



Richard Broughton
Environmental Services Manager
Carolina South District

November 9, 2018

CERTIFIED MAIL
RETURN RECEIPT REQUESTED
7017 3380 0000 3350 5469

Mr. Ed Haigler
Division of Mining and Solid Waste Permitting
Bureau of Land & Waste Management
SCDHEC
2600 Bull Street
Columbia, SC 29201

RECEIVED

NOV 13 2018

DIVISION OF MINING
SOLID WASTE MANAGEMENT
BLWM

RE: Orangeburg Quarry, Permit No. I-000802
Mine Permit Modification Application Addendum #1

Dear Mr. Haigler:

We have received comments from Mr. Mark Caldwell with USF&WS and Mr. Greg Mixon with SCDNR regarding a record of the federally endangered red-cockaded woodpecker (RCW) on the southern portion of our proposed pit expansion area. In response to these comments we hired Three Oaks Engineering, Inc. to conduct a survey of the property. The actual field investigation took place October 29 – 31, 2018. The cavity tree located in 1990 was not located in the field. A single new cavity tree was located approximately 135 yards from the 1990 tree (based on coordinates provided by SCDNR). A copy of the summary report from Three Oaks is enclosed for your files. Please note we are also submitting copies to Mr. Caldwell and Mr. Mixon.

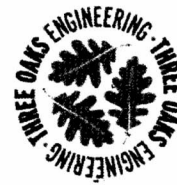
Based on the finding of a single RCW cavity tree, we believe additional coordination with USF&W and SCDNR is necessary. We await their comments and/or guidance in this matter. Should any or all of the agencies involved want to conduct a site visit, we would be more than happy to arrange that.

If you have any questions about this survey or if you wish to discuss this matter further, please email me at richard.broughton@martinmarietta.com or give me a call at 803 978-6275.

Sincerely,

Richard Broughton
Environmental Services Manager
Carolina South District

CC: Mr Mark Caldwell – U.S. Fish & Wildlife Service
Mr. Greg Mixon - S.C. Department of Natural Resources



Three Oaks Engineering, Inc.
1230 Sumter Street, Suite 400
Columbia, South Carolina 29201
(803) 600-3787

November 11, 2018

Richard Broughton
Environmental Services Manager, Martin Marietta
Carolina South Region/Mid-Atlantic Division
8451 Monticello Road
Columbia, SC 29203

RECEIVED

NOV 13 2018

Subject: Martin Marietta Materials, Red-cockaded Woodpecker Review
Orangeburg County, South Carolina Purchase Order #11587320 NB

DIVISION OF MINING
SOLID WASTE MANAGEMENT
BLWM

Dear Mr. Broughton,

Three Oaks Engineering, Inc. is pleased to provide the following summary report of surveying the federally endangered Red-cockaded Woodpecker (RCW) (*Picoides borealis*).

The following Tasks have been performed as part of this contract:

Task 1. Desktop Review

Existing and available natural resource information was collected and reviewed. This information included:

- Aerial photography
- Forest Stand Data (provided by Martin Marietta)
- Soil mapping
- Known locations of protected species and potential habitat
- Literature review for specific habitat requirements

Task 2. Field Investigation

Following the desktop review, a site visit was completed that included an intensive survey for active RCW cavity trees and the known RCW cavity tree identified by the US Fish and Wildlife Service (USFWS). Potential nesting habitats were surveyed by running line transects through stands and visually inspecting all pines for evidence of cavity excavation by RCWs. Transects were spaced so that all trees in suitable nesting habitat are inspected.

Task 3. Technical Report

The results of the desktop review and field investigation are summarized in a brief technical report. The report includes the location of 1 new RCW cavity tree identified during surveys and a discussion of the status of the cavity tree identified by the USFWS. In addition to the cavity trees, the report summarizes the survey results of all available habitat within the project action area.



Martin Marietta Materials, Red-cockaded Woodpecker Survey

Orangeburg County, South Carolina



Prepared For: **Martin Marietta Materials**



Prepared By: **Three Oaks Engineering, Inc.**

November 2018



INTRODUCTION

Martin Marietta Materials, Inc. (Applicant) has applied to the SC Department of Health and Environmental Control (DHEC) to modify the Orangeburg Quarry (limestone), Permit I-000802. The mine is located at 950 County Line Road, Cross, SC in Orangeburg County, approximately 6.0 miles southeast of Eutawville, South Carolina. (See Figure 1. Location Map) The Applicant requests to increase the permitted acreage by 1017.0 acres (to 2120.9 ac.), increase depth 40' (to 125'), and extend the reclamation schedule (from 2045 to 2112). Reclamation is proposed to occur in lakes, woodlands, and grasslands.

