Red Maple (Acer rubrum)</u>	<u>45</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>
3. <u>Black Willow (Salix nigra)</u>	<u>80</u>	<u>Yes</u>	<u>OBL</u>
4. <u>Cottonwood (Populus deltoides)</u>	<u>25</u>	<u>No</u>	<u>FAC</u>
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
	<u>200</u> =Total Cover		
50% of total cover:	<u>100</u>	20% of total cover:	<u>40</u>

Sapling/Shrub Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>
2. <u>Autumn olive (Elaeagnus umbellata)</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
	<u>35</u> =Total Cover		
50% of total cover:	<u>18</u>	20% of total cover:	<u>7</u>

Herb Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
6. _____	_____	_____	_____
7. _____	_____	_____	_____
8. _____	_____	_____	_____
9. _____	_____	_____	_____
10. _____	_____	_____	_____
11. _____	_____	_____	_____
	_____ =Total Cover		
50% of total cover:	_____	20% of total cover:	_____

Woody Vine Stratum (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status
1. <u>Japanese honeysuckle (Lonicera japonica)</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____
5. _____	_____	_____	_____
	<u>5</u> =Total Cover		
50% of total cover:	<u>3</u>	20% of total cover:	<u>1</u>

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 6 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species <u>80</u>	x 1 = <u>80</u>
FACW species <u>0</u>	x 2 = <u>0</u>
FAC species <u>145</u>	x 3 = <u>435</u>
FACU species <u>5</u>	x 4 = <u>20</u>
UPL species <u>10</u>	x 5 = <u>50</u>
Column Totals: <u>240</u> (A)	<u>585</u> (B)
Prevalence Index = B/A = <u>2.44</u>	

Hydrophytic Vegetation Indicators:

 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is >50%

X 3 - Prevalence Index is ≤3.0¹

 4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)

 Problematic Hydrophytic Vegetation¹ (Explain)

¹Indicators 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 or equal to 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: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	10YR 6/1	80	5YR 4/6	20	C	M	Loamy/Clayey	Prominent redox concentrations
3-10	10YR 6/1	80	10YR 5/6	50	C	M	Loamy/Clayey	Prominent redox concentrations
10-20	10YR 5/6	99					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators 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 _____

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	Requirement Control Symbol EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Mint Hill Industrial 71197757 City/County: Charlotte/Mecklenburg Sampling Date: 11/14/19
 Applicant/Owner: Aberdeen Carolina and Western Railway State: NC Sampling Point: U 3
 Investigator(s): JC Weaver Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Topographic high Local relief (concave, convex, none): convex Slope (%): 2-8%
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: Cecil, Enon, Helena, and Wilkes NWI classification: _____
 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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="padding: 5px;"> Is the Sampled Area within a Wetland? </td> <td style="padding: 5px;"> Yes _____ No <u>X</u> </td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: U 3

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																	
1. <u>Pignut Hickory (<i>Carya glabra</i>)</u>	<u>40</u>	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>5</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>20.0%</u> (A/B)																
2. <u>Sweetgum (<i>Liquidambar styraciflua</i>)</u>	<u>30</u>	Yes	FAC																	
3. <u>White Oak (<i>Quercus alba</i>)</u>	<u>45</u>	Yes	FACU																	
4. _____																				
5. _____																				
6. _____																				
7. _____																				
115 = Total Cover				Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%; text-align:right;">Total % Cover of:</td> <td style="width:50%; text-align:left;">Multiply by:</td> </tr> <tr> <td>OBL species <u>0</u></td> <td>x 1 = <u>0</u></td> </tr> <tr> <td>FACW species <u>0</u></td> <td>x 2 = <u>0</u></td> </tr> <tr> <td>FAC species <u>30</u></td> <td>x 3 = <u>90</u></td> </tr> <tr> <td>FACU species <u>90</u></td> <td>x 4 = <u>360</u></td> </tr> <tr> <td>UPL species <u>15</u></td> <td>x 5 = <u>75</u></td> </tr> <tr> <td>Column Totals: <u>135</u> (A)</td> <td><u>525</u> (B)</td> </tr> <tr> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.89</u></td> </tr> </table>	Total % Cover of:	Multiply by:	OBL species <u>0</u>	x 1 = <u>0</u>	FACW species <u>0</u>	x 2 = <u>0</u>	FAC species <u>30</u>	x 3 = <u>90</u>	FACU species <u>90</u>	x 4 = <u>360</u>	UPL species <u>15</u>	x 5 = <u>75</u>	Column Totals: <u>135</u> (A)	<u>525</u> (B)	Prevalence Index = B/A = <u>3.89</u>	
Total % Cover of:	Multiply by:																			
OBL species <u>0</u>	x 1 = <u>0</u>																			
FACW species <u>0</u>	x 2 = <u>0</u>																			
FAC species <u>30</u>	x 3 = <u>90</u>																			
FACU species <u>90</u>	x 4 = <u>360</u>																			
UPL species <u>15</u>	x 5 = <u>75</u>																			
Column Totals: <u>135</u> (A)	<u>525</u> (B)																			
Prevalence Index = B/A = <u>3.89</u>																				
50% of total cover: <u>58</u>		20% of total cover: <u>23</u>																		
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30</u>)																				
1. <u>Autumn olive (<i>Elaeagnus umbellata</i>)</u>	<u>15</u>	Yes	UPL	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
15 = Total Cover																				
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>																		
<u>Herb Stratum</u> (Plot size: <u>30</u>)																				
1. _____																				
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
7. _____																				
8. _____																				
9. _____																				
10. _____																				
11. _____																				
= Total Cover																				
50% of total cover: _____		20% of total cover: _____																		
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)																				
1. <u>Japanese honeysuckle (<i>Lonicera japonica</i>)</u>	<u>5</u>	Yes	FACU	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 or equal to 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.																
2. _____																				
3. _____																				
4. _____																				
5. _____																				
6. _____																				
5 = Total Cover																				
50% of total cover: <u>3</u>		20% of total cover: <u>1</u>																		
Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																				
Remarks: (Include photo numbers here or on a separate sheet.) 																				

SOIL

Sampling Point: U 3

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 5/8	95					Loamy/Clayey	
5-15	10YR 5/4	95					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators 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:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	Requirement Control Symbol EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Mint Hill Industrial 71197757 City/County: Charlotte/Mecklenburg Sampling Date: 11/14/19

Applicant/Owner: Aberdeen Carolina and Western Railway State: NC Sampling Point: W4

Investigator(s): JC Weaver Section, Township, Range: _____

Landform (hillside, terrace, etc.): Topographic low Local relief (concave, convex, none): concave Slope (%): 1-4%

Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: _____ Long: _____ Datum: NAD83

Soil Map Unit Name: Cecil, Enon, Helena, and Wilkes NWI classification: PUBHh, R5UBH, R4SBC

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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required: check all that apply)</u> _____ Surface Water (A1) _____ True Aquatic Plants (B14) <input checked="" type="checkbox"/> High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) <input checked="" type="checkbox"/> Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) <input checked="" type="checkbox"/> Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ _____ Inundation Visible on Aerial Imagery (B7) <input checked="" type="checkbox"/> Water-Stained Leaves (B9) _____ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) <input checked="" type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input checked="" type="checkbox"/> Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <input checked="" type="checkbox"/> Geomorphic Position (D2) _____ Shallow Aquitard (D3) <input checked="" type="checkbox"/> Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
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Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>8</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>6</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: W4

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Red Maple (Acer rubrum)</u>	<u>45</u>	<u>Yes</u>	<u>FAC</u>	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>5</u> (A) Total Number of Dominant Species Across All Strata: <u>7</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>71.4%</u> (A/B)
2. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>50</u>	<u>Yes</u>	<u>FAC</u>	
3. <u>American Sycamore (platanus occidentalis)</u>	<u>75</u>	<u>Yes</u>	<u>FACW</u>	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>170</u> =Total Cover			Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>90</u> x 2 = <u>180</u> FAC species <u>120</u> x 3 = <u>360</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>225</u> (A) <u>610</u> (B) Prevalence Index = B/A = <u>2.71</u>
50% of total cover: <u>85</u>	20% of total cover: <u>34</u>			
Sapling/Shrub Stratum (Plot size: <u>30</u>)				
1. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>25</u>	<u>Yes</u>	<u>FAC</u>	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Autumn olive(Elaeagnus umbellata)</u>	<u>10</u>	<u>Yes</u>	<u>UPL</u>	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
	<u>35</u> =Total Cover			
50% of total cover: <u>18</u>	20% of total cover: <u>7</u>			
Herb Stratum (Plot size: <u>30</u>)				
1. <u>Sensitive Fern (Onoclea sensibilis)</u>	<u>15</u>	<u>Yes</u>	<u>FACW</u>	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 or equal to 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.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	<u>15</u> =Total Cover			
50% of total cover: <u>8</u>	20% of total cover: <u>3</u>			
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Japanese honeysuckle (Lonicera japonica)</u>	<u>5</u>	<u>Yes</u>	<u>FACU</u>	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>5</u> =Total Cover			
50% of total cover: <u>3</u>	20% of total cover: <u>1</u>			

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 5/2	80	5YR 4/6	20	C	M	Loamy/Clayey	Prominent redox concentrations
5-8	10YR 5/2	50	10YR 4/6	50	C	M	Loamy/Clayey	Prominent redox concentrations
8-15	10YR 5/1	70	10YR 4/6	30	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators 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

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	Requirement Control Symbol EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Mint Hill Industrial 71197757 City/County: Charlotte/Mecklenburg Sampling Date: 11/14/19
 Applicant/Owner: Aberdeen Carolina and Western Railway State: NC Sampling Point: U 4
 Investigator(s): JC Weaver Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Topographic high Local relief (concave, convex, none): convex Slope (%): 2-8%
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: Cecil, Enon, Helena, and Wilkes NWI classification: _____
 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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	<table style="width:100%;"> <tr> <td style="width: 60%;">Is the Sampled Area within a Wetland?</td> <td style="width: 40%;">Yes _____ No <u>X</u></td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: U 4

<u>Tree Stratum</u> (Plot size: <u>30</u>)	Absolute % Cover	Dominant Species?	Indicator Status																									
1. <u>Black Walnut (<i>Juglans nigra</i>)</u>	<u>50</u>	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)																								
2. <u>Sweetgum (<i>Liquidambar styraciflua</i>)</u>	<u>30</u>	Yes	FAC																									
3. <u>White Oak (<i>Quercus alba</i>)</u>	<u>45</u>	Yes	FACU																									
4. _____																												
5. _____																												
6. _____																												
7. _____																												
125 =Total Cover				Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:30%;"></td> <td style="width:30%; text-align:center;">Total % Cover of:</td> <td style="width:30%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 1 = <u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 2 = <u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>30</u></td> <td style="text-align:center;">x 3 = <u>90</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>95</u></td> <td style="text-align:center;">x 4 = <u>380</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>15</u></td> <td style="text-align:center;">x 5 = <u>75</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u>140</u> (A)</td> <td style="text-align:center;"><u>545</u> (B)</td> </tr> <tr> <td colspan="3" style="text-align:center;">Prevalence Index = B/A = <u>3.89</u></td> </tr> </table>		Total % Cover of:	Multiply by:	OBL species	<u>0</u>	x 1 = <u>0</u>	FACW species	<u>0</u>	x 2 = <u>0</u>	FAC species	<u>30</u>	x 3 = <u>90</u>	FACU species	<u>95</u>	x 4 = <u>380</u>	UPL species	<u>15</u>	x 5 = <u>75</u>	Column Totals:	<u>140</u> (A)	<u>545</u> (B)	Prevalence Index = B/A = <u>3.89</u>		
	Total % Cover of:	Multiply by:																										
OBL species	<u>0</u>	x 1 = <u>0</u>																										
FACW species	<u>0</u>	x 2 = <u>0</u>																										
FAC species	<u>30</u>	x 3 = <u>90</u>																										
FACU species	<u>95</u>	x 4 = <u>380</u>																										
UPL species	<u>15</u>	x 5 = <u>75</u>																										
Column Totals:	<u>140</u> (A)	<u>545</u> (B)																										
Prevalence Index = B/A = <u>3.89</u>																												
50% of total cover: <u>63</u>		20% of total cover: <u>25</u>																										
<u>Sapling/Shrub Stratum</u> (Plot size: <u>30</u>)																												
1. <u>Autumn olive(<i>Elaeagnus umbellata</i>)</u>	<u>15</u>	Yes	UPL	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																								
2. _____																												
3. _____																												
4. _____																												
5. _____																												
6. _____																												
7. _____																												
8. _____																												
9. _____																												
15 =Total Cover																												
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>																										
<u>Herb Stratum</u> (Plot size: <u>30</u>)																												
1. _____				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 or equal to 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.																								
2. _____																												
3. _____																												
4. _____																												
5. _____																												
6. _____																												
7. _____																												
8. _____																												
9. _____																												
10. _____																												
11. _____																												
=Total Cover																												
50% of total cover: _____		20% of total cover: _____																										
<u>Woody Vine Stratum</u> (Plot size: <u>30</u>)																												
1. _____				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																								
2. _____																												
3. _____																												
4. _____																												
5. _____																												
=Total Cover																												
50% of total cover: _____		20% of total cover: _____																										
Remarks: (Include photo numbers here or on a separate sheet.)																												

SOIL

Sampling Point: U 4

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 6/6	95					Loamy/Clayey	
5-15	10YR 6/4	95					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators 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:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	Requirement Control Symbol EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
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Project/Site: Mint Hill Industrial 71197757 City/County: Charlotte/Mecklenburg Sampling Date: 11/14/19
 Applicant/Owner: Aberdeen Carolina and Western Railway State: NC Sampling Point: W5
 Investigator(s): JC Weaver Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Topographic low Local relief (concave, convex, none): concave Slope (%): 1-4%
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: Cecil, Enon, Helena, and Wilkes NWI classification: PUBHh, R5UBH, R4SBC
 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 <u>X</u> No _____ Hydric Soil Present? Yes <u>X</u> No _____ Wetland Hydrology Present? Yes <u>X</u> No _____	Is the Sampled Area within a Wetland? Yes <u>X</u> No _____
Remarks:	

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required: check all that apply)</u> _____ Surface Water (A1) _____ True Aquatic Plants (B14) <u>X</u> High Water Table (A2) _____ Hydrogen Sulfide Odor (C1) _____ Saturation (A3) _____ Oxidized Rhizospheres on Living Roots (C3) _____ Water Marks (B1) _____ Presence of Reduced Iron (C4) _____ Sediment Deposits (B2) _____ Recent Iron Reduction in Tilled Soils (C6) <u>X</u> Drift Deposits (B3) _____ Thin Muck Surface (C7) _____ Algal Mat or Crust (B4) _____ Other (Explain in Remarks) _____ Iron Deposits (B5) _____ _____ Inundation Visible on Aerial Imagery (B7) <u>X</u> Water-Stained Leaves (B9) _____ Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> _____ Surface Soil Cracks (B6) <u>X</u> Sparsely Vegetated Concave Surface (B8) <u>X</u> Drainage Patterns (B10) _____ Moss Trim Lines (B16) _____ Dry-Season Water Table (C2) _____ Crayfish Burrows (C8) _____ Saturation Visible on Aerial Imagery (C9) _____ Stunted or Stressed Plants (D1) <u>X</u> Geomorphic Position (D2) _____ Shallow Aquitard (D3) <u>X</u> Microtopographic Relief (D4) _____ FAC-Neutral Test (D5)
---	--

Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): <u>2</u> Water Table Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> Saturation Present? Yes <u>X</u> No _____ Depth (inches): <u>1</u> (includes capillary fringe)	Wetland Hydrology Present? Yes <u>X</u> No _____
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Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

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

Sampling Point: W5

	Absolute % Cover	Dominant Species?	Indicator Status	
Tree Stratum (Plot size: <u>30</u>)				
1. <u>Red Maple (Acer rubrum)</u>	<u>45</u>	Yes	FAC	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>4</u> (A) Total Number of Dominant Species Across All Strata: <u>6</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>66.7%</u> (A/B)
2. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>50</u>	Yes	FAC	
3. <u>American Sycamore (platanus occidentalis)</u>	<u>75</u>	Yes	FACW	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
	<u>170</u> =Total Cover			Prevalence Index worksheet: Total % Cover of: _____ Multiply by: _____ OBL species <u>0</u> x 1 = <u>0</u> FACW species <u>75</u> x 2 = <u>150</u> FAC species <u>120</u> x 3 = <u>360</u> FACU species <u>5</u> x 4 = <u>20</u> UPL species <u>10</u> x 5 = <u>50</u> Column Totals: <u>210</u> (A) <u>580</u> (B) Prevalence Index = B/A = <u>2.76</u>
	50% of total cover: <u>85</u> 20% of total cover: <u>34</u>			
Sapling/Shrub Stratum (Plot size: <u>30</u>)				
1. <u>Sweetgum (Liquidambar styraciflua)</u>	<u>25</u>	Yes	FAC	Hydrophytic Vegetation Indicators: <input type="checkbox"/> 1 - Rapid Test for Hydrophytic Vegetation <input checked="" type="checkbox"/> 2 - Dominance Test is >50% <input checked="" type="checkbox"/> 3 - Prevalence Index is ≤3.0 ¹ <input type="checkbox"/> 4 - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <input type="checkbox"/> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
2. <u>Autumn olive(Elaeagnus umbellata)</u>	<u>10</u>	Yes	UPL	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
	<u>35</u> =Total Cover			
	50% of total cover: <u>18</u> 20% of total cover: <u>7</u>			
Herb Stratum (Plot size: <u>30</u>)				
1. _____	_____	_____	_____	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 or equal to 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.
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
6. _____	_____	_____	_____	
7. _____	_____	_____	_____	
8. _____	_____	_____	_____	
9. _____	_____	_____	_____	
10. _____	_____	_____	_____	
11. _____	_____	_____	_____	
	_____ =Total Cover			
	50% of total cover: _____ 20% of total cover: _____			
Woody Vine Stratum (Plot size: <u>30</u>)				
1. <u>Japanese honeysuckle (Lonicera japonica)</u>	<u>5</u>	Yes	FACU	Hydrophytic Vegetation Present? Yes <input checked="" type="checkbox"/> No _____
2. _____	_____	_____	_____	
3. _____	_____	_____	_____	
4. _____	_____	_____	_____	
5. _____	_____	_____	_____	
	<u>5</u> =Total Cover			
	50% of total cover: <u>3</u> 20% of total cover: <u>1</u>			

Remarks: (Include photo numbers here or on a separate sheet.)

SOIL

Sampling Point: W5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-3	2.5YR 2.5/1	95					Loamy/Clayey	
3-8	2.5YR 2.5/1	80	10YR 4/6	50	C	M	Loamy/Clayey	Prominent redox concentrations
8-15	2.5YR 3/4	70	10YR 4/6	30	C	M	Loamy/Clayey	Prominent redox concentrations

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)
- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators 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 _____

Remarks:

U.S. Army Corps of Engineers WETLAND DETERMINATION DATA SHEET – Eastern Mountains and Piedmont Region See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R	<i>Requirement Control Symbol</i> EXEMPT <i>(Authority: AR 335-15, paragraph 5-2a)</i>
---	---

Project/Site: Mint Hill Industrial 71197757 City/County: Charlotte/Mecklenburg Sampling Date: 11/14/19
 Applicant/Owner: Aberdeen Carolina and Western Railway State: NC Sampling Point: U 5
 Investigator(s): JC Weaver Section, Township, Range: _____
 Landform (hillside, terrace, etc.): Topographic high Local relief (concave, convex, none): convex Slope (%): 2-8%
 Subregion (LRR or MLRA): LRR P, MLRA 136 Lat: _____ Long: _____ Datum: NAD83
 Soil Map Unit Name: Cecil, Enon, Helena, and Wilkes NWI classification: _____
 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 _____ No <u>X</u> Hydric Soil Present? Yes _____ No <u>X</u> Wetland Hydrology Present? Yes _____ No <u>X</u>	<table style="width:100%;"> <tr> <td style="width: 60%;">Is the Sampled Area within a Wetland?</td> <td style="width: 40%;">Yes _____ No <u>X</u></td> </tr> </table>	Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>
Is the Sampled Area within a Wetland?	Yes _____ No <u>X</u>		
Remarks:			

HYDROLOGY

Wetland Hydrology Indicators: <u>Primary Indicators (minimum of one is required; check all that apply)</u> <input type="checkbox"/> Surface Water (A1) <input type="checkbox"/> True Aquatic Plants (B14) <input type="checkbox"/> High Water Table (A2) <input type="checkbox"/> Hydrogen Sulfide Odor (C1) <input type="checkbox"/> Saturation (A3) <input type="checkbox"/> Oxidized Rhizospheres on Living Roots (C3) <input type="checkbox"/> Water Marks (B1) <input type="checkbox"/> Presence of Reduced Iron (C4) <input type="checkbox"/> Sediment Deposits (B2) <input type="checkbox"/> Recent Iron Reduction in Tilled Soils (C6) <input type="checkbox"/> Drift Deposits (B3) <input type="checkbox"/> Thin Muck Surface (C7) <input type="checkbox"/> Algal Mat or Crust (B4) <input type="checkbox"/> Other (Explain in Remarks) <input type="checkbox"/> Iron Deposits (B5) <input type="checkbox"/> Inundation Visible on Aerial Imagery (B7) <input type="checkbox"/> Water-Stained Leaves (B9) <input type="checkbox"/> Aquatic Fauna (B13)	<u>Secondary Indicators (minimum of two required)</u> <input type="checkbox"/> Surface Soil Cracks (B6) <input type="checkbox"/> Sparsely Vegetated Concave Surface (B8) <input type="checkbox"/> Drainage Patterns (B10) <input type="checkbox"/> Moss Trim Lines (B16) <input type="checkbox"/> Dry-Season Water Table (C2) <input type="checkbox"/> Crayfish Burrows (C8) <input type="checkbox"/> Saturation Visible on Aerial Imagery (C9) <input type="checkbox"/> Stunted or Stressed Plants (D1) <input type="checkbox"/> Geomorphic Position (D2) <input type="checkbox"/> Shallow Aquitard (D3) <input type="checkbox"/> Microtopographic Relief (D4) <input type="checkbox"/> FAC-Neutral Test (D5)
Field Observations: Surface Water Present? Yes _____ No _____ Depth (inches): _____ Water Table Present? Yes _____ No _____ Depth (inches): _____ Saturation Present? Yes _____ No _____ Depth (inches): _____ (includes capillary fringe)	Wetland Hydrology Present? Yes _____ No <u>X</u>
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:	
Remarks:	

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

Sampling Point: U 5

	Absolute % Cover	Dominant Species?	Indicator Status																									
Tree Stratum (Plot size: <u>30</u>)																												
1. <u>Black Walnut (<i>Juglans nigra</i>)</u>	<u>50</u>	Yes	FACU	Dominance Test worksheet: Number of Dominant Species That Are OBL, FACW, or FAC: <u>1</u> (A) Total Number of Dominant Species Across All Strata: <u>4</u> (B) Percent of Dominant Species That Are OBL, FACW, or FAC: <u>25.0%</u> (A/B)																								
2. <u>Sweetgum (<i>Liquidambar styraciflua</i>)</u>	<u>30</u>	Yes	FAC																									
3. <u>White Oak (<i>Quercus alba</i>)</u>	<u>45</u>	Yes	FACU																									
4. _____																												
5. _____																												
6. _____																												
7. _____																												
	<u>125</u> =Total Cover			Prevalence Index worksheet: <table style="width:100%; border:none;"> <tr> <td style="width:50%;"></td> <td style="width:25%; text-align:center;">Total % Cover of:</td> <td style="width:25%; text-align:center;">Multiply by:</td> </tr> <tr> <td>OBL species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 1 = <u>0</u></td> </tr> <tr> <td>FACW species</td> <td style="text-align:center;"><u>0</u></td> <td style="text-align:center;">x 2 = <u>0</u></td> </tr> <tr> <td>FAC species</td> <td style="text-align:center;"><u>30</u></td> <td style="text-align:center;">x 3 = <u>90</u></td> </tr> <tr> <td>FACU species</td> <td style="text-align:center;"><u>95</u></td> <td style="text-align:center;">x 4 = <u>380</u></td> </tr> <tr> <td>UPL species</td> <td style="text-align:center;"><u>15</u></td> <td style="text-align:center;">x 5 = <u>75</u></td> </tr> <tr> <td>Column Totals:</td> <td style="text-align:center;"><u>140</u> (A)</td> <td style="text-align:center;"><u>545</u> (B)</td> </tr> <tr> <td></td> <td colspan="2" style="text-align:center;">Prevalence Index = B/A = <u>3.89</u></td> </tr> </table>		Total % Cover of:	Multiply by:	OBL species	<u>0</u>	x 1 = <u>0</u>	FACW species	<u>0</u>	x 2 = <u>0</u>	FAC species	<u>30</u>	x 3 = <u>90</u>	FACU species	<u>95</u>	x 4 = <u>380</u>	UPL species	<u>15</u>	x 5 = <u>75</u>	Column Totals:	<u>140</u> (A)	<u>545</u> (B)		Prevalence Index = B/A = <u>3.89</u>	
	Total % Cover of:	Multiply by:																										
OBL species	<u>0</u>	x 1 = <u>0</u>																										
FACW species	<u>0</u>	x 2 = <u>0</u>																										
FAC species	<u>30</u>	x 3 = <u>90</u>																										
FACU species	<u>95</u>	x 4 = <u>380</u>																										
UPL species	<u>15</u>	x 5 = <u>75</u>																										
Column Totals:	<u>140</u> (A)	<u>545</u> (B)																										
	Prevalence Index = B/A = <u>3.89</u>																											
50% of total cover: <u>63</u>		20% of total cover: <u>25</u>																										
Sapling/Shrub Stratum (Plot size: <u>30</u>)																												
1. <u>Autumn olive(<i>Elaeagnus umbellata</i>)</u>	<u>15</u>	Yes	UPL	Hydrophytic Vegetation Indicators: <u>1</u> - Rapid Test for Hydrophytic Vegetation <u>2</u> - Dominance Test is >50% <u>3</u> - Prevalence Index is ≤3.0 ¹ <u>4</u> - Morphological Adaptations ¹ (Provide supporting data in Remarks or on a separate sheet) <u> </u> Problematic Hydrophytic Vegetation ¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.																								
2. _____																												
3. _____																												
4. _____																												
5. _____																												
6. _____																												
7. _____																												
8. _____																												
9. _____																												
	<u>15</u> =Total Cover																											
50% of total cover: <u>8</u>		20% of total cover: <u>3</u>																										
Herb Stratum (Plot size: <u>30</u>)																												
1. _____				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 or equal to 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.																								
2. _____																												
3. _____																												
4. _____																												
5. _____																												
6. _____																												
7. _____																												
8. _____																												
9. _____																												
10. _____																												
11. _____																												
	=Total Cover																											
50% of total cover: _____		20% of total cover: _____																										
Woody Vine Stratum (Plot size: <u>30</u>)																												
1. _____				Hydrophytic Vegetation Present? Yes <u> </u> No <u>X</u>																								
2. _____																												
3. _____																												
4. _____																												
5. _____																												
	=Total Cover																											
50% of total cover: _____		20% of total cover: _____																										
Remarks: (Include photo numbers here or on a separate sheet.)																												

SOIL

Sampling Point: U 5

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

Depth (inches)	Matrix		Redox Features				Texture	Remarks
	Color (moist)	%	Color (moist)	%	Type ¹	Loc ²		
0-5	10YR 6/6	95					Loamy/Clayey	
5-15	10YR 6/4	95					Loamy/Clayey	

¹Type: C=Concentration, D=Depletion, RM=Reduced Matrix, MS=Masked Sand Grains.

²Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- Histosol (A1)
- Histic Epipedon (A2)
- Black Histic (A3)
- Hydrogen Sulfide (A4)
- Stratified Layers (A5)
- 2 cm Muck (A10) (**LRR N**)
- Depleted Below Dark Surface (A11)
- Thick Dark Surface (A12)
- Sandy Mucky Mineral (S1)
- Sandy Gleyed Matrix (S4)
- Sandy Redox (S5)
- Stripped Matrix (S6)
- Dark Surface (S7)

- Polyvalue Below Surface (S8) (**MLRA 147, 148**)
- Thin Dark Surface (S9) (**MLRA 147, 148**)
- Loamy Mucky Mineral (F1) (**MLRA 136**)
- Loamy Gleyed Matrix (F2)
- Depleted Matrix (F3)
- Redox Dark Surface (F6)
- Depleted Dark Surface (F7)
- Redox Depressions (F8)
- Iron-Manganese Masses (F12) (**LRR N, MLRA 136**)
- Umbric Surface (F13) (**MLRA 122, 136**)
- Piedmont Floodplain Soils (F19) (**MLRA 148**)
- Red Parent Material (F21) (**MLRA 127, 147, 148**)

Indicators for Problematic Hydric Soils³:

- 2 cm Muck (A10) (**MLRA 147**)
- Coast Prairie Redox (A16) (**MLRA 147, 148**)
- Piedmont Floodplain Soils (F19) (**MLRA 136, 147**)
- Red Parent Material (F21) (**outside MLRA 127, 147, 148**)
- Very Shallow Dark Surface (F22)
- Other (Explain in Remarks)

³Indicators 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:

NC DWQ Stream Identification Form Version 4.11

RPW-1,2,3,4,5

Date: 11/14/19	Project/Site: Mint Hill Industrial	Latitude: 35.22049
Evaluator: JC Weaver / Vic Larson	County: Mecklenburg	Longitude: -80.64118
Total Points: <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i> 28	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = 15)

	Absent	Weak	Moderate	Strong
1 ^a Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

^aartificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 6.5)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 6.5)

18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

See provided photo log. Stream form is representative for all intermittent streams on site.

NC DWQ Stream Identification Form Version 4.11

Ephemeral -1,2

Date: 11/14/19	Project/Site: Mint Hill Industrial	Latitude: 35.22049
Evaluator: JC Weaver / Vic Larson	County: Mecklenburg	Longitude: -80.64118
Total Points: <i>Stream is at least intermittent if ≥ 19 or perennial if ≥ 30*</i> 16	Stream Determination (circle one) Ephemeral Intermittent Perennial	Other <i>e.g. Quad Name:</i>

A. Geomorphology (Subtotal = 7)

	Absent	Weak	Moderate	Strong
1 ^a Continuity of channel bed and bank	0	1	2	3
2. Sinuosity of channel along thalweg	0	1	2	3
3. In-channel structure: ex. riffle-pool, step-pool, ripple-pool sequence	0	1	2	3
4. Particle size of stream substrate	0	1	2	3
5. Active/relict floodplain	0	1	2	3
6. Depositional bars or benches	0	1	2	3
7. Recent alluvial deposits	0	1	2	3
8. Headcuts	0	1	2	3
9. Grade control	0	0.5	1	1.5
10. Natural valley	0	0.5	1	1.5
11. Second or greater order channel	No = 0		Yes = 3	

^aartificial ditches are not rated; see discussions in manual

B. Hydrology (Subtotal = 4)

12. Presence of Baseflow	0	1	2	3
13. Iron oxidizing bacteria	0	1	2	3
14. Leaf litter	1.5	1	0.5	0
15. Sediment on plants or debris	0	0.5	1	1.5
16. Organic debris lines or piles	0	0.5	1	1.5
17. Soil-based evidence of high water table?	No = 0		Yes = 3	

C. Biology (Subtotal = 5)

18. Fibrous roots in streambed	3	2	1	0
19. Rooted upland plants in streambed	3	2	1	0
20. Macroinvertebrates (note diversity and abundance)	0	1	2	3
21. Aquatic Mollusks	0	1	2	3
22. Fish	0	0.5	1	1.5
23. Crayfish	0	0.5	1	1.5
24. Amphibians	0	0.5	1	1.5
25. Algae	0	0.5	1	1.5
26. Wetland plants in streambed	FACW = 0.75; OBL = 1.5 Other = 0			

*perennial streams may also be identified using other methods. See p. 35 of manual.

Notes:

Sketch:

See provided photo log. Stream form is representative for all ephemeral streams on site.

MECKLENBURG COUNTY ~ PROPERTY RECORD CARD PROPERTY SEARCH

PARCEL ID: 13715210
ALBEMARLE RD MINT HILL NC

MINT HILL INDUSTRIAL LLC
967 NC HIGHWAY 211 E
CANDOR NC 27229

Total Appraised Value
\$2,086,700

KEY INFORMATION

Land Use Code	I600	Neighborhood	IN02
Land Use Desc	INDUSTRIAL	Land	2861848 SQUARE FEET
Exemption/Deferment	-	Municipality	MINT HILL
Last Sale Date	-	Fire District	MINT HILL
Last Sale Price	-	Special District	FIRE SERVICE F
Legal Description	L42 M55-687		

ASSESSMENT DETAILS

Notice of 2019 Real Estate Assessed Value	
Land Value	\$2,086,700
Building Value	\$0
Features	\$0
Total	\$2,086,700

BUILDING (1)

Finished Area	-	Year Built	-	Built Use / Style	-
Story	-	Heat	-	Fuel	-
Foundation	-	External Wall	-	Fireplace(s)	-
Full Bath(s)	-	Half Bath(s)	-	Bedroom(s)	-
Total (SqFt)	-				

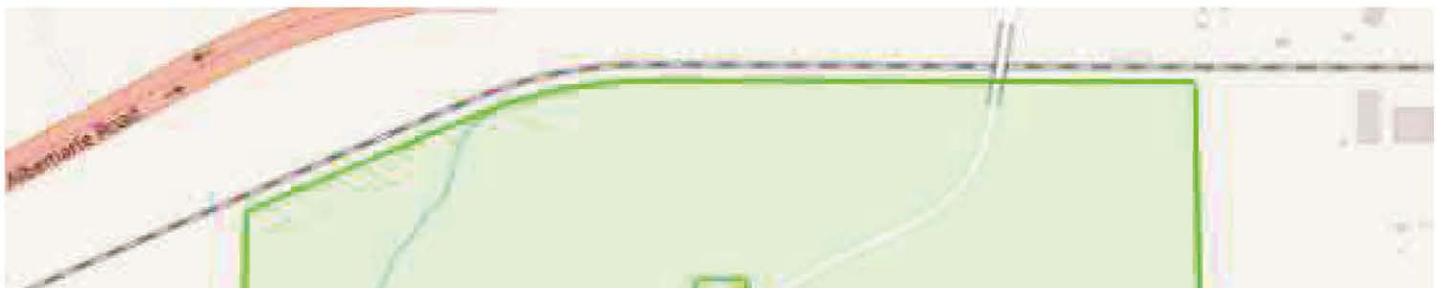
LAND

Use	Units	Type	Neighborhood	Assessment
I600	2861848	SQUARE FEET	IN02	\$2,086,700

VALUE CHANGES

The value change history shows only changes in appraised value; it does not show exemptions, exclusions or deferrals that could reduce a property's taxable value. If any of these are in effect for a particular tax year, it will be shown on the property tax bill for that year. It is also possible that some previous value changes might be missing from this list or listed in the wrong order. If you have any questions, please call the County Assessor's Office at 704-336-7600.

Date of Value Change	Effective for Tax Year	Reason for Change	New Value
01/16/2019	2019	COUNTYWIDE REVALUATION	\$2,086,700
10/15/2015	2015	Board of Equalization and Review - Decision	\$2,861,800
04/07/2015	2015	CHANGE IN ZONING AND/OR USE	\$5,008,200
10/11/2014	2014	REVALUATION REVIEW - PEARSON	\$1,296,700
04/10/2014	2014	COMBINED REAL ESTATE	\$1,469,600
10/10/2014	2011	REVALUATION REVIEW - PEARSON	\$992,300
02/04/2011	2011	COUNTYWIDE REVALUATION	\$1,102,600
07/24/2004	2004	DIVISION OF REAL ESTATE/OR NEW PARCEL	\$547,800





Disclaimer

Mecklenburg County makes every effort to produce the most accurate information possible. **No warranties, expressed or implied, are provided for the data herein, its use or interpretation.**



November 19, 2021

Aberdeen Carolina and Western Railway
976 NC Highway 211 E
Candor, North Carolina 27229

Attn: Mr. Anthony Menzies
P: (910) 974-4219
E: amenzies@acwr.com

Re: Wetlands and Waters Delineation
Mint Hill Passing and Siding Location
Samarcand Storage and Passing Siding
Mecklenburg and Moore Counties, North Carolina
Terracon Project No. 71217506

Dear Mr. Menzies :

Terracon Consultants Inc. (Terracon) has conducted a wetlands and waters review for the Proposed Mint Hill Passing and Siding Location and the Samarcand Storage and Passing Siding located in Mecklenburg and Moore Counties (respectively), NC (Exhibit 1 and 1A). Staff was tasked with evaluating features that may be considered subject to jurisdiction and permitting requirements under Sections 404 and 401 of the Clean Water Act (CWA) and under the State's Isolated and Other Non-404 Jurisdictional Wetlands and Waters.

Background Research

Prior to the initiation of field efforts, several available resources were reviewed, including the U.S. Geological Survey 7.5-minute topographic quadrangles of Mint Hill (1993), Midland (1993), and Candor (1994) NC, the NRCS published Soil Survey of Mecklenburg and Moore Counties, NC, aerial photography, National Wetlands Inventory, and other publicly available mapping resources. Field work was conducted by technical staff in October 2021.

Topography

Mint Hill Passing and Siding Location

Topography in the study area consists of a series of topographic highs with steep slopes and drainages to the southeast. Elevations range from a high of approximately 700 feet above mean sea level (MSL) down to approximately 690 feet above MSL (Exhibit 1) based on a review of USGS mapping and other online resources.

Samarcand Storage and Passing Siding

Topography in the study area consists of mostly flat terrain with gentle to steep slopes and drainages to the south. Elevations range from a high of approximately 700 feet above mean sea

Wetland and Waters Review

Mint Hill Passing and Siding and Samarcand Storage and Passing Siding ■
Mecklenburg and Moore Counties, NC ■
November 19, 2021 ■ Terracon Project No. 71217506



level (MSL) down to approximately 690 feet above MSL (Exhibit 1A) based on a review of USGS mapping and other online resources.

Soils

Mint Hill Passing and Siding Location

Exhibit 2 depicts three (3) soil mapping units potentially occurring in the study area. The Cecil clay loam (CeB2 - 2 to 8% slopes and CeD2 - 8 to 15% slopes) and Pacolet sandy loam (PaF – 15 to 25% slopes) soil mapping units are believed to occur on the property. These soil mapping units are not considered hydric soils by NRCS. The published Mecklenburg County soil survey did not identify any aquatic features within the proposed project location.

Samarcand Storage and Passing Siding

Exhibits 2A depicts three (3) soil mapping units potentially occurring in the study area. The Candor sand (CaB 0-4% slopes), Udorthents loam (Ud), and Vaucluse gravelly sandy loam (VcD - 8 to 18% slopes) soil mapping units are believed to occur on the property. These soil mapping units are not considered hydric soils by NRCS. The published Moore County soil survey did not identify any aquatic features within the proposed project location.

Wetlands and Waters

Section 404 of the CWA requires regulation of discharges into waters of the U.S. (WOTUS). Although the principal administrative agency of the CWA is the U.S. Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (USACE) has major responsibility for implementation, permitting, and enforcement of provisions of the CWA. Water bodies such as rivers, lakes, and streams are subject to jurisdictional consideration under the Section 404 program. However, by regulation, certain wetlands are also considered WOTUS. However, wetlands and other waterbodies that do not fall under federal regulation may be subject to jurisdiction by the N.C. Division of Water Resources (NCDWR) under the state's Isolated and Other Non-404 Jurisdictional Wetlands and Waters program.

Our delineation methodology generally follows the guidance outlined in the Regional Supplement to the USACE Wetland Delineation Manual for the Eastern Mountains and Piedmont Region. Areas must exhibit three distinct characteristics to be considered jurisdictional wetlands: 1) prevalence of hydrophytic (water tolerant) plants; 2) presence of hydric soils; and 3) sufficient wetland hydrology indicators within 12 inches of the ground surface.

The study area was also reviewed for the presence of tributaries (stream channels) using criteria provided by the USACE and the NCDWR. When present, intermittent and perennial tributaries, and certain other surface waters, are also considered jurisdictional by the USACE and/or NCDWR.

Preliminary Delineation Results

Terracon's review of the Proposed Mint Hill Passing and Siding and Samarcand Storage and Passing Siding study areas indicated that no potential wetlands or WOTUS are present within these study areas. The approximate location and extent of the proposed project study areas are

Wetland and Waters Review

Mint Hill Passing and Siding and Samarcand Storage and Passing Siding ■
Mecklenburg and Moore Counties, NC ■
November 19, 2021 ■ Terracon Project No. 71217506



provided in Exhibit 3, 3A. On-site photos are also attached to document site conditions at the time of the field review.

Clean Water Act Permitting

As the study areas do not included potential wetlands or waters, no Clean Water Act permitting will be required for these projects.

Riparian Buffers/Setbacks

There are no buffers or setbacks associated with the project study areas.

Recommendations

Potential wetlands and waters that are likely subject to USACE and/or NCDWR jurisdiction were not observed within the proposed project study areas. No impacts to wetlands or waters are expected as a result of the proposed projects. Should the scope and/or extents of the proposed projects change, Terracon recommends that an additional wetlands and waters review be conducted.

Please contact our office if you have questions regarding this evaluation.

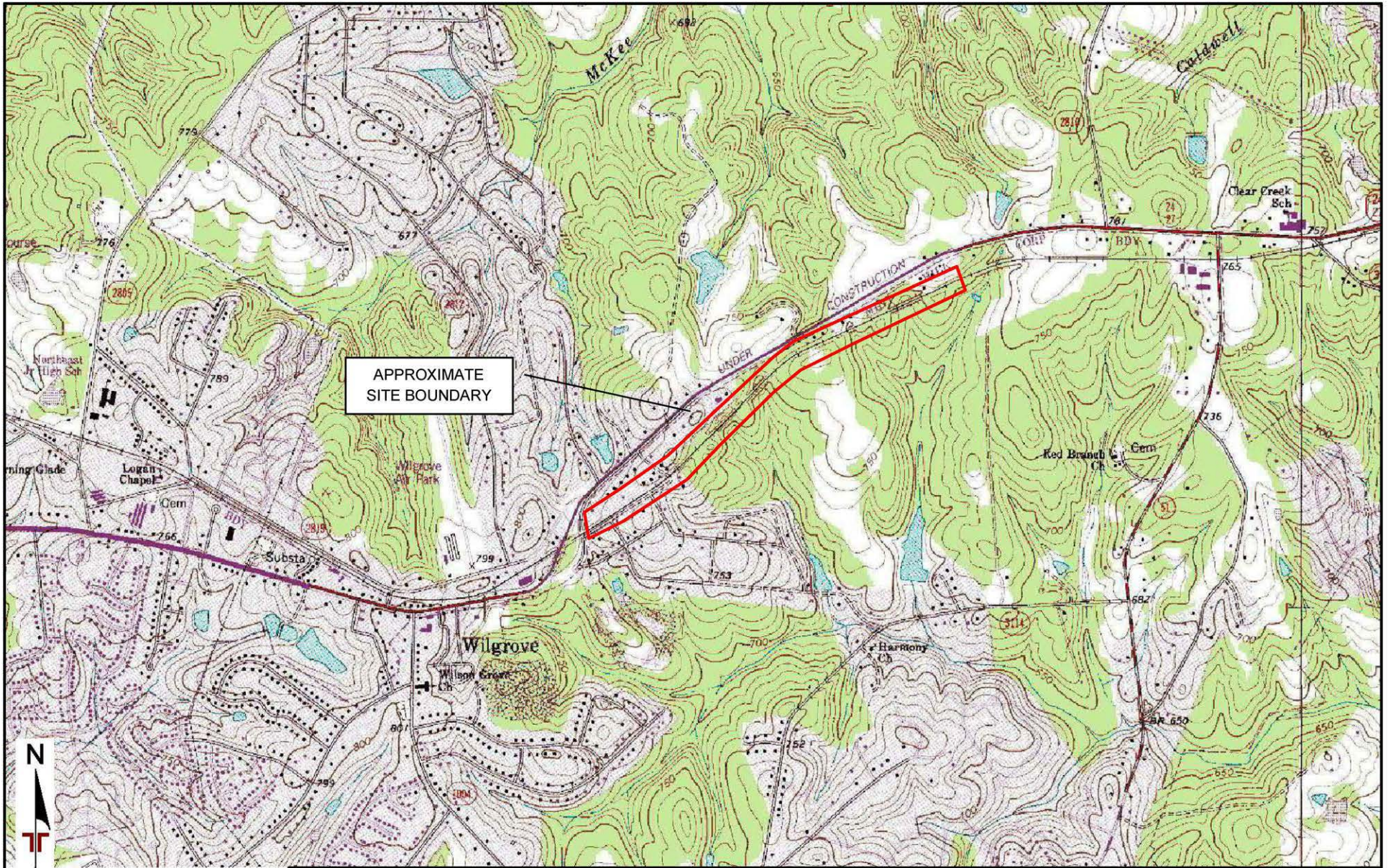
Sincerely,



JC Weaver
Project Scientist



Robert Turnbull
Department Manager



APPROXIMATE
SITE BOUNDARY



TOPOGRAPHIC MAP IMAGE COURTESY OF
THE U.S. GEOLOGICAL SURVEY
QUADRANGLES INCLUDE: MINT HILL, NC
(1/1/1993) and MIDLAND, NC (1/1/1993).