Martin Marietta: RCW Survey

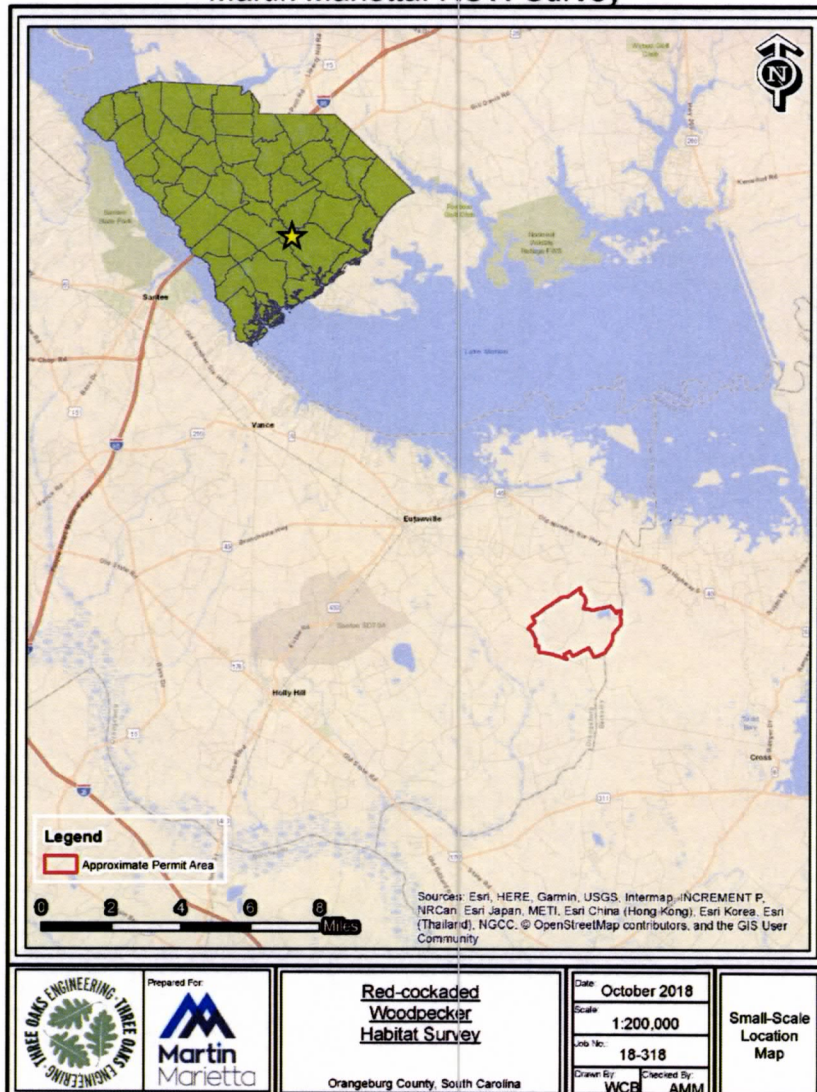


Figure 1. Location Map



During the technical review of the proposal, the US Fish and Wildlife Service (USFWS) notified the Applicant of a known occurrence of the endangered Red-cockaded Woodpecker (RCW), *Picoides borealis*. This occurrence was documented on the property in January 1990 by F.W. Kinard Baughman and the USFWS requested a qualified biologist survey the suitable habitat for the presence or absence of RCW's.

The following Natural Resources Technical Report (NRTR) has been prepared to summarize the methodology and results of a presence/absence survey of the proposed expansion property (action area).