DIAGRAM IS FOR GENERAL LOCATION ONLY,
AND IS NOT INTENDED FOR CONSTRUCTION
PURPOSES

Project Manager: LB	Project No. 71217506
Drawn by: .ICW	Scale: 1"=2,000'
Checked by: I R	File Name:
Approved by: LB	Date: Oct 2021

Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

TOPOGRAPHIC MAP
Mint Hill Siding 11730 Allen Station Drive Mint Hill, NC

Exhibit
1

LEGEND

- Site Boundary
- Soil Mapping Units
- CeB2- Cecil sandy clay loam, 2-8% slopes
- CeD2- Cecil sandy clay loam, 8-15% slopes
- PaE- Pacolet sandy loam, 15-25 % slopes



APPROXIMATE
SITE BOUNDARY



AERIAL PHOTOGRAPHY PROVIDED BY
MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY,
AND IS NOT INTENDED FOR CONSTRUCTION
PURPOSES

Project Manager: LB
Drawn by: JCW
Checked by: LB
Approved by: LB

Project No. 71217506
Scale: AS SHOWN
File Name:
Date: Oct 2021

Terracon

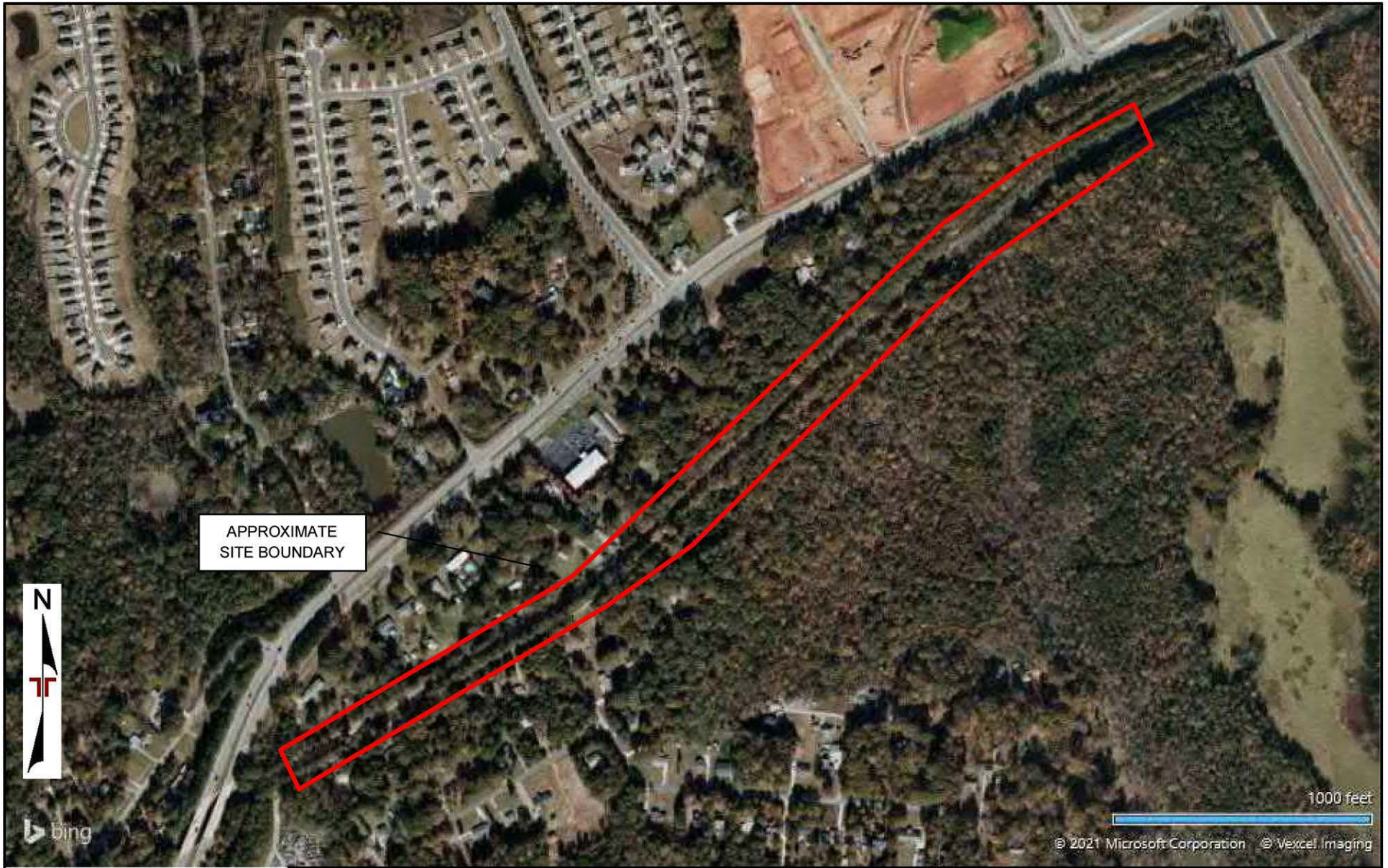
2701 Westport Rd
Charlotte, NC 28208-3608

USDA NRCS Soils Data

Mint Hill Siding
LOCATED BETWEEN HIGHWAY 27 AND I-485
Mint Hill, NC

Exhibit

2



APPROXIMATE
SITE BOUNDARY

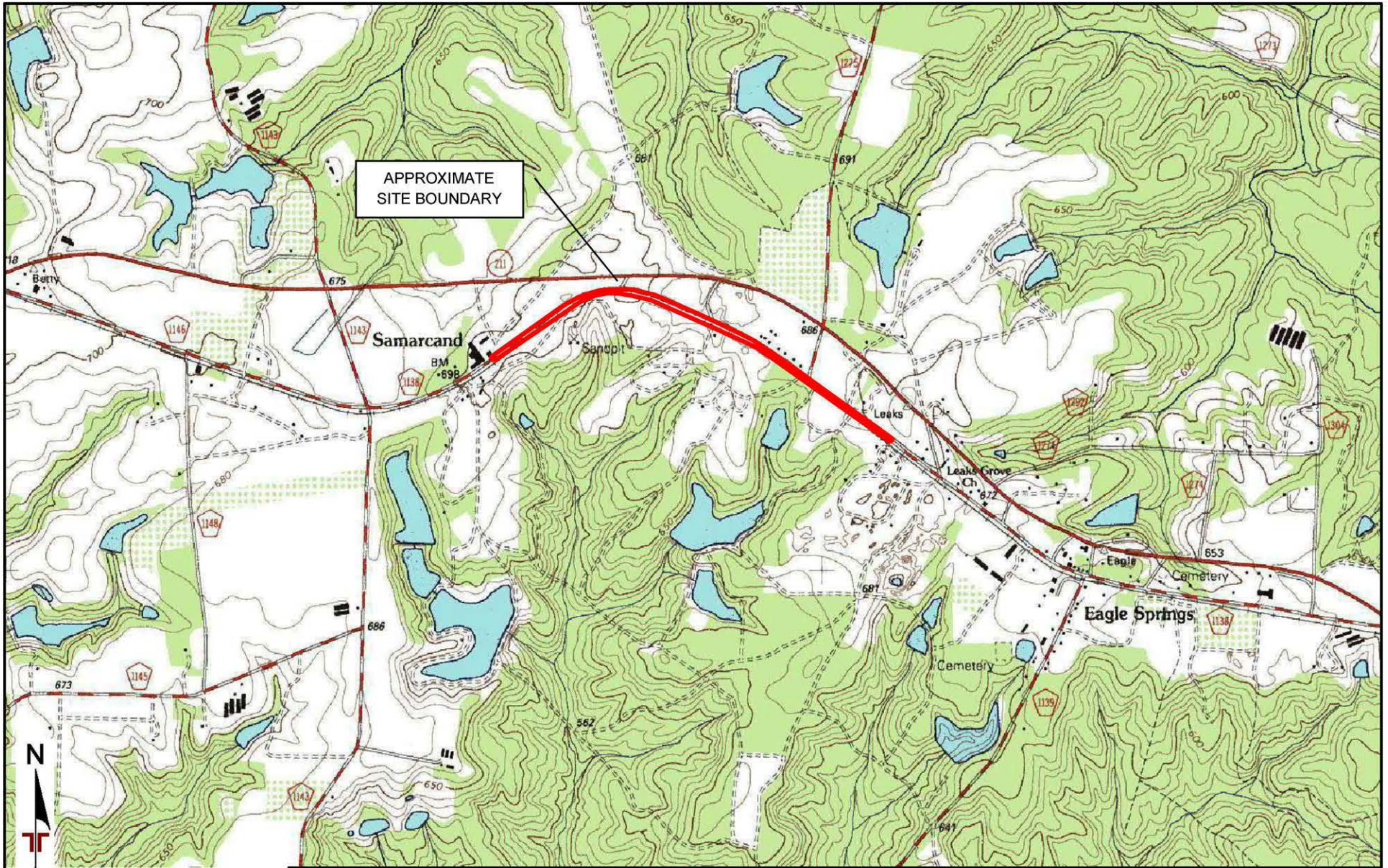


Bing

1000 feet

© 2021 Microsoft Corporation © Vexcel Imaging

<p>AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS</p> <p>DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES</p>	<p>Project Manager: IR</p>	<p>Project No. 71217506</p>	<p>Terracon</p> <p>2701 Westport Road</p> <p>Charlotte, North Carolina</p>	<p>SITE DIAGRAM</p>		<p>Exhibit</p>
	<p>Drawn by: JCW</p>	<p>Scale:</p>		<p>ACWR Corridor WOTUS Survey</p> <p>Mint Hill Passing and Siding</p> <p>Mint Hill, NC</p>		<p>3</p>
	<p>Checked by: RB</p>	<p>File Name:</p>				
	<p>Approved by: LB</p>	<p>Date: October 2021</p>				



APPROXIMATE
SITE BOUNDARY

TOPOGRAPHIC MAP IMAGE COURTESY OF
THE U.S. GEOLOGICAL SURVEY
QUADRANGLES INCLUDE: CANDOR, NC
(1/1/1994).

DIAGRAM IS FOR GENERAL LOCATION ONLY,
AND IS NOT INTENDED FOR CONSTRUCTION
PURPOSES

Project Manager: LB
Drawn by: .JCW
Checked by: I R
Approved by: RT

Project No. 71217506
Scale: 1"=2,000'
File Name:
Date: October 2021



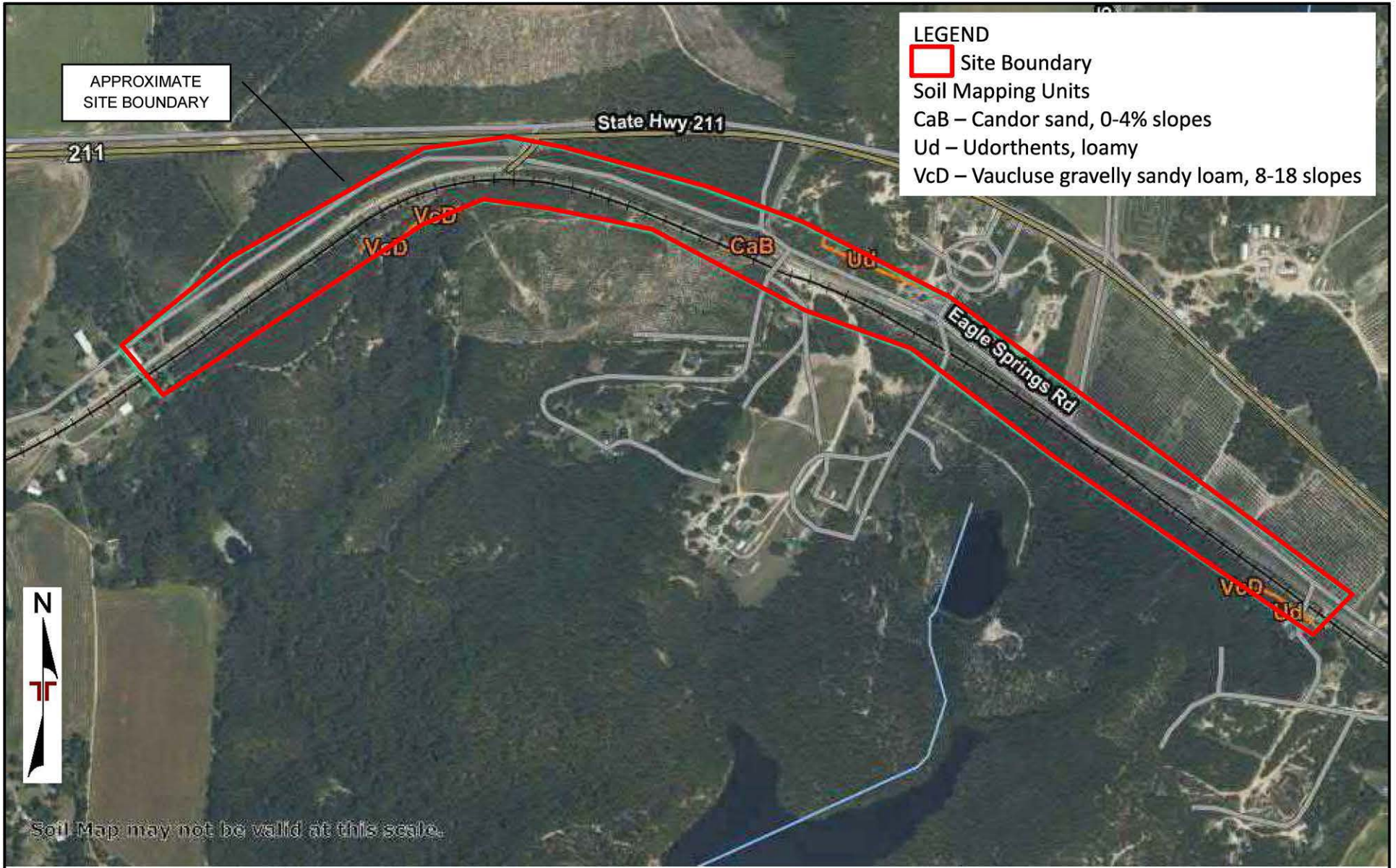
2701 Westport Rd
Charlotte, NC 28208-3608

TOPOGRAPHIC MAP

ACWR Corridor WOTUS Survey
Samarqand Storage and Passing Siding
Eagle Springs, NC

Exhibit

1A



AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	LB
Drawn by:	JCW
Checked by:	LB
Approved by:	RT

Project No.	71217506
Scale:	AS SHOWN
File Name:	
Date:	October 2021

Terracon

2701 Westport Rd
Charlotte, NC 28208-3608

SITE DIAGRAM

ACWR Corridor WOTUS Survey
Samarcand Storage and Passing Siding
Eagle Springs, NC

Exhibit

2A



AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	LB
Drawn by:	JCW
Checked by:	LB
Approved by:	RT

Project No.	71217506
Scale:	AS SHOWN
File Name:	
Date:	October 2021

Terracon
 2701 Westport Rd
 Charlotte, NC 28208-3608

SITE DIAGRAM

ACWR Corridor WOTUS Survey
 Samarcand Storage and Passing Siding
 Eagle Springs, NC

Exhibit

3A



Photograph 1: View of Mint Hill Passing existing rail line and proposed rail corridor north of the existing line, eastern portion of the site, facing east.



Photograph 2: View of Mint Hill Passing existing rail line and proposed rail corridor south of the existing line, central portion of the site, facing west.



Photograph 3: View of Mint Hill Passing existing rail line and proposed rail corridor north of the existing line, western portion of the site, facing east.



Photograph 4: View of Samarcand existing rail line and proposed rail corridor north of the existing line, western portion of the site, facing west.



Photograph 5: View of Samarcond existing rail line and proposed rail corridor north of the existing line, central portion of the site, facing east.



Photograph 6: View of Samarcond existing rail line and proposed rail corridor north of the existing line, eastern portion of the site, facing west.



December 12, 2021

Aberdeen Carolina and Western Railway
976 NC Highway 211 E
Candor, North Carolina 27229

Attn: Mr. Anthony Menzies
P: (910) 974-4219
E: amenzies@acwr.com

Re: Wetlands and Waters Delineation
Midland Siding
Cabarrus County, North Carolina
Terracon Project No. 71217506

Dear Mr. Menzies :

Terracon Consultants Inc. (Terracon) has conducted a wetlands and waters review for the Proposed Midland Siding project located in Cabarrus County, NC (Exhibit 1). Staff was tasked with evaluating features that may be considered subject to jurisdiction and permitting requirements under Sections 404 and 401 of the Clean Water Act (CWA) and under the State's Isolated and Other Non-404 Jurisdictional Wetlands and Waters.

Background Research

Prior to the initiation of field efforts, several available resources were reviewed, including the U.S. Geological Survey 7.5-minute topographic quadrangle of Midland (2011), the NRCS published Soil Survey of Cabarrus County, NC, aerial photography, National Wetlands Inventory, and other publicly available mapping resources. Field work was conducted by technical staff in November 2021.

Topography

Topography in the study area consists of a series of topographic highs with steep slopes and drainages to the south. Elevations range from a high of approximately 700 feet above mean sea level (MSL) down to approximately 600 feet above MSL (Exhibit 1) based on a review of USGS mapping and other online resources. Far Branch is depicted as an intermittent stream within the central portion of the site.

Soils

Exhibit 2 depicts four (4) soil mapping units potentially occurring in the study area. The Badin channery silt loam, 15-41% slopes (BaF), Chewacla sandy loam, 0-2% slopes, frequently flooded (ChA), Tarrus silt loam 2-8% slopes (TaB), and Tarrus silt loam, 8-15% slopes (TaD) soil mapping units are believed to occur on the property. Chewacla sandy loam is considered to have components that are hydric soils (wetland soils) by NRCS. The published Cabarrus County soil survey identified Far Branch within the proposed project location.

Wetlands and Waters

Section 404 of the Clean Water Act (CWA) requires regulation of discharges into waters of the U.S. (WOTUS). Although the principal administrative agency of the CWA is the U.S. Environmental Protection Agency (EPA), the U.S. Army Corps of Engineers (USACE) has major responsibility for implementation, permitting, and enforcement of provisions of the CWA. Water bodies such as rivers, lakes, and streams are subject to jurisdictional consideration under the Section 404 program. However, by regulation, certain wetlands are also considered WOTUS.

Currently WOTUS are assessed by the CWA's pre-2015 definition of WOTUS. This definition of WOTUS includes the implementation of rulemaking as decided in the Supreme Court's decision of the consolidated cases *Rapanos v. United States* and *Carabell v. United States*.

Specifically, the following waters will be under federal jurisdiction pursuant to the CWA:

- Traditional navigable waters (TNWs)
- Wetlands adjacent to TNWs
- Non-navigable tributaries of traditional navigable waters that are relatively permanent where the tributaries typically flow year-round or have continuous flow at least seasonally (3 months)
- Wetlands that directly abut such tributaries
- Relatively permanent, standing or continuously flowing bodies of water "forming geographic features" that are described in ordinary parlance as "streams, oceans, rivers, and lakes". These are Relatively Permanent Waters (RPWs).

The following waters will be considered jurisdictional if a significant nexus (contributes to the physical, chemical, or biological integrity of downstream TNWs) exists between these features and traditional navigable waters:

- Non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent
- Wetlands adjacent to but that do not directly abut a relatively permanent non-navigable tributary

The following waters will be considered non jurisdictional under the CWA:

- Swales or Erosional features (gullies, small washes characterized by low volume, infrequent or short duration flows)
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and that do not carry a relatively permanent flow of water.

However, wetlands and other waterbodies that do not fall under federal regulation per the CWA may be subject to jurisdiction by the N.C Division of Water Resources (NCDWR) under the state's Isolated and Other Non-404 Jurisdictional Wetlands and Waters program. Our delineation methodology generally follows the guidance outlined in the Regional Supplement to the USACE Wetland Delineation Manual for the Eastern Mountains and Piedmont Region. Areas must exhibit three distinct characteristics to be considered jurisdictional wetlands: 1) prevalence of hydrophytic (water tolerant) plants; 2) presence of hydric soils; and 3) sufficient wetland hydrology indicators within 12 inches of the ground surface.

The study area was also reviewed for the presence of tributaries (stream channels) using criteria provided by the USACE and the NCDWR. When present, intermittent and perennial tributaries, and certain other surface waters, are also considered jurisdictional by the USACE and/or NCDWR.

Preliminary Delineation Results

Terracon’s review of the Midland Siding study area identified four (4) potential tributaries within the proposed limits of disturbance and within the central portion of the property. The approximate location and extent of this feature is provided in Exhibit 3. Terracon also identified three (3) potential wetlands outside of the proposed limits of disturbance, not discussed within this report. Exhibit 3 is not a replacement for a traditional survey and is suitable for preliminary planning purposes only and for use by a surveyor to aid in locating flags. On-site photos are also attached to document site conditions at the time of the field review.

Table 1 provides data associated with the tributaries that were delineated onsite. Final discretion regarding each tributaries flow regime and buffer status lies with USACE and NCDWR.

Table 2. Potential Tributaries on the Midland Siding Study area.

Potential Tributary ID	Flow Regime	Approximate Amount in Study Area (Acres/Lf)	Flag Sequence
S1 (a and b)	Perennial	0.013 AC/ 67 Lf	S (1-24)
S2	Intermittent	0.002 AC/ 34 Lf	SC (1-10)
S3	Intermittent	0.007 AC/ 107 Lf	SE (1-15)
S4	Intermittent	0.003 AC/46 Lf	SF (1-8)

Clean Water Act Permitting

Most impacts to wetlands and WOTUS, which are deemed under the jurisdiction of either the federal or state regulatory authority (USACE or NCDWR, respectively) must first be permitted pursuant to Section 404 and Section 401 of the CWA and/or the State’s Isolated and Other Non-404 Jurisdictional Wetlands and Waters program. Activities so authorized are subject to additional requirements to comply with water quality and storm water management. The Nationwide Permit program (NWP) administered by USACE provides permitting of impacts which do not exceed pre-determined thresholds (typically 0.5 acre of WOTUS, including wetlands). Impacts ≥ 0.10 acre of wetland and/or ≥ 0.003 acre of stream will likely require compensatory mitigation. Impacts exceeding 0.5 acre can be authorized by a Section 404 Individual Permit. More guidance can be provided once site development designs have been prepared.

Wetland and Waters Review

Midland Siding ■ Cabarrus County, NC ■
December 12, 2021 ■ Terracon Project No. 71217506




Recommendations

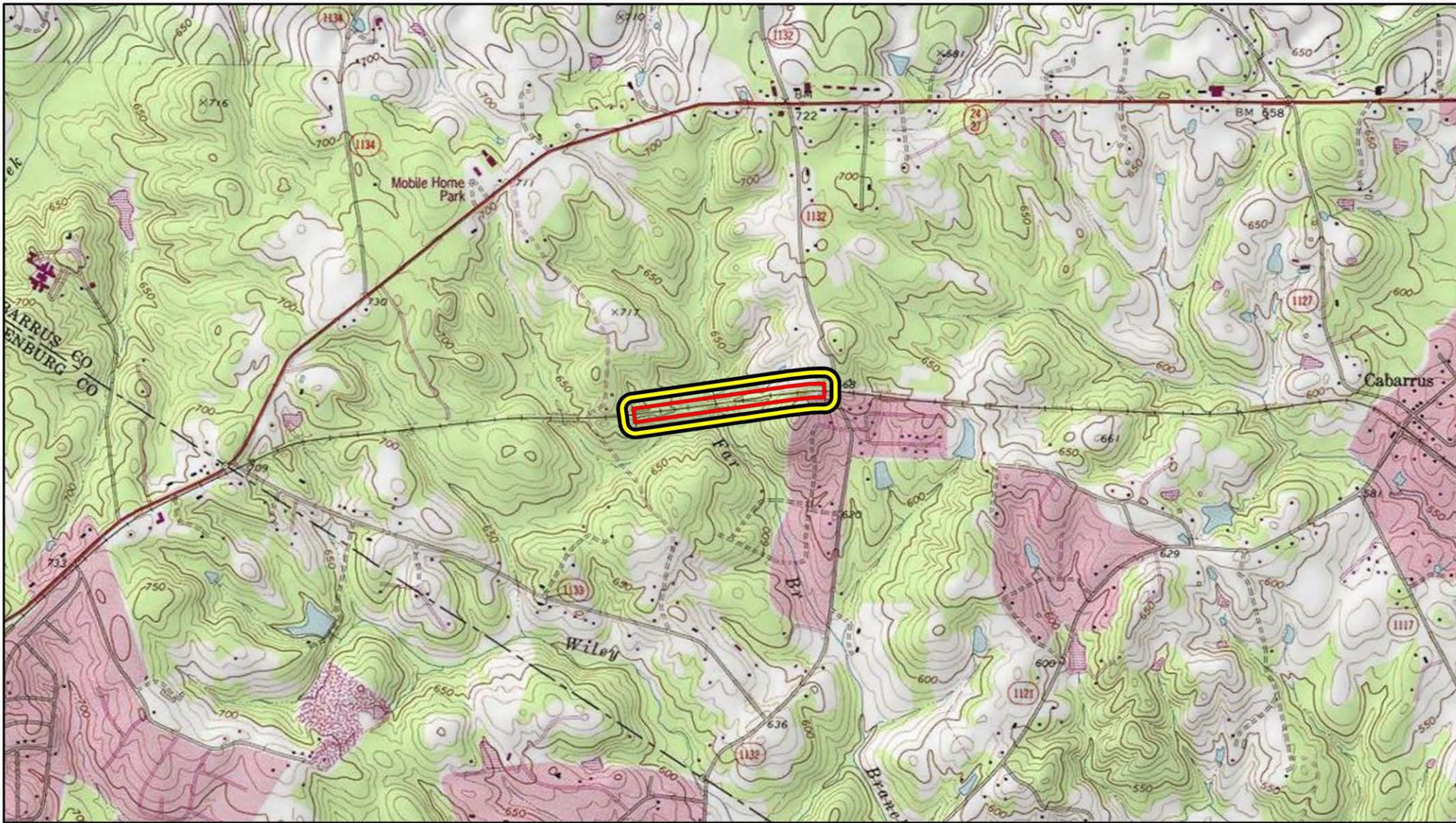
Three (3) potential wetlands and four (4) potential tributaries that are likely subject to USACE and/or NCDWR jurisdiction has been delineated within the Midland Siding study area. If impacts to these features are proposed, a PJD request package, suitable for submittal to the USACE, can be prepared for this property. Note however, a PJD review is not a prerequisite for Section 404/401 permitting. Terracon's professional opinion is that the three (3) potential wetlands and four (4) potential tributaries will be subject to 404 jurisdiction and 404/401 permitting would be needed to impact these features. It is important to note that applying for a Section 404 permit from USACE also triggers the need for compliance with the Endangered Species Act and the Historic Preservation Act; Terracon has provided these reports under separate covers. Terracon is experienced with ensuring compliance with the above regulatory requirements as well as offering full service permitting assistance.

Please contact our office if you have questions regarding this evaluation.

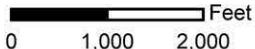
Sincerely,


JC Weaver
Project Scientist


Robert Turnbull
Department Manager



- Limits of Disturbance
- Project Study Area



Sources: 2011 National Geographic Society/ESRI, i-cubed seamless USGS quadrangles (Midland, NC); Project Boundary based on Cabarrus County Parcel Data.

	Project No.:	JN217126
	Date:	Dec 2021
	Drawn By:	KT
	Reviewed By:	JCW

Terracon

2701 Westport Road Charlotte, NC 28208

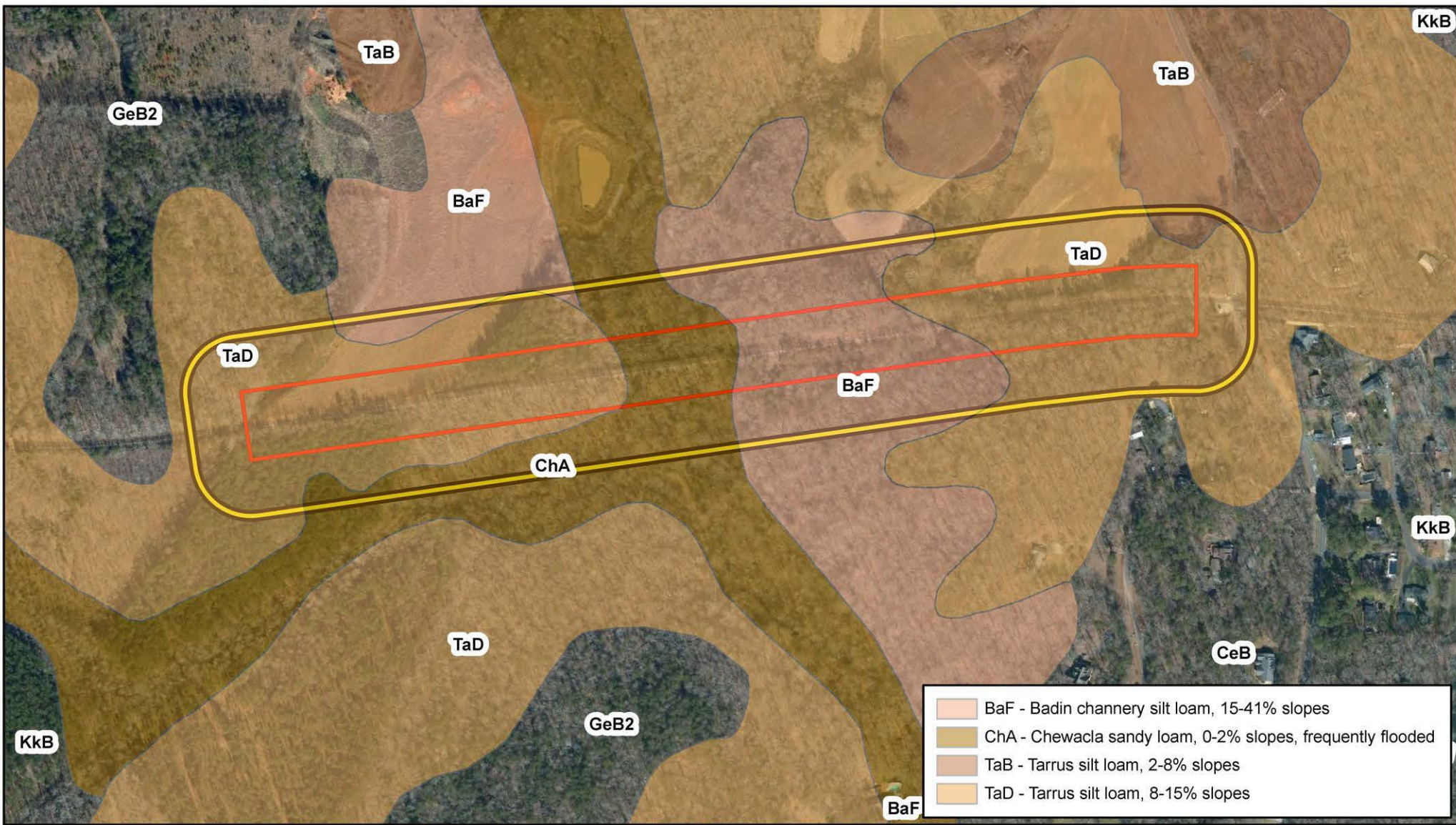
PH. (704) 509-1777 terracon.com

USGS Topographic Map

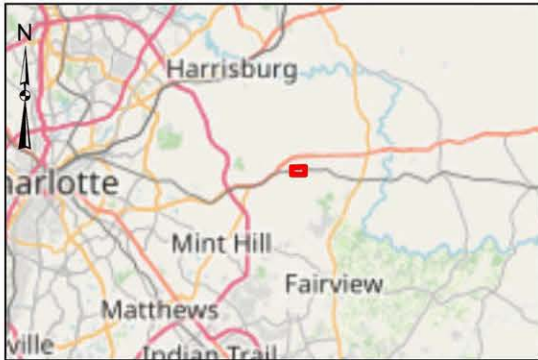
Midland Industrial
Midland, Cabarrus County, North Carolina

Exhibit

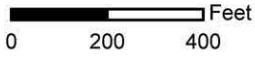
1



- BaF - Badin channery silt loam, 15-41% slopes
- ChA - Chewacla sandy loam, 0-2% slopes, frequently flooded
- TaB - Tarrus silt loam, 2-8% slopes
- TaD - Tarrus silt loam, 8-15% slopes



- Limits of Disturbance
- Project Study Area



Sources: Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server; NRCS digital Soil Survey of Cabarrus County, 2012; Project Boundary based on Cabarrus County Parcel Data.

Project No.: JN217126
 Date: Dec 2021
 Drawn By: KT
 Reviewed By: JCW

Terracon

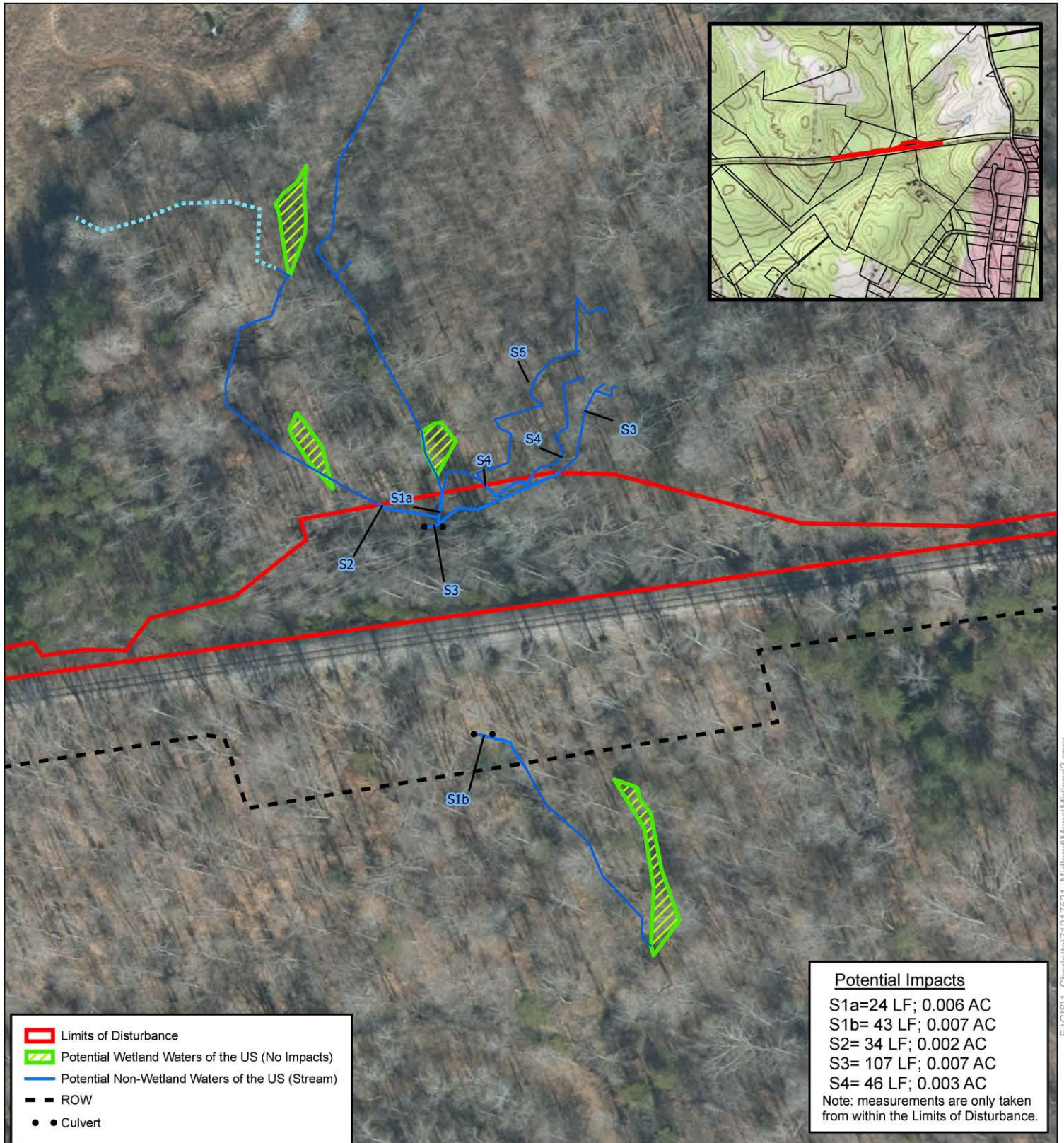
2701 Westport Road Charlotte, NC 28208
 PH. (704) 509-1777 terracon.com

NRCS Soils

Midland Industrial
 Midland, Cabarrus County, North Carolina

Exhibit

3



Legend

- ▬ Limits of Disturbance
- ▨ Potential Wetland Waters of the US (No Impacts)
- ▬ Potential Non-Wetland Waters of the US (Stream)
- ROW
- ● Culvert

Potential Impacts

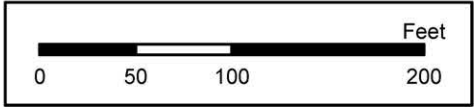
S1a	= 24 LF; 0.006 AC
S1b	= 43 LF; 0.007 AC
S2	= 34 LF; 0.002 AC
S3	= 107 LF; 0.007 AC
S4	= 46 LF; 0.003 AC

Note: measurements are only taken from within the Limits of Disturbance.



Sources: Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server; Project Boundary based on Cabarrus County Parcel Data.

Disclaimer: The information depicted in this file is for informational purposes only and was not prepared for and is not suitable for legal or engineering purposes. This information presented is not for regulatory review and is intended for use only by a Professional Land Surveyor prior to regulatory review.



PM:	Project No.: 71197586
Drawn By: CEW	Scale: inch = 10 / 100 ft
Checked By: JCW	File Path:
Approved By:	Date: Dec 2021

Terracon

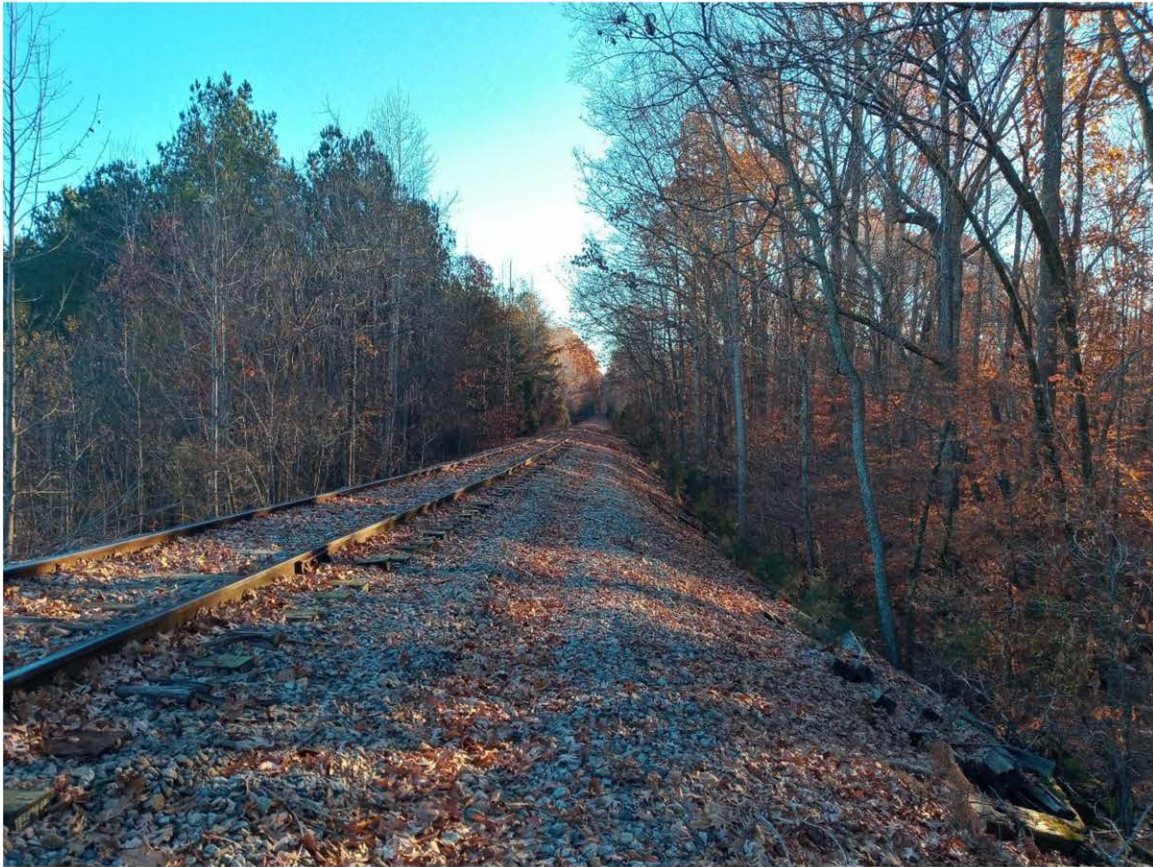
2701 Wesport Road Charlotte, NC 28216
 PH. 704.509.1777 Fax: 704.509.1888

Depiction of Aquatic Resources

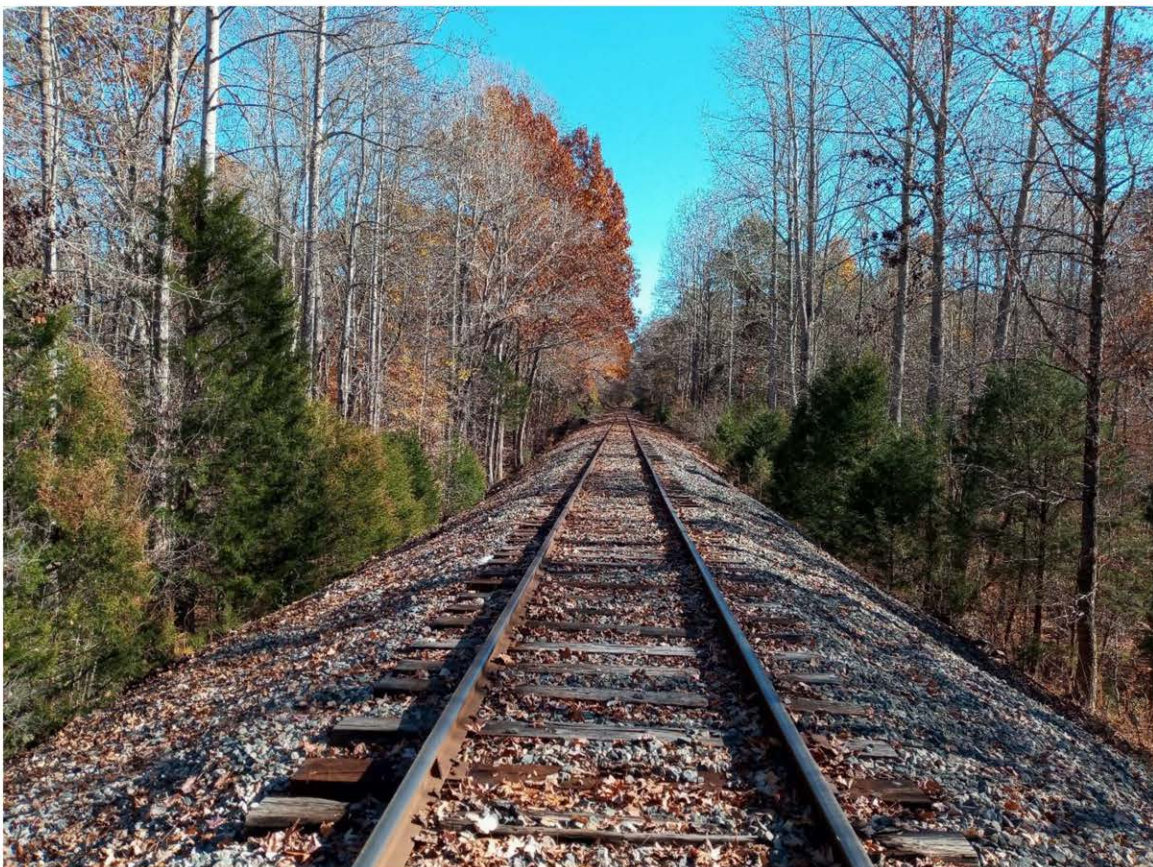
Midland Industrial

Midland, Cabarrus County, North Carolina

Exhibit
1



Photograph 1: View of rail lines within study area, southern portion of the site, facing east.



Photograph 2: View of rail lines within study area, southern portion of the site, facing west.



Photograph 3: View of stream S1 (b) and culverts south of existing rail line in the central portion of the site, facing northeast.



Photograph 4: View of southern portion of stream S1 (b) at the southern portion of the site, south of existing rail line, facing north.



Photograph 5: View of stream S1 (a) and culverts north of existing rail line in the central portion of the site, facing west.



Photograph 6: View of stream S1 (a) in central portion of the site, north of existing rail line, facing north.



Photograph 7: View of stream S2 within LOD, north of existing rail line, facing southwest.



Photograph 8: View of aquatic feature S3 within LOD, north of existing rail line, facing northeast.



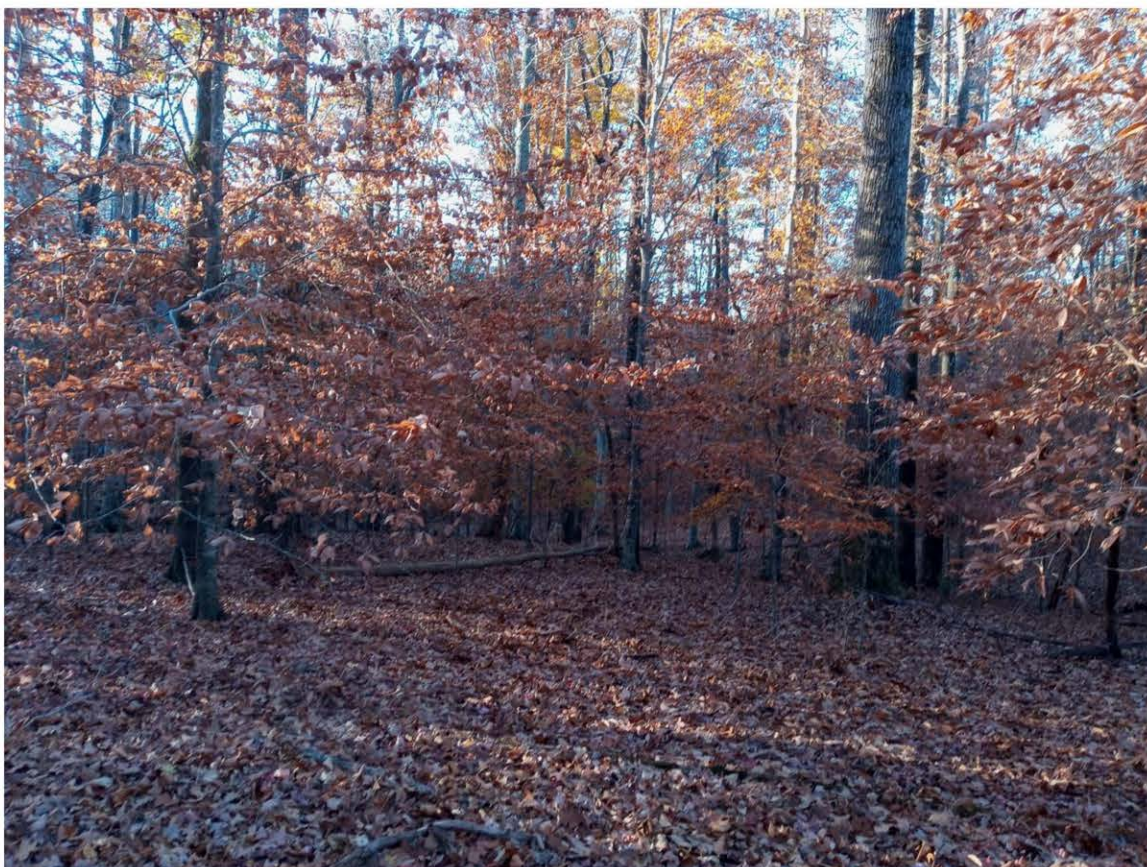
Photograph 9: View of potential wetland, outside of LOD, adjacent to stream S2 (a), central portion of the site north of existing rail line, facing south.



Photograph 10: View of potential wetland, adjacent to stream S1 (b), central portion of the site south of the rail line, facing north.



Photograph 11: View of typical hydric soil ped found in potential wetlands outside of LOD.



Photograph 12: View of upland deciduous woods, western portion of the site, facing south.

Appendix D
Threatened and Endangered Species Coordination



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Date: 12/02/2021

Self-Certification Letter

Project Name ACWR EA - Mint Hill Siding

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Raleigh Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. Based on your analysis, mark all the determinations that apply:

- “no effect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, not likely to adversely affect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, likely to adversely affect” determination for the Northern long-eared bat (*Myotis septentrionalis*) and relying on the findings of the January 5, 2016, Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat;
- “no Eagle Act permit required” determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” or “not likely to adversely affect” determinations for proposed and listed species and proposed and designated critical habitat; the “may affect” determination for Northern long-eared bat; and/or the “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed. Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species. Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year. Information about the online project review process including instructions, species information, and other information regarding project reviews within North Carolina is available at our website <http://www.fws.gov/raleigh/pp.html>. If you have any questions, you can write to us at Raleigh@fws.gov or please contact Leigh Mann of this office at 919-856-4520, ext. 10.

Sincerely,

/s/Pete Benjamin

Pete Benjamin
Field Supervisor
Raleigh Ecological Services

Enclosures - project review package



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Asheville Ecological Services Field Office
160 Zillicoa Street
Asheville, NC 28801-1082
Phone: (828) 258-3939 Fax: (828) 258-5330
<http://www.fws.gov/nc-es/es/countyfr.html>

In Reply Refer To:

September 23, 2021

Consultation Code: 04EN1000-2021-SLI-1269

Event Code: 04EN1000-2021-E-02808

Project Name: Mint Hill Siding (MOW694) ; JN217426

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. Although not required by section 7, many agencies request species lists to start the informal consultation process and begin their fulfillment of the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

This list, along with other helpful resources, is also available on the U.S. Fish and Wildlife Service (Service) – Asheville Field Office’s (AFO) website: https://www.fws.gov/raleigh/species/cntylist/nc_counties.html. The AFO website list includes “species of concern” – species that could potentially be placed on the federal list of threatened and endangered species in the future. Also available are:

- Design and Construction Recommendations
https://www.fws.gov/asheville/htmls/project_review/Recommendations.html
- Optimal Survey Times for Federally Listed Plants
https://www.fws.gov/nc-es/plant/plant_survey.html
- Northern long-eared bat Guidance
https://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html
- Predictive Habitat Model for Aquatic Species
<https://www.fws.gov/asheville/htmls/Maxent/Maxent.html>

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could require modifications of these lists.

Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of the species lists should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website or the AFO website (the AFO website dates each county list with the day of the most recent update/change) at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list or by going to the AFO website.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a Biological Evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12 and on our office's website at https://www.fws.gov/asheville/htmls/project_review/assessment_guidance.html.

If a Federal agency (or their non-federal representative) determines, based on the Biological Assessment or Biological Evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>.

Though the bald eagle is no longer protected under the Endangered Species Act, please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require additional consultation (see <https://www.fws.gov/southeast/our-services/permits/eagles/>). Wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds (including bald and golden eagles) and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - Migratory Birds
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Asheville Ecological Services Field Office

160 Zillicoa Street

Asheville, NC 28801-1082

(828) 258-3939

Project Summary

Consultation Code: 04EN1000-2021-SLI-1269

Event Code: Some(04EN1000-2021-E-02808)

Project Name: Mint Hill Siding (MOW694) ; JN217426

Project Type: TRANSPORTATION

Project Description: Storage and passing siding

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.2149682,-80.65542393464418,14z>



Counties: Mecklenburg County, North Carolina

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Carolina Heelsplitter <i>Lasmigona decorata</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3534	Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Michaux's Sumac <i>Rhus michauxii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5217	Endangered
Schweinitz's Sunflower <i>Helianthus schweinitzii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3849	Endangered
Smooth Coneflower <i>Echinacea laevigata</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3473	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

NAME	BREEDING SEASON
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

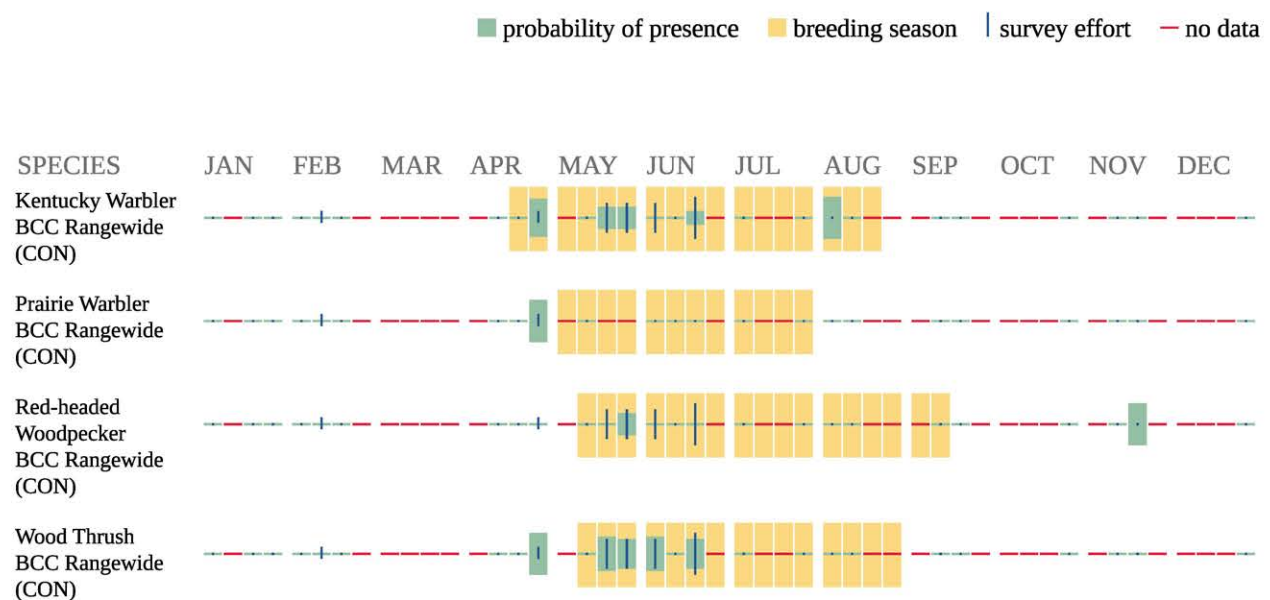
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (-)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#)

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
-

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.



Roy Cooper, Governor

D. Reid Wilson, Secretary

Walter Clark

Director, Division of Land and Water Stewardship

NCNHDE-15832

September 23, 2021

Katie Talavera
Terracon Inc.
2401 Brentwood Road, Suite 107
Raleigh, NC 27603
RE: Mint Hill Siding (MOW694) ; JN217426

Dear Katie Talavera:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

Based on the project area mapped with your request, a query of the NCNHP database indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. Please note that although there may be no documentation of natural heritage elements within the project boundary, it does not imply or confirm their absence; the area may not have been surveyed. The results of this query should not be substituted for field surveys where suitable habitat exists. In the event that rare species are found within the project area, please contact the NCNHP so that we may update our records.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is found within the project area or is indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: <https://www.fws.gov/offices/Directories/ListOffices.cfm?statecode=37>.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

The NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or Federally-listed species are documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
Mint Hill Siding (MOW694)
Project No. JN217426
September 23, 2021
NCNHDE-15832

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Vascular Plant	13923	Acmispon helleri	Carolina Birdfoot-trefoil	1951-08-22	H	3-Medium	---	Threatened	G5T3	S3
Vascular Plant	13743	Delphinium exaltatum	Tall Larkspur	1800s	Hi?	5-Very Low	---	Threatened	G3	S2

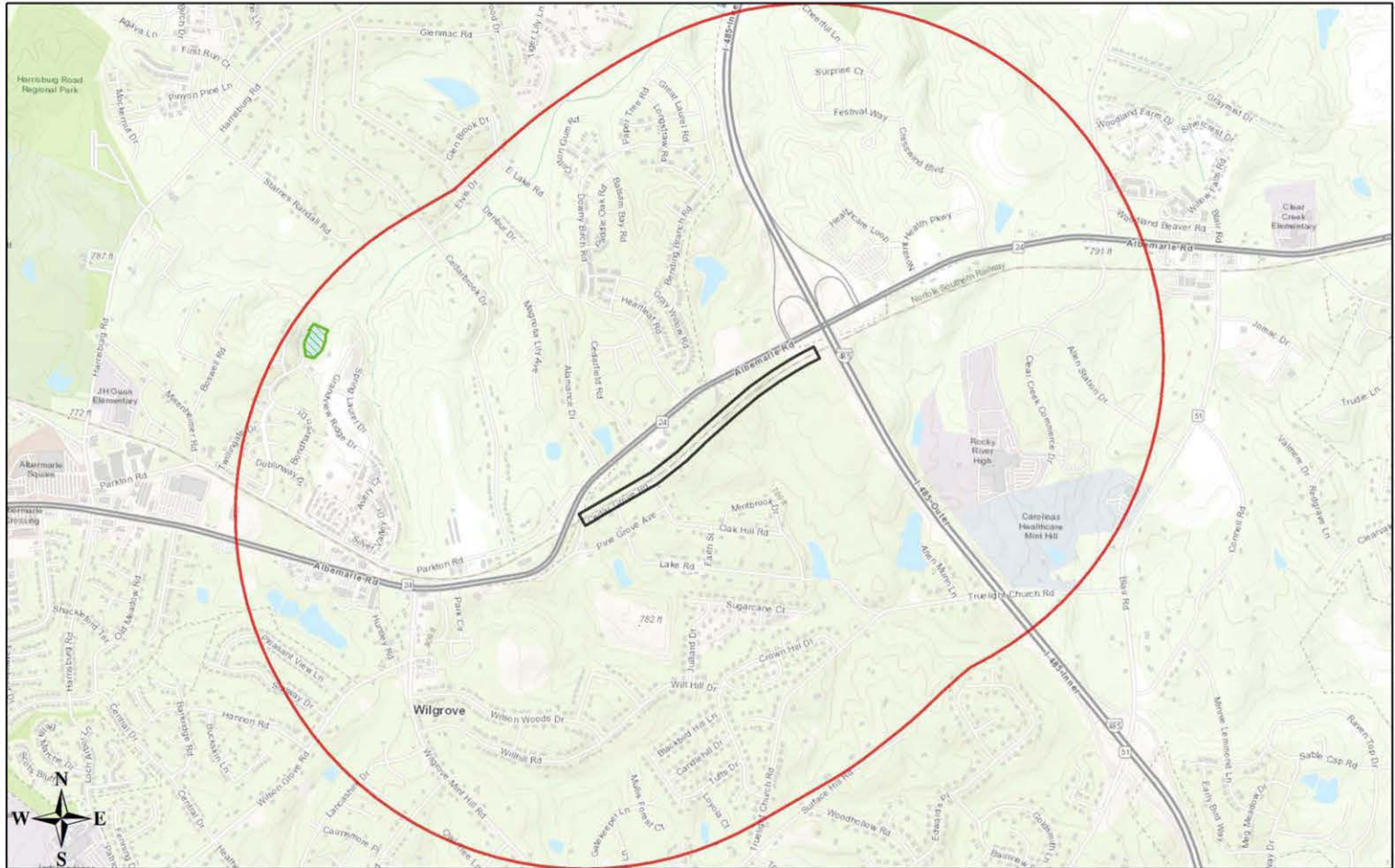
No Natural Areas are Documented Within a One-mile Radius of the Project Area

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
City of Charlotte Open Space	City of Charlotte	Local Government

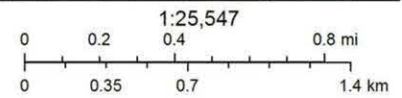
Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/help>. Data query generated on September 23, 2021; source: NCNHP, Q2 July 2021. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-15832: Mint Hill Siding (MOW694)



September 23, 2021

- Project Boundary
- Buffered Project Boundary
- Managed Area (MAREA)



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Species Conclusions Table

Project Name: **ACWR EA – Mint Hill Siding**

Date: July 5, 2022 by Skelly and Loy/Terracon

Species / Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Northern Long Eared Bat	Suitable summer habitat	May affect	Relying upon the findings of the 1/5/2016 Programmatic Biological Opinion for Final 4(d) Rule on the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions to fulfill our project-specific section 7 responsibilities.
Carolina Heelsplitter	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Atlantic Pigtoe	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Michaux’s Sumac	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Schweinitz's Sunflower	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Smooth Coneflower	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Critical habitats	No critical habitat present	No effect	No Critical Habitat present.
Bald Eagle	Unlikely to disturb nesting bald eagles	No effect	No Eagle Act permit required.

Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.



Department Manager

Signature/Title

7/6/2022

Date

A field evaluation was conducted on September 29 and October 4, 2021 by Terracon biologists JC Weaver, Conner Miller, and Chaz Ganey to identify potentially suitable habitat for federally threatened and endangered species protected by the Endangered Species Act (ESA). During the field evaluation, plant communities and habitats were evaluated to determine if potentially suitable habitat for listed species is present within the project site.

Northern long-eared bat – During summer, the northern long-eared bat (NLEB) roosts singly or in colonies underneath bark, in cavities, or in crevices in both live and dead trees and/or snags (typically >3 inches diameter breast height). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on suitability to provide cavities or crevices or presence of peeling bark. It has also been found, rarely, roosting in structures like barns and sheds when suitable tree roosts are not available. During the summer, NLEB emerge at dusk to forage in upland and lowland woodlands and tree-lined corridors.

It is reported that the NLEB hibernation season is October 15 – April 15. The bats spend winter hibernating in caves and mines, called hibernacula. They typically use large caves or mines with large passages and entrances; constant temperatures; and high humidity with no air currents. Specific areas where they hibernate have very high humidity, so much so that droplets of water are often seen on their fur. Within hibernacula, surveyors find them in small crevices or cracks, often with only the nose and ears visible (USFWS 2014).

Habitat Present: Yes (Summer Habitat)

A review of September 2021 NCNHP records indicates no occurrences of NLEB within 1.0 mile of the study area. No known, occupied hibernacula were identified within 1.0 mile of the project study area based on review of these NCNHP records. Pursuant to the final 4(d) rules, incidental take from tree removal activities is not prohibited unless it results from, (1) removing a known occupied maternity roost tree, or (2) from tree removal activities within 150 feet of a known occupied maternity roost tree from June 1 through July 31, or (3) results from tree removal activities within 0.25 mile of a hibernaculum at any time. The proposed project appears to meet intent of the 4(d) rule criteria and any incidental take would be exempt if the project continues to remain in compliance with the 4(d) rules. Consultation with USFWS is not required if these criteria do not change and no new information regarding NLEB occurrences or hibernaculum within 0.25 mile arises.

BIOLOGICAL CONCLUSION: Exempt per the 4(d) Rule

Carolina heelsplitter - The Carolina heelsplitter requires cool, clean, well-oxygenated water. Stable, silt-free stream bottoms appear to be critical to the species. Typically, stable areas occur where the stream banks are well-vegetated with trees and shrubs.

Potential Habitat Present: No

Potential habitat for the Carolina heelsplitter is not present in the study area. The streams that occur onsite were observed to be subject to siltation and pollution and show signs of streambank instability. The Charlotte suburban area is experiencing

tremendous growth and development stressing the system. These intermittent/perennial streams are also small, first order streams that do not provide the type of habitat considered conducive for this species. The Carolina heelsplitter has a fragmented distribution and historically has been known to exist only in several locations within the Catawba and Pee Dee River systems in North Carolina and Catawba, Pee Dee and Savannah River systems in South Carolina. Recent collection efforts indicate that the Carolina heelsplitter has been extinguished from the majority of its historic range and only eleven small populations are known to exist. According to the Carolina heelsplitter 5-year Review, published by USFWS, in the Catawba River system, the population has been identified in Waxhaw Creek, Sixmile Creek, Gills Creek/Cane Creek, Fishing Creek/South Fork, and Bull Run Creek. This site is located in the Reedy Creek watershed, a sub watershed of Middle Rocky River. Terracon surveyed the site on September 29 and October 4, 2021 and did not observe habitat that would be conducive for this species. The streams appear to be mainly intermittent within the western and eastern portions of the site. The streams provide inadequate habitat and do not appear to provide consistent year-round flow as needed by this species. Also present at the time of the assessment was turbid water, evidence of urban stormwater runoff, and substrate comprised primarily of silt. It is our professional opinion that suitable habitat for Carolina heelsplitter does not occur on this site. NCNHP data reviewed in September 2021 indicates no occurrences of this species within 1.0 mile of the study area.

BIOLOGICAL CONCLUSION: No Effect

Schweinitz's sunflower - Schweinitz's sunflower occurs in full to partial sun and is found in areas with poor soils, such as thin clays that vary from wet to dry. It is believed that this species once occurred in natural forest openings or grasslands. Many of the remaining populations occur along roadsides. Schweinitz's sunflower is found in the central Piedmont region of North and South Carolina.

Habitat Present: Yes

The study area does provide marginal habitat for this species. Therefore, Terracon biologists conducted pedestrian surveys in September 2021 throughout the areas of potential habitat. No evidence of this species was observed. NCNHP data from September 2021 does document occurrences of this species within one mile of the study area. However, the project is expected to have No Effect on the species since onsite surveys revealed no evidence of this species.

BIOLOGICAL CONCLUSION: No Effect

Michaux's Sumac - Michaux's sumac is found growing in sandy or rocky open woods, in association with basic soils. This plant survives best in areas where some form of disturbance has provided an open area, such as right of ways. Michaux's sumac is endemic to the coastal plain and piedmont of Virginia, North Carolina, South Carolina, Georgia, and Florida. The largest population known is located at Fort Pickett in Virginia, but the populations are located in the North Carolina piedmont and sandhills. Currently, the plant is extant in the following North Carolina counties: Cumberland, Davie, Durham, Franklin, Hoke, Mecklenburg, Moore, Nash, Richmond, Robeson, Scotland and Wake.

Habitat Present: Yes

The study area does provide marginal habitat for this species. Therefore, Terracon biologists conducted pedestrian surveys in September 2021 throughout the areas of potential habitat. No evidence of this species was observed. NCNHP data from September 2021 does document occurrences of this species within one mile of the study area. However, the project is expected to have No Effect on the species since onsite surveys revealed no evidence of this species.

BIOLOGICAL CONCLUSION: No Effect

Smooth Coneflower - Habitat for smooth coneflower is typically found in open woods, glades, cedar barrens, roadsides, clearcuts, dry limestone bluffs, and power line right of ways, and usually on magnesium and calcium rich soils associated with gabbro and diabase in North Carolina. Optimal sites are characterized by abundant sunlight and little competition in the herbaceous layer. Natural fires, as well as large herbivores, historically influenced the vegetation in this species' range. Many of the herbs associated with Smooth coneflower are also sun-loving species that depend on periodic disturbances to reduce the shade and competition of woody plants.

Habitat Present: Yes

The study area does provide marginal habitat for this species. Therefore, Terracon biologists conducted pedestrian surveys in September 2021 throughout the areas of potential habitat. No evidence of this species was observed. NCNHP data from September 2021 does document occurrences of this species within one mile of the study area. However, the project is expected to have No Effect on the species since onsite surveys revealed no evidence of this species.

BIOLOGICAL CONCLUSION: No Effect

Atlantic pigtoe - The Atlantic Pigtoe requires excellent water quality, clean coarse sand and gravel substrate in a flowing river ecosystem. This species has several specific habitat requirements, including clean and perennially flowing, highly oxygenated waters with sufficient velocity to maintain uncompacted stream bed habitats.

Potential Habitat Present: No

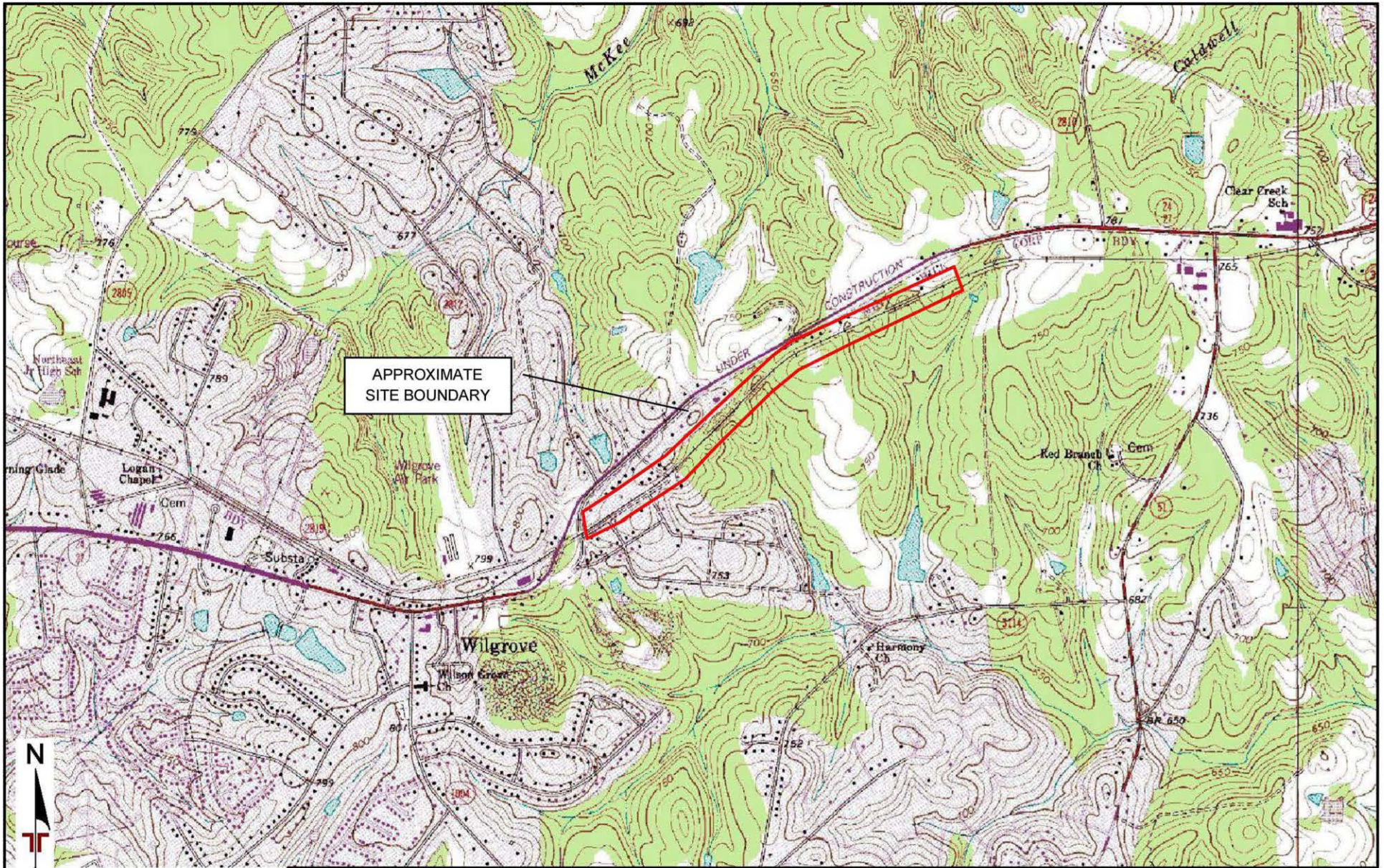
The site is outside the current range of the species but considered as part of the review. Potential habitat for the Atlantic Pigtoe is not present in the study area. The streams that occur onsite were observed to be subject to siltation and show signs of streambank instability. These mainly intermittent streams are also small, first order streams, high in their respective watersheds, with minimal flow that do not provide the type of habitat considered conducive for this species. Lack of excellent water quality, water quantity, suitable instream substrate, and development stressors further reduce potential habitat. NCNHP data reviewed in September 2021 indicates no occurrences of this species within 1.0 mile of the study area.

BIOLOGICAL CONCLUSION: No Effect

Representative Photos



View of existing rail ROW, western portion of site, facing east.



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY
 QUADRANGLES INCLUDE: MINT HILL, NC (1/1/1993) and MIDLAND, NC (1/1/1993).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager:	LB	Project No.	71217506
Drawn by:	JCW	Scale:	1"=2,000'
Checked by:	IR	File Name:	Click
Approved by:	LB	Date:	Oct 2021

Terracon
 2701 Westport Rd
 Charlotte, NC 28208-3608

TOPOGRAPHIC MAP

Mint Hill Siding
 11730 Allen Station Drive
 Mint Hill, NC

Exhibit

1A

LEGEND

- Site Boundary
- Soil Mapping Units
- CeB2- Cecil sandy clay loam, 2-8% slopes
- CeD2- Cecil sandy clay loam, 8-15% slopes
- PaE- Pacolet sandy loam, 15-25 % slopes



APPROXIMATE
SITE BOUNDARY



AERIAL PHOTOGRAPHY PROVIDED BY
MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY,
AND IS NOT INTENDED FOR CONSTRUCTION
PURPOSES

Project Manager: LB
Drawn by: JCW
Checked by: LB
Approved by: LB

Project No. 71217506
Scale: AS SHOWN
File Name:
Date: Oct 2021

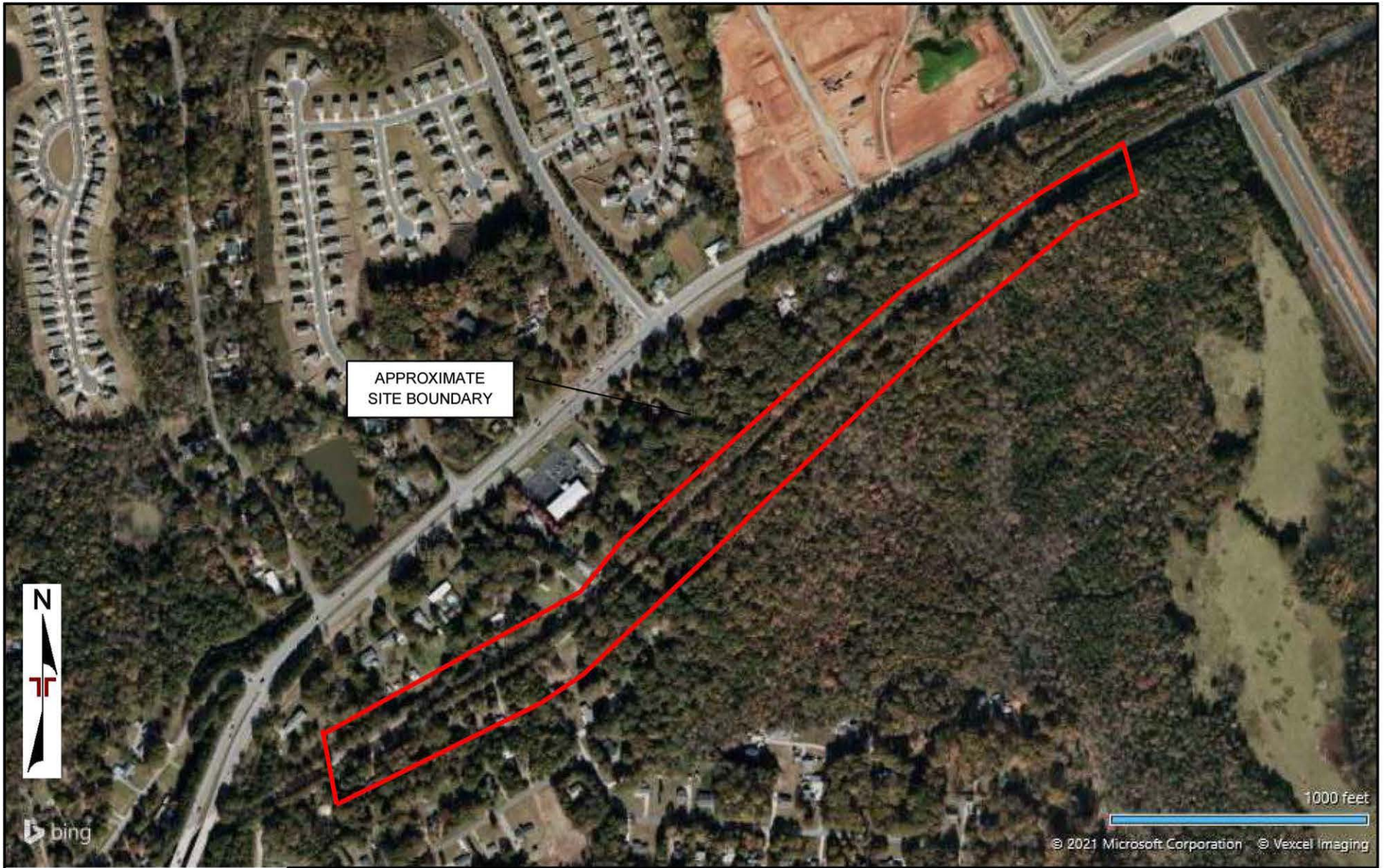
Terracon
2701 Westport Rd
Charlotte, NC 28208-3608

USDA NRCS Soils Data

Mint Hill Siding
LOCATED BETWEEN HIGHWAY 27 AND I-485
Mint Hill, NC

Exhibit

2A



APPROXIMATE
SITE BOUNDARY



bing

1000 feet

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AERIAL PHOTOGRAPHY PROVIDED BY
MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY,
AND IS NOT INTENDED FOR CONSTRUCTION
PURPOSES

Project Manager: LB
 Drawn by: JCW
 Checked by: LB
 Approved by: LB

Project No. 71217506
 Scale: AS SHOWN
 File Name:
 Date: Oct 2021

Terracon
 2701 Westport Rd
 Charlotte, NC 28208-3608

POTENTIAL HABITAT MAP

Mint Hill Siding
 LOCATED BETWEEN HIGHWAY 27 AND I-485
 Mint Hill, NC

Exhibit
 3A



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Asheville Ecological Services Field Office
160 Zillicoa Street
Asheville, NC 28801-1082
Phone: (828) 258-3939 Fax: (828) 258-5330
<http://www.fws.gov/nc-es/es/countyfr.html>

In Reply Refer To:

December 07, 2021

Consultation code: 04EN1000-2021-TA-1262

Event Code: 04EN1000-2022-E-00422

Project Name: Mint Hill Siding

Subject: Verification letter for the 'Mint Hill Siding' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Laura Bair:

The U.S. Fish and Wildlife Service (Service) received on December 07, 2021 your effects determination for the 'Mint Hill Siding' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Carolina Heelsplitter *Lasmigona decorata* Endangered
- Michaux's Sumac *Rhus michauxii* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Schweinitz's Sunflower *Helianthus schweinitzii* Endangered
- Smooth Coneflower *Echinacea laevigata* Endangered

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

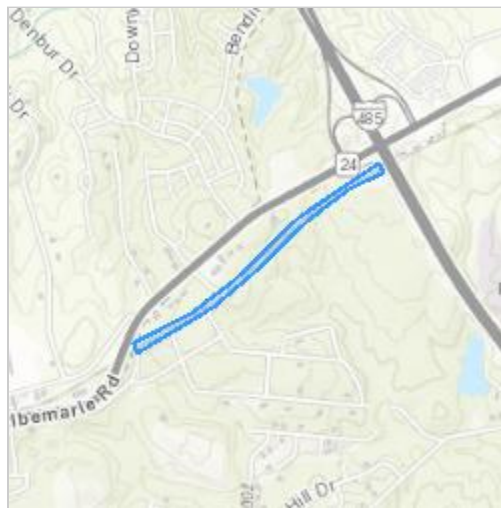
Mint Hill Siding

2. Description

The following description was provided for the project 'Mint Hill Siding':

MOW 694 - additional railroad siding within existing right-of-way.

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.215156300000004,-80.6552492211932,14z>



Determination Key Result

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may

affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?
Yes
2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")
No
3. Will your activity purposefully **Take** northern long-eared bats?
No
4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?
Automatically answered
No
5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/angered/mammals/nleb/nhisites.html.

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?
No
 7. Will the action involve Tree Removal?
Yes
-

8. Will the action only remove hazardous trees for the protection of human life or property?

No

9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

No

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

5

2. If known, estimated acres of forest conversion from April 1 to October 31

5

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Date: 12/02/2021

Self-Certification Letter

Project Name ACWR EA - Mint Hill Warehouse

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Raleigh Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. Based on your analysis, mark all the determinations that apply:

- “no effect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, not likely to adversely affect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, likely to adversely affect” determination for the Northern long-eared bat (*Myotis septentrionalis*) and relying on the findings of the January 5, 2016, Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat;
- “no Eagle Act permit required” determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” or “not likely to adversely affect” determinations for proposed and listed species and proposed and designated critical habitat; the “may affect” determination for Northern long-eared bat; and/or the “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed. Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species. Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year. Information about the online project review process including instructions, species information, and other information regarding project reviews within North Carolina is available at our website <http://www.fws.gov/raleigh/pp.html>. If you have any questions, you can write to us at Raleigh@fws.gov or please contact Leigh Mann of this office at 919-856-4520, ext. 10.

Sincerely,

/s/Pete Benjamin

Pete Benjamin
Field Supervisor
Raleigh Ecological Services

Enclosures - project review package



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Asheville Ecological Services Field Office
160 Zillicoa Street
Asheville, NC 28801-1082
Phone: (828) 258-3939 Fax: (828) 258-5330
<http://www.fws.gov/nc-es/es/countyfr.html>

In Reply Refer To:

September 23, 2021

Consultation Code: 04EN1000-2021-SLI-1268

Event Code: 04EN1000-2021-E-02806

Project Name: Mint Hill Storage Yard (MOW80) and Mint Hill Warehouse (MOW102) ;
JN217426

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. Although not required by section 7, many agencies request species lists to start the informal consultation process and begin their fulfillment of the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

This list, along with other helpful resources, is also available on the U.S. Fish and Wildlife Service (Service) – Asheville Field Office’s (AFO) website: https://www.fws.gov/raleigh/species/cntylist/nc_counties.html. The AFO website list includes “species of concern” – species that could potentially be placed on the federal list of threatened and endangered species in the future. Also available are:

- Design and Construction Recommendations
https://www.fws.gov/asheville/htmls/project_review/Recommendations.html
- Optimal Survey Times for Federally Listed Plants
https://www.fws.gov/nc-es/plant/plant_survey.html
- Northern long-eared bat Guidance
https://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html
- Predictive Habitat Model for Aquatic Species
<https://www.fws.gov/asheville/htmls/Maxent/Maxent.html>

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could require modifications of these lists.

Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of the species lists should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website or the AFO website (the AFO website dates each county list with the day of the most recent update/change) at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list or by going to the AFO website.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a Biological Evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12 and on our office's website at https://www.fws.gov/asheville/htmls/project_review/assessment_guidance.html.

If a Federal agency (or their non-federal representative) determines, based on the Biological Assessment or Biological Evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>.

Though the bald eagle is no longer protected under the Endangered Species Act, please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require additional consultation (see <https://www.fws.gov/southeast/our-services/permits/eagles/>). Wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds (including bald and golden eagles) and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>;

<http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - Migratory Birds
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Asheville Ecological Services Field Office

160 Zillicoa Street

Asheville, NC 28801-1082

(828) 258-3939

Project Summary

Consultation Code: 04EN1000-2021-SLI-1268

Event Code: Some(04EN1000-2021-E-02806)

Project Name: Mint Hill Storage Yard (MOW80) and Mint Hill Warehouse (MOW102) ;
JN217426

Project Type: TRANSPORTATION

Project Description: Construction of storage yard and warehouse.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.2204329,-80.63845617276087,14z>



Counties: Mecklenburg County, North Carolina

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Carolina Heelsplitter <i>Lasmigona decorata</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3534	Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Michaux's Sumac <i>Rhus michauxii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5217	Endangered
Schweinitz's Sunflower <i>Helianthus schweinitzii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3849	Endangered
Smooth Coneflower <i>Echinacea laevigata</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3473	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

NAME	BREEDING SEASON
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

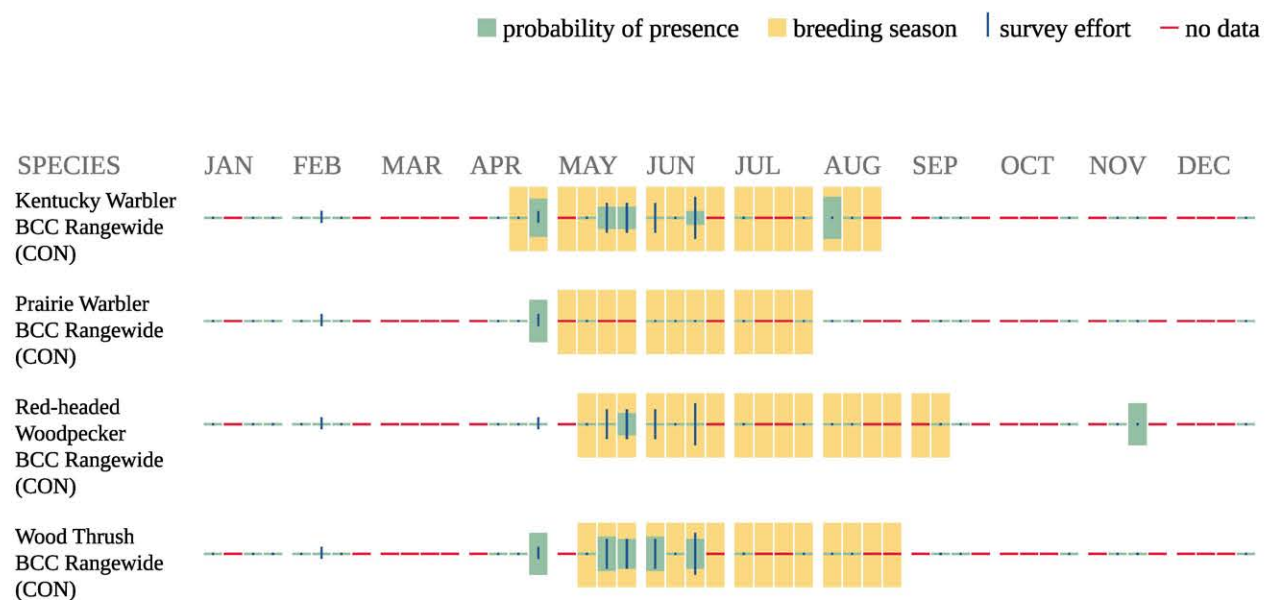
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#)

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
-

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

FRESHWATER POND

- [PUBHh](#)

RIVERINE

- [R4SBC](#)
 - [R5UBH](#)
-



Roy Cooper, Governor

D. Reid Wilson, Secretary

Walter Clark

Director, Division of Land and Water Stewardship

NCNHDE-15833

September 23, 2021

Katie Talavera
Terracon Inc.
2401 Brentwood Road, Suite 107
Raleigh, NC 27603
RE: Mint Hill Storage Yard (MOW80) and Mint Hill Warehouse (MOW102) ; JN217426

Dear Katie Talavera:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

A query of the NCNHP database indicates that there are records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. These results are presented in the attached 'Documented Occurrences' tables and map.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is documented within the project area or indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: <https://www.fws.gov/offices/Directory/ListOffices.cfm?statecode=37>.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

Also please note that the NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or an occurrence of a Federally-listed species is documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Intersecting the Project Area
Mint Hill Storage Yard (MOW80) and Mint Hill Warehouse (MOW102)

Project No. JN217426

September 23, 2021

NCNHDE-15833

Element Occurrences Documented Within Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Vascular Plant	13923	<i>Acmispon helleri</i>	Carolina Birdfoot-trefoil	1951-08-22	H	3-Medium	---	Threatened	G5T3	S3

No Natural Areas are Documented within the Project Area

No Managed Areas Documented within the Project Area

Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/help>. Data query generated on September 23, 2021; source: NCNHP, Q2 July 2021. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
 Mint Hill Storage Yard (MOW80) and Mint Hill Warehouse (MOW102)

Project No. JN217426

September 23, 2021

NCNHDE-15833

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Vascular Plant	13923	Acmispon helleri	Carolina Birdfoot-trefoil	1951-08-22	H	3-Medium	---	Threatened	G5T3	S3

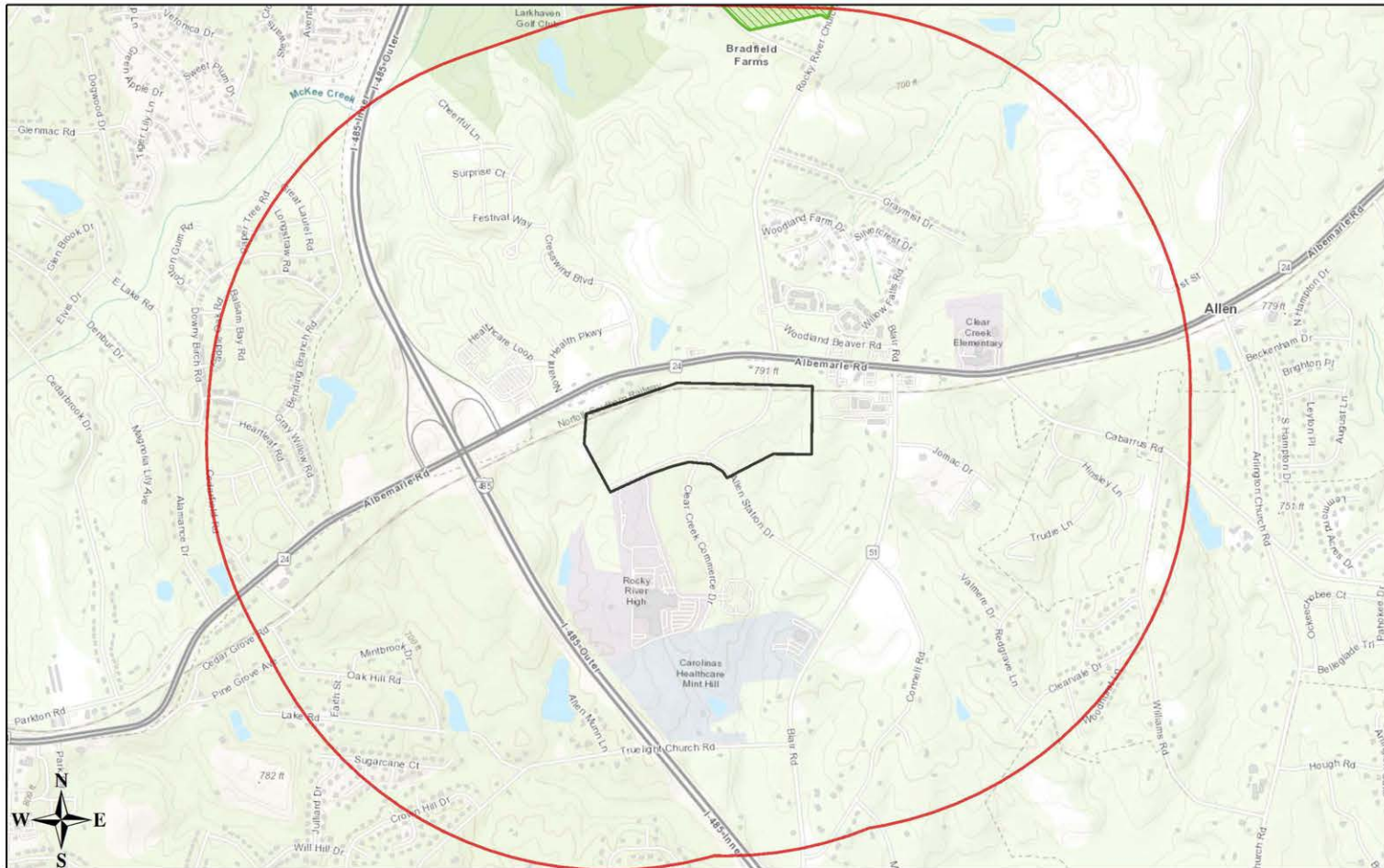
No Natural Areas are Documented Within a One-mile Radius of the Project Area

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
Mecklenburg County Open Space - Sherman Branch Nature Preserve	Mecklenburg County	Local Government

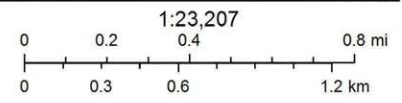
Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/help>. Data query generated on September 23, 2021; source: NCNHP, Q2 July 2021. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-15833: Mint Hill Storage Yard (MOW80) and Mint Hill Warehouse (MOW102)



September 23, 2021

- Project Boundary
- Buffered Project Boundary
- Managed Area (MAREA)



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Species Conclusions Table

Project Name: **ACWR EA – Mint Hill Warehouse**

Date: July 5, 2022 by Skelly and Loy/Terracon

Species/Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Northern Long Eared Bat	Suitable summer habitat	May affect	Relying upon the findings of the 1/5/2016 Programmatic Biological Opinion for Final 4(d) Rule on the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions to fulfill our project-specific section 7 responsibilities.
Carolina Heelsplitter	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Atlantic Pigtoe	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Michaux's Sumac	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Schweinitz's Sunflower	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Smooth Coneflower	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Critical habitats	No critical habitat present	No effect	No Critical Habitat present.
Bald Eagle	Unlikely to disturb nesting bald eagles	No effect	No Eagle Act permit required.

Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.

 Department Manager

Signature/Title

7/6/2022

Date

A field evaluation was conducted on September 29 and October 4, 2021 by Terracon biologists JC Weaver, Conner Miller, and Chaz Ganey to identify potentially suitable habitat for federally threatened and endangered species protected by the Endangered Species Act (ESA). During the field evaluation, plant communities and habitats were evaluated to determine if potentially suitable habitat for listed species is present within the project site.

Northern long-eared bat – During summer, the northern long-eared bat (NLEB) roosts singly or in colonies underneath bark, in cavities, or in crevices in both live and dead trees and/or snags (typically >3 inches diameter breast height). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on suitability to provide cavities or crevices or presence of peeling bark. It has also been found, rarely, roosting in structures like barns and sheds when suitable tree roosts are not available. During the summer, NLEB emerge at dusk to forage in upland and lowland woodlands and tree-lined corridors.

It is reported that the NLEB hibernation season is October 15 – April 15. The bats spend winter hibernating in caves and mines, called hibernacula. They typically use large caves or mines with large passages and entrances; constant temperatures; and high humidity with no air currents. Specific areas where they hibernate have very high humidity, so much so that droplets of water are often seen on their fur. Within hibernacula, surveyors find them in small crevices or cracks, often with only the nose and ears visible (USFWS 2014).

Habitat Present: Yes (Summer Habitat)

A review of September 2021 NCNHP records indicates no occurrences of NLEB within 1.0 mile of the study area. No known, occupied hibernacula were identified within 1.0 mile of the project study area based on review of these NCNHP records. Pursuant to the final 4(d) rules, incidental take from tree removal activities is not prohibited unless it results from, (1) removing a known occupied maternity roost tree, or (2) from tree removal activities within 150 feet of a known occupied maternity roost tree from June 1 through July 31, or (3) results from tree removal activities within 0.25 mile of a hibernaculum at any time. The proposed project appears to meet intent of the 4(d) rule criteria and any incidental take would be exempt if the project continues to remain in compliance with the 4(d) rules. Consultation with USFWS is not required if these criteria do not change and no new information regarding NLEB occurrences or hibernaculum within 0.25 mile arises.

BIOLOGICAL CONCLUSION: Exempt per the 4(d) Rule

Carolina heelsplitter - The Carolina heelsplitter requires cool, clean, well-oxygenated water. Stable, silt-free stream bottoms appear to be critical to the species. Typically, stable areas occur where the stream banks are well-vegetated with trees and shrubs.

Potential Habitat Present: No

Potential habitat for the Carolina heelsplitter is not present in the study area. The streams that occur onsite were observed to be subject to siltation and pollution and show signs of streambank instability. The Charlotte suburban area is experiencing

tremendous growth and development stressing the system. These intermittent/perennial streams are also small, first order streams that do not provide the type of habitat considered conducive for this species. The Carolina heelsplitter has a fragmented distribution and historically has been known to exist only in several locations within the Catawba and Pee Dee River systems in North Carolina and Catawba, Pee Dee and Savannah River systems in South Carolina. Recent collection efforts indicate that the Carolina heelsplitter has been extinguished from the majority of its historic range and only eleven small populations are known to exist. According to the Carolina heelsplitter 5-year Review, published by USFWS, in the Catawba River system, the population has been identified in Waxhaw Creek, Sixmile Creek, Gills Creek/Cane Creek, Fishing Creek/South Fork, and Bull Run Creek. This site is located in the Reedy Creek watershed, a sub watershed of Middle Rocky River. Terracon surveyed the site on September 29 and October 4, 2021 and did not observe habitat that would be conducive for this species. The streams appear to be mainly intermittent within the western and eastern portions of the site. The streams provide inadequate habitat and do not appear to provide consistent year-round flow as needed by this species. Also present at the time of the assessment was turbid water, evidence of urban stormwater runoff, and substrate comprised primarily of silt. It is our professional opinion that suitable habitat for Carolina heelsplitter does not occur on this site. NCNHP data reviewed in September 2021 indicates no occurrences of this species within 1.0 mile of the study area.

BIOLOGICAL CONCLUSION: No Effect

Schweinitz's sunflower - Schweinitz's sunflower occurs in full to partial sun and is found in areas with poor soils, such as thin clays that vary from wet to dry. It is believed that this species once occurred in natural forest openings or grasslands. Many of the remaining populations occur along roadsides. Schweinitz's sunflower is found in the central Piedmont region of North and South Carolina.

Habitat Present: Yes

The study area does provide marginal habitat for this species. Therefore, Terracon biologists conducted pedestrian surveys in September 2021 throughout the areas of potential habitat. No evidence of this species was observed. NCNHP data from September 2021 does document occurrences of this species within one mile of the study area. However, the project is expected to have No Effect on the species since onsite surveys revealed no evidence of this species.

BIOLOGICAL CONCLUSION: No Effect

Michaux's Sumac - Michaux's sumac is found growing in sandy or rocky open woods, in association with basic soils. This plant survives best in areas where some form of disturbance has provided an open area, such as right of ways. Michaux's sumac is endemic to the coastal plain and piedmont of Virginia, North Carolina, South Carolina, Georgia, and Florida. The largest population known is located at Fort Pickett in Virginia, but the populations are located in the North Carolina piedmont and sandhills. Currently, the plant is extant in the following North Carolina counties: Cumberland, Davie, Durham, Franklin, Hoke, Mecklenburg, Moore, Nash, Richmond, Robeson, Scotland and Wake.