METHODOLOGY

The methodology was developed in accordance with the USFWS Survey Protocol for RCW's as described in the *Recovery Plan for the Red-cockaded Woodpecker (Picoides borealis): second revision* (USFWS, 2003). The first step of this methodology included a desktop review of available data. Aerial photography, forest stand data, soil mapping and known element of occurrence records were all used to determine which forest stands would be surveyed for the presence of RCW's. For the purpose of surveying, suitable foraging habitat consists of a pine or pine/hardwood stand of forest, woodland, or savannah in which 50 percent or more of the dominant trees are pines and the dominant pine trees are generally 30 years in age or older (US Fish and Wildlife Service, 2003). Suitable nesting habitat consists of pine, pine/hardwood, and hardwood/pine stands that contain pines 60 years in age or older and that are within 0.8 km (0.5 mi) of the suitable foraging habitat to be impacted at the project site. Additionally, pines 60 years in age or older may be scattered or clumped within younger stands; these older trees within younger stands must also be examined for the presence of red-cockaded woodpecker cavities (USFWS, 2003).

For this project action area, 8 forest stands (Appendix A, Table 1.) were identified that met or came close to meeting the requirements of the nesting or foraging habitat as described above, and one element of occurrence record indicated a previously identified RCW cavity tree. The stands indicated as having pines greater than 25 years old were identified as potential foraging habitat and all stands with pines greater than 50 years old were also identified as potential nesting habitat (see Figure 2. Forest Stand Map).

Stand #	Timber Stands		Last Burned
	Species	Age	
24	Loblolly	26	2015
30	Loblolly	26	2014/2015
31	Loblolly	25	2013/2014
46	Loblolly	25	2013/2014
57	Longleaf	56	2013/2014
58	Loblolly	28	2013
64	Loblolly	53	2013
101	Loblolly	34	2015

Table 1. Provided by Martin Marietta from MeadWestvaco 2016.

The second step was to complete field surveys of the forest stands identified in step one. The field survey consisted of running line transects spaced between 50 to 100 yards apart and visually inspecting medium and large pines for signs of active RCW cavity excavation. As cavities have a tendency to be western facing (Locke and Conner, 1983), the transects were laid out in a North and South orientation to provide the highest likelihood of locating existing cavities. During these field surveys, the forest stands not identified during the desktop review were visually inspected to ensure no nesting or foraging habitat was missed.

The principal personnel contributing to the field work and report are provided in Appendix B.

RESULTS

All potential forage or nesting habitat found during the desktop analysis and field visit was surveyed for cavity trees. Stands 57 and 64 both had trees beyond 50 years old while stands 24, 30, 31 a & b, 46, 58 and 101 all contain trees between 25 and 35 years old (MeadWestvaco, 2016). Of the 8 forest stands evaluated, only one RCW cavity tree was identified. This tree occurred in stand 57, which was shown to be 56 years old.



Photo 2. Remnant Cavity



Photo 1. Active Cavity

Additional photos of the forest stands are found in Appendix C.