Habitat Present: Yes

The study area does provide marginal habitat for this species. Therefore, Terracon biologists conducted pedestrian surveys in September 2021 throughout the areas of potential habitat. No evidence of this species was observed. NCNHP data from September 2021 does document occurrences of this species within one mile of the study area. However, the project is expected to have No Effect on the species since onsite surveys revealed no evidence of this species.

BIOLOGICAL CONCLUSION: No Effect

Smooth Coneflower - Habitat for smooth coneflower is typically found in open woods, glades, cedar barrens, roadsides, clearcuts, dry limestone bluffs, and power line right of ways, and usually on magnesium and calcium rich soils associated with gabbro and diabase in North Carolina. Optimal sites are characterized by abundant sunlight and little competition in the herbaceous layer. Natural fires, as well as large herbivores, historically influenced the vegetation in this species' range. Many of the herbs associated with Smooth coneflower are also sun-loving species that depend on periodic disturbances to reduce the shade and competition of woody plants.

Habitat Present: Yes

The study area does provide marginal habitat for this species. Therefore, Terracon biologists conducted pedestrian surveys in September 2021 throughout the areas of potential habitat. No evidence of this species was observed. NCNHP data from September 2021 does document occurrences of this species within one mile of the study area. However, the project is expected to have No Effect on the species since onsite surveys revealed no evidence of this species.

BIOLOGICAL CONCLUSION: No Effect

Atlantic pigtoe - The Atlantic Pigtoe requires excellent water quality, clean coarse sand and gravel substrate in a flowing river ecosystem. This species has several specific habitat requirements, including clean and perennially flowing, highly oxygenated waters with sufficient velocity to maintain uncompacted stream bed habitats.

Potential Habitat Present: No

The site is outside the current range of the species but considered as part of the review. Potential habitat for the Atlantic Pigtoe is not present in the study area. The streams that occur onsite were observed to be subject to siltation and show signs of streambank instability. These mainly intermittent streams are also small, first order streams, high in their respective watersheds, with minimal flow that do not provide the type of habitat considered conducive for this species. Lack of excellent water quality, water quantity, suitable instream substrate, and development stressors further reduce potential habitat. NCNHP data reviewed in September 2021 indicates no occurrences of this species within 1.0 mile of the study area.

BIOLOGICAL CONCLUSION: No Effect

Representative Photos



View of intermittent/perennial stream on the eastern portion of the property, facing southwest.



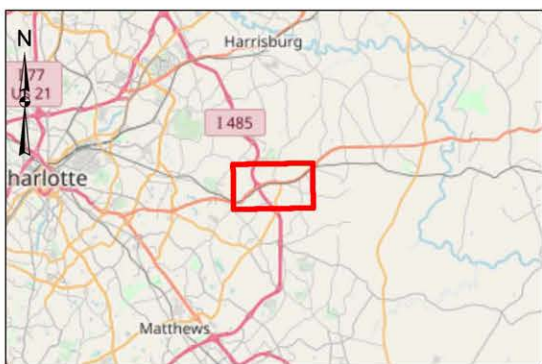
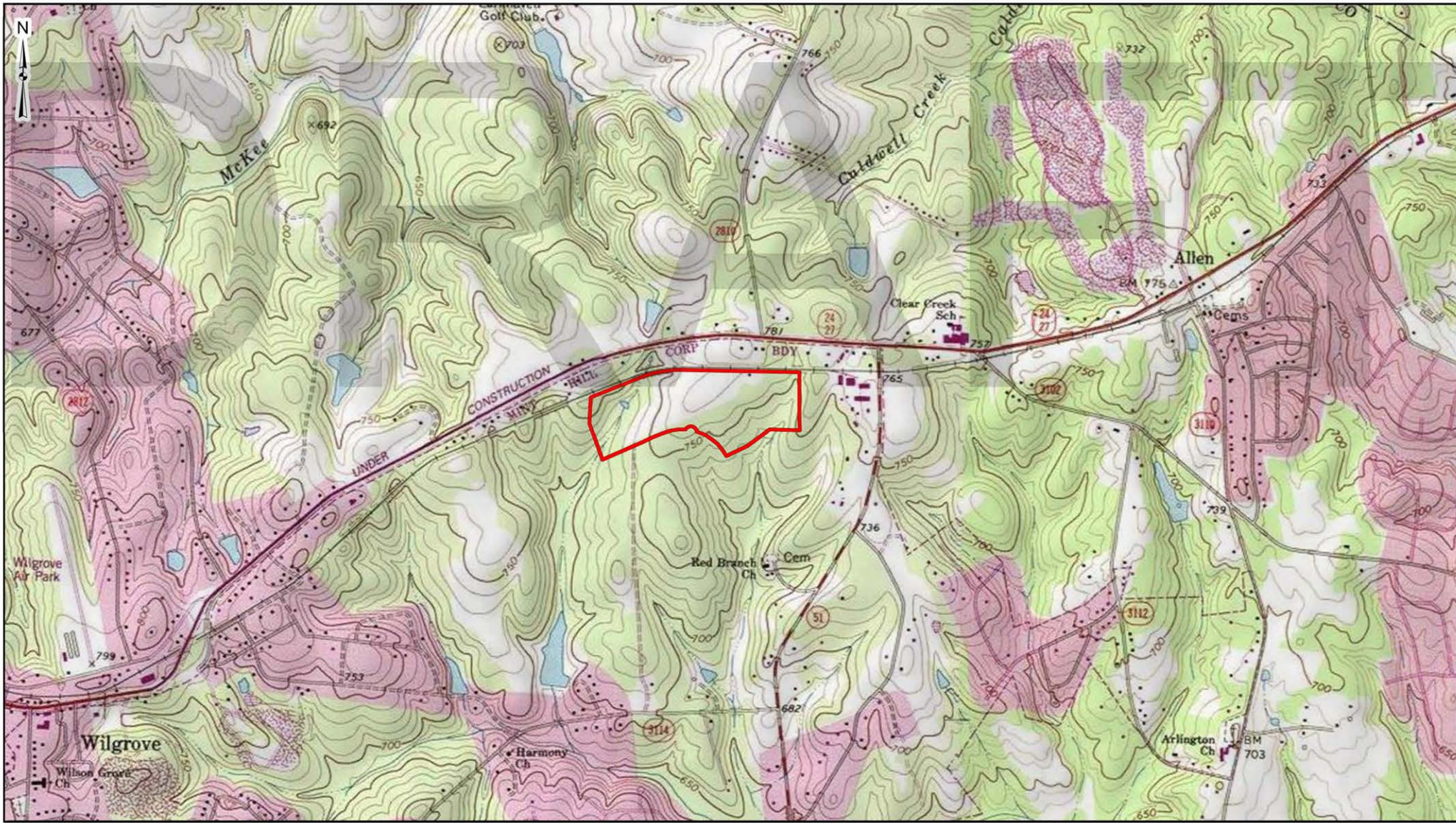
View of mixed evergreen and deciduous woods, central portion of site, facing south.



View of riparian woods and wetland, western portion of site, facing north.

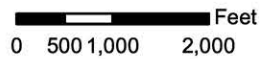


View of maintained rail ROW, northern portion of site, facing east.



Legend

 Site Boundary



Project No.:	71217506
Date:	Oct 2021
Drawn By:	CEW
Reviewed By:	JCW



2701 Westport Road
Charlotte, NC 28208
PH. (704) 509-1777
terracon.com

DATA SOURCES:
2011 National Geographic Society/ESRI,
i-cubed seamless USGS quadrangles
(Mint Hill, NC); Site Boundary Based on

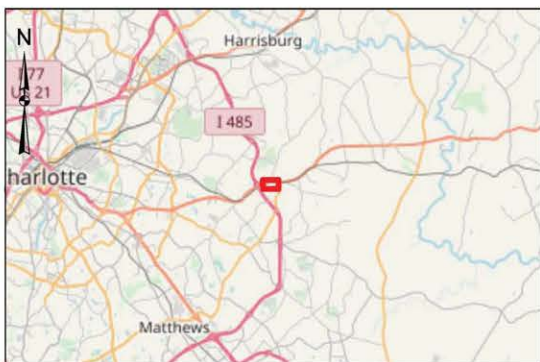
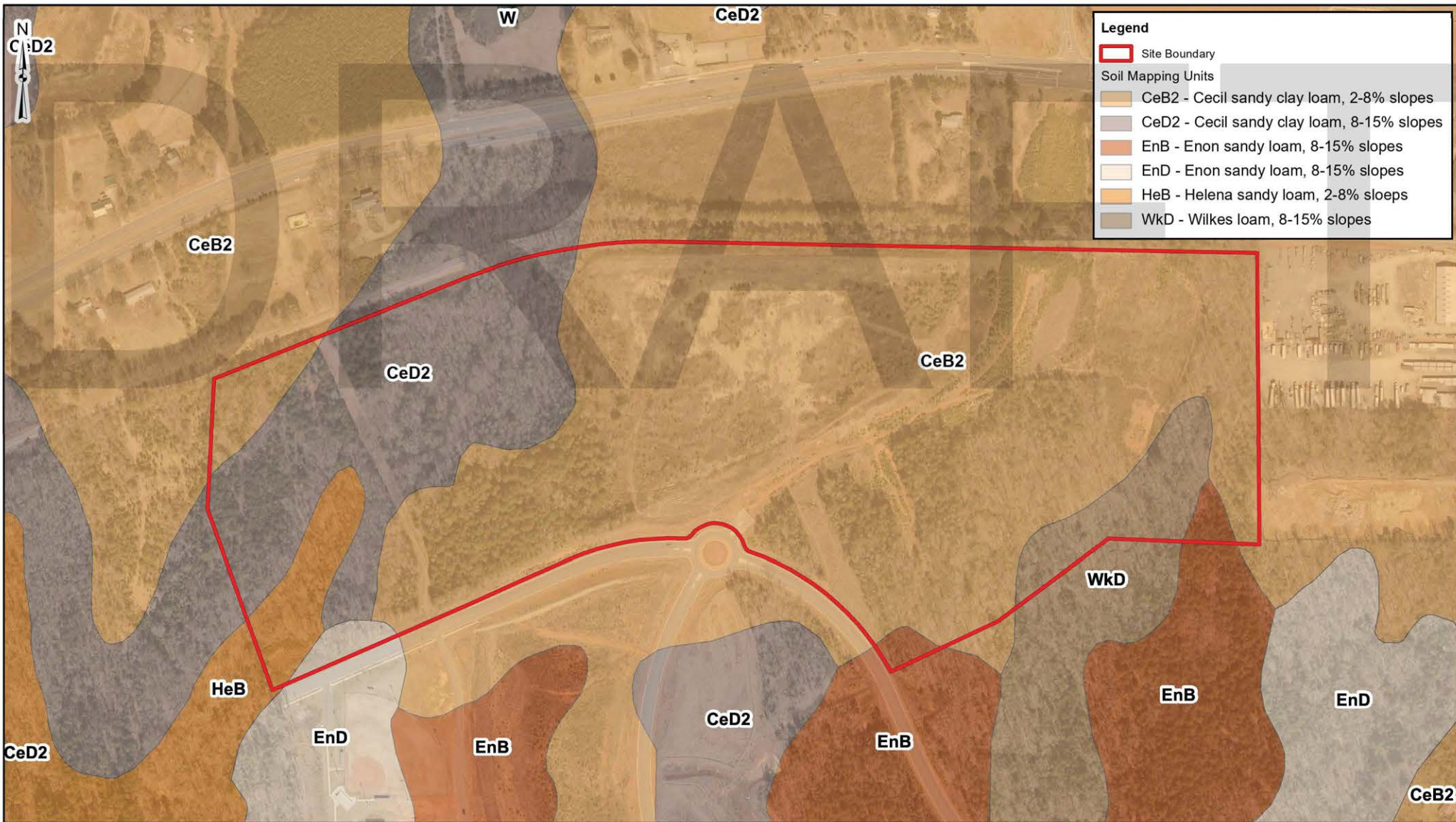
Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for and is not suitable for legal or engineering purposes. ESI does not warrant the work of regulatory agencies or other third parties data or information.

USGS Topographic Map

Mint Hill Industrial Site
(35.22049, -80.64118)
Charlotte, Mecklenburg County, NC

Exhibit

1



DATA SOURCES:
 Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server; NRCS digital Soil Survey of Mecklenburg County, 2009; Site Boundary Based on Mecklenburg County Parcel Data.

Disclaimer: The information depicted on this figure is for informational purposes only and was not prepared for and is not suitable for legal or engineering purposes. ESI does not warrant the work of regulatory agencies or other third parties data or information.

Project No.: 71217506
 Date: Oct 2021
 Drawn By: CEW
 Reviewed By: JCW

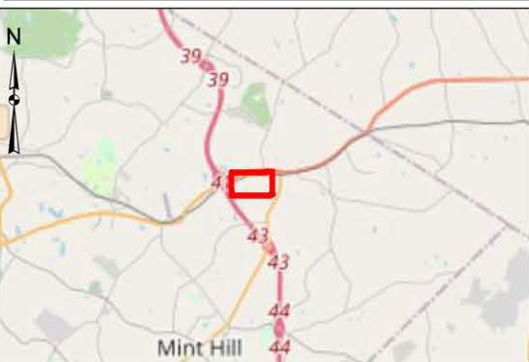
Terracon
 2701 Westport Road Charlotte, NC 28208
 PH. (704) 509-1777 terracon.com

USDA NRCS Soils Data

Mint Hill Industrial Site
 (35.22049, -80.64118)
 Charlotte, Mecklenburg County, NC

Exhibit

2



Legend

Site Boundary

0 100 200 400 Feet

DATA SOURCES:
 Latest High-Resolution NC Statewide Orthoimagery, NC
 OneMap Server; Site Boundary Based on Mecklenburg
 County Parcel Data.

Project No.:	71197757
Date:	Sep 2021
Drawn By:	CEW
Reviewed By:	JCW

Terracon

2701 Westport Road Charlotte, NC 28208
 PH. (704) 509-1777 terracon.com

POTENTIAL HABITAT MAP

Mint Hill Industrial Site
 (35.22049, -80.64118)
 Charlotte, Mecklenburg County, NC

Exhibit

3



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Asheville Ecological Services Field Office
160 Zillicoa Street
Asheville, NC 28801-1082
Phone: (828) 258-3939 Fax: (828) 258-5330
<http://www.fws.gov/nc-es/es/countyfr.html>

In Reply Refer To:

December 07, 2021

Consultation code: 04EN1000-2021-TA-1261

Event Code: 04EN1000-2022-E-00425

Project Name: Mint Hill Warehouse and Storage Yard

Subject: Verification letter for the 'Mint Hill Warehouse and Storage Yard' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Laura Bair:

The U.S. Fish and Wildlife Service (Service) received on December 07, 2021 your effects determination for the 'Mint Hill Warehouse and Storage Yard' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Carolina Heelsplitter *Lasmigona decorata* Endangered
- Michaux's Sumac *Rhus michauxii* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Schweinitz's Sunflower *Helianthus schweinitzii* Endangered
- Smooth Coneflower *Echinacea laevigata* Endangered

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

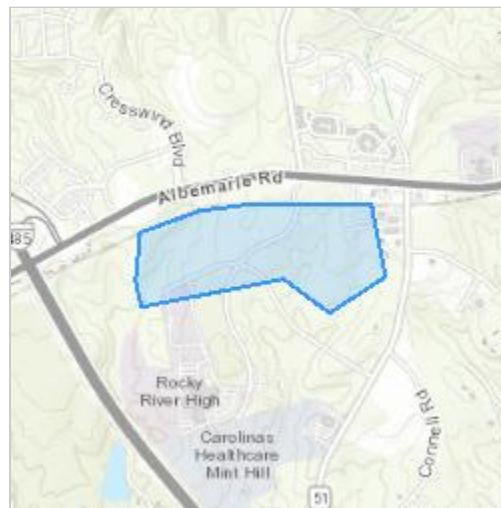
Mint Hill Warehouse and Storage Yard

2. Description

The following description was provided for the project 'Mint Hill Warehouse and Storage Yard':

MOW 102 and MOW 80 - new storage yard and 200,000-400,000 sf warehouse

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.220056,-80.63689465693494,14z>

**Determination Key Result**

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may

affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?
Yes
2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")
No
3. Will your activity purposefully **Take** northern long-eared bats?
No
4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?
Automatically answered
No
5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/endangered/mammals/nleb/nhisites.html.

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?
No
 7. Will the action involve Tree Removal?
Yes
-

8. Will the action only remove hazardous trees for the protection of human life or property?

No

9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

No

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

30

2. If known, estimated acres of forest conversion from April 1 to October 31

30

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Date: 12/02/2021

Self-Certification Letter

Project Name ACWR EA - Midland Siding

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Raleigh Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. Based on your analysis, mark all the determinations that apply:

- “no effect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, not likely to adversely affect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, likely to adversely affect” determination for the Northern long-eared bat (*Myotis septentrionalis*) and relying on the findings of the January 5, 2016, Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat;
- “no Eagle Act permit required” determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” or “not likely to adversely affect” determinations for proposed and listed species and proposed and designated critical habitat; the “may affect” determination for Northern long-eared bat; and/or the “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed. Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species. Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year. Information about the online project review process including instructions, species information, and other information regarding project reviews within North Carolina is available at our website <http://www.fws.gov/raleigh/pp.html>. If you have any questions, you can write to us at Raleigh@fws.gov or please contact Leigh Mann of this office at 919-856-4520, ext. 10.

Sincerely,

/s/Pete Benjamin

Pete Benjamin
Field Supervisor
Raleigh Ecological Services

Enclosures - project review package



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Asheville Ecological Services Field Office
160 Zillicoa Street
Asheville, NC 28801-1082
Phone: (828) 258-3939 Fax: (828) 258-5330
<http://www.fws.gov/nc-es/es/countyfr.html>

In Reply Refer To:

November 12, 2021

Consultation Code: 04EN1000-2022-SLI-0104

Event Code: 04EN1000-2022-E-00276

Project Name: Midland Siding

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The attached species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. Although not required by section 7, many agencies request species lists to start the informal consultation process and begin their fulfillment of the requirements under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

This list, along with other helpful resources, is also available on the U.S. Fish and Wildlife Service (Service) – Asheville Field Office’s (AFO) website: https://www.fws.gov/raleigh/species/cntylist/nc_counties.html. The AFO website list includes “species of concern” – species that could potentially be placed on the federal list of threatened and endangered species in the future. Also available are:

- Design and Construction Recommendations
https://www.fws.gov/asheville/htmls/project_review/Recommendations.html
- Optimal Survey Times for Federally Listed Plants
https://www.fws.gov/nc-es/plant/plant_survey.html
- Northern long-eared bat Guidance
https://www.fws.gov/asheville/htmls/project_review/NLEB_in_WNC.html
- Predictive Habitat Model for Aquatic Species
<https://www.fws.gov/asheville/htmls/Maxent/Maxent.html>

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could require modifications of these lists.

Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of the species lists should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website or the AFO website (the AFO website dates each county list with the day of the most recent update/change) at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list or by going to the AFO website.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a Biological Evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12 and on our office's website at https://www.fws.gov/asheville/htmls/project_review/assessment_guidance.html.

If a Federal agency (or their non-federal representative) determines, based on the Biological Assessment or Biological Evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species, and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at: <http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>.

Though the bald eagle is no longer protected under the Endangered Species Act, please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require additional consultation (see <https://www.fws.gov/southeast/our-services/permits/eagles/>). Wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds (including bald and golden eagles) and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
 - Migratory Birds
 - Wetlands
-

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Asheville Ecological Services Field Office

160 Zillicoa Street

Asheville, NC 28801-1082

(828) 258-3939

Project Summary

Consultation Code: 04EN1000-2022-SLI-0104

Event Code: Some(04EN1000-2022-E-00276)

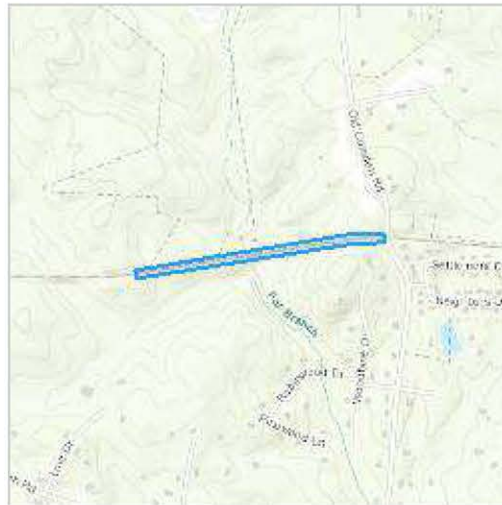
Project Name: Midland Siding

Project Type: LAND - CLEARING

Project Description: Rail expansion

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.236896,-80.57560511949377,14z>



Counties: Cabarrus County, North Carolina

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Clams

NAME	STATUS
Carolina Heelsplitter <i>Lasmigona decorata</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/3534	Endangered

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Schweinitz's Sunflower <i>Helianthus schweinitzii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3849	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Kentucky Warbler <i>Oporornis formosus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 20
Prairie Warbler <i>Dendroica discolor</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

NAME	BREEDING SEASON
Wood Thrush <i>Hylocichla mustelina</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

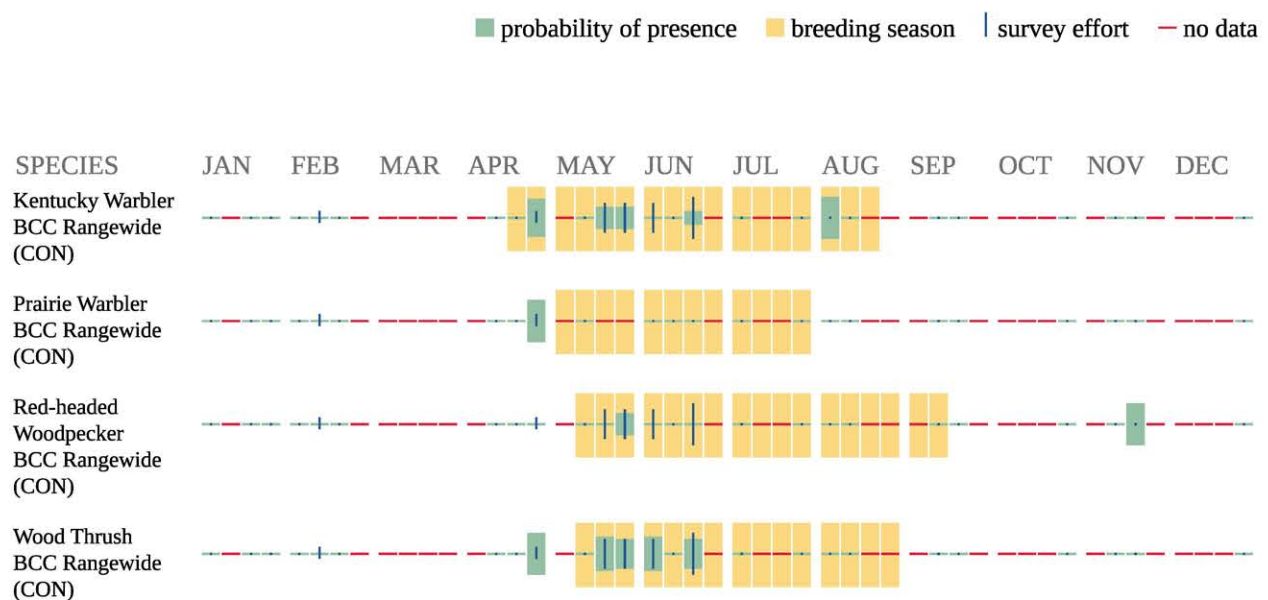
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (–)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#)

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [AKN Phenology Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
-

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED.
PLEASE VISIT [HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML](https://www.fws.gov/wetlands/data/mapper.html) OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.



Roy Cooper, Governor

D. Reid Wilson, Secretary

Walter Clark
Director, Division of Land and Water Stewardship

NCNHDE-15831

September 23, 2021

Katie Talavera
Terracon Inc.
2401 Brentwood Road, Suite 107
Raleigh, NC 27603
RE: Midland Siding (MOW692) ; JN217426

Dear Katie Talavera:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

Based on the project area mapped with your request, a query of the NCNHP database indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. Please note that although there may be no documentation of natural heritage elements within the project boundary, it does not imply or confirm their absence; the area may not have been surveyed. The results of this query should not be substituted for field surveys where suitable habitat exists. In the event that rare species are found within the project area, please contact the NCNHP so that we may update our records.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is found within the project area or is indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: <https://www.fws.gov/offices/Directories/ListOffices.cfm?statecode=37>.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

The NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or Federally-listed species are documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
Midland Siding (MOW692)
Project No. JN217426
September 23, 2021
NCNHDE-15831

No Element Occurrences are Documented Within a One-mile Radius of the Project Area

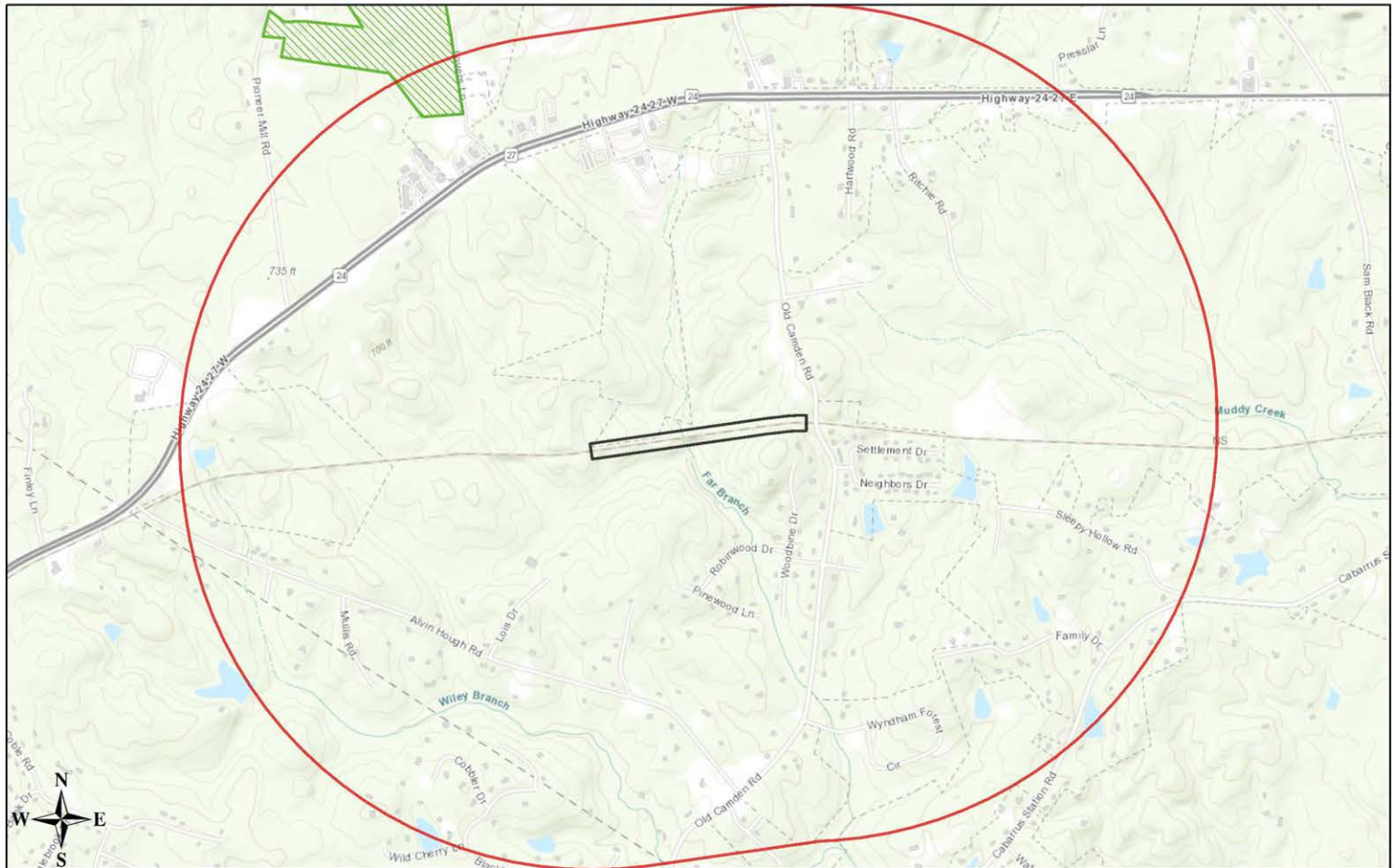
No Natural Areas are Documented Within a One-mile Radius of the Project Area

Managed Areas Documented Within a One-mile Radius of the Project Area

Managed Area Name	Owner	Owner Type
Three Rivers Land Trust Easement	Three Rivers Land Trust	Private

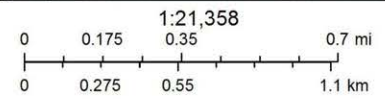
Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/help>. Data query generated on September 23, 2021; source: NCNHP, Q2 July 2021. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-15831: Midland Siding (MOW692)



September 23, 2021

-  Project Boundary
-  Buffered Project Boundary
-  Managed Area (MAREA)



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community


Species Conclusions Table

Project Name: **ACWR EA – Midland Siding**

Date: July 5, 2022 by Skelly and Loy/Terracon

Species/Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Northern Long Eared Bat	Suitable summer habitat	May affect	Relying upon the findings of the 1/5/2016 Programmatic Biological Opinion for Final 4(d) Rule on the Northern Long-Eared Bat and Activities Exempted from Take Prohibitions to fulfill our project-specific section 7 responsibilities.
Carolina Heelsplitter	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Atlantic Pigtoe	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Schweinitz's Sunflower	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Critical habitats	No critical habitat present	No effect	There are no critical habitats.

Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.



 Department Manager
 Signature/Title

7/6/2022

 Date

A field evaluation was conducted on September 29 and October 4, 2021 by Terracon biologists JC Weaver, Conner Miller, and Chaz Ganey to identify potentially suitable habitat for federally threatened and endangered species protected by the Endangered Species Act (ESA). During the field evaluation, plant communities and habitats were evaluated to determine if potentially suitable habitat for listed species is present within the project site.

Northern long-eared bat – During summer, the northern long-eared bat (NLEB) roosts singly or in colonies underneath bark, in cavities, or in crevices in both live and dead trees and/or snags (typically >3 inches diameter breast height). Males and non-reproductive females may also roost in cooler places, like caves and mines. This bat seems opportunistic in selecting roosts, using tree species based on suitability to provide cavities or crevices or presence of peeling bark. It has also been found, rarely, roosting in structures like barns and sheds when suitable tree roosts are not available. During the summer, NLEB emerge at dusk to forage in upland and lowland woodlands and tree-lined corridors.

It is reported that the NLEB hibernation season is October 15 – April 15. The bats spend winter hibernating in caves and mines, called hibernacula. They typically use large caves or mines with large passages and entrances; constant temperatures; and high humidity with no air currents. Specific areas where they hibernate have very high humidity, so much so that droplets of water are often seen on their fur. Within hibernacula, surveyors find them in small crevices or cracks, often with only the nose and ears visible (USFWS 2014).

Habitat Present: Yes (Summer Habitat)

A review of September 2021 NCNHP records indicates no occurrences of NLEB within 1.0 mile of the study area. No known, occupied hibernacula were identified within 1.0 mile of the project study area based on review of these NCNHP records. Pursuant to the final 4(d) rules, incidental take from tree removal activities is not prohibited unless it results from, (1) removing a known occupied maternity roost tree, or (2) from tree removal activities within 150 feet of a known occupied maternity roost tree from June 1 through July 31, or (3) results from tree removal activities within 0.25 mile of a hibernaculum at any time. The proposed project appears to meet intent of the 4(d) rule criteria and any incidental take would be exempt if the project continues to remain in compliance with the 4(d) rules. Consultation with USFWS is not required if these criteria do not change and no new information regarding NLEB occurrences or hibernaculum within 0.25 mile arises.

BIOLOGICAL CONCLUSION: Exempt per the 4(d) Rule

Carolina heelsplitter - The Carolina heelsplitter requires cool, clean, well-oxygenated water. Stable, silt-free stream bottoms appear to be critical to the species. Typically, stable areas occur where the stream banks are well-vegetated with trees and shrubs.

Potential Habitat Present: No

Potential habitat for the Carolina heelsplitter is not present in the study area. The streams that occur onsite were observed to be subject to siltation and pollution and show signs of streambank instability. The Charlotte suburban area is experiencing

tremendous growth and development stressing the system. These intermittent/perennial streams are also small, first order streams that do not provide the type of habitat considered conducive for this species. The Carolina heelsplitter has a fragmented distribution and historically has been known to exist only in several locations within the Catawba and Pee Dee River systems in North Carolina and Catawba, Pee Dee and Savannah River systems in South Carolina. Recent collection efforts indicate that the Carolina heelsplitter has been extinguished from the majority of its historic range and only eleven small populations are known to exist. According to the Carolina heelsplitter 5-year Review, published by USFWS, in the Catawba River system, the population has been identified in Waxhaw Creek, Sixmile Creek, Gills Creek/Cane Creek, Fishing Creek/South Fork, and Bull Run Creek. This site is located in the Clear Creek watershed, a sub watershed of Middle Rocky River. Terracon surveyed the site on September 29 and October 4, 2021 and did not observe habitat that would be conducive for this species. The streams appear to be mainly intermittent within the western and eastern portions of the site. The streams provide inadequate habitat and do not appear to provide consistent year-round flow as needed by this species. Also present at the time of the assessment was turbid water, evidence of urban stormwater runoff, and substrate comprised primarily of silt. It is our professional opinion that suitable habitat for Carolina heelsplitter does not occur on this site. NCNHP data reviewed in September 2021 indicates no occurrences of this species within 1.0 mile of the study area.

BIOLOGICAL CONCLUSION: No Effect

Schweinitz's sunflower - Schweinitz's sunflower occurs in full to partial sun and is found in areas with poor soils, such as thin clays that vary from wet to dry. It is believed that this species once occurred in natural forest openings or grasslands. Many of the remaining populations occur along roadsides. Schweinitz's sunflower is found in the central Piedmont region of North and South Carolina.

Habitat Present: Yes

The study area does provide marginal habitat for this species. Therefore, Terracon biologists conducted pedestrian surveys in September 2021 throughout the areas of potential habitat. No evidence of this species was observed. NCNHP data from September 2021 does document occurrences of this species within one mile of the study area. However, the project is expected to have No Effect on the species since onsite surveys revealed no evidence of this species.

BIOLOGICAL CONCLUSION: No Effect

Atlantic pigtoe - The Atlantic Pigtoe requires excellent water quality, clean coarse sand and gravel substrate in a flowing river ecosystem. This species has several specific habitat requirements, including clean and perennially flowing, highly oxygenated waters with sufficient velocity to maintain uncompacted stream bed habitats.

Potential Habitat Present: No

The site is outside the current range of the species but considered as part of the review. Potential habitat for the Atlantic Pigtoe is not present in the study area. The streams that

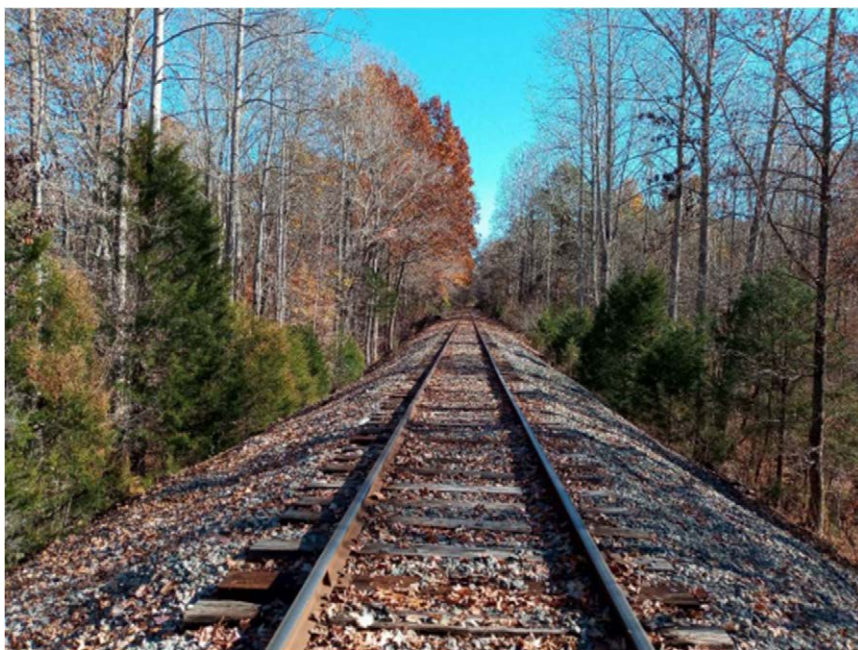
occur onsite were observed to be subject to siltation and show signs of streambank instability. These mainly intermittent streams are also small, first order streams, high in their respective watersheds, with minimal flow that do not provide the type of habitat considered conducive for this species. Lack of excellent water quality, water quantity, suitable instream substrate, and development stressors further reduce potential habitat. NCNHP data reviewed in September 2021 indicates no occurrences of this species within 1.0 mile of the study area.

BIOLOGICAL CONCLUSION: No Effect

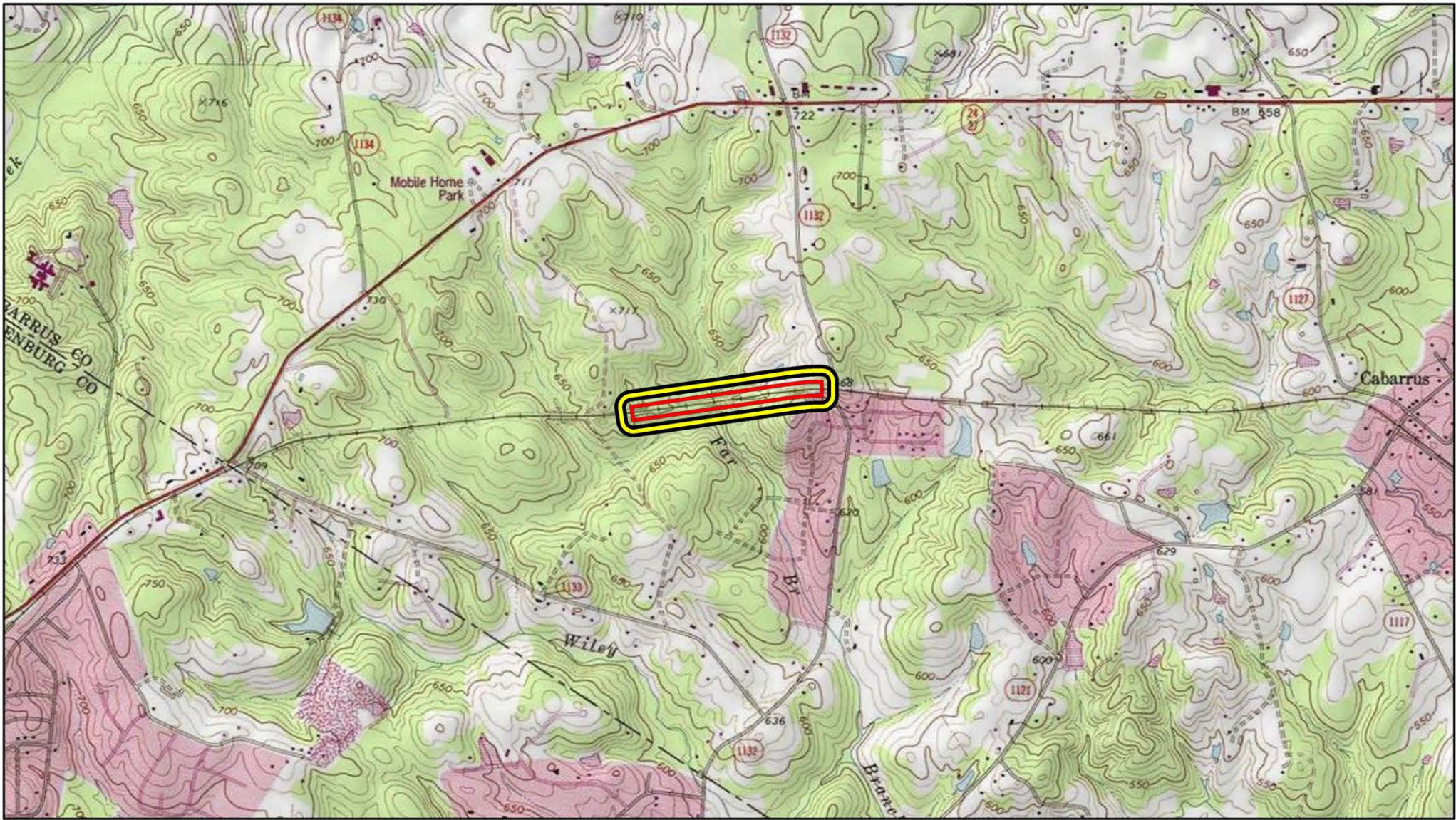
Representative Photos



View of the southern portion of the stream, south of the existing rail line, facing north.



View of the rail ROW, southern portion of site, facing west.



- Limits of Disturbance
- Project Study Area



Sources: 2011 National Geographic Society/ESRI, i-cubed seamless USGS quadrangles (Midland, NC); Project Boundary based on Cabarrus County Parcel Data.

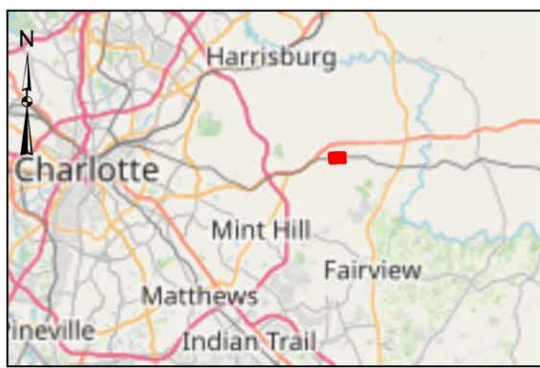
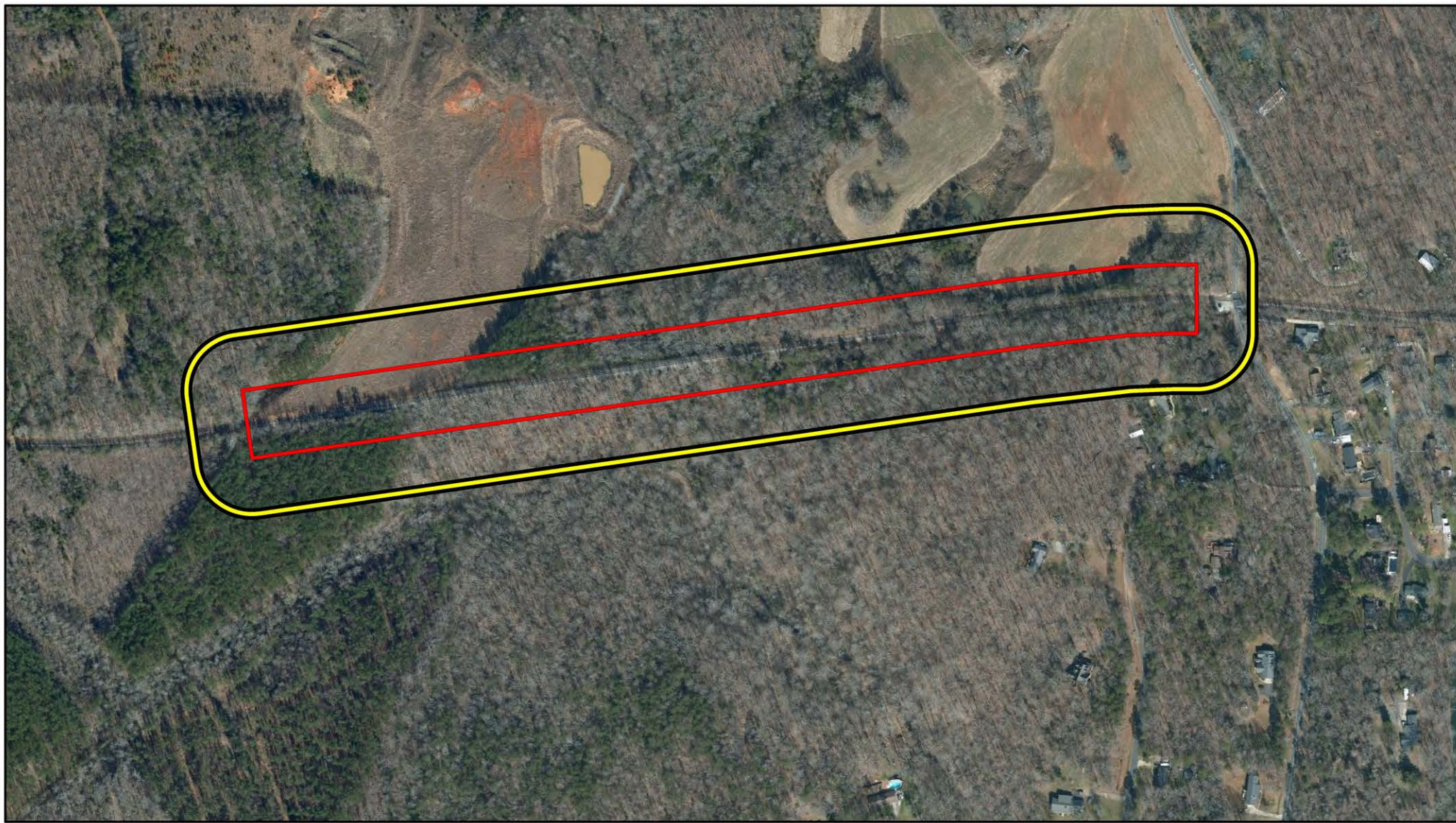
N ↑	Project No.:	JN217126
	Date:	Dec 2021
	Drawn By:	KT
	Reviewed By:	JCW

Terracon

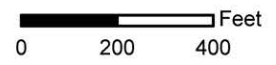
2701 Westport Road Charlotte, NC 28208
 PH. (704) 509-1777 terracon.com

USGS Topographic Map
Midland Industrial Midland, Cabarrus County, North Carolina

Exhibit
1



- Limits of Disturbance
- Project Study Area



DATA SOURCES:
 Latest High-Resolution NC Statewide Orthoimagery, NC OneMap Server, Site Boundary approximated from client data.

Project No.:	JN217126
Date:	Dec 2021
Drawn By:	KT
Reviewed By:	JCW



2701 Westport Road Charlotte, NC 28208
 PH. (704) 509-1777 terracon.com

Aerial
Midland Industrial Midland, Cabarrus County, North Carolina

Exhibit
2



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Asheville Ecological Services Field Office
160 Zillicoa Street
Asheville, NC 28801-1082
Phone: (828) 258-3939 Fax: (828) 258-5330
<http://www.fws.gov/nc-es/es/countyfr.html>

In Reply Refer To:

December 07, 2021

Consultation code: 04EN1000-2022-TA-0157

Event Code: 04EN1000-2022-E-00430

Project Name: Midland Siding

Subject: Verification letter for the 'Midland Siding' project under the January 5, 2016, Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-eared Bat and Activities Excepted from Take Prohibitions.

Dear Laura Bair:

The U.S. Fish and Wildlife Service (Service) received on December 07, 2021 your effects determination for the 'Midland Siding' (the Action) using the northern long-eared bat (*Myotis septentrionalis*) key within the Information for Planning and Consultation (IPaC) system. This IPaC key assists users in determining whether a Federal action is consistent with the activities analyzed in the Service's January 5, 2016, Programmatic Biological Opinion (PBO). The PBO addresses activities excepted from "take"^[1] prohibitions applicable to the northern long-eared bat under the Endangered Species Act of 1973 (ESA) (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.).

Based upon your IPaC submission, the Action is consistent with activities analyzed in the PBO. The Action may affect the northern long-eared bat; however, any take that may occur as a result of the Action is not prohibited under the ESA Section 4(d) rule adopted for this species at 50 CFR §17.40(o). Unless the Service advises you within 30 days of the date of this letter that your IPaC-assisted determination was incorrect, this letter verifies that the PBO satisfies and concludes your responsibilities for this Action under ESA Section 7(a)(2) with respect to the northern long-eared bat.

Please report to our office any changes to the information about the Action that you submitted in IPaC, the results of any bat surveys conducted in the Action area, and any dead, injured, or sick northern long-eared bats that are found during Action implementation. If the Action is not completed within one year of the date of this letter, you must update and resubmit the information required in the IPaC key.

This IPaC-assisted determination allows you to rely on the PBO for compliance with ESA Section 7(a)(2) only for the northern long-eared bat. It **does not** apply to the following ESA-protected species that also may occur in the Action area:

- Carolina Heelsplitter *Lasmigona decorata* Endangered
- Monarch Butterfly *Danaus plexippus* Candidate
- Schweinitz's Sunflower *Helianthus schweinitzii* Endangered

If the Action may affect other federally listed species besides the northern long-eared bat, a proposed species, and/or designated critical habitat, additional consultation between you and this Service office is required. If the Action may disturb bald or golden eagles, additional coordination with the Service under the Bald and Golden Eagle Protection Act is recommended.

[1]Take means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct [ESA Section 3(19)].

Action Description

You provided to IPaC the following name and description for the subject Action.

1. Name

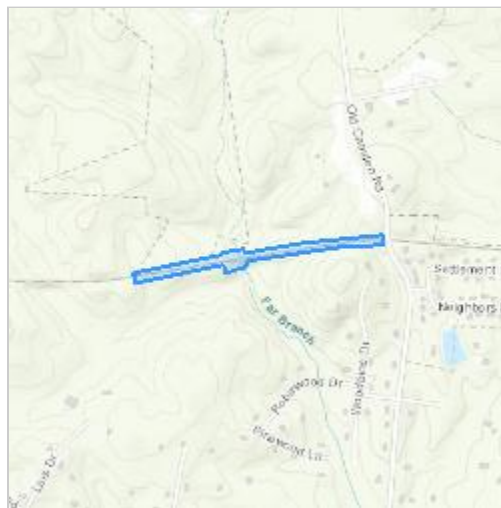
Midland Siding

2. Description

The following description was provided for the project 'Midland Siding':

(MOW692) Construction of 2900 linear feet of new storage and passing siding

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.23692665,-80.57587683324262,14z>

**Determination Key Result**

This Federal Action may affect the northern long-eared bat in a manner consistent with the description of activities addressed by the Service's PBO dated January 5, 2016. Any taking that may occur incidental to this Action is not prohibited under the final 4(d) rule at 50 CFR §17.40(o). Therefore, the PBO satisfies your responsibilities for this Action under ESA Section 7(a)(2) relative to the northern long-eared bat.

Determination Key Description: Northern Long-eared Bat 4(d) Rule

This key was last updated in IPaC on May 15, 2017. Keys are subject to periodic revision.

This key is intended for actions that may affect the threatened northern long-eared bat.

The purpose of the key for Federal actions is to assist determinations as to whether proposed actions are consistent with those analyzed in the Service's PBO dated January 5, 2016.

Federal actions that may cause prohibited take of northern long-eared bats, affect ESA-listed species other than the northern long-eared bat, or affect any designated critical habitat, require ESA Section 7(a)(2) consultation in addition to the use of this key. Federal actions that may

affect species proposed for listing or critical habitat proposed for designation may require a conference under ESA Section 7(a)(4).

Determination Key Result

This project may affect the threatened Northern long-eared bat; therefore, consultation with the Service pursuant to Section 7(a)(2) of the Endangered Species Act of 1973 (87 Stat.884, as amended; 16 U.S.C. 1531 et seq.) is required. However, based on the information you provided, this project may rely on the Service's January 5, 2016, *Programmatic Biological Opinion on Final 4(d) Rule for the Northern Long-Eared Bat and Activities Excepted from Take Prohibitions* to fulfill its Section 7(a)(2) consultation obligation.

Qualification Interview

1. Is the action authorized, funded, or being carried out by a Federal agency?

Yes

2. Have you determined that the proposed action will have "no effect" on the northern long-eared bat? (If you are unsure select "No")

No

3. Will your activity purposefully **Take** northern long-eared bats?

No

4. [Semantic] Is the project action area located wholly outside the White-nose Syndrome Zone?

Automatically answered

No

5. Have you contacted the appropriate agency to determine if your project is near a known hibernaculum or maternity roost tree?

Location information for northern long-eared bat hibernacula is generally kept in state Natural Heritage Inventory databases – the availability of this data varies state-by-state. Many states provide online access to their data, either directly by providing maps or by providing the opportunity to make a data request. In some cases, to protect those resources, access to the information may be limited. A web page with links to state Natural Heritage Inventory databases and other sources of information on the locations of northern long-eared bat roost trees and hibernacula is available at www.fws.gov/midwest/angered/mammals/nleb/nhisites.html.

Yes

6. Will the action affect a cave or mine where northern long-eared bats are known to hibernate (i.e., hibernaculum) or could it alter the entrance or the environment (physical or other alteration) of a hibernaculum?

No

7. Will the action involve Tree Removal?

Yes

8. Will the action only remove hazardous trees for the protection of human life or property?

No

9. Will the action remove trees within 0.25 miles of a known northern long-eared bat hibernaculum at any time of year?

No

10. Will the action remove a known occupied northern long-eared bat maternity roost tree or any trees within 150 feet of a known occupied maternity roost tree from June 1 through July 31?

No

Project Questionnaire

If the project includes forest conversion, report the appropriate acreages below. Otherwise, type '0' in questions 1-3.

1. Estimated total acres of forest conversion:

5

2. If known, estimated acres of forest conversion from April 1 to October 31

5

3. If known, estimated acres of forest conversion from June 1 to July 31

0

If the project includes timber harvest, report the appropriate acreages below. Otherwise, type '0' in questions 4-6.

4. Estimated total acres of timber harvest

0

5. If known, estimated acres of timber harvest from April 1 to October 31

0

6. If known, estimated acres of timber harvest from June 1 to July 31

0

If the project includes prescribed fire, report the appropriate acreages below. Otherwise, type '0' in questions 7-9.

7. Estimated total acres of prescribed fire

0

8. If known, estimated acres of prescribed fire from April 1 to October 31

0

9. If known, estimated acres of prescribed fire from June 1 to July 31

0

If the project includes new wind turbines, report the megawatts of wind capacity below. Otherwise, type '0' in question 10.

10. What is the estimated wind capacity (in megawatts) of the new turbine(s)?

0



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Date: 12/02/2021

Self-Certification Letter

Project Name ACWR EA - ACWR HQ Storage Yard

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Raleigh Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. Based on your analysis, mark all the determinations that apply:

- “no effect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, not likely to adversely affect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, likely to adversely affect” determination for the Northern long-eared bat (*Myotis septentrionalis*) and relying on the findings of the January 5, 2016, Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat;
- “no Eagle Act permit required” determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” or “not likely to adversely affect” determinations for proposed and listed species and proposed and designated critical habitat; the “may affect” determination for Northern long-eared bat; and/or the “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed. Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species. Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year. Information about the online project review process including instructions, species information, and other information regarding project reviews within North Carolina is available at our website <http://www.fws.gov/raleigh/pp.html>. If you have any questions, you can write to us at Raleigh@fws.gov or please contact Leigh Mann of this office at 919-856-4520, ext. 10.

Sincerely,

/s/Pete Benjamin

Pete Benjamin
Field Supervisor
Raleigh Ecological Services

Enclosures - project review package



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Raleigh Ecological Services Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Phone: (919) 856-4520 Fax: (919) 856-4556

In Reply Refer To:
Consultation Code: 04EN2000-2022-SLI-0240
Event Code: 04EN2000-2022-E-00530
Project Name: ACWR HQ

November 12, 2021

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The species list generated pursuant to the information you provided identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Section 7 of the Act requires that all federal agencies (or their designated non-federal representative), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species. A biological assessment or evaluation may be prepared to fulfill that requirement and in determining whether additional consultation with the Service is necessary. In addition to the federally-protected species list, information on the species' life histories and habitats and information on completing a biological assessment or

evaluation and can be found on our web page at <http://www.fws.gov/raleigh>. Please check the web site often for updated information or changes

If your project contains suitable habitat for any of the federally-listed species known to be present within the county where your project occurs, the proposed action has the potential to adversely affect those species. As such, we recommend that surveys be conducted to determine the species' presence or absence within the project area. The use of North Carolina Natural Heritage program data should not be substituted for actual field surveys.

If you determine that the proposed action may affect (i.e., likely to adversely affect or not likely to adversely affect) a federally-protected species, you should notify this office with your determination, the results of your surveys, survey methodologies, and an analysis of the effects of the action on listed species, including consideration of direct, indirect, and cumulative effects, before conducting any activities that might affect the species. If you determine that the proposed action will have no effect (i.e., no beneficial or adverse, direct or indirect effect) on federally listed species, then you are not required to contact our office for concurrence (unless an Environmental Impact Statement is prepared). However, you should maintain a complete record of the assessment, including steps leading to your determination of effect, the qualified personnel conducting the assessment, habitat conditions, site photographs, and any other related articles.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

Not all Threatened and Endangered Species that occur in North Carolina are subject to section 7 consultation with the U.S Fish and Wildlife Service. Atlantic and shortnose sturgeon, sea turtles, when in the water, and certain marine mammals are under purview of the National Marine Fisheries Service. If your project occurs in marine, estuarine, or coastal river systems you should also contact the National Marine Fisheries Service, <http://www.nmfs.noaa.gov/>

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. If you have any questions or comments, please contact John Ellis of this office at john_ellis@fws.gov.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Raleigh Ecological Services Field Office

Post Office Box 33726

Raleigh, NC 27636-3726

(919) 856-4520

Project Summary

Consultation Code: 04EN2000-2022-SLI-0240

Event Code: Some(04EN2000-2022-E-00530)

Project Name: ACWR HQ

Project Type: LAND - CLEARING

Project Description: Building expansion

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.3021323,-79.71636734836196,14z>



Counties: Montgomery and Moore counties, North Carolina

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Red-cockaded Woodpecker <i>Picoides borealis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Fishes

NAME	STATUS
Cape Fear Shiner <i>Notropis mekistocholas</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6063	Endangered

Clams

NAME	STATUS
Atlantic Pigtoe <i>Fusconaia masoni</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5164	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Michaux's Sumac <i>Rhus michauxii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5217	Endangered
Schweinitz's Sunflower <i>Helianthus schweinitzii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3849	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



Roy Cooper, Governor

D. Reid Wilson, Secretary

Walter Clark
Director, Division of Land and Water Stewardship

NCNHDE-15830

September 23, 2021

Katie Talavera
Terracon Inc.
2401 Brentwood Road, Suite 107
Raleigh, NC 27603
RE: ACWR HQ Phase 3 Storage Yard (MOW82; JN217426)

Dear Katie Talavera:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

Based on the project area mapped with your request, a query of the NCNHP database indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. Please note that although there may be no documentation of natural heritage elements within the project boundary, it does not imply or confirm their absence; the area may not have been surveyed. The results of this query should not be substituted for field surveys where suitable habitat exists. In the event that rare species are found within the project area, please contact the NCNHP so that we may update our records.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is found within the project area or is indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: <https://www.fws.gov/offices/Directories/ListOffices.cfm?statecode=37>.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

The NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or Federally-listed species are documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
 ACWR HQ Phase 3 Storage Yard (MOW82)
 Project No. JN217426
 September 23, 2021
 NCNHDE-15830

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Beetle	34432	Cicindela nigrion	Autumn Tiger Beetle	1964-10-08	H	5-Very Low	---	Significantly Rare	G2G3	S1

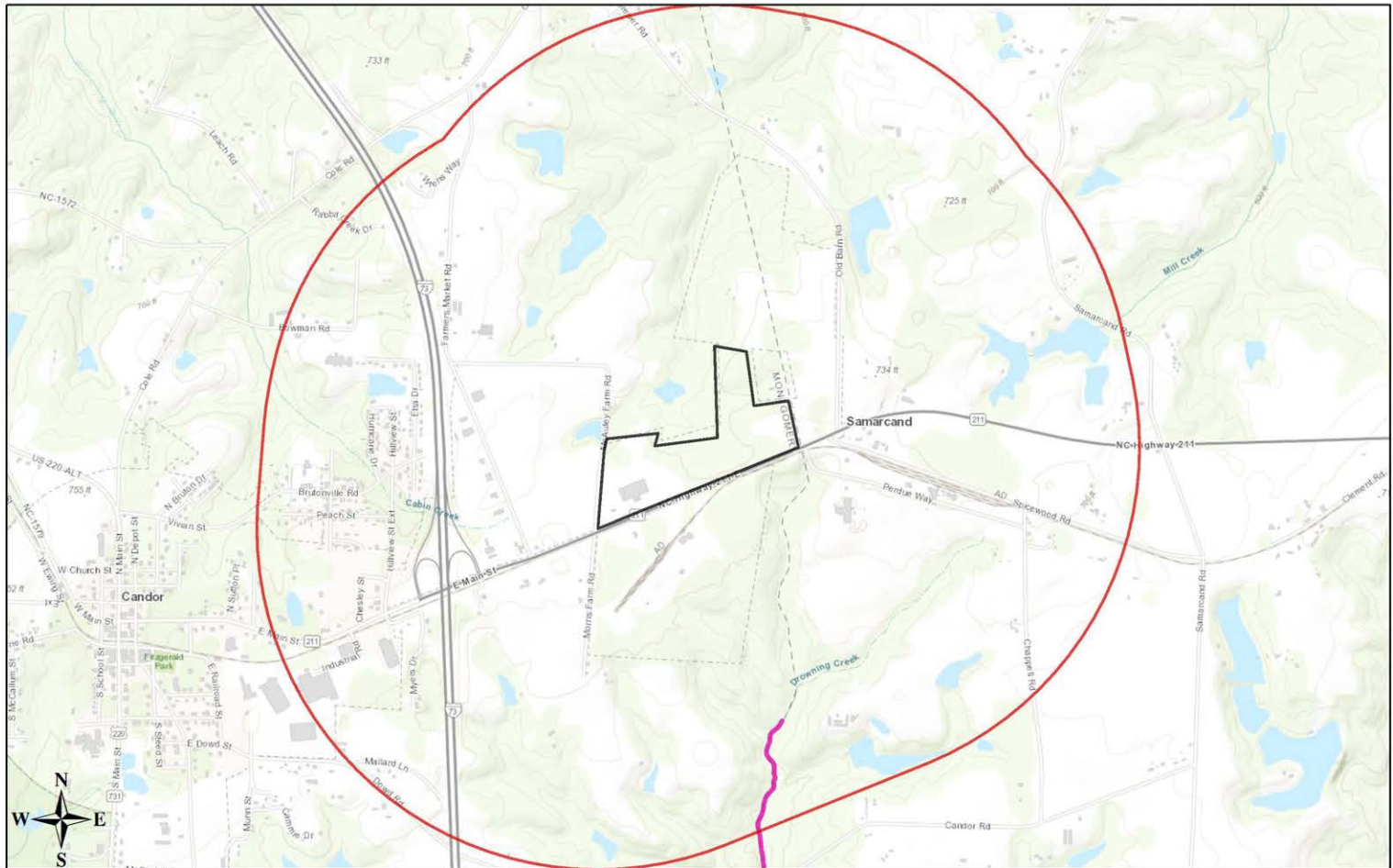
Natural Areas Documented Within a One-mile Radius of the Project Area

Site Name	Representational Rating	Collective Rating
LBR/Drowning Creek Aquatic Habitat	R2 (Very High)	C4 (Moderate)

No Managed Areas are Documented Within a One-mile Radius of the Project Area

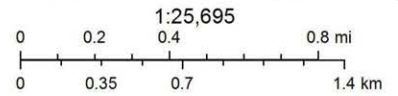
Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/help>. Data query generated on September 23, 2021; source: NCNHP, Q2 July 2021. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-15830: ACWR HQ Phase 3 Storage Yard (MOW82)



September 23, 2021

- Project Boundary
- Buffered Project Boundary
- NHP Natural Area (NHNA)



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Species Conclusions Table

Project Name: **ACWR EA – ACWR HQ Storage Yard**

Date: June 9, 2022 by Skelly and Loy/Terracon

Species/Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Red-cockaded Woodpecker	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Cape Fear Shiner	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Atlantic Pigtoe	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Michaux's Sumac	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Schweinitz's Sunflower	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Critical habitats	No critical habitat present	No effect	There are no critical habitats.

Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.

Robert T. Dinkell

Dept. Mgr. _____

6/9/2022 _____

Signature/Title

Date

A field evaluation was conducted on September 29 and October 4, 2021 by Terracon biologists JC Weaver, Conner Miller, and Chaz Ganey to identify potentially suitable habitat for federally threatened and endangered species protected by the Endangered Species Act (ESA). During the field evaluation, plant communities and habitats were evaluated to determine if potentially suitable habitat for listed species is present within the project site.

Red-cockaded Woodpecker – Prefers mature open pine forests with a population range of about 60- 100 years old. It makes its nest exclusively in mature pine trees, preferably living long leaf pine (*Pinus palustris*) trees that are typically 80 years or older. Cavities are excavated over a period of one to six years. Red-cockaded Woodpeckers (RCW) typically develop “clusters” of cavities trees within a 3 to 60-acre span with a territory that can span from about 125 -200 acres.

Habitat Present: No

Suitable foraging or nesting habitat for RCW is not present in the study area. Based on a review of historic aerial photography and on-site determinations, pine trees within the greater study area are not of sufficient age to provide habitat for this species. Additionally, there are no trees within the Limit of Disturbance (LOD). A review of September 2021 NCNHP records indicates no occurrences of RCW within 1.0 mile of the study area. No known, occupied cavity trees were identified within 1.0 mile of the project study area based on review of these NCNHP records.

BIOLOGICAL CONCLUSION: No Effect

Cape Fear Shiner - The Cape Fear Shiner is associated with gravel, cobble and boulder substrates in clean, well-oxygenated water. Streams with slow pools, riffles, and slow runs, appear to be critical to the species. Typically, shiners utilize the rocky bottom for spawning beds and to offer protection for their fry.

Potential Habitat Present: No

Potential habitat for the Cape Fear Shiner is not present in the study area. No streams are present within the limits of disturbance for the proposed project. NCNHP data reviewed in September 2021 indicates no occurrences of this species within 1.0 mile of the study area.

BIOLOGICAL CONCLUSION: No Effect

Atlantic Pigtoe - Atlantic Pigtoe requires coarse sand and gravel, and occasionally, silty water. The Atlantic Pigtoe inhabits small creeks to larger rivers with excellent water quality, where flows were sufficient to maintain clean, silt-free substrates.

Potential Habitat Present: No

Potential habitat for the Atlantic Pigtoe is not present in the study area. No streams are present within the limits of disturbance for the proposed project. NCNHP data reviewed in September 2021 indicates no occurrences of this species within 1.0 mile of the study area.

BIOLOGICAL CONCLUSION: No Effect

Schweinitz's sunflower - Schweinitz's sunflower occurs in full to partial sun and is found in areas with poor soils, such as thin clays that vary from wet to dry. It is believed that this species once occurred in natural forest openings or grasslands. Many of the remaining populations occur along roadsides. Schweinitz's sunflower is found in the central Piedmont region of North and South Carolina.

Habitat Present: Yes

The study area does provide marginal habitat for this species. Therefore, Terracon biologists conducted pedestrian surveys in September 2021 throughout the areas of potential habitat. No evidence of this species was observed. NCNHP data from September 2021 does document occurrences of this species within one mile of the study area. However, the project is expected to have No Effect on the species since onsite surveys revealed no evidence of this species.

BIOLOGICAL CONCLUSION: No Effect

Michaux's Sumac - Michaux's sumac is a rhizomatous, densely hairy shrub, with erect stems from 1 to 3 feet in height. Flowering usually occurs from June to July, the flowers are small, greenish yellow to white, and grow in erect dense clusters. Fruit is produced from August to October and is a red drupe. Michaux's sumac is found growing in sandy or rocky open woods, in association with basic soils. This plant survives best in areas where some form of disturbance has provided an open area, such as right of ways. The largest population known is located at Fort Pickett in Virginia, but populations are located in the North Carolina piedmont and sandhills. Currently, the plant is extant in the following North Carolina counties: Cumberland, Davie, Durham, Franklin, Hoke, Mecklenburg, Moore, Nash, Richmond, Robeson, Scotland and Wake.

Habitat Present: Yes

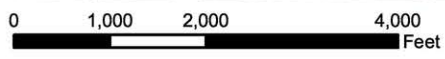
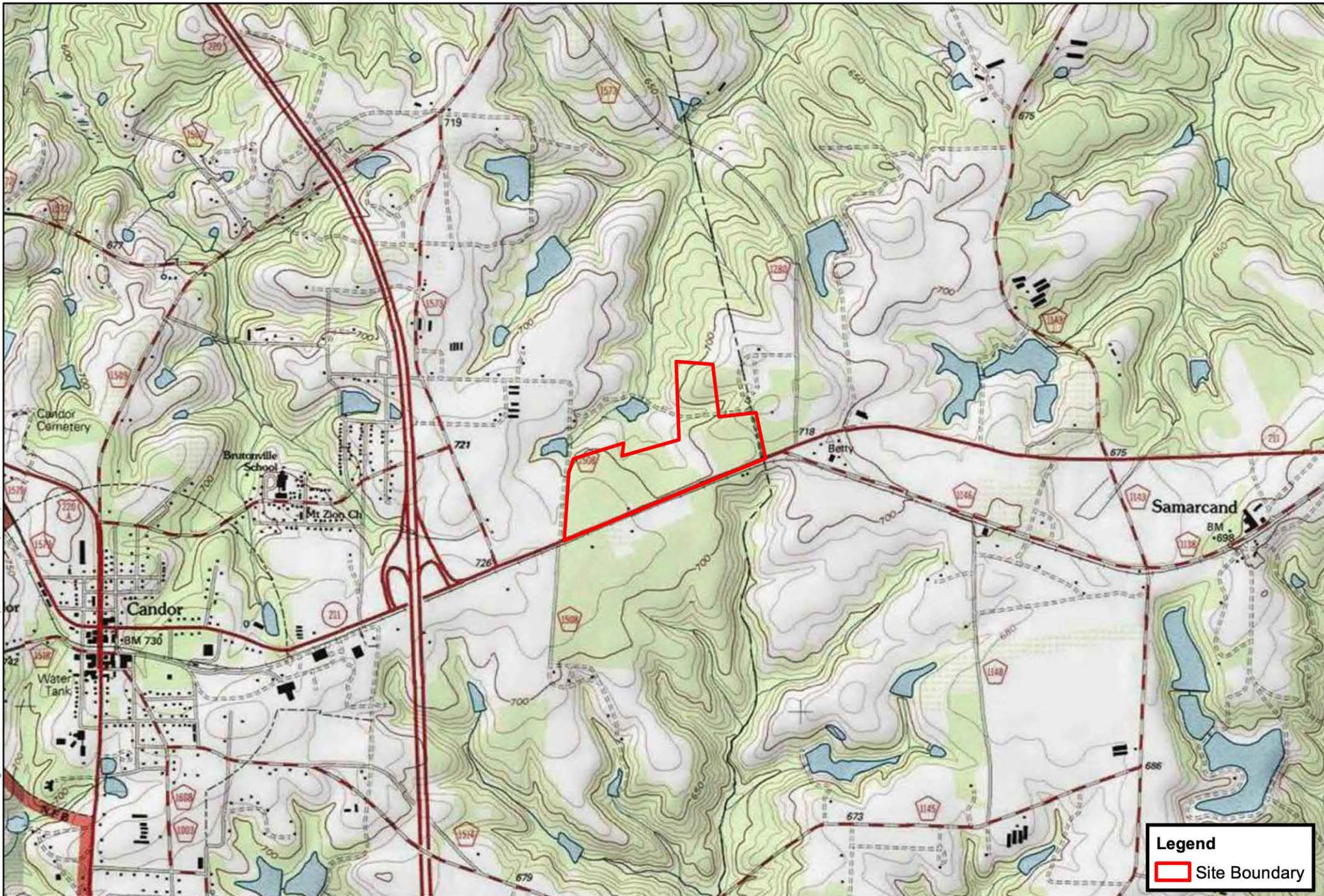
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BIOLOGICAL CONCLUSION: No Effect

Representative Photos



Document Path: N:\Projects\2019\70197432\Working Files\Weiland Delineation\GIS Maps\Exhibit 2 - Topo Map.mxd



Source: USGS QUADRANGLE - CANDOR, NC (1994)
Contour Interval: 10FT

Project No:
70197432
Drawn By:
MRW
Checked By:
CBD
Date:
July 2019

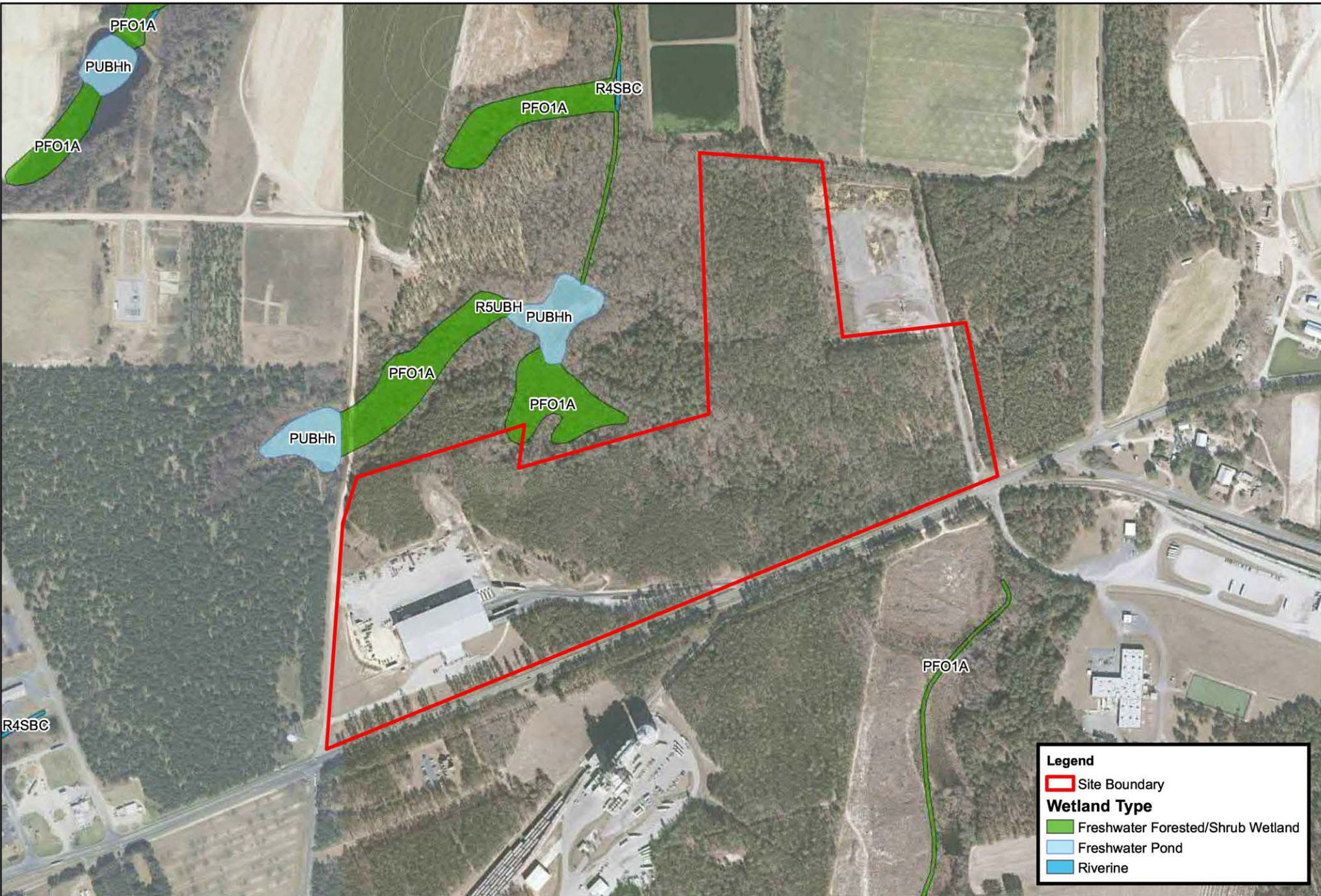


2401 Brentwood Road, Suite 107 Raleigh, NC 27604
Phone: 919-873-2211 Fax: 919-873-9555

Topographic Map
ACWR - 80 Acre Site
NC Highway 211
Candor, Montgomery County, North Carolina

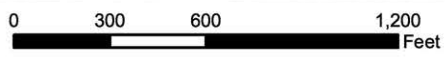
EXHIBIT NO.
2

Document Path: N:\Projects\2019\70197432\Working Files\Wetland Delineation\GIS Maps\Exhibit 4 - NWI Map.mxd



Legend

- Site Boundary
- Wetland Type**
- Freshwater Forested/Shrub Wetland
- Freshwater Pond
- Riverine



Source: National Wetland Inventory GIS Database

Project No:
70197432
Drawn By:
MRW
Checked By:
CBD
Date:
July 2019



2401 Brentwood Road, Suite 107 Raleigh, NC 27604
Phone: 919-873-2211 Fax: 919-873-9555

National Wetland Inventory Map

ACWR - 80 Acre Site
NC Highway 211
Candor, Montgomery County, North Carolina

EXHIBIT NO.
4



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Raleigh Field Office
P.O. Box 33726
Raleigh, NC 27636-3726

Date: 12/02/2021

Self-Certification Letter

Project Name ACWR EA - Samarcand Siding

Dear Applicant:

Thank you for using the U.S. Fish and Wildlife Service (Service) Raleigh Ecological Services online project review process. By printing this letter in conjunction with your project review package, you are certifying that you have completed the online project review process for the project named above in accordance with all instructions provided, using the best available information to reach your conclusions. This letter, and the enclosed project review package, completes the review of your project in accordance with the Endangered Species Act of 1973 (16 U.S.C. 1531-1544, 87 Stat. 884), as amended (ESA), and the Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c, 54 Stat. 250), as amended (Eagle Act). This letter also provides information for your project review under the National Environmental Policy Act of 1969 (P.L. 91-190, 42 U.S.C. 4321-4347, 83 Stat. 852), as amended. A copy of this letter and the project review package must be submitted to this office for this certification to be valid. This letter and the project review package will be maintained in our records.

The species conclusions table in the enclosed project review package summarizes your ESA and Eagle Act conclusions. Based on your analysis, mark all the determinations that apply:

- “no effect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, not likely to adversely affect” determinations for proposed/listed species and/or proposed/designated critical habitat; and/or
- “may affect, likely to adversely affect” determination for the Northern long-eared bat (*Myotis septentrionalis*) and relying on the findings of the January 5, 2016, Programmatic Biological Opinion for the Final 4(d) Rule on the Northern long-eared bat;
- “no Eagle Act permit required” determinations for eagles.

We certify that use of the online project review process in strict accordance with the instructions provided as documented in the enclosed project review package results in reaching the appropriate determinations. Therefore, we concur with the “no effect” or “not likely to adversely affect” determinations for proposed and listed species and proposed and designated critical habitat; the “may affect” determination for Northern long-eared bat; and/or the “no Eagle Act permit required” determinations for eagles. Additional coordination with this office is not needed. Candidate species are not legally protected pursuant to the ESA. However, the Service encourages consideration of these species by avoiding adverse impacts to them. Please contact this office for additional coordination if your project action area contains candidate species. Should project plans change or if additional information on the distribution of proposed or listed species, proposed or designated critical habitat, or bald eagles becomes available, this determination may be reconsidered. This certification letter is valid for 1 year. Information about the online project review process including instructions, species information, and other information regarding project reviews within North Carolina is available at our website <http://www.fws.gov/raleigh/pp.html>. If you have any questions, you can write to us at Raleigh@fws.gov or please contact Leigh Mann of this office at 919-856-4520, ext. 10.

Sincerely,

/s/Pete Benjamin

Pete Benjamin
Field Supervisor
Raleigh Ecological Services

Enclosures - project review package



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Raleigh Ecological Services Field Office
Post Office Box 33726
Raleigh, NC 27636-3726
Phone: (919) 856-4520 Fax: (919) 856-4556

In Reply Refer To:
Consultation Code: 04EN2000-2022-SLI-0239
Event Code: 04EN2000-2022-E-00528
Project Name: Samarcond Storage & Passing Siding

November 12, 2021

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The species list generated pursuant to the information you provided identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

Section 7 of the Act requires that all federal agencies (or their designated non-federal representative), in consultation with the Service, insure that any action federally authorized, funded, or carried out by such agencies is not likely to jeopardize the continued existence of any federally-listed endangered or threatened species. A biological assessment or evaluation may be prepared to fulfill that requirement and in determining whether additional consultation with the Service is necessary. In addition to the federally-protected species list, information on the species' life histories and habitats and information on completing a biological assessment or

evaluation and can be found on our web page at <http://www.fws.gov/raleigh>. Please check the web site often for updated information or changes

If your project contains suitable habitat for any of the federally-listed species known to be present within the county where your project occurs, the proposed action has the potential to adversely affect those species. As such, we recommend that surveys be conducted to determine the species' presence or absence within the project area. The use of North Carolina Natural Heritage program data should not be substituted for actual field surveys.

If you determine that the proposed action may affect (i.e., likely to adversely affect or not likely to adversely affect) a federally-protected species, you should notify this office with your determination, the results of your surveys, survey methodologies, and an analysis of the effects of the action on listed species, including consideration of direct, indirect, and cumulative effects, before conducting any activities that might affect the species. If you determine that the proposed action will have no effect (i.e., no beneficial or adverse, direct or indirect effect) on federally listed species, then you are not required to contact our office for concurrence (unless an Environmental Impact Statement is prepared). However, you should maintain a complete record of the assessment, including steps leading to your determination of effect, the qualified personnel conducting the assessment, habitat conditions, site photographs, and any other related articles.

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>; <http://www.towerkill.com>; and <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

Not all Threatened and Endangered Species that occur in North Carolina are subject to section 7 consultation with the U.S Fish and Wildlife Service. Atlantic and shortnose sturgeon, sea turtles, when in the water, and certain marine mammals are under purview of the National Marine Fisheries Service. If your project occurs in marine, estuarine, or coastal river systems you should also contact the National Marine Fisheries Service, <http://www.nmfs.noaa.gov/>

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. If you have any questions or comments, please contact John Ellis of this office at john_ellis@fws.gov.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Raleigh Ecological Services Field Office

Post Office Box 33726

Raleigh, NC 27636-3726

(919) 856-4520

Project Summary

Consultation Code: 04EN2000-2022-SLI-0239

Event Code: Some(04EN2000-2022-E-00528)

Project Name: Samarcand Storage & Passing Siding

Project Type: LAND - CLEARING

Project Description: Railroad expansion

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@35.29873485,-79.66622863084973,14z>



Counties: Moore County, North Carolina

Endangered Species Act Species

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Birds

NAME	STATUS
Red-cockaded Woodpecker <i>Picoides borealis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7614	Endangered

Fishes

NAME	STATUS
Cape Fear Shiner <i>Notropis mekistocholas</i> There is final critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/6063	Endangered

Clams

NAME	STATUS
Atlantic Pigtoe <i>Fusconaia masoni</i> There is proposed critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/5164	Proposed Threatened

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Michaux's Sumac <i>Rhus michauxii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5217	Endangered
Schweinitz's Sunflower <i>Helianthus schweinitzii</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3849	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.



Roy Cooper, Governor

D. Reid Wilson, Secretary

Walter Clark
Director, Division of Land and Water Stewardship

NCNHDE-15834

September 23, 2021

Katie Talavera
Terracon Inc.
2401 Brentwood Road, Suite 107
Raleigh, NC 27603
RE: Samarcand Storage & Passing Siding (MOW92) ; JN217426

Dear Katie Talavera:

The North Carolina Natural Heritage Program (NCNHP) appreciates the opportunity to provide information about natural heritage resources for the project referenced above.

Based on the project area mapped with your request, a query of the NCNHP database indicates that there are no records for rare species, important natural communities, natural areas, and/or conservation/managed areas within the proposed project boundary. Please note that although there may be no documentation of natural heritage elements within the project boundary, it does not imply or confirm their absence; the area may not have been surveyed. The results of this query should not be substituted for field surveys where suitable habitat exists. In the event that rare species are found within the project area, please contact the NCNHP so that we may update our records.

The attached 'Potential Occurrences' table summarizes rare species and natural communities that have been documented within a one-mile radius of the property boundary. The proximity of these records suggests that these natural heritage elements may potentially be present in the project area if suitable habitat exists. Tables of natural areas and conservation/managed areas within a one-mile radius of the project area, if any, are also included in this report.

If a Federally-listed species is found within the project area or is indicated within a one-mile radius of the project area, the NCNHP recommends contacting the US Fish and Wildlife Service (USFWS) for guidance. Contact information for USFWS offices in North Carolina is found here: <https://www.fws.gov/offices/Directory/ListOffices.cfm?statecode=37>.

Please note that natural heritage element data are maintained for the purposes of conservation planning, project review, and scientific research, and are not intended for use as the primary criteria for regulatory decisions. Information provided by the NCNHP database may not be published without prior written notification to the NCNHP, and the NCNHP must be credited as an information source in these publications. Maps of NCNHP data may not be redistributed without permission.

The NC Natural Heritage Program may follow this letter with additional correspondence if a Dedicated Nature Preserve, Registered Heritage Area, Land and Water Fund easement, or Federally-listed species are documented near the project area.

If you have questions regarding the information provided in this letter or need additional assistance, please contact Rodney A. Butler at rodney.butler@ncdcr.gov or 919-707-8603.

Sincerely,
NC Natural Heritage Program

Natural Heritage Element Occurrences, Natural Areas, and Managed Areas Within a One-mile Radius of the Project Area
 Samarcand Storage & Passing Siding (MOW92)
 Project No. JN217426
 September 23, 2021
 NCNHDE-15834

Element Occurrences Documented Within a One-mile Radius of the Project Area

Taxonomic Group	EO ID	Scientific Name	Common Name	Last Observation Date	Element Occurrence Rank	Accuracy	Federal Status	State Status	Global Rank	State Rank
Beetle	34432	Cicindela nigrion	Autumn Tiger Beetle	1964-10-08	H	5-Very Low	---	Significantly Rare	G2G3	S1
Natural Community	36909	Pine/Scrub Oak Sandhill (Blackjack Subtype)	---	2016-02-18	A?	2-High	---	---	G3	S3
Natural Community	36910	Sandhill Streamhead Swamp	---	2016-02-18	C	3-Medium	---	---	G4?	S4
Natural Community	36912	Streamhead Canebrake	---	2016-02-18	C	3-Medium	---	---	G1	S1
Reptile	11915	Pituophis melanoleucus melanoleucus	Northern Pinesnake	1989-05-27	H	3-Medium	---	Threatened	G4T4	S2

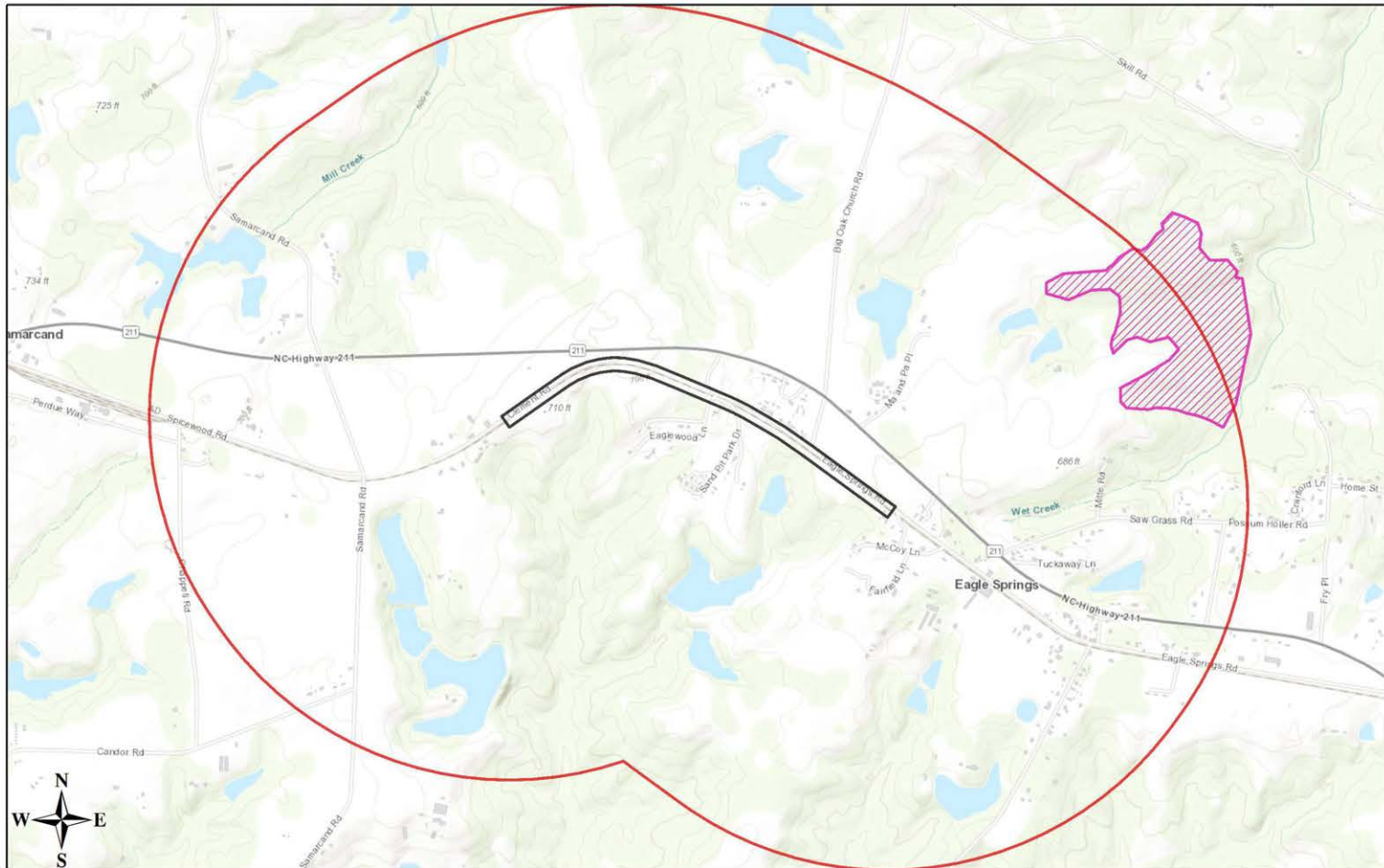
Natural Areas Documented Within a One-mile Radius of the Project Area

Site Name	Representational Rating	Collective Rating
Eagle Springs Sandhills	R5 (General)	C4 (Moderate)




No Managed Areas are Documented Within a One-mile Radius of the Project Area

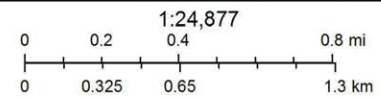
Definitions and an explanation of status designations and codes can be found at <https://ncnhde.natureserve.org/help>. Data query generated on September 23, 2021; source: NCNHP, Q2 July 2021. Please resubmit your information request if more than one year elapses before project initiation as new information is continually added to the NCNHP database.

NCNHDE-15834: Samarcanal Storage & Passing Siding (MOW92)



September 23, 2021

-  Project Boundary
-  Buffered Project Boundary
-  NHP Natural Area (NHNA)



Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community

Species Conclusions Table

Project Name: **ACWR EA – Samarcand Siding**

Date: June 9, 2022 by Skelly and Loy/Terracon

Species/Resource Name	Conclusion	ESA Section 7 / Eagle Act Determination	Notes / Documentation
Red-cockaded Woodpecker	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Cape Fear Shiner	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Atlantic Pigtoe	No suitable habitat present	No effect	Habitat assessment by Terracon biologists found no suitable habitat.
Michaux's Sumac	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Schweinitz's Sunflower	Suitable habitat present	No effect	Species-specific survey by Terracon biologists did not observe the species or evidence of the species.
Critical habitats	No critical habitat present	No effect	There are no critical habitats.

Acknowledgement: I agree that the above information about my proposed project is true. I used all of the provided resources to make an informed decision about impacts in the immediate and surrounding areas.

 _____ Dept. Mgr. _____

Signature/Title

_____6/9/2022_____

Date

A field evaluation was conducted on September 29 and October 4, 2021 by Terracon biologists JC Weaver, Conner Miller, and Chaz Ganey to identify potentially suitable habitat for federally threatened and endangered species protected by the Endangered Species Act (ESA). During the field evaluation, plant communities and habitats were evaluated to determine if potentially suitable habitat for listed species is present within the project site.

Red-cockaded Woodpecker – Prefers mature open pine forests with a population range of about 60- 100 years old. It makes its nest exclusively in mature pine trees, preferably living long leaf pine (*Pinus palustris*) trees that are typically 80 years or older. Cavities are excavated over a period of one to six years. Red-cockaded Woodpeckers (RCW) typically develop “clusters” of cavities trees within a 3 to 60-acre span with a territory that can span from about 125 -200 acres.

Habitat Present: No

Suitable foraging or nesting habitat for RCW is not present in the study area. Based on a review of historic aerial photography and on-site determinations, pine trees within the greater study area are not of sufficient age to provide habitat for this species. Additionally, there are no trees within the rail right-of-way/Limit of Disturbance (LOD). A review of September 2021 NCNHP records indicates no occurrences of RCW within 1.0 mile of the study area. No known, occupied cavity trees were identified within 1.0 mile of the project study area based on review of these NCNHP records.

BIOLOGICAL CONCLUSION: No Effect

Cape Fear Shiner - The Cape Fear Shiner is associated with gravel, cobble and boulder substrates in clean, well-oxygenated water. Streams with slow pools, riffles, and slow runs, appear to be critical to the species. Typically, shiners utilize the rocky bottom for spawning beds and to offer protection for their fry.

Potential Habitat Present: No

Potential habitat for the Cape Fear Shiner is not present in the study area. No streams are present within the limits of disturbance for the proposed project. NCNHP data reviewed in September 2021 indicates no occurrences of this species within 1.0 mile of the study area.

BIOLOGICAL CONCLUSION: No Effect

Atlantic Pigtoe - Atlantic Pigtoe requires coarse sand and gravel, and occasionally, silty water. The Atlantic Pigtoe inhabits small creeks to larger rivers with excellent water quality, where flows were sufficient to maintain clean, silt-free substrates.

Potential Habitat Present: No

Potential habitat for the Atlantic Pigtoe is not present in the study area. No streams are present within the limits of disturbance for the proposed project. NCNHP data reviewed in September 2021 indicates no occurrences of this species within 1.0 mile of the study area.

BIOLOGICAL CONCLUSION: No Effect

Schweinitz's sunflower - Schweinitz's sunflower occurs in full to partial sun and is found in areas with poor soils, such as thin clays that vary from wet to dry. It is believed that this species once occurred in natural forest openings or grasslands. Many of the remaining populations occur along roadsides. Schweinitz's sunflower is found in the central Piedmont region of North and South Carolina.

Habitat Present: Yes

The study area does provide marginal habitat for this species. Therefore, Terracon biologists conducted pedestrian surveys in September 2021 throughout the areas of potential habitat. No evidence of this species was observed. NCNHP data from September 2021 does document occurrences of this species within one mile of the study area. However, the project is expected to have No Effect on the species since onsite surveys revealed no evidence of this species.

BIOLOGICAL CONCLUSION: No Effect

Michaux's Sumac - Michaux's sumac is a rhizomatous, densely hairy shrub, with erect stems from 1 to 3 feet in height. Flowering usually occurs from June to July, the flowers are small, greenish yellow to white, and grow in erect dense clusters. Fruit is produced from August to October and is a red drupe. Michaux's sumac is found growing in sandy or rocky open woods, in association with basic soils. This plant survives best in areas where some form of disturbance has provided an open area, such as right of ways. The largest population known is located at Fort Pickett in Virginia, but populations are located in the North Carolina piedmont and sandhills. Currently, the plant is extant in the following North Carolina counties: Cumberland, Davie, Durham, Franklin, Hoke, Mecklenburg, Moore, Nash, Richmond, Robeson, Scotland and Wake.