Martin Marietta: RCW Survey

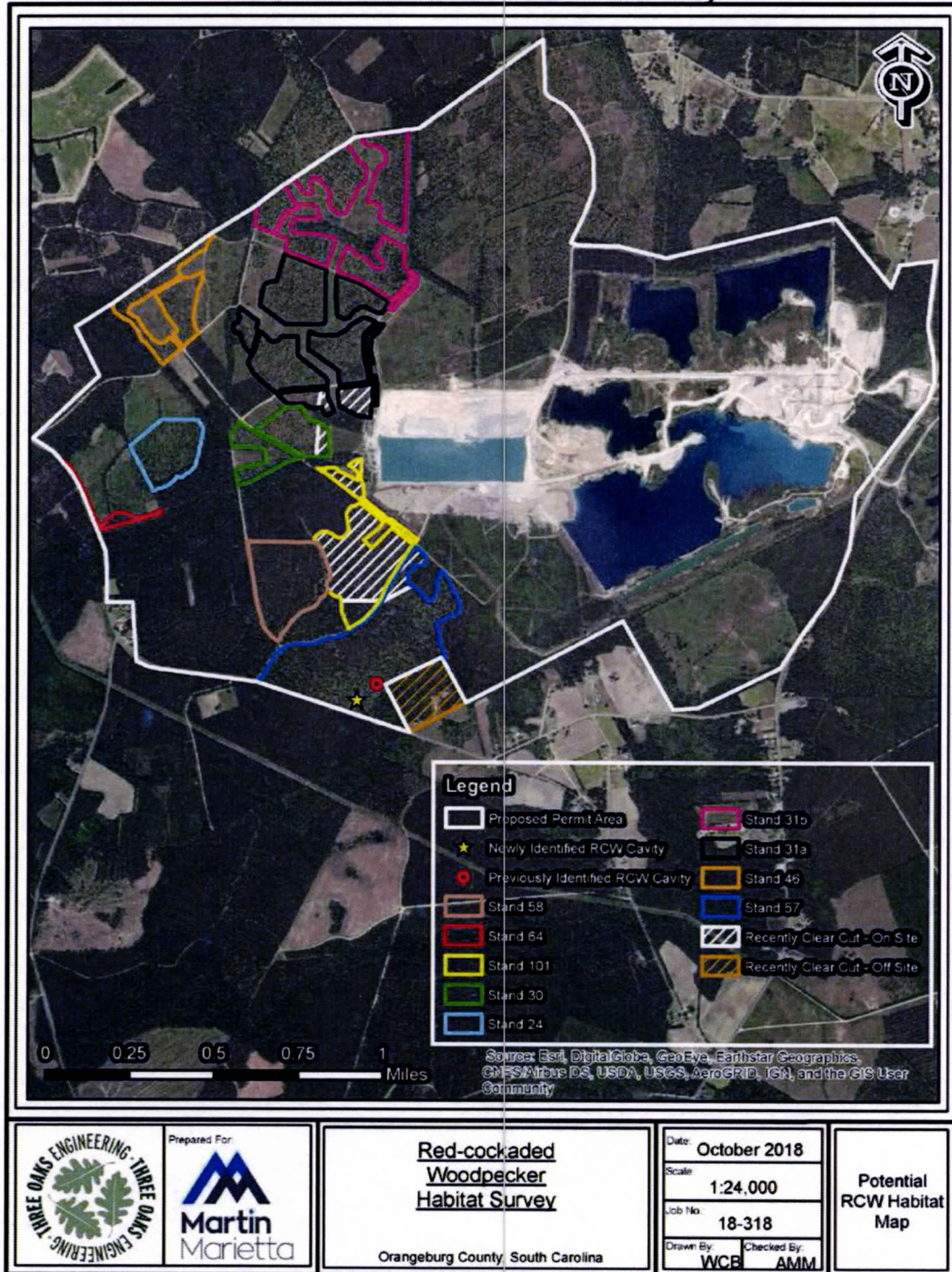


Figure 2. Forest Stand Map

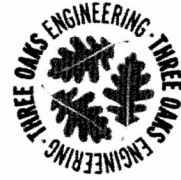


The previously identified RCW cavity tree was not able to be located in the field. GPS coordinates provided by the SC Department of Natural Resource *Elements of Occurrence Database* indicated the tree was located approximately 135 yards from the active cavity tree. Improvements in GPS technology may account for the discrepancy in location, a clerical error when inputting the cavity tree location data may have occurred, or the original cavity tree may have been harvested during past timber management operations.

The current cavity tree has a cavity facing north-northwest (Photo 1) and has remnants of past cavity excavation on the south-southeast face of the tree (Photo 2). The remnant areas show signs of significant damage and excavation that rendered the cavities unusable. The current cavity shows signs of enlargement on both the left and right edges of the cavity excavation and may not have been fully excavated yet. Limited amount of resin candling on the outside of the tree may suggest this is only a cavity start and not a livable cavity. No RCW's were identified around the cavity tree or in the area around the cavity tree.

RECOMMENDATIONS

Based on the identification of one active Red-cockaded woodpecker cavity tree, additional coordination will be needed between the applicant and the US Fish and Wildlife Service. During the next phase of evaluation, it is anticipated a more detailed forest stand analysis will be needed and a plan to avoid and minimize impacts to the RCW will be required. These next steps will determine if the applicant qualifies for management requirements of the SC Safe Harbor Program or if an individual Habitat Conservation Plan will be needed. This plan would include detailed information about the proposed action that may impact the RCW, what steps the applicant will take to minimize and mitigate such impacts, and what alternatives to the proposed action were considered and the reasons why such alternatives are not being utilized (16 U.S.C. §1539).