Habitat Present: Yes

The study area does provide marginal habitat for this species. Therefore, Terracon biologists conducted pedestrian surveys in September 2021 throughout the areas of potential habitats. No evidence of this species was observed. NCNHP data from September 2021 does not document occurrences of this species within one mile of the study area. The project is expected to have No Effect on the species since onsite surveys revealed no evidence of this species.

BIOLOGICAL CONCLUSION: No Effect

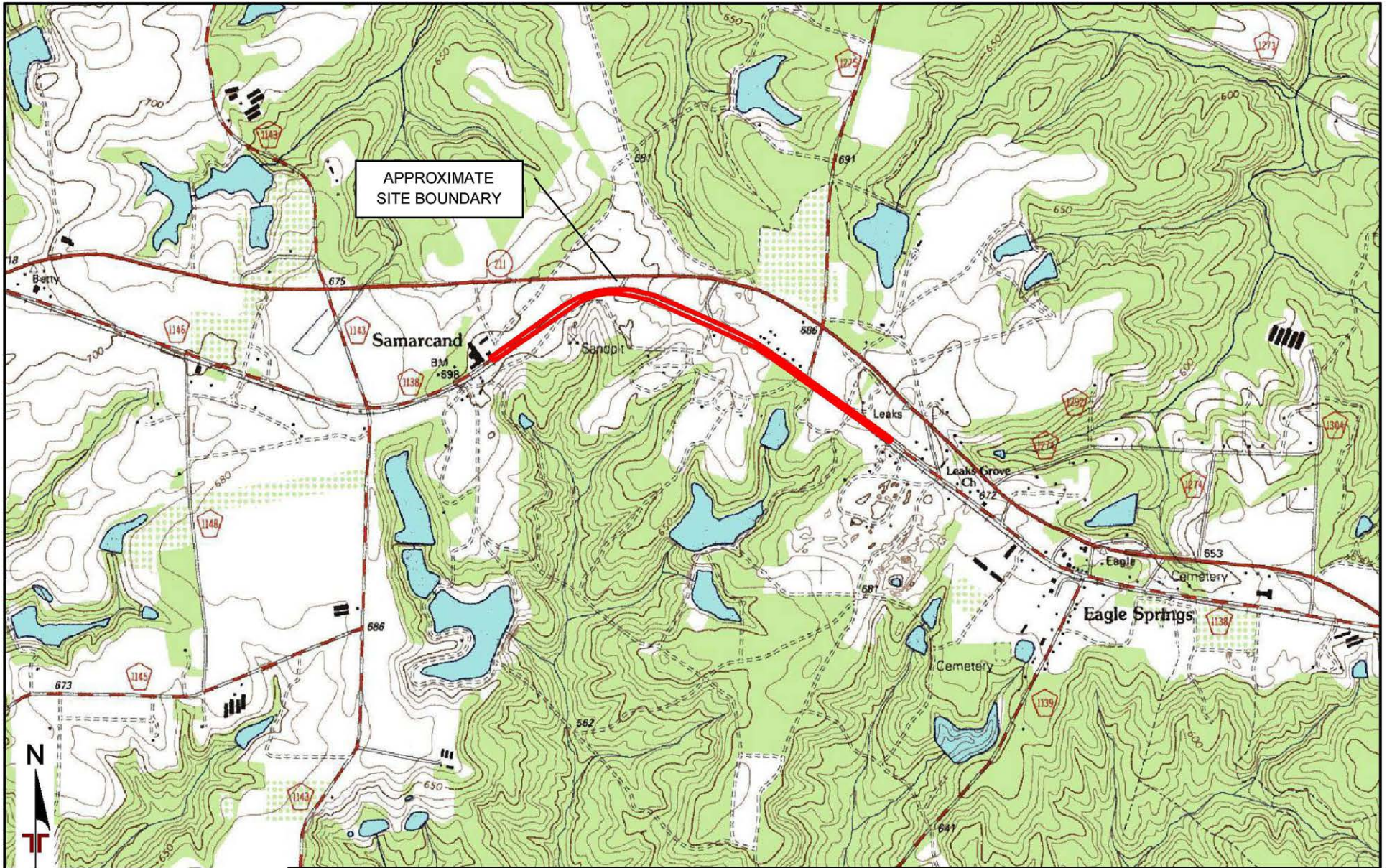
Representative Photos



View of existing rail ROW, central portion of site, facing east.



View of existing rail ROW, central portion, looking east.



TOPOGRAPHIC MAP IMAGE COURTESY OF THE U.S. GEOLOGICAL SURVEY QUADRANGLES INCLUDE: CANDOR, NC (1/1/1994).

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager: LB	Project No. 71217506
Drawn by: .JCW	Scale: 1"=2,000'
Checked by: I R	File Name:
Approved by: RT	Date: October 2021

Terracon
 2701 Westport Rd
 Charlotte, NC 28208-3608

TOPOGRAPHIC MAP
 ACWR Corridor WOTUS Survey
 Samarcond Storage and Passing Siding
 Eagle Springs, NC

Exhibit
 1A



APPROXIMATE
SITE BOUNDARY



bing

2500 feet

© 2021 Microsoft Corporation © Vexcel Imaging

AERIAL PHOTOGRAPHY PROVIDED BY MICROSOFT BING MAPS

DIAGRAM IS FOR GENERAL LOCATION ONLY, AND IS NOT INTENDED FOR CONSTRUCTION PURPOSES

Project Manager: LB
 Drawn by: JCW
 Checked by: LB
 Approved by: RT

Project No. 71217506
 Scale: AS SHOWN
 File Name:
 Date: October 2021

Terracon

2701 Westport Rd
 Charlotte, NC 28208-3608

SITE DIAGRAM

ACWR Corridor WOTUS Survey
 Samarcand Storage and Passing Siding
 Eagle Springs, NC

Exhibit
 3A



United States Department of the Interior



FISH AND WILDLIFE SERVICE

Asheville Field Office
160 Zillicoa Street Suite B
Asheville, North Carolina 28801

December 13, 2021

Andréa Martin
Federal Railroad Administration
1200 New Jersey Avenue Southeast
Washington, DC 20590

Subject: Scoping Request for Aberdeen, Carolina & Western Railroad Environmental Assessment for Development in Mecklenburg, Cabarrus, Montgomery, and Moore Counties

Dear Ms. Martin:

On December 2, 2021, we received your mailed letter requesting our comments on the subject project. We have reviewed the information that you presented. The subject project contains action areas within the Asheville (AFO) and Raleigh (RFO) Ecological Services Field Offices' work areas. The AFO coordinated with the RFO and has incorporated their comments into this response. The following comments are provided in accordance with the provisions of the National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA); the Migratory Bird Treaty Act (MBTA), as amended (16 U.S.C. 703); the Bald and Golden Eagle Protection Act (BGEPA, 16 U.S.C. 668-668d); the Fish and Wildlife Coordination Act, as amended (16 U.S.C. 661 - 667e); and section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 - 1543) (Act).

Project Description

According to the information provided, the Federal Railroad Administration (FRA) is providing financial assistance to Aberdeen, Carolina & Western Railway (ACWR) to construct passing and storage sidings, storage yards, and a new warehouse to address congestion issues on the existing railroad in Mecklenburg, Cabarrus, Montgomery, and Moore Counties. The project includes construction in five locations between Mint Hill and Samarcand, North Carolina.

Mint Hill Siding – Work will be completed along the existing rail line within the 200-foot right-of-way which has a cleared zone of approximately 50 feet. Tree clearing and ground disturbance will be necessary on forested lands.

Mint Hill Storage Yard and Warehouse – Construction will include new storage track spurs, a warehouse, and impervious surfaces within a 66-acre property. Tree clearing and ground disturbance will be necessary. The project location includes undeveloped, forested land with known wetlands.

Midland Siding – Work will be completed along the existing rail line within the existing right-of-way that extends up to about 200 feet. Tree clearing and ground disturbance will be necessary. Work includes the extension of an existing culvert for Far Branch and 2:1 slope construction.

Headquarters Storage Yard – Work includes construction of 12 new storage track spurs totaling 20,000 linear feet on an area cleared of trees during a previous project. The project location is surrounded by wooded land and includes wetlands and streams.

Samarcan and Storage and Passing Siding – Work will be completed along the existing rail line within the approximately 100-foot existing right-of-way which has a clear zone of about 50 feet. Tree clearing and ground disturbance may be necessary.

Federally Listed Species

In accordance with section 7(a)(2) of the Act and 50 CFR Part 402.01, before any federal authorization/permits or funding can be issued for this project, it is the responsibility of the appropriate federal regulatory/permitting and/or funding agency(ies) to determine whether the project *may affect* any federally endangered or threatened species (listed species) or designated critical habitat. If it is determined that this project *may affect* any listed species or designated critical habitat, you must initiate section 7 consultation with this office.

A review of the project area reveals no existing records of federally listed species, however, species that occur in the region and for which we are concerned include:

Common Name	Scientific Name	Federal Status ¹
Atlantic pigtoe	<i>Fusconaia masoni</i>	T
Bald eagle	<i>Haliaeetus leucocephalus</i>	BGEPA
Georgia aster	<i>Symphyotrichum georgianum</i>	CCA
Golden eagle	<i>Aquila chrysaetos canadensis</i>	BGEPA
Little brown bat	<i>Myotis lucifugus</i>	ARS
Michaux's sumac	<i>Rhus michauxii</i>	E
Monarch butterfly	<i>Danaus plexippus</i>	CAN
Northern long-eared bat, NLEB	<i>Myotis septentrionalis</i>	T
Red-cockaded woodpecker, RCW	<i>Dryobates (=Picoides) borealis</i>	E, PT
Schweinitz's sunflower	<i>Helianthus schweinitzii</i>	E
Smooth coneflower	<i>Echinacea laevigata</i>	E
Tricolored bat	<i>Perimyotis subflavus</i>	ARS

¹E = endangered species, T = threatened species, PT = proposed threatened, CCA = not federally listed but has a Candidate Conservation Agreement, ARS = at-risk species, CAN = candidate species, BGEPA = Bald and Golden Eagle Protection Act

Because Michaux's sumac, NLEB, RCW (Moore and Montgomery counties only), Schweinitz's sunflower, and smooth coneflower are known to occur in the area, these species should be considered in any environmental assessment (EA) and/or biological assessment (BA) prepared for this project.

Guidance on what is included in a complete EA/BA can be found at the following links:

- https://www.fws.gov/asheville/htmls/project_review/assessment_guidance.html
- https://www.fws.gov/midWest/endangered/section7/ba_guide.html

Information on current ranges for each of the species can be found on our Environmental Conservation Online System (ECOS; <https://ecos.fws.gov/ecp/>) for each species. A section 7 consultation range, called the Area of Influence (AOI), has also been developed for many species. We encourage you to put your action areas into the Information for Planning and Consultation (IPaC) website

(<https://ecos.fws.gov/ipac/>) which will produce an unofficial or official species list based on AOI (vs current range), which is good for 90 days.

Additionally, we recommend surveying the project areas for suitable habitat for these species prior to any on-the-ground activities. In the event suitable habitat is present for any species, we recommend that species surveys be conducted during the appropriate timeframe to ensure that no populations of rare species are inadvertently affected by the proposed project and to better inform your effects determination for section 7 purposes.

Information on optimal botanical survey windows can be found here:

<https://www.fws.gov/southeast/pdf/fact-sheet/north-carolina-optimal-survey-windows-for-at-risk-and-listed-plants.pdf>. As a reminder, those completing animal surveys must have a Section 10(a)(1)(A) permit from the U.S. Fish and Wildlife Service (Service) in the event an animal is captured and handled. A condition of the permit is to coordinate with the Service at least 15 days prior to surveys so that we can determine if a survey and potentially handling animals is absolutely necessary. If surveys are not performed, you may assume presence of the species and consult with us under section 7(a)(2) of the Act.

Based on the information provided, suitable summer roosting habitat for NLEB may be present at sites in Mecklenburg and Cabarrus counties. NLEB is not known to be present in Moore or Montgomery counties despite many surveys in Uwharrie National Forest and elsewhere. The final 4(d) rule (effective as of February 16, 2016), exempts incidental take of NLEB associated with activities that occur greater than 0.25 miles from a known hibernation site, and greater than 150 feet from a known, occupied maternity roost during the pup season (June 1 – July 31). The proposed development occurs at a location where any incidental take that may result from associated activities is exempt under the 4(d) rule. Although not required, we encourage the project proponent to avoid tree clearing activities during the NLEB active season from April 1 – October 15. A listing review of NLEB is expected in the near future. Consultations that use the 4(d) rule for NLEB may need to be reinitiated if the 4(d) rule is rescinded or the listing status of the species changes. Project proponents also have the option of conducting consultation without the use of the 4(d) rule.

The Service published a final rule to list Atlantic pigtoe as threatened on November 16, 2021 (86 FR 64000-64053). The listing will be final on December 16, 2021. Atlantic pigtoe is known to occur in the Goose Creek watershed in Union County, south of the Midland site, and in the Little River watershed in Randolph and Montgomery Counties. Critical habitat has been designated for Atlantic pigtoe. Unit 17: YR1 (Little River) is located north of the project in Montgomery County. The critical habitat unit consists of 40 river miles (64.4 river km) of Little River from SR1114 downstream to Okeewemee Star Road, including the West Fork Little River from NC134 to the confluence with the Little River. The Atlantic pigtoe has been found in a variety of riverine habitats, from small headwater streams (< 1 meter wide) in the Ridge and Valley and Piedmont physiographic regions downstream to large rivers in the Coastal Plain. This species needs clean, flowing water characterized by high dissolved oxygen concentrations and it prefers gravel beds and coarse sand habitats just downstream of riffles (i.e., rocky, or shallow stream areas with swift water currents). It also may be found less commonly in sand, cobble, and mixtures of sand, silt, and detritus (Price, 2005; USFWS, 2020a). Although the species has not been known to occur in 10-digit subwatersheds associated with this project, survey data is sparse for these watersheds. Atlantic pigtoe should be considered in any EA and/or BA.

Little brown bat and tricolored bat are ARS and monarch butterfly is a CAN. ARS and CAN are not legally protected under the Act and are not subject to any of its provisions, including section 7, unless they are formally proposed or listed as endangered or threatened. While lead federal agencies are not prohibited from jeopardizing the continued existence of an ARS, CAN, or proposed species until the species becomes listed, the prohibition against jeopardy and taking a listed species under section 9 of the Act applies as soon as the listing becomes effective, regardless of the stage of completion of the proposed action. We are including these species in our response to give you advance notification and request your assistance in protecting them. Although not required, we recommend that the presence/absence of these

species be addressed in future BAs and BEs prepared for similar projects. Additionally, we encourage you to coordinate projects with the North Carolina Wildlife Resources Commission on behalf of these species.

It was determined in September 2014 that Georgia aster did not warrant listing; therefore, the species is not subject to section 7 consultation. However, we would appreciate consideration of Georgia aster when evaluating the action area for impacts to federally listed species and their habitats. The species is the subject of a Candidate Conservation Agreement which binds signatories to monitoring and management guidelines. Currently, the FRA is not a signatory to this agreement; however, the recommendations can be provided should FRA like to implement them in the future.

Migratory Birds and Eagles

The MBTA implements four treaties that provide for the international protection of migratory birds. The MBTA prohibits taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. Bald and golden eagles are afforded additional legal protection under BGEPA.

For many industries/activities, the Service has developed activity-specific guidance found at the following website: <https://www.fws.gov/birds/management/project-assessment-tools-and-guidance.php>. These guidance documents are designed to help industry and project developers implement measures to reduce activity specific impacts to migratory birds. These documents provide important background on the applicable laws and policies, helping clarify standards and expectations and/or offering suggested best practices to avoid or minimize negative impacts to birds.

Fish and Wildlife Resource Recommendations

We are also concerned about the potential effects the project could have on other natural resources within and surrounding the proposed project location. We offer the following general recommendations for the benefit of fish and wildlife resources:

- **Impervious Surfaces/Stormwater/Low Impact Development (LID).** Increased development contributes to the increased quantity and decreased quality of stormwater entering project area waterways. Additionally, increased development outside the floodplain increases stormwater flows already caused by the lack of or loss of riparian buffers and floodplain development. Recent studies¹ have shown that areas of 10 percent to 20 percent impervious surface (such as roofs, roads, and parking lots) double the amount of stormwater runoff compared to natural cover and decrease deep infiltration (groundwater recharge) by 16 percent. At 35 – 50 percent impervious surface, runoff triples, and deep infiltration is decreased by 40 percent. Above 75 percent impervious surface, runoff is 5.5 times higher than natural cover, and deep infiltration is decreased by 80 percent. Additionally, the adequate treatment of stormwater at project sites is essential for the protection of water quality and aquatic habitat. Impervious surfaces also collect pathogens, metals, sediment, and chemical pollutants and quickly transmit them (via stormwater runoff) to receiving waters. According to the Environmental Protection Agency, this non-point -source pollution is one of the major threats to water quality in the United States, posing one of the greatest threats to aquatic life, and is also linked to chronic and acute illnesses in human populations from exposure through drinking water and contact recreational. Increased stormwater runoff also directly damages aquatic and riparian habitat, causing streambank and stream channel scouring. Additionally, impervious surfaces reduce groundwater recharge, resulting in even lower than expected stream flows during drought periods, which can induce

¹Federal Interagency Stream Restoration Working Group (15 federal agencies of the United States Government). Published October 1998, Revised August 2001. Stream Corridor Restoration: Principles, Processes, and Practices. GPO Item No. 0120-A; SuDocs No. A 57.6/2:EN 3/PT.653. ISBN-0-934213-59-3.

potentially catastrophic effects for fish, mussels, and other aquatic life. Use of any of the proposed stormwater collection devices described below will dramatically decrease the quantity and increase the quality of stormwater runoff.

- To avoid any additional impacts to habitat quality within the watershed, we recommend that all new developments, regardless of the percentage of impervious surface area created, implement stormwater retention and treatment measures designed to replicate and maintain the hydrograph at the preconstruction condition.
- We recommend the use of low impact development techniques,² such as reduced road widths, grassed swales in place of curb and gutter, rain gardens, and wetland retention areas, for retaining and treating stormwater runoff rather than the more traditional measures, such as large retention ponds, etc. These designs often cost less to install and significantly reduce environmental impacts from development.
- Where detention ponds are used, stormwater outlets should drain through a vegetated area prior to reaching any natural stream or wetland area. Detention structures should be designed to allow for the slow discharge of stormwater, attenuating the potential adverse effects of stormwater surges; thermal spikes; and sediment, nutrient, and chemical discharges. Also, because the purpose of stormwater control measures is to protect streams and wetlands, no stormwater control measures or best management practices should be installed within any stream (perennial or intermittent) or wetland.
- We also recommend that consideration be given to the use of pervious materials (i.e., pervious concrete, interlocking/open paving blocks, etc.) for the construction of roads, driveways, sidewalks, etc. Pervious surfaces minimize changes to the hydrology of the watershed and can be used to facilitate groundwater recharge. Pervious materials are also less likely to absorb and store heat and allow the cooler soil below to cool the pavement. Additionally, pervious concrete requires less maintenance and is less susceptible to freeze/thaw cracking due to large voids within the concrete.
- **Stream Buffers.** Natural, forested riparian buffers are critical to the health of aquatic ecosystems. They accomplish the following: 1) catch and filter runoff, thereby helping to prevent non-point source pollutants from reaching streams, 2) enhance the instream processing of both point and non-point source pollutants, 3) act as “sponges” by absorbing runoff (which reduces the severity of floods) and by allowing runoff to infiltrate and recharge groundwater levels (which maintains stream flows during dry periods), 4) catch and help prevent excess woody debris from entering the stream and creating logjams, 5) stabilize stream banks and maintain natural channel morphology, 6) provide coarse woody debris for habitat structure and most of the dissolved organic carbon and other nutrients necessary for the aquatic food web, and 7) maintain air and water temperatures around the stream. Forested riparian buffers (a minimum 50 feet wide along intermittent streams and 100 feet wide along perennial streams [or the full extent of the 100-year floodplain, whichever is greater]) should be created and/or maintained adjacent to all aquatic areas. Within the watersheds supporting federally listed aquatic species, we recommend undisturbed, forested buffers that are naturally vegetated with trees, shrubs, and herbaceous vegetation. These buffers should extend a **minimum** of 200 feet from the banks of all perennial streams and a **minimum** of 100 feet from the banks of all intermittent streams (or the full extent of the 100-year floodplain, whichever is greater.) Impervious surfaces, ditches, pipes, roads, utility lines (sewer, water, gas, transmission, etc.), and other infrastructure that requires maintenance, cleared rights-of-way and/or compromise the functions and values of the forested buffers should not occur within these riparian areas.

²We recommend visiting the Environmental Protection Agency’s Web site (<http://www.epa.gov/polluted-runoff-nonpoint-source-pollution/urban-runoff-low-impact-development>) for additional information and fact sheets regarding the implementation of low-impact-development techniques.

- **Erosion and Sedimentation Control.** Construction activities near aquatic resources, streams, and wetlands have the potential to cause bank destabilization, water pollution, and water quality degradation if measures to control site runoff are not properly installed and maintained. In order to effectively reduce erosion and sedimentation impacts, best management practices specific to the extent and type of construction should be designed and installed prior to land disturbing activities and should be maintained throughout construction. Natural fiber matting (coir) should be used for erosion control as synthetic netting can trap animals and persists in the environment beyond its intended purpose. Land disturbance should be limited to what can be stabilized quickly, preferably by the end of the workday. Once construction is complete, disturbed areas should be revegetated with native riparian grass and tree species as soon as possible. For maximum benefits to water quality and bank stabilization, riparian areas should be forested; however, if the areas are maintained in grass, they should not be mowed. The Service can provide information on potential sources of plant material upon request. A complete design manual that is consistent with the requirements of the North Carolina Sedimentation and Pollution Control Act and Administrative Rules, can be found at the following website: <https://deq.nc.gov/about/divisions/energy-mineral-land-resources>.
- **General Recommendations for Replacing Structures that Cross Rivers and Streams.** We generally recommend the use of clear-spanning bridge structures designed, at a minimum, to accommodate the active channel width. Use of culverts is discouraged. Properly sized spanning structures will provide for the passage of aquatic species and accommodate the movement of debris and bed material. Furthermore, spanning structures usually: (1) can be constructed with minimal in-stream impacts, (2) do not require stream channel realignment, and (3) retain the natural streambed conditions; and the horizontal and vertical clearances may be designed to allow for human and wildlife passage beneath the structures.
 - Culvert extension and installation should follow Best Management Practices developed by NCDOT, available at: <https://connect.ncdot.gov/projects/Roadway/RoadwayDesignAdministrativeDocuments/Best%20Management%20Practices%20for%20Construction%20and%20Maintenance%20Activities.pdf>
 - Stormwater drainage should not discharge directly into the streams; instead, they should drain through a vegetated area before entering the streams. Removal of vegetation in riparian areas should be minimized.
 - Armoring of the bank with riprap should be minimized. The reseeding of disturbed areas should be performed promptly after grading, and seed mixes should consist of native vegetation in order to prevent the spread of invasive plant species.
 - We recommend that all equipment be refueled and receive maintenance outside of the riparian zone. Refueling and maintenance should take place in designated refueling sites that are provisioned to quickly contain any spills of fuel, lubricants, and other fluids.
- **Pollinators.** Pollinators, such as most bees, some birds and bats, and other insects, including moths and butterflies, play a crucial role in the reproduction of flowering plants and production of most fruits and vegetables. Over 75 percent of flowering plants and about 75 percent of crops are pollinated by these types of fauna. A recent study of the status of pollinators in North America by the National Academy of Sciences found that populations of honeybees (which are not native to North America) and many wild pollinators are declining. Declines in wild pollinators are a result of disease and the loss, degradation, and fragmentation of habitat. Because loss of habitat and diminished native food sources have decreased the populations and diversity of pollinators throughout the country, we recommend that development projects be sited in areas that are previously disturbed (fallow fields, closed industrial sites, etc.) or sites that do not impact mature forests, streams, or wetlands. To reduce development impacts to monarch butterflies and other pollinators and/or to increase the habitat and species diversity within the project area, we recommend the following measures be incorporated into project designs:

- Throughout the site, avoid non-native seed mixes and plants. Instead, sow native seed mixes and plant species that are beneficial to pollinators.
- Avoid seed mixes and plants that have been pre-treated with insecticides, such as neonicotinoids.
- Taller growing pollinator plant species should be planted around the periphery of the site and anywhere on the site where mowing can be restricted during the summer months. Taller plants, not mowed during the summer, would provide benefits to pollinators, habitat for ground nesting/feeding birds, and cover for small mammals.
- Native low growing/groundcover species should be planted in areas that need to be maintained. This would provide benefits to pollinators while also minimizing the amount of maintenance, such as mowing and herbicide treatment.
- Using a seed mix that includes milkweed species is especially beneficial for monarch butterflies. The following website provides additional information and a comprehensive list of native plant species that benefit pollinators: <http://www.xerces.org/pollinator-resource-center/mid-atlantic>. We also offer our assistance with developing seed mixes that can be used in conjunction with fast growing erosion control seed mixes for overall soil stability and pollinator benefits.
- Additional information regarding plant species, seed mixes, and pollinator habitat requirements can be provided upon request.
- Mowing and grounds maintenance, including pesticide use, should be scheduled to not interfere with monarch breeding or nectaring at project sites that occur along the migration route. To reduce harm, we advise mowing in the fall or winter when flowers are not in bloom.
- Provide nesting sites for pollinator species. Different pollinators have different needs for nesting sites. Therefore, we recommend project designs include a diverse array of habitats to accommodate varied pollinators. For example:
 - Hummingbirds typically nest in trees or shrubs.
 - Many butterflies lay eggs on specific host plants.
 - Most bees nest in the ground and in wood or dry plant stems.
 - For additional information and actions that can be taken to benefit pollinators, please visit the following website: <https://www.fws.gov/pollinators/>.
- Minimize effects of outdoor light pollution. Recent studies indicate that artificial lighting disrupts the natural reproduction and feeding patterns of nocturnal pollinators such as beetles and moths. This disruption results in a decrease of pollination rates in plants and a decrease in the health and diversity of nocturnal pollinators. When developing an outdoor lighting plan or installing any outdoor lighting devices, we recommend the following measures be considered to minimize potential adverse effects of outdoor lighting:
 - Decrease the number of light fixtures, as practicable, to meet lighting objectives.
 - Install lighting only in areas that need illumination for safety (e.g. paths, roads, etc.). Avoid lighting landscape features such as trees, shrubs, or building facades.
 - Install fully shielded lights that direct light downward.
 - Use only low-pressure sodium (LPS), high-pressure sodium (HPS), or light emitting diode (LED) light sources that emit “warm” light. “Warm” light sources are those that contain low amounts of blue light in their spectrum. Choosing light sources with a color temperature of no more than 3,000 Kelvins will minimize the effects of blue light exposure.
 - For additional information and actions that can be taken to reduce outdoor light pollution, please visit the following website: <https://www.darksky.org/our-work/lighting/lighting-for-citizens/lighting-basics/>.

We appreciate the opportunity to provide these comments. Please contact Ms. Lauren B. Wilson of our staff at lauren_wilson@fws.gov if you have any questions. In any future correspondence concerning this project, please reference our Log Number 22-204.

Sincerely,

JANET MIZZI Digitally signed by JANET MIZZI
Date: 2021.12.13 16:20:02 -05'00'

Janet Mizzi
Field Supervisor

Appendix E

Section 106 Consultation and Supporting Documentation



**North Carolina Department of Natural and Cultural Resources
State Historic Preservation Office**

Ramona M. Bartos, Administrator

Governor Roy Cooper
Secretary D. Reid Wilson

Office of Archives and History
Deputy Secretary, Darin J. Waters, Ph.D.

January 10, 2022

Melissa McKay
Terracon Consultants, Inc.
2401 Brentwood Road, Suite 107
Raleigh, North Carolina 27604

Melissa.McKay@terracon.com

Re: Reconnaissance survey report of new siding and storage yard construction along the Aberdeen Carolina & Western Railway, Mecklenburg and Montgomery Counties, ER 20-1193

Ms. McKay:

Thank you for your submittal of December 1, 2021, transmitting the revised draft of the above-referenced report. We have reviewed the information provided and offer the following comments.

Terracon conducted a limited archaeological field reconnaissance of five new areas. As a result of these investigations, four new archaeological sites were recorded (31MK1172, 31MK1173, 31MG2238, and 31MG2239). Much of the study area was observed to be disturbed and eroded by past timbering, clearing, and development activities and none of the sites are recommended eligible for the National Register of Historic Places (NRHP). Terracon recommends the proposed project should be allowed to proceed without concern for impacts to significant cultural resources.


We concur with Terracon's findings and recommendations. We accept the report as final and do not recommend additional archaeological investigations at this time.

We have determined that the project as proposed will not have an effect on any historic structures.

The above comments are made pursuant to Section 106 of the National Historic Preservation Act and the Advisory Council on Historic Preservation's Regulations for Compliance with Section 106 codified at 36 CFR Part 800.

Thank you for your cooperation and consideration. If you have questions concerning the above comment, contact Renee Gledhill-Earley, environmental review coordinator, at 919-814-6579 or environmental.review@ncdcr.gov. In all future communication concerning this project, please cite the above referenced tracking number.

Sincerely,


for Ramona Bartos, Deputy
State Historic Preservation Officer



U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

November 18, 2021

Chystal Amschler
Raleigh Regulatory Field Office
US Army Corps of Engineers
331 Heritage Trade drive, Suite 105
Wake Forest, NC 27587

RE: Section 106 Lead Agency Designation
Aberdeen Carolina & Western Railroad
Congestion Mitigation Project
Mecklenburg, Cabarrus, Montgomery, and Moore Counties, North Carolina

Dear Ms. Amschler:

The Federal Railroad Administration (FRA) is providing financial assistance to Aberdeen, Carolina & Western Railway (ACWR) to construct new facilities including passing and storage sidings, storage yards and a new warehouse. The purpose of the project is to address congestion issues on the existing railroad. The project will occur at five sites along the existing ACWR rail line in Mecklenburg, Cabarrus, Montgomery, and Moore Counties, North Carolina (See Figure 1-6).

FRA and ACWR are preparing an Environmental Assessment (EA) to comply with the requirements of NEPA. The EA also documents compliance with other applicable Federal, North Carolina, and local environmental laws and regulations. FRA is the lead Federal agency for review under NEPA.


This project is the undertaking for the purposes of Section 106 of the National Historic Preservation Act (NHPA) and its implementing regulations (36 CFR Part 800). The project will require issuance of a Section 404 Permit from the United States Army Corps of Engineers (USACE). FRA proposes to serve as lead federal agency for compliance with Section 106 in accordance with 36 CFR 800.2(a)(2). As lead federal agency, FRA would fulfill FRA and USACE's collective responsibilities under Section 106. FRA invites the USACE to participate as a consulting party in the Section 106 consultation process.

We respectfully request that you provide a response in the next 30 days to our proposal for FRA to serve as lead federal agency for Section 106 compliance and our invitation to participate as a consulting party in the Section 106 consultation process. If we do not hear from your office, we will assume that your agency will act independently to fulfill its requirements under Section 106. An e-mailed response is preferred to ensure timely receipt of your communications; FRA is working remotely at this time and has limited access to mailed responses.

If you have any questions or would like to discuss in more detail the project or our agencies' respective roles and responsibilities in the Section 106 process, please contact Derek Manning, Environmental Protection Specialist, at derek.manning@dot.gov or 857-998-1779.

Sincerely,
**ANDREA
ELIZABETH
MARTIN**

Andréa Martin
Senior Environmental Protection Specialist
Federal Railroad Administration

 Digitally signed by ANDREA
ELIZABETH MARTIN
Date: 2021.11.18 08:15:40
-05'00'

cc: Derek Manning, DOT, Environmental Protection Specialist



U.S. Department
of Transportation

**Federal Railroad
Administration**

1200 New Jersey Avenue, SE
Washington, DC 20590

November 23, 2021

Renee Gledhill-Earley
Environmental Review Coordinator
State Historic Preservation Office
State Historic Preservation Office
109 E. Jones Street
Raleigh, NC 27601

**RE: Aberdeen Carolina & Western Railway Congestion Mitigation Project
Mecklenburg, Cabarrus, Montgomery, and Moore Counties, North Carolina
Initiation of Section 106 Consultation**

Dear Ms. Gledhill-Earley:

The Federal Railroad Administration (FRA) is providing financial assistance to Aberdeen, Carolina & Western Railway (ACWR) to construct new facilities including passing and storage sidings, storage yards and a new warehouse. The purpose of the project is to address congestion issues on the existing railroad. The project sites are located along their existing line in Mecklenburg, Cabarrus, Montgomery, and Moore Counties, North Carolina (See Figure 1a-b). Pursuant to Section 106 of the National Historic Preservation Act of 1966, as amended, and its implementing regulations (36 CFR Part 800) (Section 106), this letter initiates Section 106 consultation for the Project and to request concurrence with FRA's findings.

Description of the Undertaking

The proposed Project is the undertaking for the purposes of Section 106 and will occur at five locations as listed below.

Mint Hill, North Carolina [Mecklenburg County]

1. Mint Hill Siding (MOW694) – Construction of 4,300 linear feet of new storage and passing siding along the existing railroad located between Albemarle Road and I-495.
2. Mint Hill Storage Yard (MOW80) and Mint Hill Warehouse (MOW102) – Construction of new storage track spurs and warehouse on a 66-acre property located along Allen Station Road in Mecklenburg County, North Carolina (Parcel ID# 13715210). Construction activities include grading for new roads, parking area, loading docks, 8 new storage track spurs totaling 7,200 linear feet, stormwater basins, and an approximate 200,000-400,000 square foot warehouse.

Midland, North Carolina [Cabarrus County]

3. Midland Siding (MOW692) – Construction of 2,900 linear feet of new storage and passing siding approximately 2 miles east of Midland, NC.

ACWR Headquarters, Candor, North Carolina [Montgomery County]

4. ACWR HQ Phase 3 Storage Yard (MOW82) – Construction of 12 new storage track spurs totaling 20,000 linear feet located north of the existing ACWR headquarter building.

Samarcand and Eagle Springs, North Carolina [Moore County]

5. Samarcand Storage & Passing Siding (MOW92) – Construction of 6,500 linear feet of new double ended passing and storage siding along the existing railroad.

Area of Potential Effects (APE)

The Area of Potential Effects (APE), as defined in 36 CFR Part 800.16(d), is “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.”

The APE consists of the area where the Project has the potential to cause effects on historic properties. For the purposes of this consultation FRA delineated the APE to reflect the nature, scale, and location of the Undertaking as defined above (Attachment A – Area of Potential Effects Map).

The APE is delineated as five dissentionous areas described below:

1. Mint Hill Siding (MOW694) – the proposed siding and its use is consistent with existing rail corridor and does not have potential to cause visual or audible effects, as such the APE is defined at the Limit of Disturbance (LOD) as shown on Attachment A: **Figures 1a and 2**. This area is within the existing railroad right-of-way (ROW).
2. Mint Hill Storage Yard (MOW80) and Mint Hill Warehouse (MOW102) – the proposed storage yard and warehouses are consistent with the existing level and nature of development in the broader area and do not have the potential to cause visual or audible effects to historic properties. Because the design for the facility is still in the concept stage, and the limits of construction disturbance have not been clearly defined, the APE is defined as the entire property as shown on Attachment A: **Figures 1a and 3**.
3. Midland Siding (MOW692) – the proposed siding and its use is consistent with existing rail corridor and does not have potential to cause visual or audible effects, as such the APE is defined at the LOD as shown on Attachment A: **Figures 1a and 4**. This area is within the existing railroad ROW.
4. ACWR HQ Phase 3 Storage Yard (MOW82) – the proposed storage and its use is consistent with existing rail yard and does not have potential to cause visual or audible effects, as such the APE is defined at the LOD as shown on Attachment A: **Figures 1b and 5**. This area is only a portion of the ACRW parcel as demarcated in red LOD.
5. Samarcand Storage & Passing Siding (MOW92) – the proposed siding and its use is consistent with existing rail corridor and does not have potential to cause visual or audible effects, as such the APE is defined at the LOD as shown on Attachment A: **Figures 1b and 6**. This area is within the existing railroad ROW.

Identification of Historic Properties

FRA made a reasonable and good faith effort to identify historic properties with the APE. Based on the results of those efforts FRA reached a finding of *No Historic Properties Affected*, in accordance with 36 CFR 800.4(d)(1). To identify historic properties in the APE, ACWR’s consultants, who meet the Secretary of the Interior’s Professional Qualifications Standards, reviewed available information, including National Register of Historic Places (NRHP) listings; available historic maps and images; and information derived from online research at various agencies, historical societies and other sources for the sites. ACWR’s consultants also conducted field reconnaissance at each of the APEs. No historic properties, as defined by 36 CFR 800.16(l), were identified within the APE.

Background research and limited field reconnaissance was conducted for each project area by the consultant. As a result of the investigations, four new archaeological sites were recorded (31MK1172,

31M1174, 31MG2238, and 31MG2239). Sites 31MK1172 and 31MK1173 are located within the Mint Hill Storage Yard and Warehouse project area, and site 31MG2238 and 31MG2239 are located within the ACWR HQ Phase 3 Storage Yard project area. None of the sites are recommended eligible for the National Register of Historic Places (NRHP). Additional information about the results of the background research and field reconnaissance can be found in the attached Archaeological Reconnaissance Report (Attachment B – Archaeological Reconnaissance Report).

Consulting Party Outreach

In accordance with 36 CFR Part 800.2(c), FRA identified parties that may be interested in the proposed Project and FRA's determination of effects. FRA initiated consultation with the US Army Corps of Engineers (USACE) and requested lead agency status via letter dated November 18, 2021. Charlotte-Mecklenburg Historic Landmarks Commission is copied on this letter to serve as their invitation to participate as a Section 106 consulting party. Federally-recognized tribes that have expressed interest in this project area, Catawba Indian Nation and Cherokee Nation, will be invited to participate in the Section 106 process in a separate letter.

Invited parties may indicate their willingness to participate as a consulting party and provide comments, as indicated below within 30 days of receipt of this letter. Should any invited parties' express concerns about the Project's effects to historic properties, FRA will consult with you and other consulting parties to resolve those concerns prior to project implementation.

Request for Comments

FRA seeks your concurrence with the proposed APE(s) and finding of *No Historic Properties Affected*. Should you disagree with the information presented herein, please notify us within 30 calendar days. An e-mailed response is preferred to ensure timely receipt of your communications. FRA welcomes an opportunity to discuss the undertaking with you and other consulting parties prior to making determinations of effect. Please send your response to Derek Manning, Environmental Protection Specialist, at derek.manning@dot.gov or 857-998-1779. Thank you for your cooperation on this project.

Sincerely,



Amanda Murphy
Environmental Protection Specialist
Office of Infrastructure Investment

Enc: Attachment A: APE Maps
Attachment B: Archaeological Reconnaissance Report by Terracon Consultants, Inc.

cc: Derek Manning, USDOT, Environmental Protection Specialist
Crystal Amschler, USACE, Project Manager
Jack Thompson, Charlotte-Mecklenburg Historic Landmark Commission, Executive Director



U.S. Department
of Transportation

1200 New Jersey Avenue, SE
Washington, DC 20590

**Federal Railroad
Administration**

November 23, 2021

Elizabeth Toombs
Tribal Historic Preservation Officer
Cherokee Nation
PO Box 948
Tahlequah, OK 74465

**RE: Aberdeen Carolina & Western Railway Congestion Mitigation Project
Mecklenburg, Cabarrus, Montgomery, and Moore Counties, North Carolina
National Historic Preservation Act Section 106 Consultation**

Dear Ms. Toombs:

The Federal Railroad Administration (FRA) is providing financial assistance to Aberdeen, Carolina & Western Railway (ACWR) to construct new facilities including passing and storage sidings, storage yards and a new warehouse. The purpose of the Project is to address congestion issues on the existing railroad. The project sites are located along their existing line in Mecklenburg, Cabarrus, Montgomery, and Moore Counties, North Carolina (See Figure 1a-b). The purpose of this letter is to initiate National Historic Preservation Act Section 106 consultation for the Project, to determine if there are historic properties of cultural or religious significance to your Tribe that may be affected by the Project, and to notify your Tribe of FRA's finding.

Description of the Undertaking

The proposed Project is the undertaking for the purposes of Section 106 and will occur at five locations as listed below.

Mint Hill, North Carolina [Mecklenburg County]

1. Mint Hill Siding (MOW694) – Construction of 4,300 linear feet of new storage and passing siding along the existing railroad located between Albemarle Road and I-495.
2. Mint Hill Storage Yard (MOW80) and Mint Hill Warehouse (MOW102) – Construction of new storage track spurs and warehouse on a 66-acre property located along Allen Station Road in Mecklenburg County, North Carolina (Parcel ID# 13715210). Construction activities include grading for new roads, parking area, loading docks, 8 new storage track spurs totaling 7,200 linear feet, stormwater basins, and an approximate 200,000-400,000 square foot warehouse.

Midland, North Carolina [Cabarrus County]

3. Midland Siding (MOW692) – Construction of 2,900 linear feet of new storage and passing siding approximately 2 miles east of Midland, NC.

ACWR Headquarters, Candor, North Carolina [Montgomery County]

4. ACWR HQ Phase 3 Storage Yard (MOW82) – Construction of 12 new storage track spurs totaling 20,000 linear feet located north of the existing ACWR headquarter building.

Samarcand and Eagle Springs, North Carolina [Moore County]

5. Samarcand Storage & Passing Siding (MOW92) – Construction of 6,500 linear feet of new

double ended passing and storage siding along the existing railroad.

Area of Potential Effects (APE)

The Area of Potential Effects (APE), as defined in 36 CFR Part 800.16(d), is “the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist. The area of potential effects is influenced by the scale and nature of an undertaking and may be different for different kinds of effects caused by the undertaking.”

The APE consists of the area where the Project has the potential to cause effects on historic properties. For the purposes of this consultation FRA delineated the APE to reflect the nature, scale, and location of the Undertaking as defined above (Attachment A – Area of Potential Effects Map).

The APE is delineated as five dissentionous areas described below:

1. Mint Hill Siding (MOW694) – the proposed siding and its use is consistent with existing rail corridor and does not have potential to cause visual or audible effects, as such the APE is defined at the Limit of Disturbance (LOD) as shown on Attachment A: **Figures 1a and 2**. This area is within the existing railroad right-of-way (ROW).
2. Mint Hill Storage Yard (MOW80) and Mint Hill Warehouse (MOW102) – the proposed storage yard and warehouses are consistent with the existing level and nature of development in the broader area and do not have the potential to cause visual or audible effects to historic properties. Because the design for the facility is still in the concept stage, and the limits of construction disturbance have not been clearly defined, the APE is defined as the entire property as shown on Attachment A: **Figures 1a and 3**.
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4. ACWR HQ Phase 3 Storage Yard (MOW82) – the proposed storage and its use is consistent with existing rail yard and does not have potential to cause visual or audible effects, as such the APE is defined at the LOD as shown on Attachment A: **Figures 1b and 5**. This area is only a portion of the ACRW parcel as demarcated in red LOD.
5. Samarcand Storage & Passing Siding (MOW92) – the proposed siding and its use is consistent with existing rail corridor and does not have potential to cause visual or audible effects, as such the APE is defined at the LOD as shown on Attachment A: **Figures 1b and 6**. This area is within the existing railroad ROW.

Identification of Historic Properties

FRA made a reasonable and good faith effort to identify historic properties with the APE. Based on the results of those efforts FRA reached a finding of *No Historic Properties Affected*, in accordance with 36 CFR 800.4(d)(1). To identify historic properties in the APE, ACWR’s consultants, who meet the Secretary of the Interior’s Professional Qualifications Standards, reviewed available information, including National Register of Historic Places (NRHP) listings; available historic maps and images (e.g., Sanborn fire insurance maps, historic aerials, historic topographic quadrangles, plat maps, etc.), and information derived from online research at various agencies, historical societies and other sources for the sites. ACWR’s consultants also conducted field reconnaissance at each of the APEs. No historic properties, as defined by 36 CFR 800.16(1), were identified within the APE.

Background research and limited field reconnaissance was conducted for each project area by the

consultant. As a result of the investigations, four new archaeological sites were recorded (31MK1172, 31M1174, 31MG2238, and 31MG2239). Sites 31MK1172 and 31MK1173 are located within the Mint Hill Storage Yard and Warehouse project area, and site 31MG2238 and 31MG2239 are located within the ACWR HQ Phase 3 Storage Yard project area. None of the sites are recommended eligible for the NRHP. Additional information about the results of the background research and field reconnaissance can be found in the attached Archaeological Reconnaissance Report (Attachment B – Archaeological Reconnaissance Report).

Request for Participation and Comments

FRA respectfully requests that 1) you review the enclosed materials and provide any comments or information you may have regarding historic properties of religious or cultural significance to your Tribe that may be present in the APE, 2) provide any comments on FRA's finding of *No Historic Properties Affected*, and 3) that you notify FRA within 30 days from the date on this letter whether you accept or decline this invitation to be a consulting party. FRA offers Government-to-Government consultation on this Project, if that is your Tribe's preference. Please send your response to Mr. Derek Manning at derek.manning@dot.gov or 857-998-1779. Thank you for your cooperation on this Project.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Murphy'.

Amanda Murphy, MAHP
Environmental Protection Specialist
Federal Railroad Administration

Enc: Attachment A: APE Maps
Attachment B: Archaeological Reconnaissance Report by Terracon Consultants, Inc.

cc: Derek Manning, USDOT, Environmental Protection Specialist



U.S. Department
of Transportation

1200 New Jersey Avenue, SE
Washington, DC 20590

**Federal Railroad
Administration**

November 23, 2021

Wenonah G. Haire, DMD
c/o Caitlin Rogers
Tribal Historic Preservation Officer
Catawba Indian Nation
1536 Tom Steven Road
Rock Hill, SC 29730

**RE: Aberdeen Carolina & Western Railway Congestion Mitigation Project
Mecklenburg, Cabarrus, Montgomery, and Moore Counties, North Carolina
National Historic Preservation Act Section 106 Consultation**

Dear Dr. Haire:

The Federal Railroad Administration (FRA) is providing financial assistance to Aberdeen, Carolina & Western Railway (ACWR) to construct new facilities including passing and storage sidings, storage yards and a new warehouse. The purpose of the Project is to address congestion issues on the existing railroad. The project sites are located along their existing line in Mecklenburg, Cabarrus, Montgomery, and Moore Counties, North Carolina (See Figure 1a-b). The purpose of this letter is to initiate National Historic Preservation Act Section 106 consultation for the Project, to determine if there are historic properties of cultural or religious significance to your Tribe that may be affected by the Project, and to notify your Tribe of FRA's finding.

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Request for Participation and Comments

FRA respectfully requests that 1) you review the enclosed materials and provide any comments or information you may have regarding historic properties of religious or cultural significance to your Tribe that may be present in the APE, 2) provide any comments on FRA's finding of *No Historic Properties Affected*, and 3) that you notify FRA within 30 days from the date on this letter whether you accept or decline this invitation to be a consulting party. FRA offers Government-to-Government consultation on this Project, if that is your Tribe's preference. Please send your response to Mr. Derek Manning at derek.manning@dot.gov or 857-998-1779. Thank you for your cooperation on this Project.

Sincerely,

A handwritten signature in black ink, appearing to read 'A Murphy'.

Amanda Murphy, MAHP
Environmental Protection Specialist
Federal Railroad Administration

Enc: Attachment A: APE Maps
Attachment B: Archaeological Reconnaissance Report by Terracon Consultants, Inc.

cc: Derek Manning, USDOT, Environmental Protection Specialist

Archaeological Reconnaissance Report

ACWR Congestion Mitigation Program

Mecklenburg, Cabarrus, Montgomery, and Moore Counties,
North Carolina

November 2021

Terracon Project No. 7021P151

Prepared for:

Aberdeen Carolina & Western Railway Company

Prepared by:

Melissa McKay, RPA
Terracon Consultants, Inc.
Raleigh, North Carolina

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Proposal for Cultural Resource Services

ACWR Congestion Mitigation Program ■ Multiple Counties, NC

November 4, 2021 ■ Terracon Project No. 7021P151



MANAGEMENT SUMMARY

At the request of Aberdeen Carolina & Western Railway Company (ACWR; Client), Terracon Consultants, Inc. (Terracon) conducted a cultural resources desktop review and a limited archaeological field reconnaissance of five areas: Mint Hill Siding (Mecklenburg County), Mint Hill Storage Yard and Warehouse (Mecklenburg County), Midland Siding (Cabarrus County), ACWR HQ Phase 3 Storage Yard (Montgomery County), and Samarcand Siding (Moore County). The Federal Railroad Administration (FRA) is providing financial assistance to ACWR to construct new facilities including passing and storage sidings, storage yards, and a new warehouse in these areas.

Fieldwork was conducted during October and November 2021 by Melissa McKay, Abigail Bythell, Becky Sponseller, Connor Seaton, and Kristin Doshier. The goal of this limited field reconnaissance was to assess current site conditions to ascertain whether the project areas have the potential to contain intact archaeological resources or contain standing historic-period structures as well as to provide site-specific information to support Section 106 consultation.

As a result of the investigations, four new archaeological sites were recorded (31MK1172, 31MK1173, 31MG2238, and 31MG2239, **Table A**). Sites 31MK1172 and 31MK1173 are located within the Mint Hill Storage Yard and Warehouse project area, and site 31MG2238 and 31MG2239 are located within the ACWR HQ Phase 3 Storage Yard project area. None of the sites are recommended eligible for the *National Register of Historic Places* (NRHP). Much of the study area appeared to be disturbed and eroded by past timbering, clearing, and development activities.

Due to prior disturbance and a lack of subsurface integrity for the archaeological sites recorded, the proposed project should be allowed to proceed without concern for impacts to significant cultural resources. However, if the project boundaries are modified outside of the current project area and federal permitting is anticipated, additional coordination with the SHPO would be necessary to determine if additional cultural resource investigations would be required.

Table A: Summary of Site Data

Site	Cultural Affiliation	Site Type	Recommendations
31MK1172	Historic: Mid-19 th to 20 th c.	Domestic	Not Eligible; NFW*
31MK1173	Historic: Mid- 20 th c.	Agricultural	Not Eligible; NFW*
31MG2238	Prehistoric: Lithic, Unk. Subperiod	Limited Activity	Not Eligible; NFW*
31MG2239	Prehistoric: Woodland; Historic: Mid-19 th to 20 th c.	Prehistoric: Short-Term Habitation; Historic: Domestic	Not Eligible; NFW*

*NFW: No Further Work

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1.0 INTRODUCTION

The Federal Railroad Administration (FRA) is providing financial assistance to Aberdeen, Carolina & Western Railway (ACWR) to construct new facilities including passing and storage sidings, storage yards and a new warehouse. The purpose of the project is to address congestion issues on the existing railroad.

The proposed project consists of five areas: Mint Hill Siding (Mecklenburg County), Mint Hill Storage Yard and Warehouse (Mecklenburg County), Midland Siding (Cabarrus County), ACWR HQ Phase 3 Storage Yard (Montgomery County), and Samarcand Storage and Passing Siding (Moore County; See **Figures 1a-b**).

The Mint Hill Siding project would consist of the construction of 4,300 linear feet of new storage and passing siding along the existing railroad located between Albemarle Road and I-495. The project area for this location is approximately 20.4 acres.

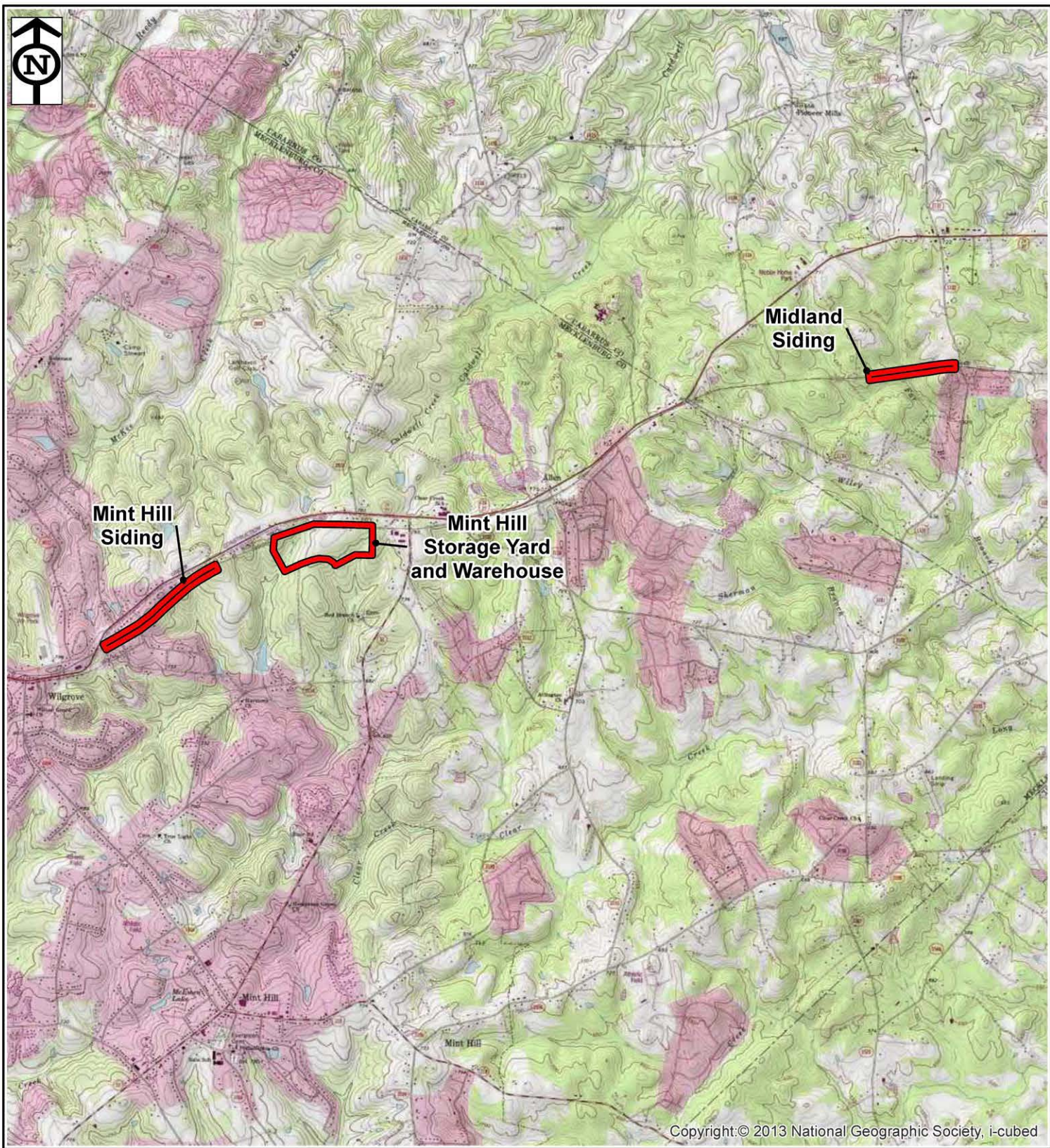
The Mint Hill Storage Yard and Warehouse project would consist of the construction of new storage track spurs and warehouse on a 66-acre property located along Allen Station Road in Mecklenburg County, North Carolina. Proposed construction activities include grading for new roads, parking area, loading docks, 8 new storage track spurs totaling 7,200 linear feet, stormwater basins, and an approximate 200,000–300,000 square foot warehouse.

The Midland Siding project would consist of the construction of 2,900 linear feet of new storage and passing siding approximately 2 miles east of Midland, NC. The project area for this location is approximately 12.8 acres.

The ACWR HQ Phase 3 Storage Yard would consist of the construction of 12 new storage track spurs totaling 20,000 linear feet located north of the existing ACWR headquarter building. The project area for this location is approximately 11.8 acres.

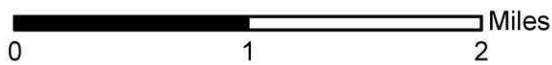
The Samarcand Storage and Passing Siding would consist of the construction of 6500 linear feet of new double ended passing and storage siding along the existing railroad. The project area for this location is approximately 30.5 acres.

At the request of the Client, Terracon Consultants, Inc. (Terracon) conducted an archaeological reconnaissance of the project areas during October and November 2021. The goal of this limited field reconnaissance was to assess current site conditions to ascertain whether the project areas have the potential to contain intact archaeological resources or contain standing historic-period structures as well as to provide site-specific information to support Section 106 consultation.



Legend

 Project Area



PM:	TR
Drwn/Chkd:	MM/TR
Project No.:	7021P151
Date:	November 2021

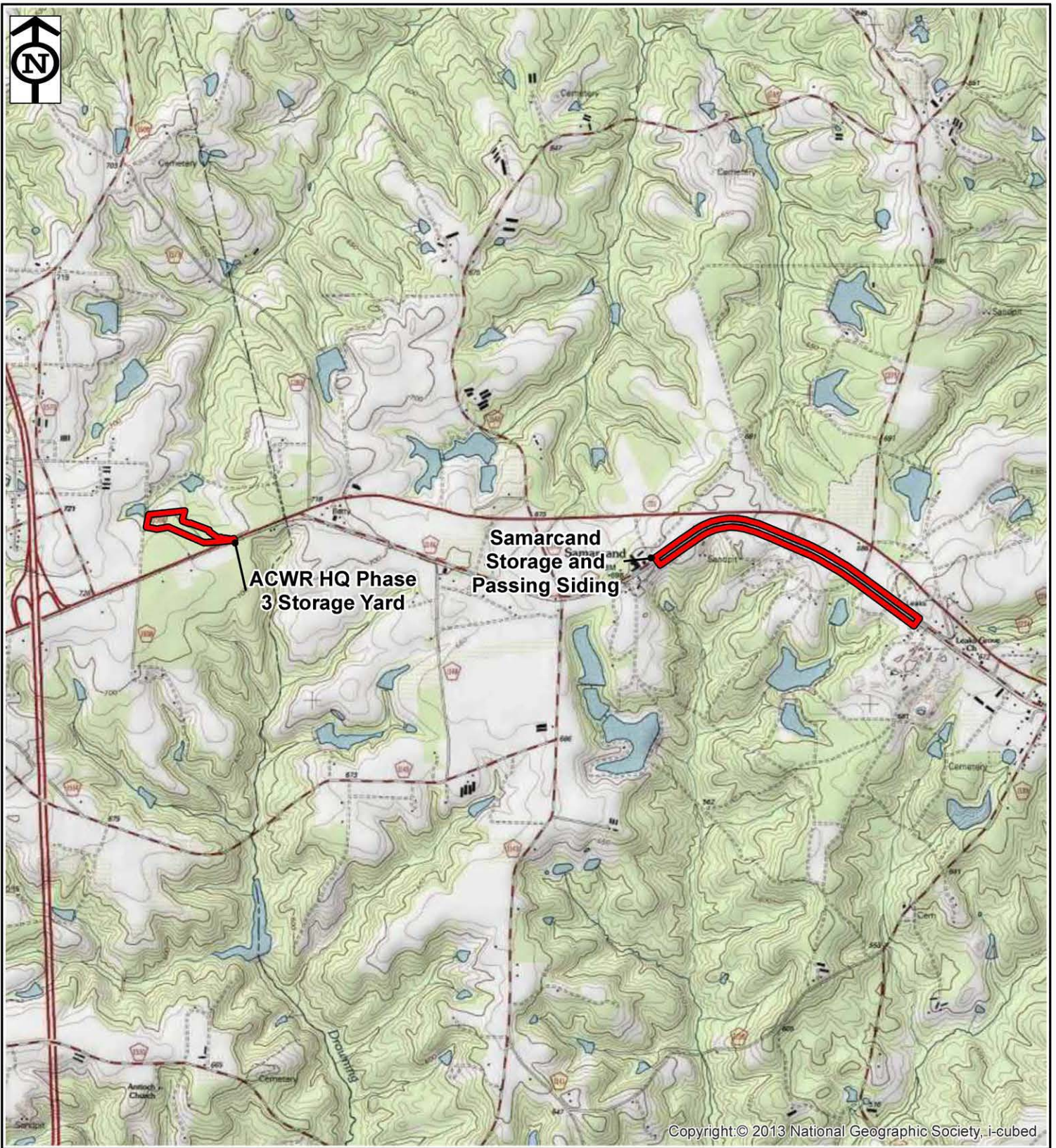
Terracon

2401 Brentwood Road, Suite 107 Raleigh, NC 27604
 Phone: (919) 873-2211 Fax: (919) 873-9555

Topographic Map

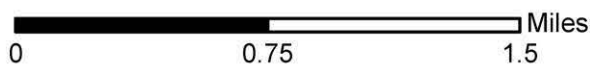
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FIGURE NO.
1a



Legend

 Project Area



PM:	TR
Drwn/Chkd:	MM/TR
Project No.:	7021P151
Date:	November 2021

Terracon

2401 Brentwood Road, Suite 107 Raleigh, NC 27604
 Phone: (919) 873-2211 Fax: (919) 873-9555

Topographic Map

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FIGURE NO.
1b

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Prior to the initiation of fieldwork, background research was conducted by North Carolina Office of State Archaeology (OSA) staff on behalf of Terracon. Field methods employed by Terracon during the investigation included visual (pedestrian) survey of the five project areas. In addition, limited shovel testing was conducted at four archaeological sites (site 31MK1172, 31M1174, 31MG2238, and 31MG2239) within two of the project areas (Mint Hill Storage Yard and Warehouse and ACWR HQ Phase 3 Storage Yard), after the initial visual survey identified the archeological sites. Shovel tests measured approximately 30 centimeters in diameter and were dug to one meter, the water table, or sterile subsoil. Field investigations occurred during October and November 2021 and were conducted by Melissa McKay, Abigail Bythell, Becky Sponseller, Connor Seaton, and Kristin Doshier.

2.0 ENVIRONMENTAL SETTING

The Mint Hill Siding, Mint Hill Storage Yard and Warehouse, and Midland Siding project areas are located within the Piedmont physiographic province. The landscape of the region is gently sloping to rolling and contains drainages bordered by moderately steep slopes.

The ACWR HQ Phase 3 Storage Yard and Samarcand Storage and Passing Siding project areas are located within the Coastal Plain physiographic province. The Coastal Plain is a gently sloping wedge of sediments cut by drainages and characterized by the presence of numerous wetlands. Most of the Coastal Plain is composed of a series of relic marine terraces that are dominated by soft, unconsolidated sedimentary rock made up of sand, silt, clay, and some eroded Piedmont materials. The younger terraces are closest to the ocean and consist of flat, poorly drained areas and swamp; the inland terraces are older and higher in elevation (NCGS 1985).

The Mint Hill Siding, Mint Hill Storage Yard and Warehouse, and Midland Siding project areas are located within the Yadkin-Pee Dee River Basin. The ACWR HQ Phase 3 Storage Yard project area is situated within the Cape Fear River Basin, and the Samarcand Storage and Passing Siding is situated along the northern boundary of the Lumber River Basin.

The soil maps for Cabarrus, Mecklenburg, Montgomery, and Moore Counties shows 15 soil units occurring within the five project areas (NRCS 2020; **Table 1**).

Table 1: Project Area Soils

Code	Name	Slope	Drainage	Landform
Mint Hill Siding (Mecklenburg County)				
CeB2	Cecil sandy clay loam, moderately eroded	2–8%	Well Drained	Interfluves
CeD2	Cecil sandy clay loam, moderately eroded	8–15%	Well Drained	Interfluves
PaE	Pacolet sandy loam	15–25%	Well Drained	Interfluves
Mint Hill Storage Yard and Warehouse (Mecklenburg County)				
CeB2	Cecil sandy clay loam, moderately eroded	2–8%	Well Drained	Interfluves
CeD2	Cecil sandy clay loam, moderately eroded	8–15%	Well Drained	Interfluves
EnB	Enon sandy loam	2–8%	Well Drained	Interfluves
EnD	Enon sandy loam	8–15%	Well Drained	Hillslopes on ridges
HeB	Helena sandy loam	2–8%	Moderately Well Drained	Ridges
WkD	Wilkes loam	8–15%	Well Drained	Hillslopes on ridges
Midland Siding (Cabarrus County)				
BaF	Badin channery silt loam	15–45%	Well Drained	Hillslopes on ridges
ChA	Chewacla sandy loam, frequently flooded	0–2%	Somewhat Poorly Drained	Floodplains
TaD	Tarrus silt loam	8–15%	Well Drained	Hillslopes on ridges
ACWR HQ Phase 3 Storage Yard (Montgomery County)				
AaB	Ailey loam sand, moderately wet	2–8%	Well Drained	Low hills
AuA	Autryville sand	0–3%	Well Drained	Low hills
CdB	Candor sand	0–8%	Somewhat Excessively Drained	Low hills
Samarcand Storage and Passing Siding (Moore County)				
CaB	Candor sand	0–4%	Somewhat Excessively Drained	Low hills
Ud	Udorthents, loamy	-	Well Drained	Interfluves

Current Land Use

The Mint Hill Siding project area consists of the existing railroad, areas of residential development, and wooded areas. The surrounding area is comprised of undeveloped wooded land and areas of residential development.

The Mint Hill Storage Yard and Warehouse project area consists primarily of undeveloped land north of a recently developed commercial area and a high school. The existing railroad runs along the northern edge of the project area. A powerline corridor crosses through the western half of the area, and Allen Station Drive is situated within the southern portion of the project area.

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The Midland Siding project area includes the existing railroad and is primarily wooded. The surrounding area is undeveloped, with the exception of a residential area east of the project area. An agricultural field is situated within a small section north of the railroad in the eastern portion of the project area.

The ACWR HQ Phase 3 Storage Yard project area consists of recently cleared land located just north of an ACWR industrial building and existing railroad. The surrounding area is comprised of undeveloped, wooded land and areas of commercial development.

The Samarcand Storage & Passing Siding project area consists of the existing railroad. The surrounding area consists of undeveloped, wooded land and areas of residential development.

3.0 BACKGROUND RESEARCH

Background research was conducted for each area and included searches of the North Carolina Office of State Archaeology (OSA) site file database, the North Carolina State Historic Preservation Office (SHPO) HPOWEB GIS service database, and review of historical maps and aerial photographs. The results of the research are provided below.

3.1 Mint Hill Siding

Research conducted by the North Carolina OSA on behalf of Terracon revealed that no previously recorded archaeological sites appear to be located within a 0.25-mile radius of the Mint Hill Siding project area.

Three previous archaeological investigations have been conducted within 0.25 mile of the project area, all of which are associated with the East Charlotte Outer Loop. In 1987, Garrow & Associates, Inc. surveyed 48 miles along three proposed routes for the then-proposed Outer Loop (O'Steen at al. 1989). A small section of the Mint Hill Siding project area is situated within this previously surveyed corridor. A total of 59 archaeological sites were recorded during the survey, 13 of which were recommended to be potentially eligible for the NRHP. Fifteen standing structures were also recorded within the project area, three of which were recommended potentially eligible for the NRHP.

In 1988, Garrow & Associates surveyed two alternative corridors for the then-proposed East Charlotte Outer Loop project (Turner 1989). Additional work was recommended at four of the 16 sites recorded during the survey.

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In 1999, archaeological testing of Site 31MK438 (initially recorded during the 1999 Charlotte Outer Loop survey) was conducted by the North Carolina Department of Transportation. It was determined that the site had low research potential and it was recommended not eligible for the NRHP.

Research conducted by Terracon using the North Carolina HPOWEB GIS service database revealed that one previously recorded property is located within a 0.25-mile radius of the project area. The Vaughn House (HPO ID# MK1214), a c. 1910 Craftsman Bungalow, was recorded during a 1987–1988 survey. The resource was surveyed only and was not assessed for its NRHP eligibility. Review of aerial imagery indicates that this structure was demolished sometime between 1998 and 2002.

No structures are visible within the project area in aerial imagery from 1956. Two small outbuildings and a possible house are visible north of the railroad in imagery from 1960 just west of Oak Hill Road (**Figure 2** shows the approximate locations of these structures). One of the outbuildings is gone by 1968, and the second appears to be gone by 1978. Review of recent aerial imagery shows that the house was demolished sometime between 2006 and 2007.



Figure 2: Approximate Structure Locations from 1956 Aerial Imagery
(Source: Google Earth)

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No structures appear to be depicted within the project area on the 1910 Mecklenburg County Soil Survey map. The 1971 Mint Hill USGS topographic map depicts two structures within the project area along Oak Hill Road (**Figure 3**). These structures also appear on the 1993 Mint Hill topographic map. The southernmost structure is likely the house that is visible in imagery from 1960, which was destroyed between 2006 and 2007. The house to the north is still standing.



Figure 3: 1971 Mint Hill, NC USGS Topographic Map

Review of recent aerial imagery shows that a portion of the railroad within the Mint Hill Siding project area was realigned sometime between 1998 and 2002, likely in relation to the construction of I-485 located east of the project area (see **Figures 4 and 5**).



Figure 4: 1998 Aerial Imagery showing Former Railroad Alignment
(Source: Google Earth)



Figure 5: 2002 Aerial Imagery showing Current Railroad Alignment and Construction of I-485
(Source: Google Earth)

3.2 Mint Hill Storage Yard and Warehouse

Research conducted by the North Carolina OSA on behalf of Terracon revealed that no previously recorded archaeological sites appear to be located within a 0.25-mile radius of the Mint Hill Storage Yard and Warehouse project area. Only one previous archaeological survey has been conducted within a 0.25-mile radius of the project area (a 1987 study for the then-proposed East Charlotte Outer Loop).

Research conducted by Terracon using the North Carolina HPOWEB GIS service database revealed that two previously recorded historic properties are located within a 0.25-mile radius of the project area. The Beaver House (HPO ID# MK1192) was recorded during a 1987–1988 architectural survey but was never assessed for its NRHP eligibility. The house appears to have been demolished prior to 2002.

The Lee-Flow House (MK1206) was also recorded during the 1987–1988 architectural survey and is located 0.1 mile north of the project area along the north side of Albemarle Road. Although the property has not been formally assessed for its NRHP eligibility, the structure is noted on the HPOWEB as a Local Landmark. It should be noted that the “Flow-Lee House” listed on the Charlotte-Mecklenburg Historic Landmarks Commission website is actually located four miles south of the project area, and not in the location specified on the HPOWEB mapping. No structure corresponding to the Lee-Flow House (MK1206) location appears on the Landmarks Commission list; it is possible that HPOWEB incorrectly identified the location of this structure.

In addition to records search for previously recorded cultural resources, Terracon conducted an examination of readily available and relevant historical aerial photographs and maps in an attempt to locate possible historical structure locations within the proposed project boundaries. In general, aerial photographs show that much of the project area was pasture or agricultural land prior to the late 1970s, when the area began to be converted to forested areas. The 1910 Soil Map for Mecklenburg County depicts one structure within the project area; however, the scale is such that the location is approximate and may not be located within the project boundaries (**Figure 6**).

The 1949 Wilgrove, NC 1:24,000 topographic quadrangle depicts one structure on the east side of the project area (**Figure 7**). This structure is not depicted on the 1971 Mint Hill, NC 1:24,000 topographic quadrangle and was presumably demolished prior to that time.

Three structures are shown on aerial photography from 1956 in the eastern portion of the project area (including the structure noted above). **Figure 8** shows the approximate locations of these former structures. Two of the three appear to have been demolished; however, it is possible that remnants of the structure to the south are still extant.

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Review of aerial imagery also shows significant disturbance to much of the property in 2006 (**Figure 9**). Information provided by the Client shows that three stormwater basins were excavated on the property by the previous property owner prior to 2010, suggesting further disturbance of the area (**Figure 10**).



Figure 6: 1910 Soil Map

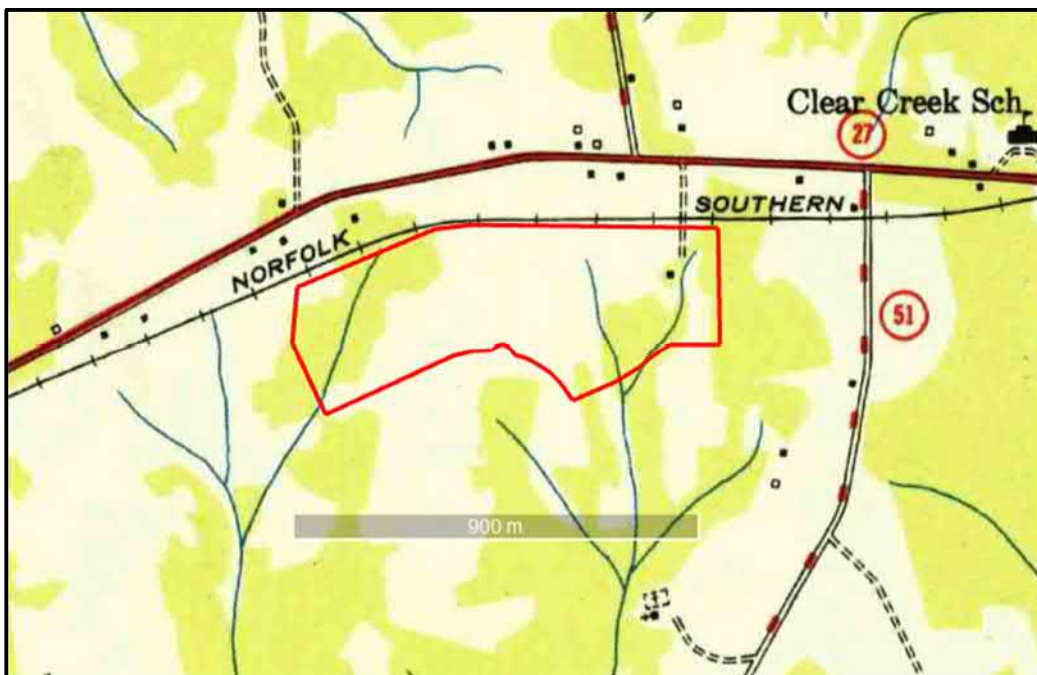


Figure 7: 1949 Wilgrove, NC 1:24,000 Topographic Map

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Figure 8: Current Aerial Photography Showing Approximate Structure Locations
(Source: Google Earth)



Figure 9: Aerial Imagery from 2002
(Source: Google Earth)



Figure 10: Storm Water Basin Locations
(Source: Google Earth)

3.3 Midland Siding

Research conducted by the North Carolina OSA on behalf of Terracon revealed that no previously recorded archaeological sites appear to be located within a 0.25-mile radius of the Midland Siding project area. A portion of the project area was located within an archaeological survey conducted in 2011 by R. W. Webb & Associates for the then-proposed Midland multi-modal industrial park. As a result of the survey, one archaeological site, 31CA394, was recorded. Because the site may have extended beyond the project boundary, it was considered to be unassessed for the NRHP. However, the portion investigated within the project area was considered unlikely to yield important information and no additional work was recommended.

Research conducted by Terracon using the North Carolina HPOWEB GIS service database revealed that two previously recorded historic properties are located within a 0.25-mile radius of the project area. The Gaston Williams Farm (HPO ID# CA0607) was surveyed in 1981 and is located approximately 0.15 mile north of the project area. It was recorded as a traditional vernacular house, with notes suggesting that the house may have been demolished. The resource was surveyed only and was not assessed for its NRHP eligibility.

No structures appear to be depicted within the project area on historical aerial imagery, the 1910 Cabarrus County Soil Survey Map or the 1949 or 1971 Midland USGS topographic maps.

Recent aerial imagery indicates that the western portion of the project area north of the existing railway was cleared between 2010 and 2013 (Figure 11).



Figure 11: 2013 Aerial Imagery showing Prior Disturbance within the Project Area
(Source: Google Earth)

3.4 ACWR HQ Phase 3 Storage Yard

Research conducted by the North Carolina OSA on behalf of Terracon revealed that one previously recorded archaeological site is located within a 0.25-mile radius of the ACWR HQ Phase 3 Storage Yard project area. 31MG626 was a prehistoric site recorded in 1982 during an archaeological survey for the then-proposed wastewater treatment site in Candor (Cooper and Patterson 1982). The site is unassessed for the NRHP.

Research conducted by Terracon using the North Carolina HPOWEB GIS service database revealed no historic properties recorded within 0.25 mile of the project area.

One structure is depicted in the northwestern portion of the project area on the c. 1910 to 1919 Montgomery County Rural Delivery Routes map (Figure 12). The 1942 Troy USGS topographic map depicts a structure in this vicinity as well (Figure 13). However, the scale for both of these maps is such that the location is approximate and may not be located within the project boundaries. No structures appear to be depicted within the project area on the 1974 Candor, NC topographic map.

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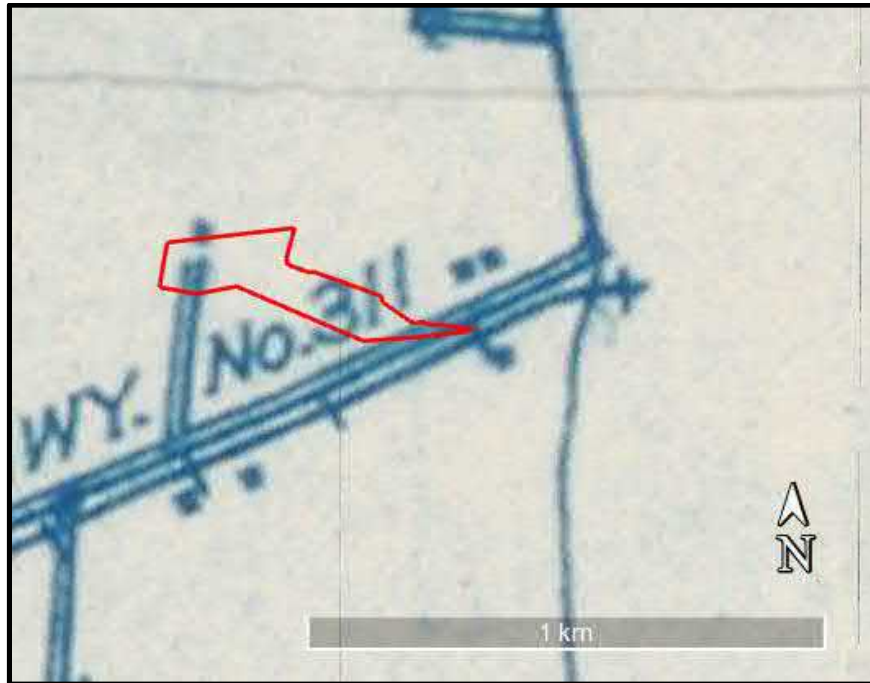


Figure 12: c. 1910 to 1919 Rural Delivery Routes Map

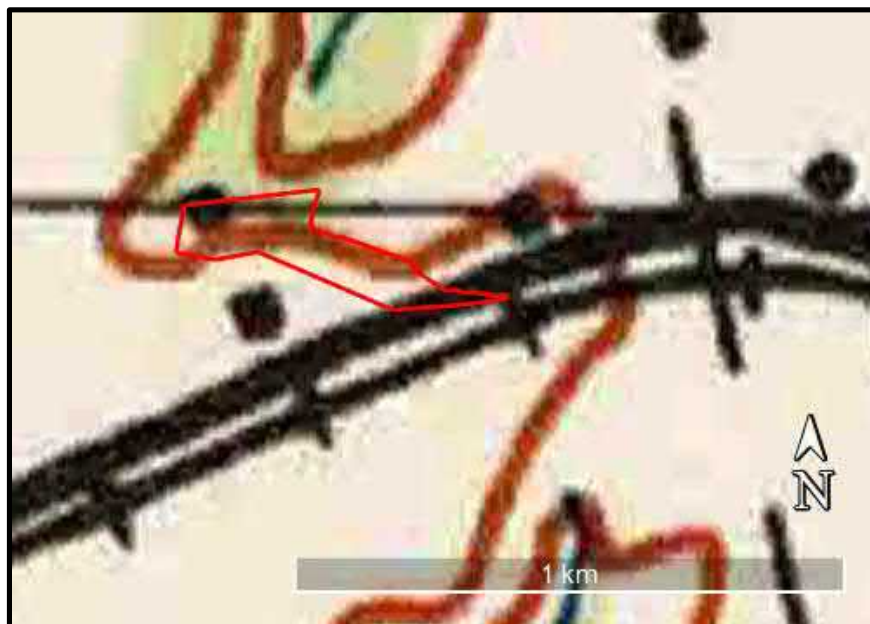


Figure 13: 1942 Troy, NC USGS Topographic Map

Aerial imagery from 1956 shows that the project area as being comprised of open fields. By 1973, the entire area is forested. No structures clearly visible within the project area on this aerial

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imagery. In imagery from 1993, a dirt road is visible in the western portion of the project area. Three possible small outbuildings are located along its eastern side (**Figure 14**).

Imagery from 2006 shows areas of disturbance and clearing related to the construction of the ACWR Industrial building south of the project area in 1999 (**Figure 15**).

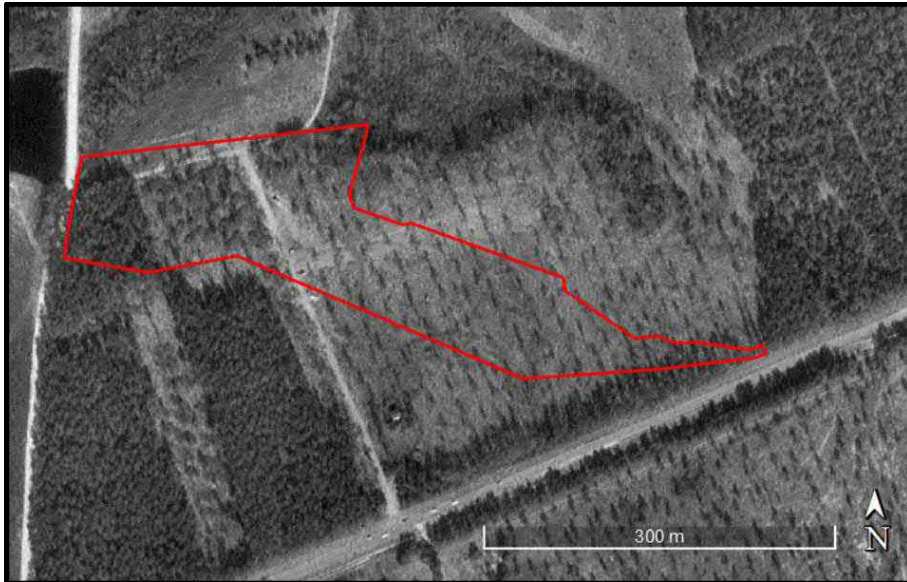


Figure 14: Aerial imagery from 1993
(Source: Google Earth)



Figure 15: Aerial Imagery from 2006
(Source: Google Earth)

3.5 Samarcand Storage and Passing Siding

Research conducted by the North Carolina OSA on behalf of Terracon revealed that no previously recorded archaeological sites appear to be located within a 0.25-mile radius of the Samarcand Siding project area. Research conducted by Terracon using the North Carolina HPOWEB GIS service database revealed no historic properties recorded within 0.25 mile of the project area.

No structures appear to be located within the project area on the 1949 Troy USGS topographic map, the 1919 Moore County Soil Map, or the 1974 Candor USGS topographic map.

Aerial imagery from 1956 shows the project area and vicinity as undeveloped fields, and no structures are visible within the project area. A road along the north side of the railroad track is visible across the entirety of the project area, and follows the same alignment as the current Clement Road (a private drive) and Eagle Springs Road. Five structures are visible just north of this road, but they appear to be located outside of the project boundary, and review of recent aerial imagery shows that they have since been demolished or replaced by more modern structures.

Imagery from 1983 shows some areas as forested and the area is still largely undeveloped. By 1993, much of the area is wooded, and residential areas are visible in the immediate vicinity (**Figure 16**). Imagery from 2013 shows evidence of clear cutting along the southern portion of the project area (**Figure 17**).

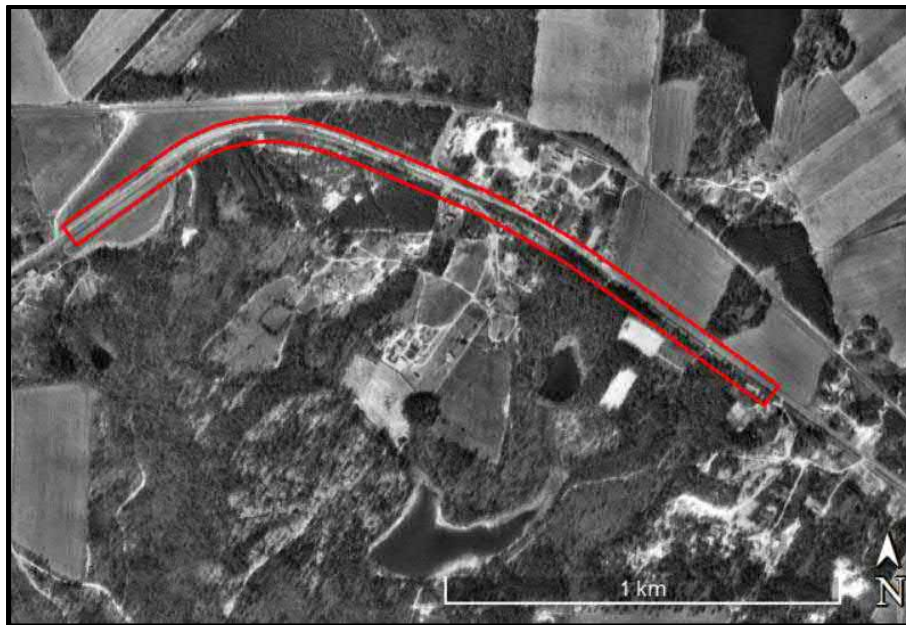


Figure 16: Aerial Imagery from 1993
(Source: Google Earth)



Figure 17: Aerial Imagery from 2013
(Source: Google Earth)

4.0 FIELD METHODOLOGY AND RESEARCH DESIGN

Terracon conducted a brief field visit of the project areas on October 15 and 21, 2021 to evaluate existing project conditions and identify surface signs of possible cultural resources. Field methodology included a general pedestrian (visual) examination of portions of the project areas and focused on exposed surfaces such as unpaved roads, recently plowed agricultural fields, eroded areas, previously disturbed areas, and other areas exhibiting good surface visibility for archaeological materials.

During these investigations, above-ground structural remains were observed in two locations within the Mint Hill Storage Yard and Warehouse project area, and prehistoric and historic artifacts were observed on the surface within the ACWR HW Phase 3 Storage Yard project area. Terracon returned to these two project areas between November 1 to 3, 2021 to conduct additional fieldwork at the archaeological sites.

Field methodology included shovel testing at 15- and 30- meter intervals. All shovel tests excavated measured approximately 30 centimeters in diameter and were dug to sterile subsoil, one meter in depth, or the water table, whichever was encountered first. All excavated sediments were screened through 6.35-millimeter (0.25-inch) hardware mesh. Pertinent field data, including

locations, soil color and texture, notes on the stratigraphic relationships of artifacts, environmental setting, topography, etc. were recorded for each shovel test. Each shovel test location was marked on a field map of the project area. Pedestrian survey was conducted along transects spaced approximately 10 meters apart in areas exhibiting greater than 50 percent surface visibility at the archaeological sites located within the ACWR HQ Phase 3 Storage Yard project area.

5.0 RESULTS

5.1 Mint Hill Siding

Based on the background research, it was expected that the southwestern portion of the Mint Hill Siding project study area would be largely disturbed from the construction of residential homes and Cedar Grove Road, a gravel driveway which runs along the southern side of the existing railroad for approximately 0.35 mile. The northeastern portion of the project area was expected to be disturbed from the realignment of a portion of the railroad between 1998 and 2002 and the construction of I-485 east of the project area. Review of historical maps and aerial imagery suggested a low likelihood for historical above ground structural remains to be located within the project study area.

Pedestrian inspection confirmed disturbance in these areas as well as steep slope within portions of the project area along the existing railroad (see **Figures 18 to 20**). No above ground historic resources were observed during the visual examination of the project area. Prior disturbance and slope along the existing railroad suggest that there is a low potential for intact archaeological sites to be present within the project area. No shovel testing was conducted in this area.

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Figure 18: Gravel Road within the Project Area, facing Northeast



Figure 19: Residential Area within the Project Area, facing Northeast



Figure 20: Slope and Gravel Corridor (Former Railroad Alignment) within Facing East/Northeast

5.2 Mint Hill Storage Yard and Warehouse

Based on review of aerial imagery, it was expected that much of the southern and central-eastern portions of the project area would be largely disturbed from previous clear cutting, road construction, and storm water basin excavations. Pedestrian inspection confirmed that the portions of the project area were disturbed and eroded (see **Figures 21 to 24**). However, some sections of the project area, especially in the western portion, were wooded. The size of the trees suggests clearing of the area within the past 20 years (see **Figures 25 and 26**).

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Figure 21: Former Storm Water Basin in Project Area, facing North/Northeast



Figure 22: Slope and Erosion in Northwestern Portion of Project Area, facing Southeast

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Figure 23: View Along Powerline Corridor in Western Portion of Project Area, facing Northwest



Figure 24: Overgrown Clear Cut Area in Central Portion of Project Area, facing North

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Figure 25: Overview of Western Portion of Project Area, facing Southwest



Figure 26: Overview of Western Portion of Project Area, facing South/Southwest

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Background research indicated that three structures were once located within the project area, and that two had likely been demolished. The probable locations of these structures were inspected for signs of above-ground structural remains. Structural remains were identified in two locations and were recorded as archaeological sites 31MK1172 and 31MK1173 (**Figures 27 and Figure 28a-b**).

31MK1172

UTM: 17S 533325m E 3897647m N

Site Size: 1,693

Elevation: 755 feet amsl

Environmental Setting: Wooded

Soils: CeB2, Cecil sandy clay loam 2–8% slopes, moderately eroded

Nearest Water: 150 meters south, unnamed tributary of Clear Creek

Surface Visibility: 0–25%

Field Procedures: Pedestrian Survey and Shovel Testing (n=15)

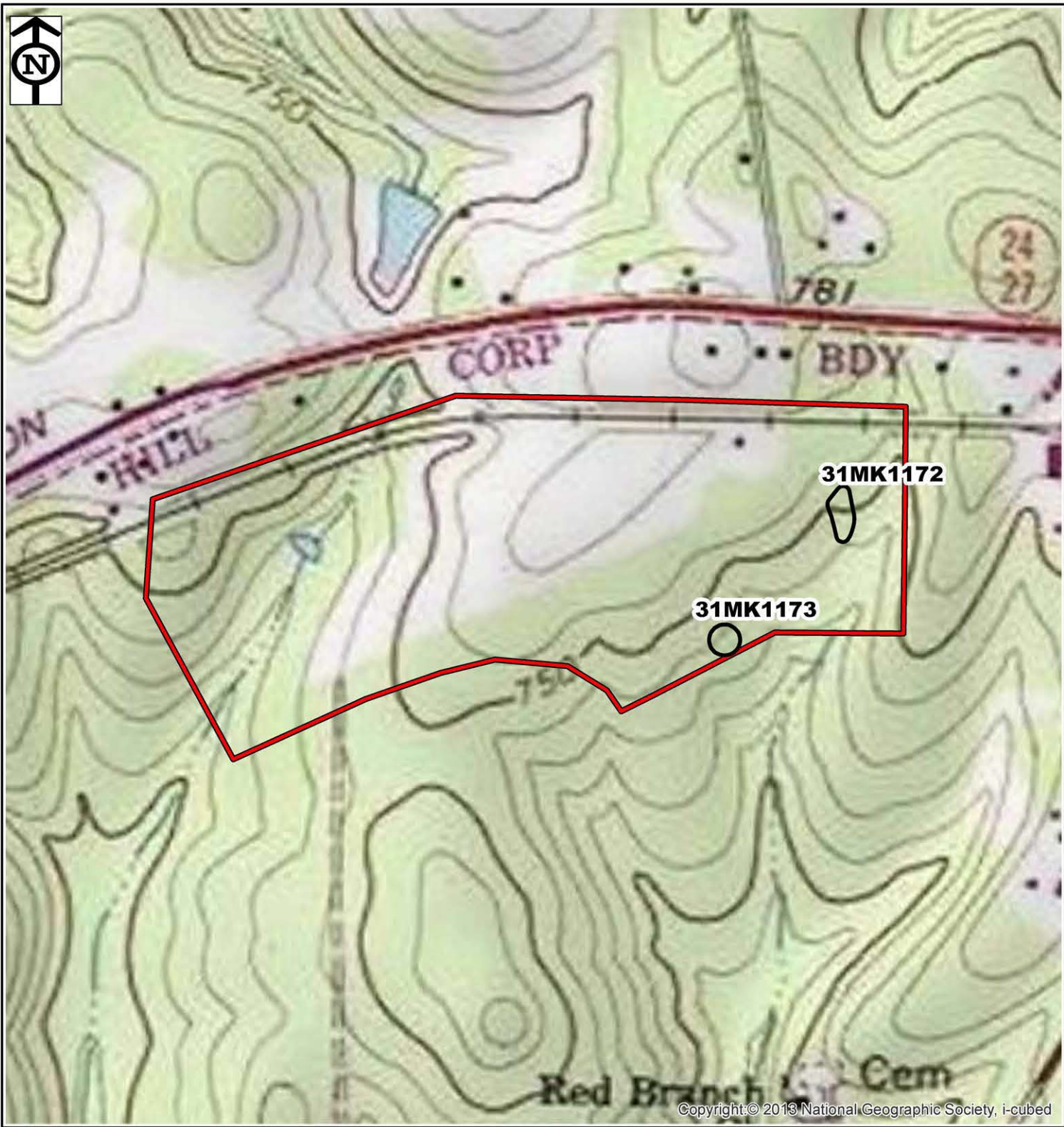
Cultural Affiliation: Historic–Mid-19th to 20th Century

Site Function: Domestic

Site Integrity: Poor

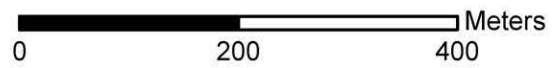
Site Description: Aerial photography from 1956 showed a structure in this location. Visual inspection of this area revealed structural remains consisting of a concrete pad, stone retaining walls, and rubble piles of concrete and stone (**Figure 28a; Figures 29 to 31**). The concrete pad measured approximately 7-x-2 m (N/S-x-E/W) and was situated approximately 6 meters north of the remains of stone walls situated within the ground (possible garage or outbuilding). The stone wall remains measured approximately 14.5 x 8 meters. Cast concrete entry stairs were located on the western edge of the structural remains (**Figure 32**).

Evidence of prior disturbance to the area included a ditch within the eastern portion of the site. An old storm water basin, constructed by the previous landowner, is located south of the site. Modern trash was noted at the surface near shovel test d8, and plastic shopping bag fragments were noted in shovel test d14 but were not collected.



Legend

- Project Area
- Site Boundary



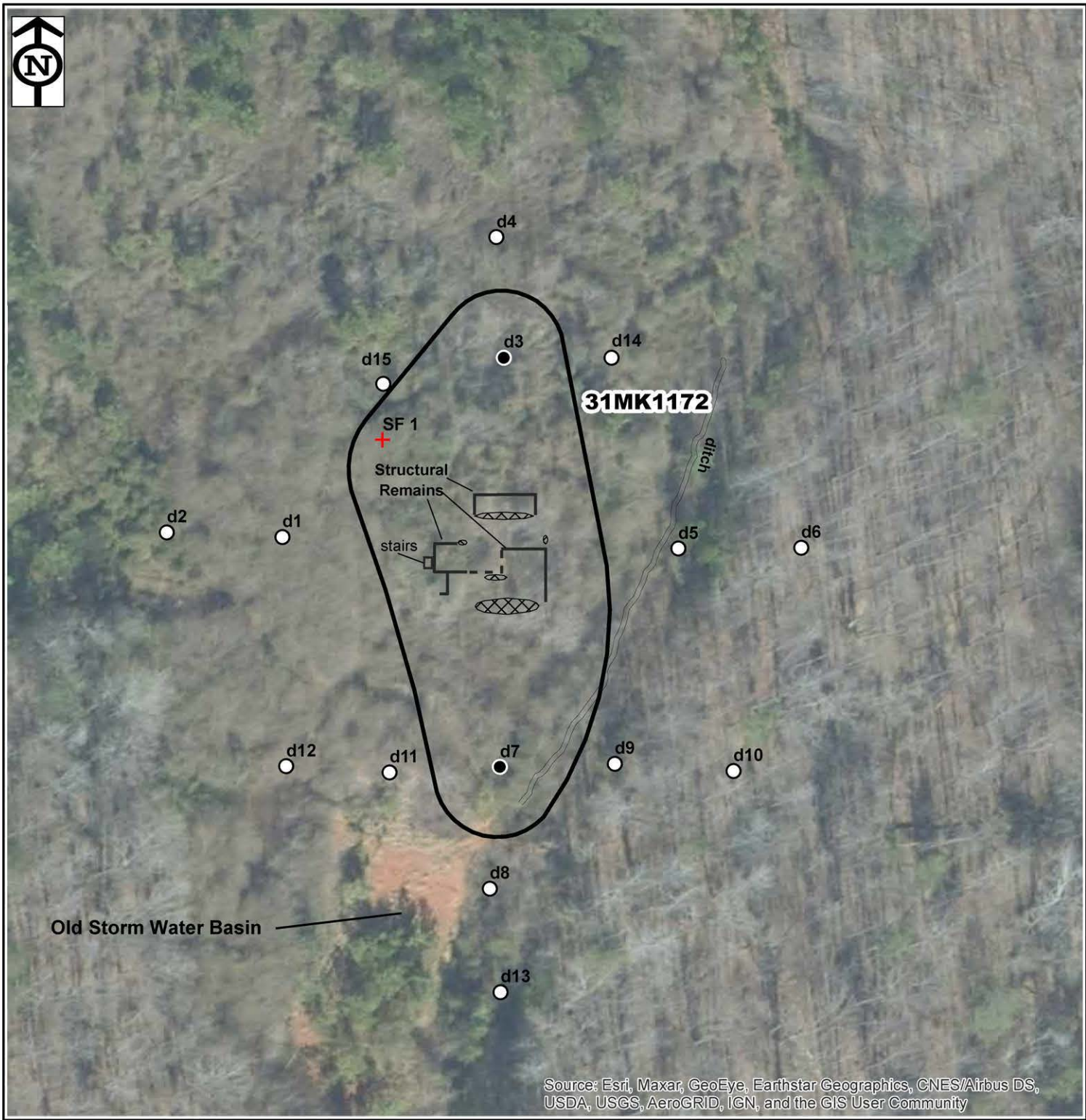
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Date:	November 2021

Terracon

2401 Brentwood Road, Suite 107 Raleigh, NC 27604
 Phone: (919) 873-2211 Fax: (919) 873-9555

Site Locations
Mint Hill Storage Yard and Warehouse Mecklenburg County, North Carolina

FIGURE NO.
27



Legend

Site Boundary

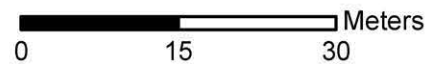
Rubble

Shovel Tests

Negative

Positive

Surface Find



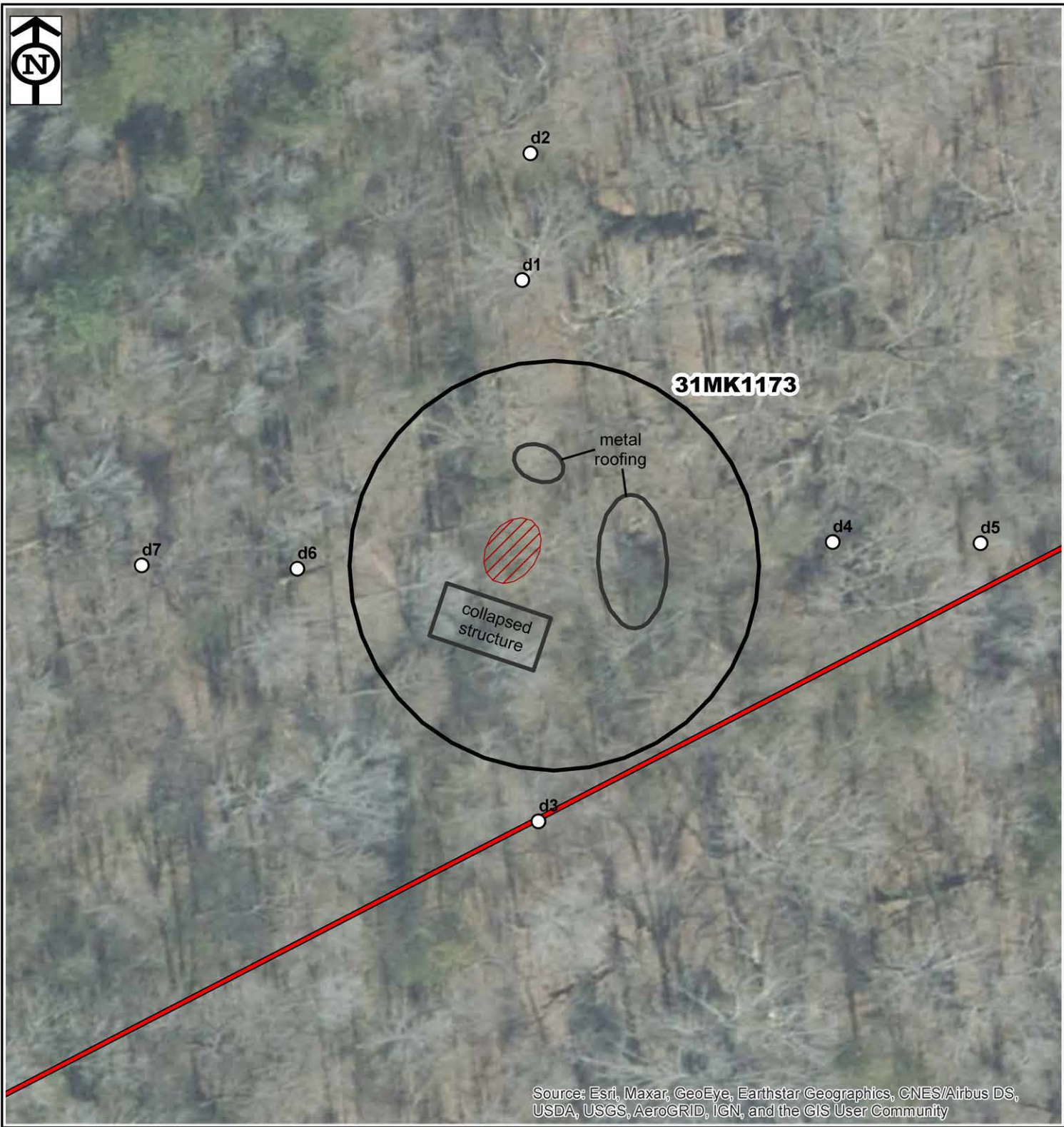
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Shovel Test Locations
Mint Hill Storage Yard and Warehouse Mecklenburg County, North Carolina

FIGURE NO.
28a

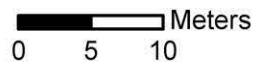


Legend

- Project Area
- Structural Remains
- Site Boundary
- Brick Pile

Shovel Tests

- Negative
- Positive



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Date:	November 2021

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Shovel Test Locations
Mint Hill Storage Yard and Warehouse Mecklenburg County, North Carolina

FIGURE NO.
28b

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ACWR Congestion Mitigation Program ■ Multiple Counties, NC

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Figure 29: Structural Remains at 31MK1172, facing South



Figure 30: Structural Remains at 31MK1172, facing Northeast

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Figure 31: Structural Remains at 31MK1172, facing Southeast



Figure 32: Concrete Stairs at 31MK1172, facing Southeast

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Fifteen shovel tests were excavated at 15-meter intervals around the structural remains. Two shovel tests, d3 and d7, yielded six artifacts and 5.2g of brick (**Table 2**). In addition, one piece of whiteware was recovered from the surface northwest of the structural remains (Surface Find [SF] 1).

Table 2: Site 31MK1172 Artifacts

Prov.	Strat.	Depth (cm)	Component	Description	n=
SF01	0	surface	Historic	Ceramic: porcelain, undecorated	1
d03	I	0-25	Historic	Brick	5.2g
				Glass: aqua, curved	1
				Metal: iron, cut nail	1
				Metal: iron, wire nail	1
				Metal: shotgun shell cap	1
d07	I	0-25	Historic	Ceramic: porcelain, undecorated	1
				Glass: brown, curved	1
Total					7

The artifacts included two pieces of glass (aqua and brown), two nails (one wire, one cut), a shotgun shell cap, and two pieces of porcelain. All of the subsurface artifacts were found in the first stratum.

Soils encountered in the shovel tests were eroded, and generally consisted of 10 to 25 centimeters of strong brown, yellowish red, or reddish brown clay loam or loamy clay over red or yellowish red clay (see **Figure 33** for a representative shovel test profile).



Figure 33: 31MK1172 d4 Profile

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Summary and Recommendations: This site is represented by a low density scatter of historic artifacts and structural remains. Review of historical aerial photographs indicate that a structure was located in this vicinity as early as 1956; however, the structure appears to have been purposefully demolished, as structural debris was largely limited to foundation remnants.

No intact structural remains or cultural features were encountered at the site. This site does not have the potential to yield significant information pertaining to the historic occupation of the area and is recommended *Not Eligible* for the NRHP under Criteria A–D.

31MK1173

UTM: 17S 533180m E 3897475m N

Site Size: 1,231

Elevation: 755 feet amsl

Environmental Setting: Wooded

Soils: CeB2, Cecil sandy clay loam 2–8% slopes, moderately eroded

Nearest Water: 100 meters east, unnamed tributary of Clear Creek

Surface Visibility: 0–25%

Field Procedures: Pedestrian Survey and Shovel Testing (n=7)

Cultural Affiliation: Historic–Mid- 20th Century

Site Function: Agricultural

Site Integrity: Poor

Site Description: Aerial photography from 1956 showed a structure in this location. Visual inspection of this area revealed structural remains consisting of a small collapsed structure (wood frame with metal roofing) near two fence posts, piles of metal roofing, and a brick pile (**Figure 28b; Figures 34 to 36**). Seven shovel tests were excavated at 15-meter intervals around the structural remains; no artifacts were recovered.

Soils in the shovel tests were eroded and generally consisted of 5 to 10 centimeters of dark brown or brown sandy clay loam over red clay (see **Figure 37** for a representative shovel test profile).

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Figure 34: Collapsed Structure and Fence Posts at 31MK1173, facing Southeast



Figure 35: Brick Pile at 31MK1173, facing East

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Figure 36: Metal Roofing at 31MK1173, facing North/Northwest



Figure 37: 31MK1173 d6 profile

Summary and Recommendations: This site consists of historic period structural remains. Review of historical aerial photographs indicate that a structure was located in this vicinity as early as

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1956. The size of the debris pile suggests this structure represented a small barn or other outbuilding and not a domestic dwelling.

No artifacts were recovered from the site, and no intact structural remains or cultural features were encountered. This site does not have the potential to yield significant information pertaining to the historic occupation of the area and is recommended *Not Eligible* for the NRHP under Criteria A–D.

5.3 Midland Siding

Based on the background research, it was expected that much of the Midland Siding project area would be wooded, with the exception of a cleared area in the western portion of the project area. The area was expected to be disturbed given its immediate proximity to the existing railroad.

Review of historical maps and aerial imagery suggested a low likelihood for historical above ground structural remains to be located within the project area.

Pedestrian inspection confirmed disturbance in the western portion of the project area (**Figure 38**). Aside from this disturbance and the disturbance related to the construction of the railroad, much of the surrounding wooded areas appeared to be largely undisturbed. While much of the area was level, several areas of steep slope were observed. See **Figures 39 to 42** for general project area photographs. No shovel testing was conducted in this area.



Figure 38: Cleared Portion of the Midland Siding Project Area, facing East

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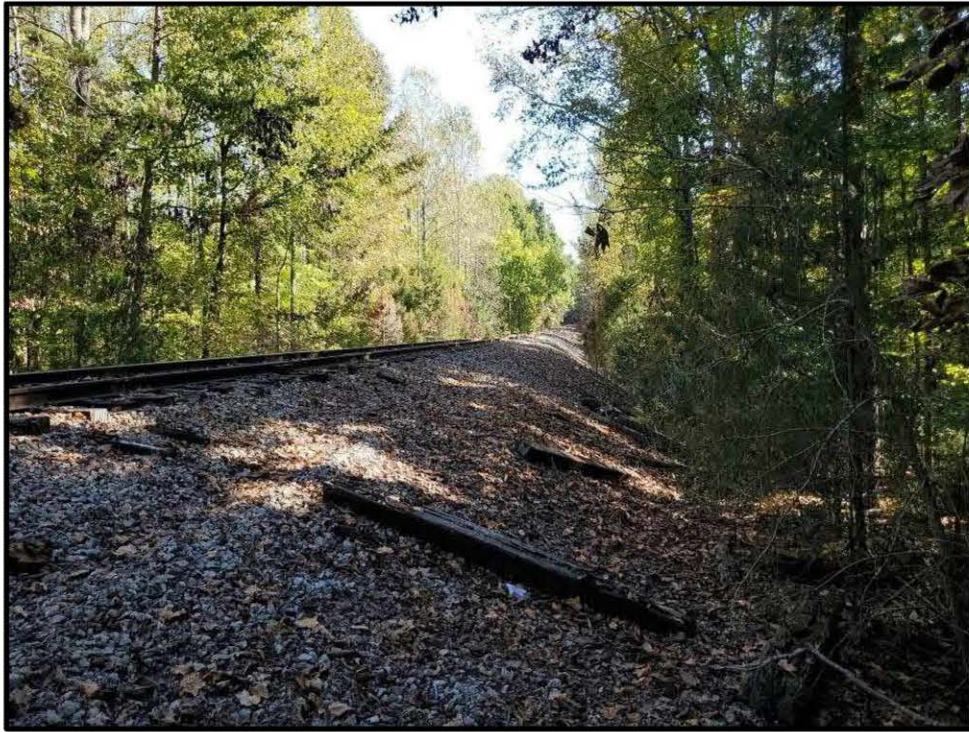


Figure 39: View along the Existing Railroad , facing East



Figure 40: Overview of the Midland Siding Project Area, facing East

Proposal for Cultural Resource Services

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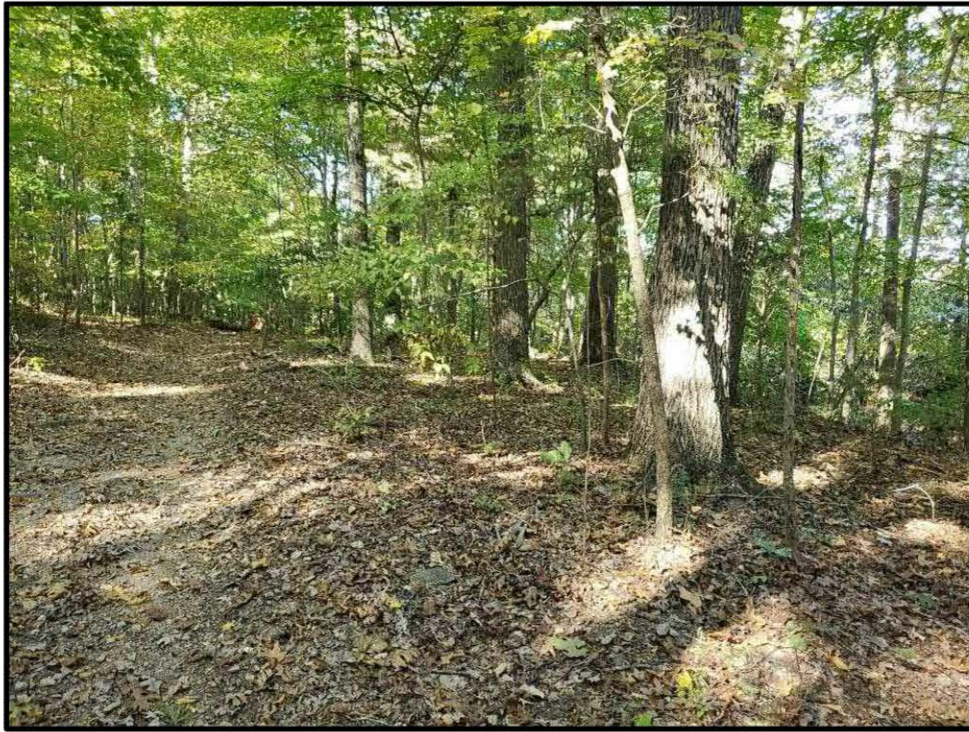


Figure 41: Overview of the Midland Siding Project Area, facing West



Figure 42: Slope within the Midland Siding Project Area, facing West

5.4 ACWR HQ Phase 3 Storage Yard

Based on review of aerial imagery, it was expected that portions of the project area would be disturbed from previous clearing related to the construction of the industrial building south of the project area.

Although recent aerial imagery shows the project area as wooded, the field visit to the property revealed that the area had recently been clear cut, and push piles of soil and tree debris were scattered across the area (see **Figures 43 to 47** for project area photographs). Vegetation in the area consisted primarily of dog fennel and various grasses, and surface visibility was generally high across much of the area. A large eroded channel crosses through the western portion of the area (**Figure 46**), and a small section of the area just northwest of where the railroad intersects NC 211 consisted of a young, managed pine stand (**Figure 47**).



Figure 43: Project Area Overview, facing North/Northeast

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Figure 44: Project Area Overview, facing Southeast



Figure 45: Burn Pile within Project Area, facing Southwest

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Figure 46: Erosion in the Project Area, facing South



Figure 47: Wooded Portion of Project Area, facing West

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Background research indicated that a structure may have been located within or near the northwestern portion of the project area, and that three possible outbuildings were situated within the area in 1993.

Pedestrian inspection did not reveal any above ground structural remains within the project area. However, several artifacts were observed on the surface in areas of clear visibility. As a result, two archaeological sites were recorded (31MG2238 and 31MG2239; **Figures 48 and 49**). Limited shovel testing was conducted at these sites. The results of the investigations are described below.

31MG2238

UTM: 17S 616495m E 3907325m N

Site Size: 180m²

Elevation: 705 feet amsl

Environmental Setting: Clear Cut

Soils: AuA, Autryville sand, 0–3% slopes

Nearest Water: 200 meters northwest, unnamed tributary of Mill Creek

Surface Visibility: 50–100%

Field Procedures: Pedestrian Survey and Shovel Testing (n=8)

Cultural Affiliation: Prehistoric–Lithic (Unknown Subperiod)

Site Function: Limited Activity

Site Integrity: Poor

Recommendations: Not Eligible; No Further Work

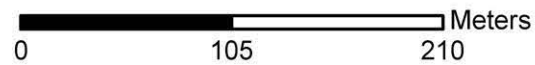
Site Description: Visual inspection in the western portion of the project area yielded two metavolcanic tertiary flakes on the surface (Surface Find [SF]1 and SF2; **Figures 49 and 50**). Delineation shovel testing at 15-meter intervals and additional systematic pedestrian survey recovered no additional artifacts.

Soils encountered in the shovel tests generally consisted of 10 to 25 centimeters of dark gray or dark grayish brown sand over olive yellow or brownish yellow sand (see **Figure 51** for a typical shovel test profile). The majority of the shovel tests were excavated to 100 cm below surface (cmbs) because subsoil was not encountered. Highly disturbed soils were encountered in shovel test d5 (**Figure 52**), which was located near a linear push pile of soil. This shovel test consisted of alternating bands of dark grayish brown and light olive brown sand and sandy clay loam to 60 cmbs. Olive brown sand was encountered between 60 and 100 cmbs. A piece of modern brown bottle glass was noted at 60 cmbs but was not collected.



Legend

- Project Area
- Site Boundary



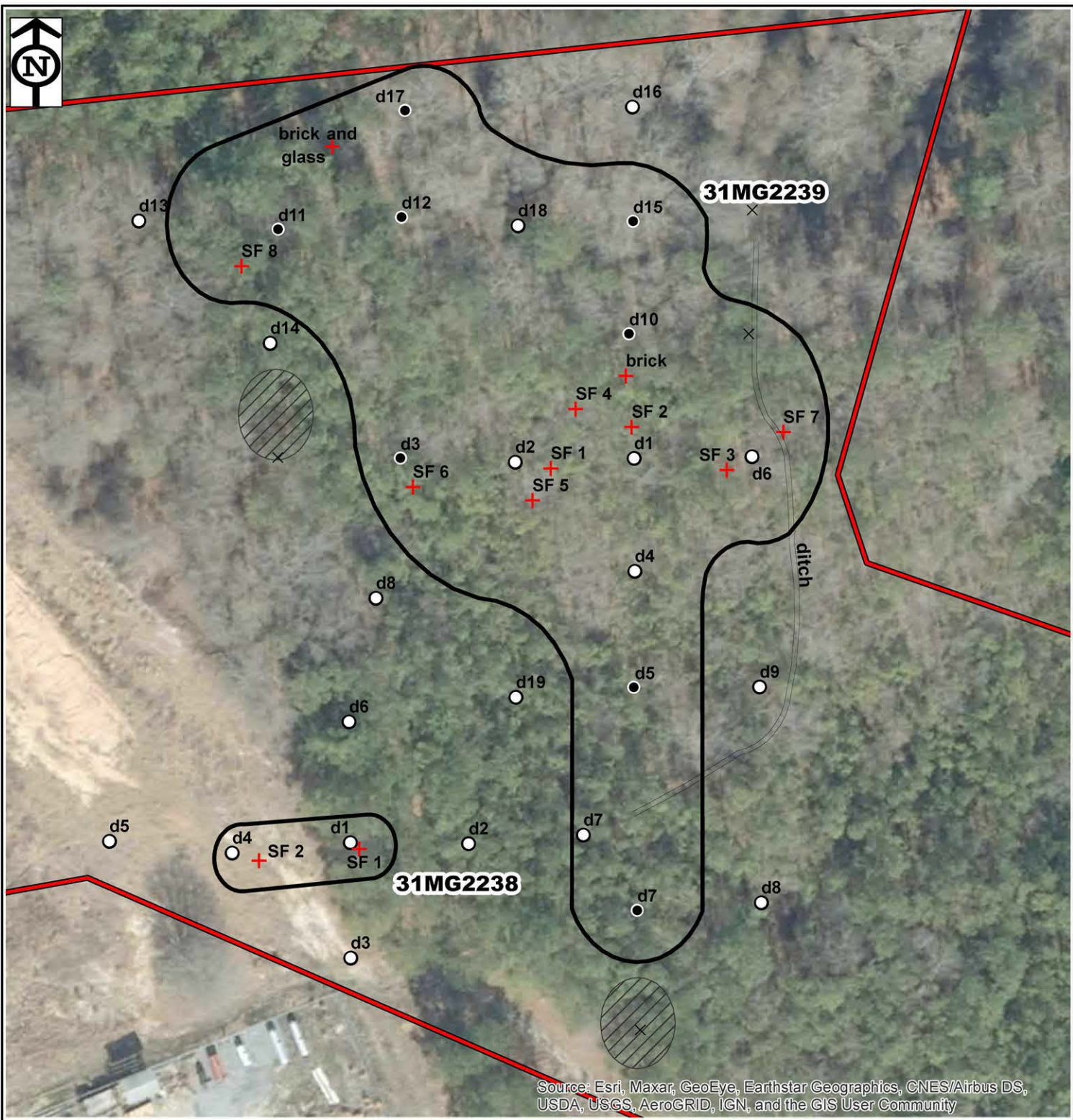
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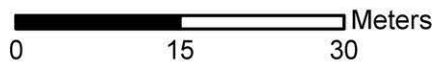
Site Locations
ACWR HQ Phase 3 Storage Yard Montgomery County, North Carolina

FIGURE NO.
48



Legend

- Project Area
- Site Boundary
- Burn Pile
- Shovel Tests**
- Negative
- Positive
- × No Dig
- + Surface Find



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Shovel Test Locations
ACWR HQ Phase 3 Storage Yard Montgomery County, North Carolina

FIGURE NO.
49

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Figure 50: Overview of 31MG2238, facing East



Figure 51: 31MG2238 d1 profile

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Figure 52: 31MG2238 d5 profile

Summary and Recommendations: This site consists of two pieces of nondiagnostic lithic debitage found on the surface of a cleared area. The overall low artifact density does not suggest a significant level of prehistoric activity in this area. This site does not have the potential to yield significant or unique information pertaining to the prehistoric occupation of the area. The site is recommended *Not Eligible* for the NRHP; no additional archaeological work is recommended for this location.

31MG2239

UTM: 17S 616524m E 3907381m N

Site Size: 4,300m²

Elevation: 702 feet amsl

Environmental Setting: Clear Cut

Soils: AuA, Autryville sand, 0–3% slopes; AuB, Ailey loamy sand, moderately wet, 2–8% slopes

Nearest Water: 140 meters northwest, unnamed tributary of Mill Creek

Surface Visibility: 0–85%

Field Procedures: Pedestrian Survey and Shovel Testing (n=20)

Cultural Affiliation: Prehistoric–Woodland; Historic–Mid-19th to 20th Century

Site Function: Prehistoric–Short-Term Habitation; Historic–Domestic

Site Integrity: Poor

Recommendations: Not Eligible; No Further Work

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Site Description: Visual inspection in the western portion of the project area yielded three pieces of metavolcanic debitage, an eroded sand tempered prehistoric ceramic sherd, and a piece of whiteware from the surface (Surface Find [SF] 1 to 3; **Figures 49 and 53**).



Figure 53: Overview of 31MG2239, facing Southwest

Shovel testing at 15- and 30- meter intervals and systematic pedestrian survey yielded an additional 75 artifacts (**Table 3**). A total of twenty shovel tests were excavated at the site, eight of which yielded subsurface artifacts. Only a representative sample of surface artifacts was collected from the site. Additional historic artifacts, including glass, ceramics, and brick, were noted primarily in the northwestern portion of the site but were not collected. A deep eroded channel runs along the eastern side of the site.

Of the 80 artifacts collected from the site, 22 were recovered from the surface, and 58 were recovered from the subsurface. Of those, 54 were recovered from the first stratum, and four were found in the second stratum.

Table 3: Site 31MG2239 Artifacts

Prov.	Strat.	Depth (cm)	Component	Description	n=
SF01	0	surface	Prehistoric	Lithic: metavolcanic debitage	1
				Ceramic: sand temper, UID	1
SF02	0	surface	Prehistoric	Lithic: metavolcanic debitage	1
SF03	0	surface	Historic	Ceramic: whiteware, undecorated	1
			Prehistoric	Lithic: metavolcanic debitage	1
SF04	0	surface	Historic	Ceramic: whiteware, undecorated	1
SF05	0	surface	Historic	Glass: light aqua, flat	1
			Prehistoric	Lithic: quartz PPK tip	1
SF06	0	surface	Historic	Ceramic: whiteware, undecorated	1
				Glass: light amethyst, bottle	1
SF07	0	surface	Historic	Glass: light aqua, bottle	1
				Glass: milk, canning lid seal	1
SF08	0	surface	Historic	Ceramic: whiteware, undecorated	2
				Glass: light aqua, bottle	1
				Glass: milk, canning lid seal	1
				Glass: amethyst, curved	1
				Glass: aqua, curved	2
				Ceramic: porcelain, yellow glaze	1
				Ceramic: stoneware, salt glaze	1
d03	I	0-30	Historic	Glass: light aqua, flat	1
				Glass: aqua, curved	1
				Metal: iron, UID	1
			Organic	Bone	7.3g
d05	II	15-30	Prehistoric	Lithic: metavolcanic debitage	1
d07	II	10-40	Prehistoric	Lithic: metavolcanic debitage	1
d10	0	surface	Historic	Glass: clear, curved	1
	II	10-45	Historic	Metal: iron, wire	1
				Brick	6.5g
			Prehistoric	Lithic: metavolcanic debitage	1
d11	I	0-25	Historic	Glass: aqua, curved	2
				Glass: clear, curved	2
d12	I	0-50	Historic	Glass: light aqua, flat	2
				Glass: clear, curved	1
				Glass: clear, jar	1
				Ceramic: whiteware, decal	1
				Glass: green, curved	1
d15	I	0-20	Historic	Glass: clear, curved	1
				Metal: iron, wire	2
d17	I	0-65	Historic	Ceramic: whiteware, undecorated	4

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Prov.	Strat.	Depth (cm)	Component	Description	n=
				Glass: light aqua, flat	2
				Metal: iron, UID	5
				Glass: clear, curved	3
				Brick	6.2g
				Metal: iron, wire	5
				Metal: iron, barbed wire	2
				Metal: iron, nail	8
				Glass: amber, bottle	1
				Glass: clear, flat	3
				Glass: light aqua, curved	1
				Glass: marble, white and black	1
				plastic: button, green	1
			Prehistoric	Lithic: metavolcanic debitage	2
Total					80

The 80 artifacts included 70 historic and 10 prehistoric artifacts. The historic artifacts included 33 pieces of glass including window glass, bottle glass, jar glass, and milk glass canning lid seal fragments. Twelve historic ceramic sherds were recovered, including 10 pieces of whiteware, one piece of stoneware, and one piece of porcelain. Twenty four iron artifacts were collected, including nails, barbed wire, and unidentified corroded iron fragments. One green plastic button was also found. A total of 7.3g of bone and 12.7g of brick were also recovered. The prehistoric artifacts included eight pieces of lithic debitage, one quartz PPK tip, and one eroded sand tempered prehistoric sherd.

Soils encountered in the shovel tests generally consisted of 10 to 30 centimeters of dark gray or dark olive brown sand or loamy sand over olive yellow or brownish yellow sand (see **Figure 54** for a representative shovel test profile). Yellowish brown or yellow sand was typically encountered between 40 and 70 cmbs. Occasionally this yellowish brown third stratum contained a higher clay content and was considered to be sterile subsoil. Some of the shovel tests encountered disturbed soils. For example, shovel test d6 consisted of banded dark grayish brown, dark olive brown, and olive yellow sand up to 65 cmbs. Olive yellow sand was encountered beneath this disturbed layer.

Disturbance was also noted in shovel test d11; two thin pieces of Styrofoam were noted in the first stratum. In d17, historic and prehistoric artifacts were comingled in the first stratum.



Figure 54: 31MG2239 d7 profile

Summary and Recommendations: This site consists of a scatter of prehistoric and historic artifacts. Previous clearing of the area has caused disturbance to the site. Only three of the shovel tests yielded subsurface ceramics from the second stratum, and one of these (d10) contained comingled historic and prehistoric materials.

No intact structural remains or cultural features were encountered at the site. The overall low artifact density and lack of intact stratigraphy suggests that this site does not have the potential to yield significant information pertaining to the prehistoric or historic occupation of the area. This site is recommended *Not Eligible* for the NRHP under Criteria A–D.

5.5 Samarcand Storage and Passing Siding

Based on the background research, it was expected that portions of the Samarcand Storage and Passing Siding project area would be disturbed from previous road construction, residential development, and clear cutting. Pedestrian inspection confirmed disturbance in these areas. In addition, a powerline corridor was observed, which runs parallel to the railroad in the western portion of the project area (see **Figures 55 to 58** for general project area photographs).

Review of historical maps and aerial imagery suggested a low likelihood for historical above ground structural remains to be located within the project area. No above ground structures or structural remains were noted. Portions of the area exhibited high surface visibility, but no artifacts were observed. No shovel testing was conducted in this area due to prior disturbance.

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Figure 55: Powerline Corridor within the Project Area, facing East/Southeast



Figure 56: Powerline Corridor within the Project Area, facing Southeast

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Figure 57: Project Area Overview, facing West/Northwest



Figure 58: View along Eagle Springs Road within Project Area, facing West

6.0 SUMMARY AND RECOMMENDATIONS

This archaeological reconnaissance of the five project areas was conducted by Terracon of Raleigh, North Carolina, at the request of ACWR. The FRA is providing financial assistance to ACWR to construct new facilities including passing and storage sidings, storage yards, and a new warehouse.

The goal of this limited field reconnaissance was to assess current site conditions to ascertain whether the project areas have the potential to contain intact archaeological resources or contain standing historic-period structures as well as to provide site-specific information to support Section 106 consultation.

Background research was conducted by the OSA on behalf of Terracon. In addition, Terracon examined readily available and relevant historical aerial photographs and maps in an attempt to locate possible historical structure or feature locations within the proposed project boundaries. Field methods employed by Terracon during the investigation included visual (pedestrian) survey. In addition, limited shovel testing was conducted at four newly recorded archaeological sites.

As a result of the investigations, four new archaeological sites were recorded (31MK1172, 31M1174, 31MG2238, and 31MG2239). Sites 31MK1172 and 31MK1173 are located within the Mint Hill Storage Yard and Warehouse project area, and site 31MG2238 and 31MG2239 are located within the ACWR HQ Phase 3 Storage Yard project area. None of the sites are recommended eligible for the *National Register of Historic Places* (NRHP).

In general, the project areas appeared to be largely disturbed by previous clear cutting and earth moving activities, particularly the proposed Mint Hill Storage Yard and Warehouse and the proposed ACWR HQ Phase 3 Storage Yard. The proposed siding study areas are located immediately adjacent to existing rail lines and are likely disturbed.

Due to prior disturbance and a lack of subsurface integrity for the archaeological sites recorded, the proposed project should be allowed to proceed without concern for impacts to significant cultural resources. However, if the project boundaries are modified outside of the current project area and federal permitting is anticipated, additional coordination with the SHPO would be necessary to determine if additional cultural resource investigations would be required.

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November 4, 2021 ■ Terracon Project No. 7021P151



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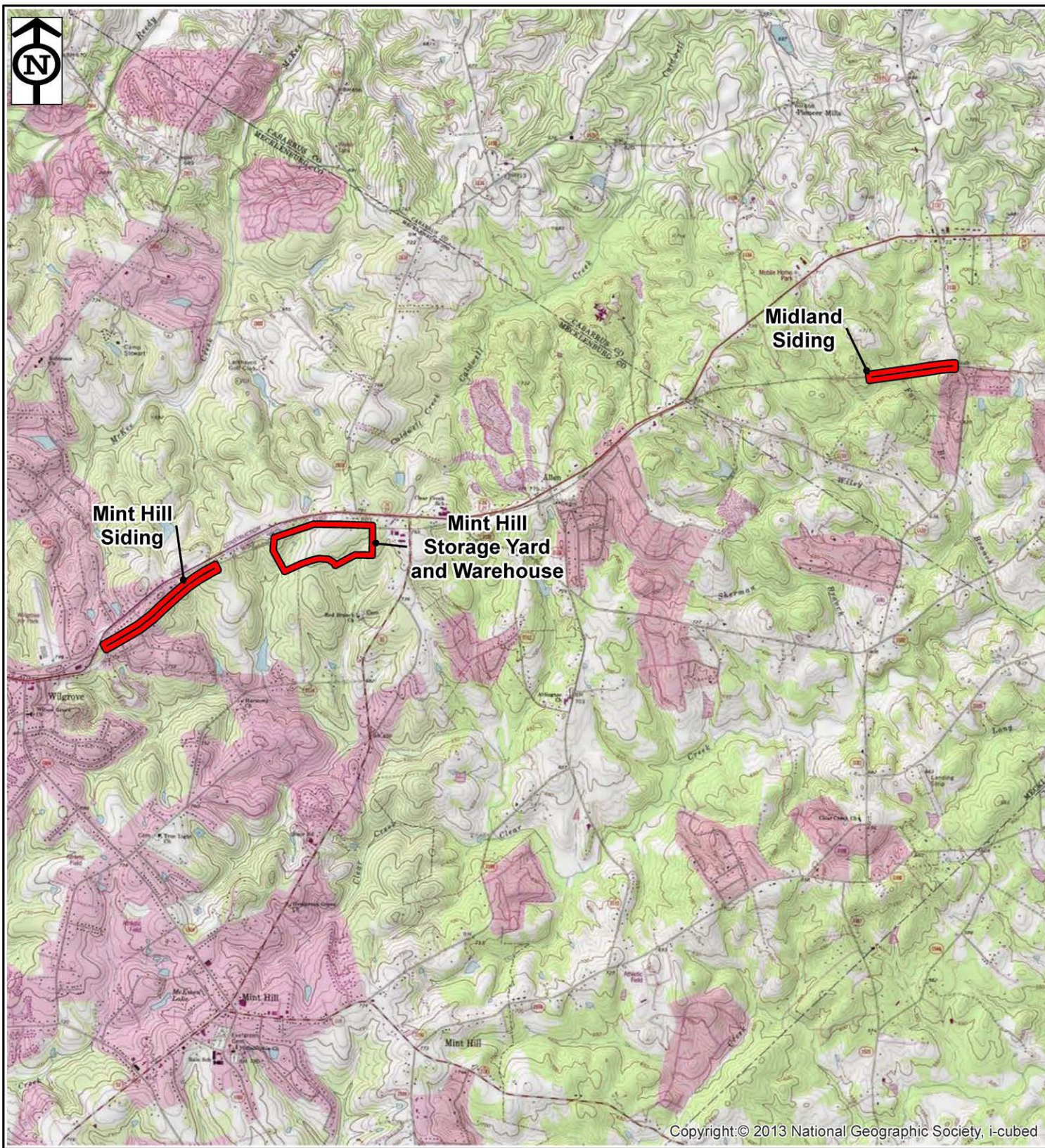
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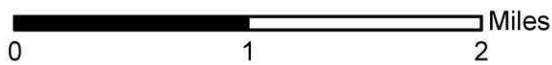
Turner, William B.

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Legend

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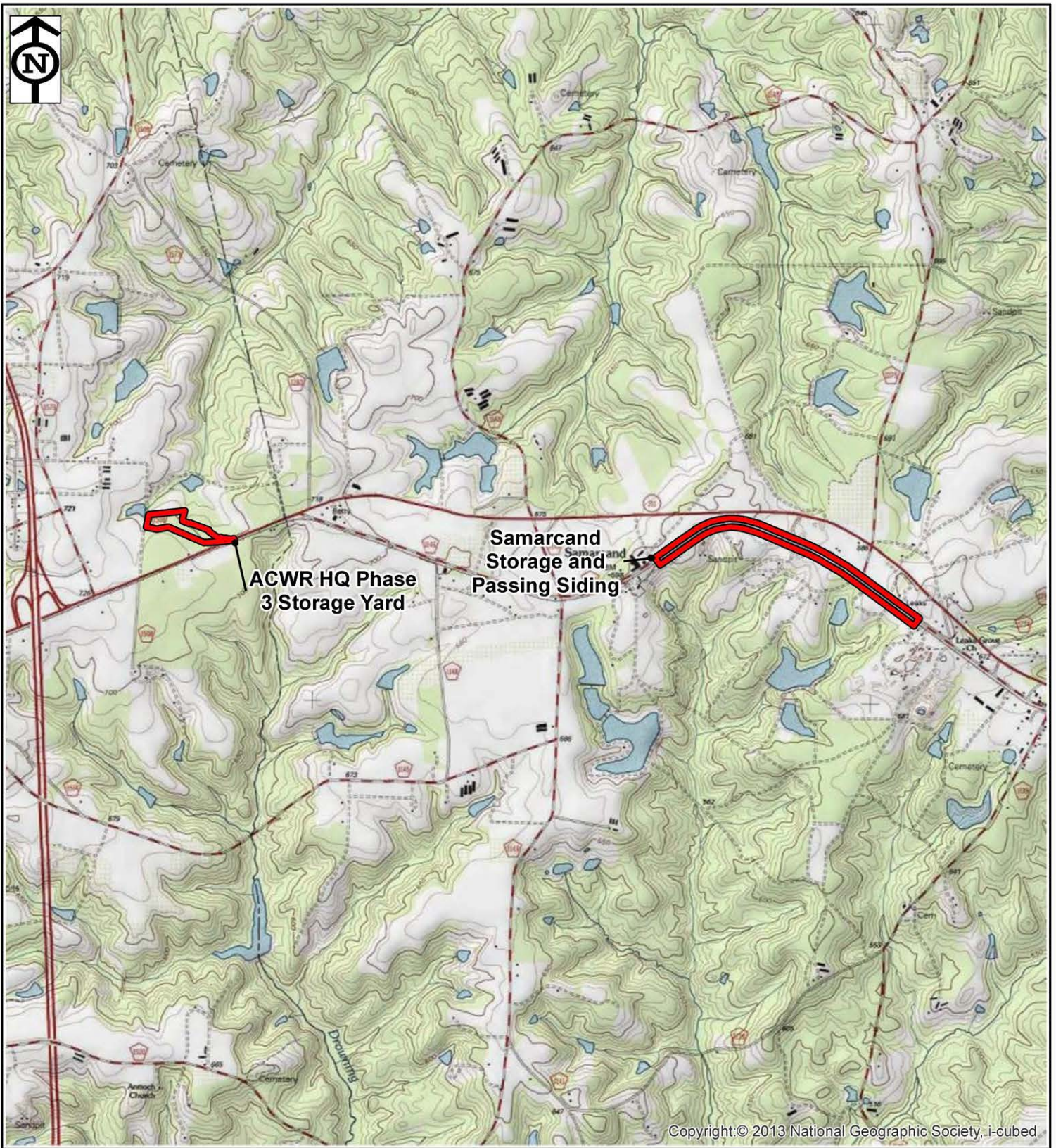
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Topographic Map

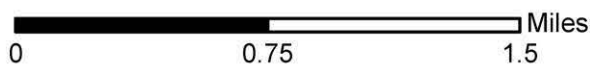
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FIGURE NO.
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Project No.:	7021P151
Date:	November 2021

Terracon

2401 Brentwood Road, Suite 107 Raleigh, NC 27604
 Phone: (919) 873-2211 Fax: (919) 873-9555

Topographic Map

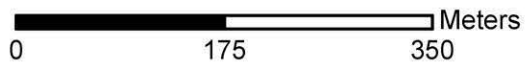
ACWR Congestion Mitigation Program
 Multiple Counties, North Carolina

FIGURE NO.
1b



Legend

 Project Area



PM:	TR
Drwn/Chkd:	MM/TR
Project No.:	7021P151
Date:	November 2021

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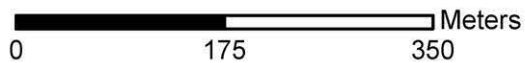
Project Area Locations
ACWR Congestion Mitigation Program Multiple Counties, North Carolina

FIGURE NO.
2



Legend

 Project Area



PM:	TR
Drwn/Chkd:	MM/TR
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Project Area Locations
ACWR Congestion Mitigation Program Multiple Counties, North Carolina

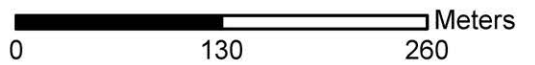
FIGURE NO.
3



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

 Project Area



PM:	TR
Drwn/Chkd:	MM/TR
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Project Area Locations
ACWR Congestion Mitigation Program Multiple Counties, North Carolina

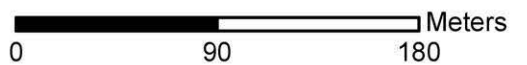
FIGURE NO.
4



Source: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

 Project Area



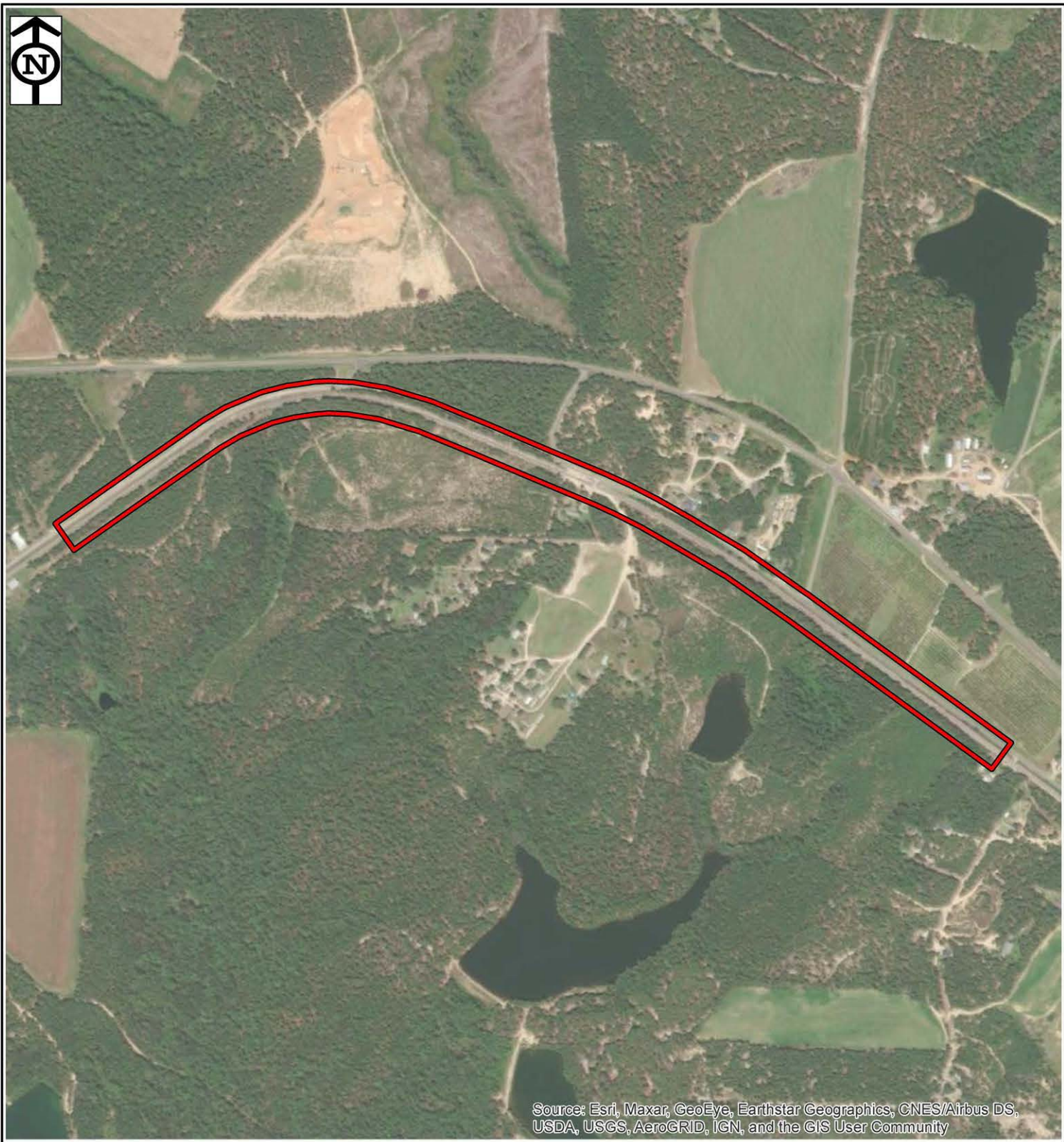
PM:	TR
Drwn/Chkd:	MM/TR
Project No.:	7021P151
Date:	November 2021

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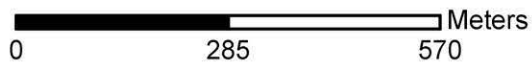
Project Area Locations
ACWR Congestion Mitigation Program Multiple Counties, North Carolina

FIGURE NO.
5



Legend

 Project Area



PM:	TR
Drwn/Chkd:	MM/TR
Project No.:	7021P151
Date:	November 2021

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Project Area Locations

ACWR Congestion Mitigation Program
 Multiple Counties, North Carolina

FIGURE NO.
6