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16 U.S. Code Chapter 35 § 1531-1544

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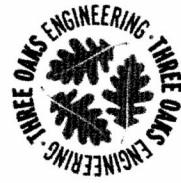
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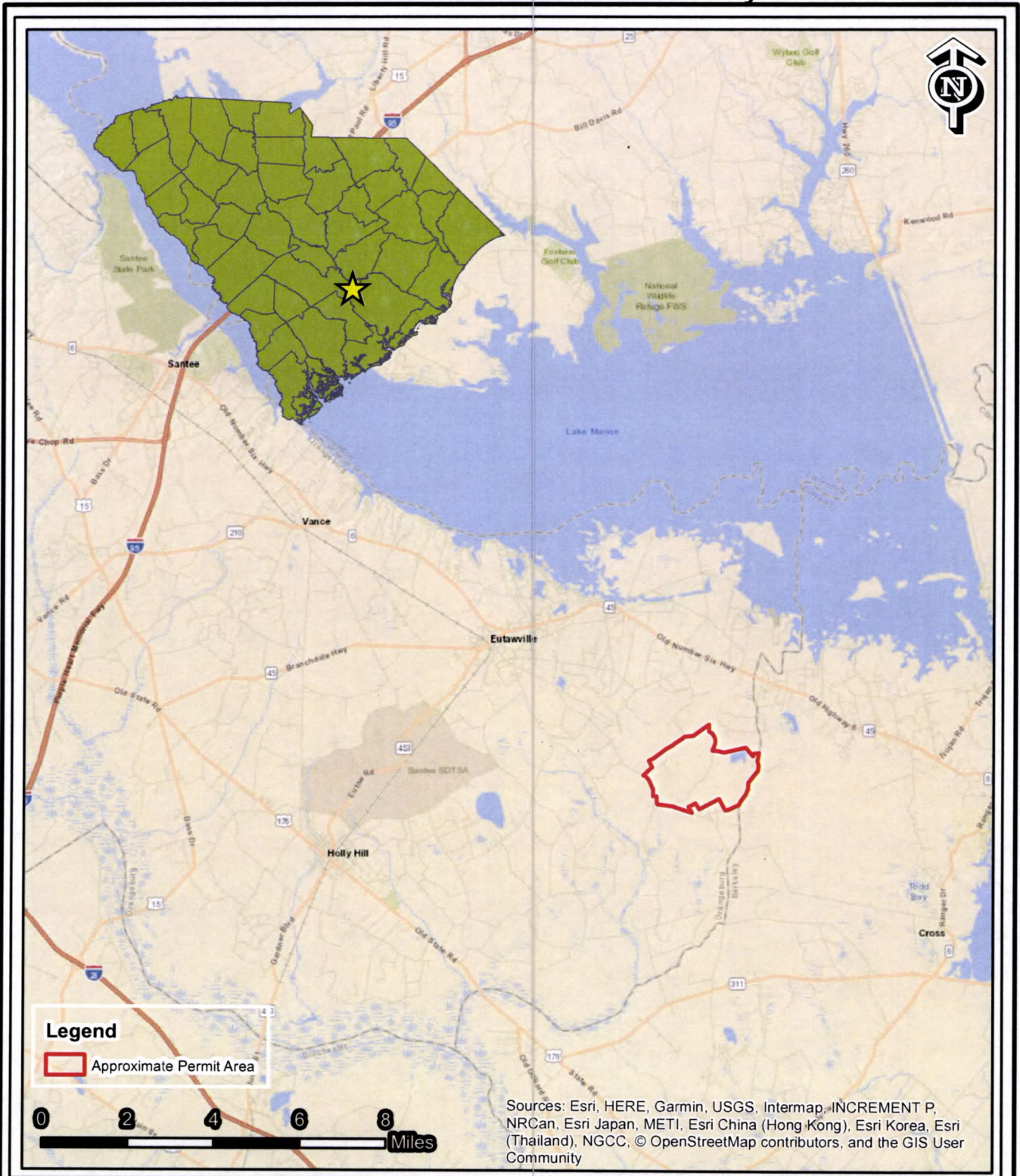
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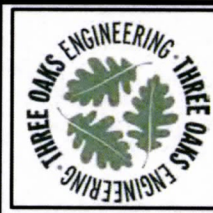
Appendix A

Project Location and Timber Stand Maps

Martin Marietta: RCW Survey



Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, © OpenStreetMap contributors, and the GIS User Community



Prepared For:

Martin Marietta

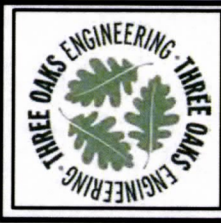
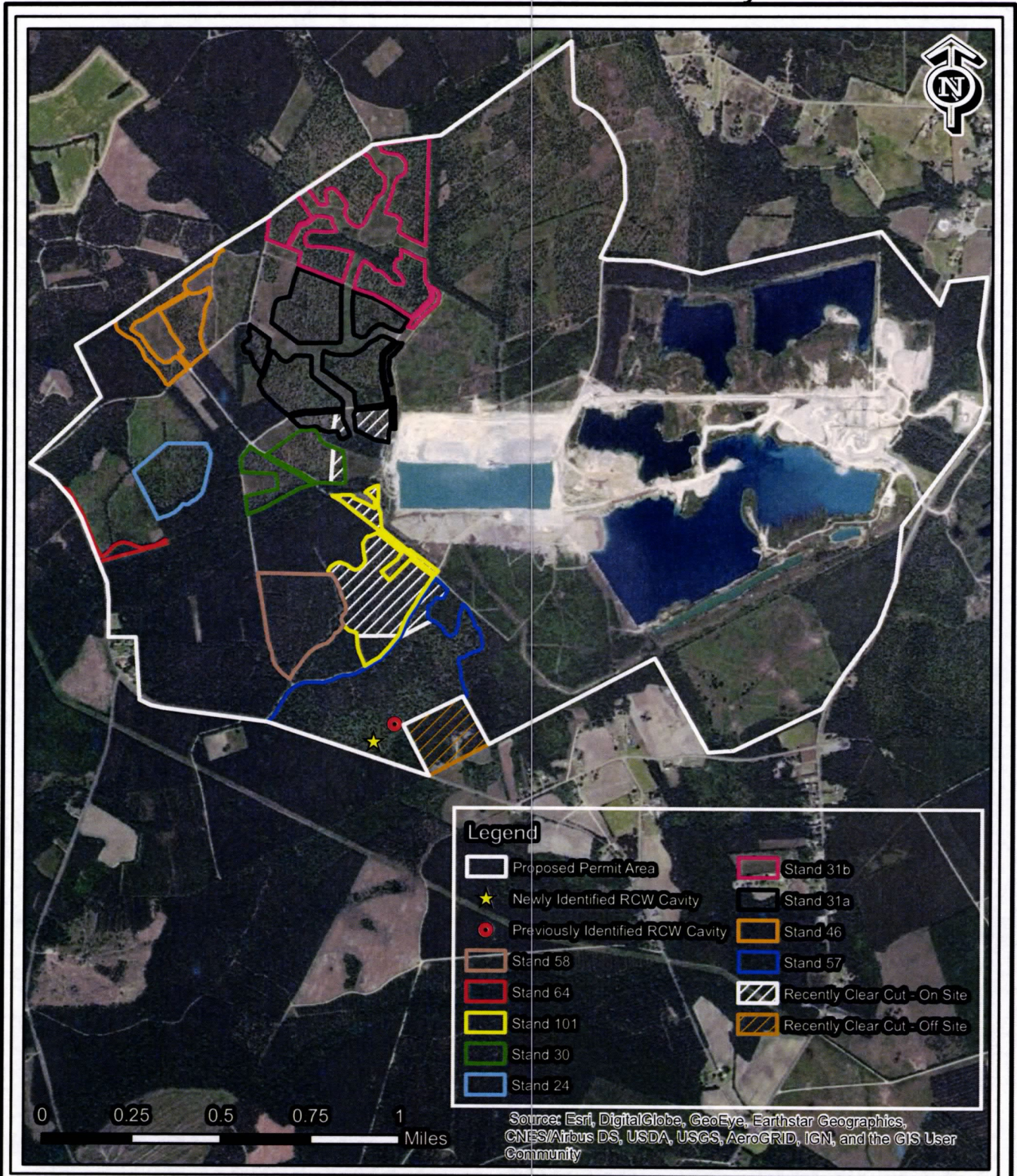
Red-cockaded
Woodpecker
Habitat Survey

Orangeburg County, South Carolina

Date: October 2018
 Scale: 1:200,000
 Job No.: 18-318
 Drawn By: WCB
 Checked By: AMM

Small-Scale
 Location
 Map

Martin Marietta: RCW Survey



Prepared For:

**Red-cockaded
Woodpecker
Habitat Survey**

Orangeburg County, South Carolina

Date: October 2018

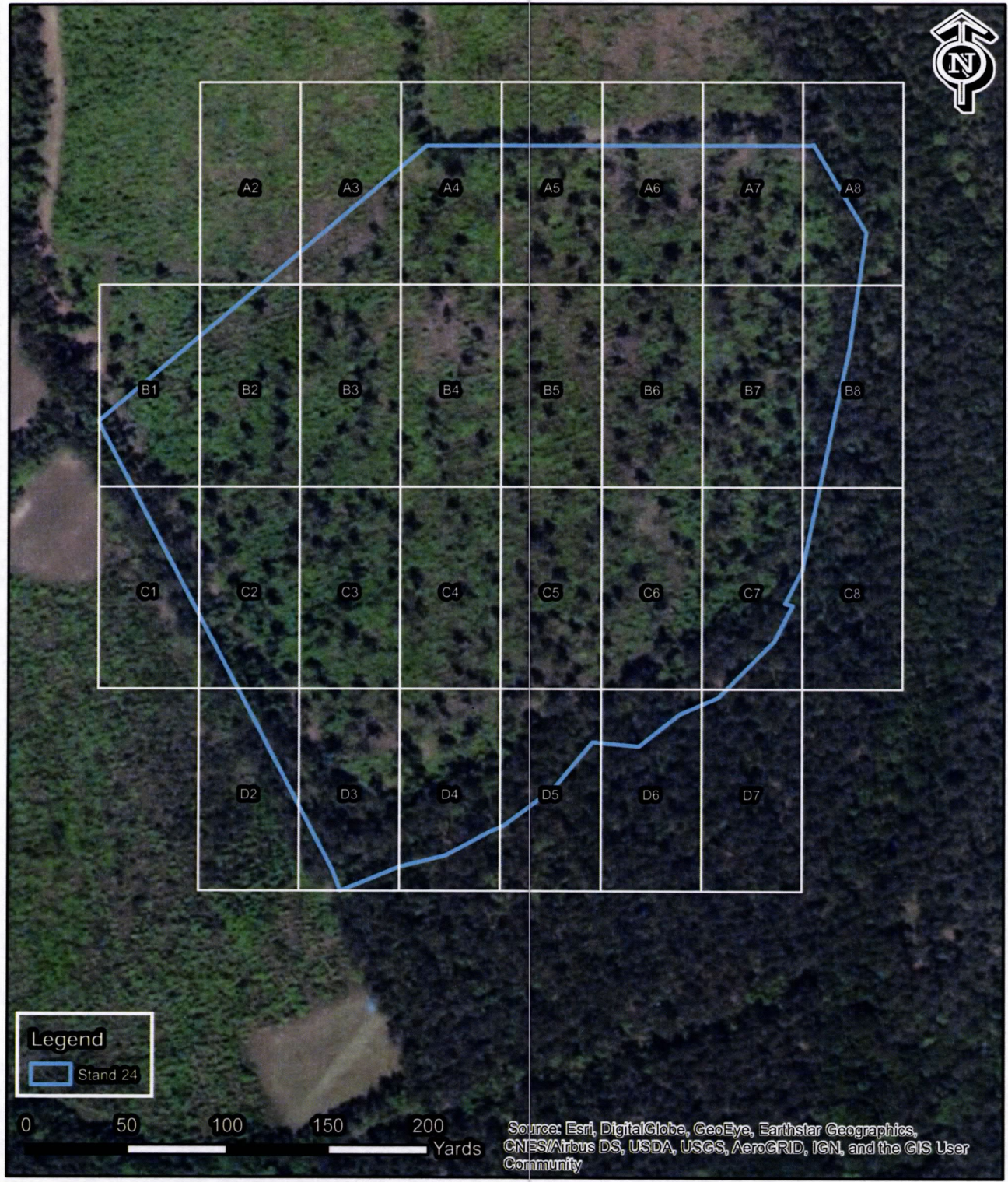
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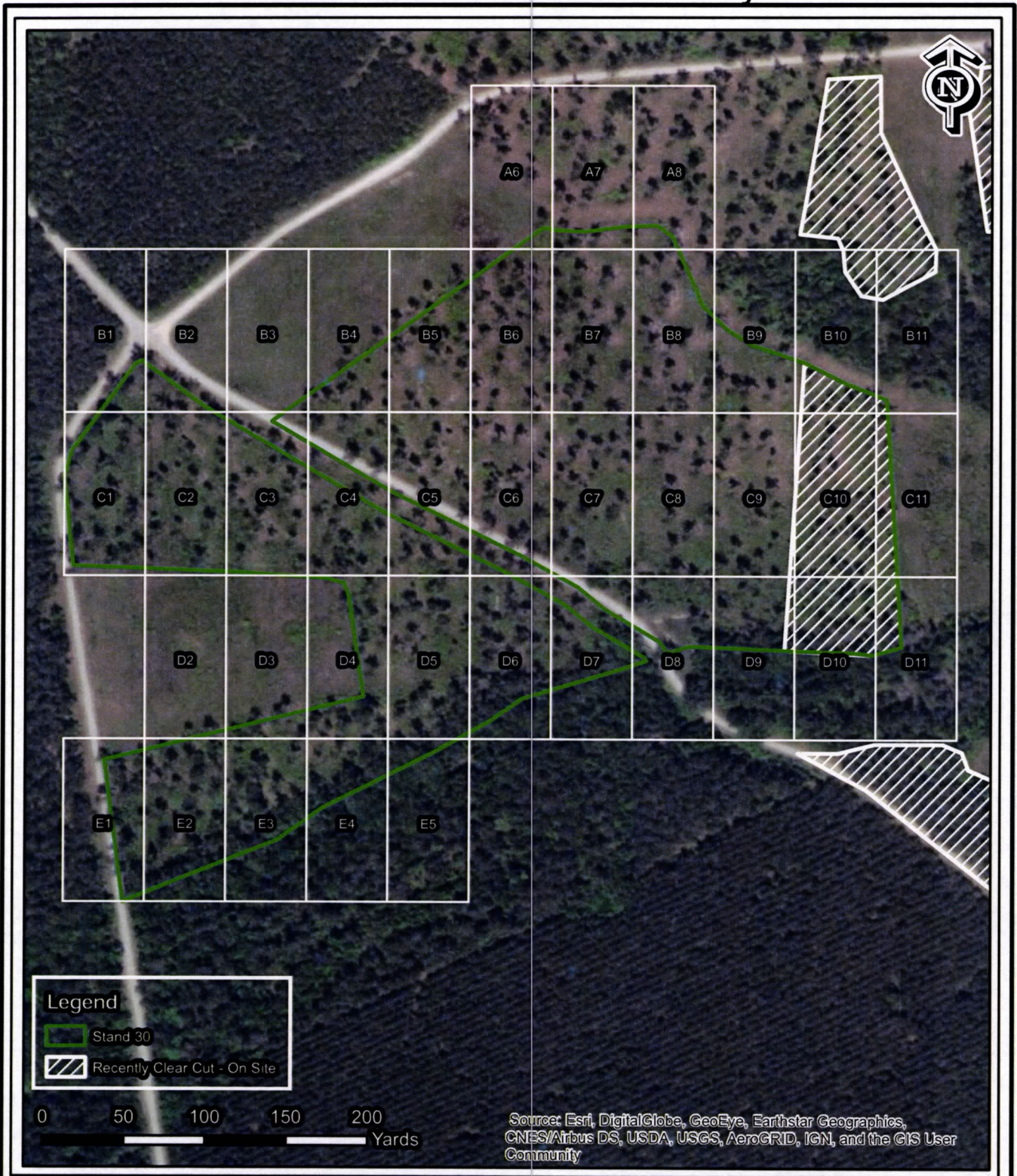
Potential
RCW Habitat
Map

Martin Marietta: RCW Survey



	<p>Prepared For:</p>	<p><u>Red-cockaded</u> <u>Woodpecker</u> <u>Habitat Survey</u></p> <p>Orangeburg County, South Carolina</p>	<p>Date: October 2018</p> <p>Scale: 1:2,500</p> <p>Job No.: 18-318</p> <p>Drawn By: WCB Checked By: AMM</p>	<p>Stand 24 Loblolly 26 y.o.</p>
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Martin Marietta: RCW Survey



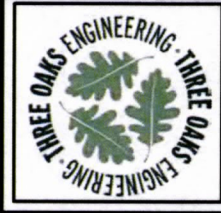
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			Orangeburg County, South Carolina	
			Job No.: 18-318	
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Martin Marietta: RCW Survey



Legend

- Stand 31a
- Recently Clear Cut - On Site



Prepared For:

Martin Marietta

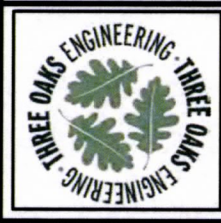
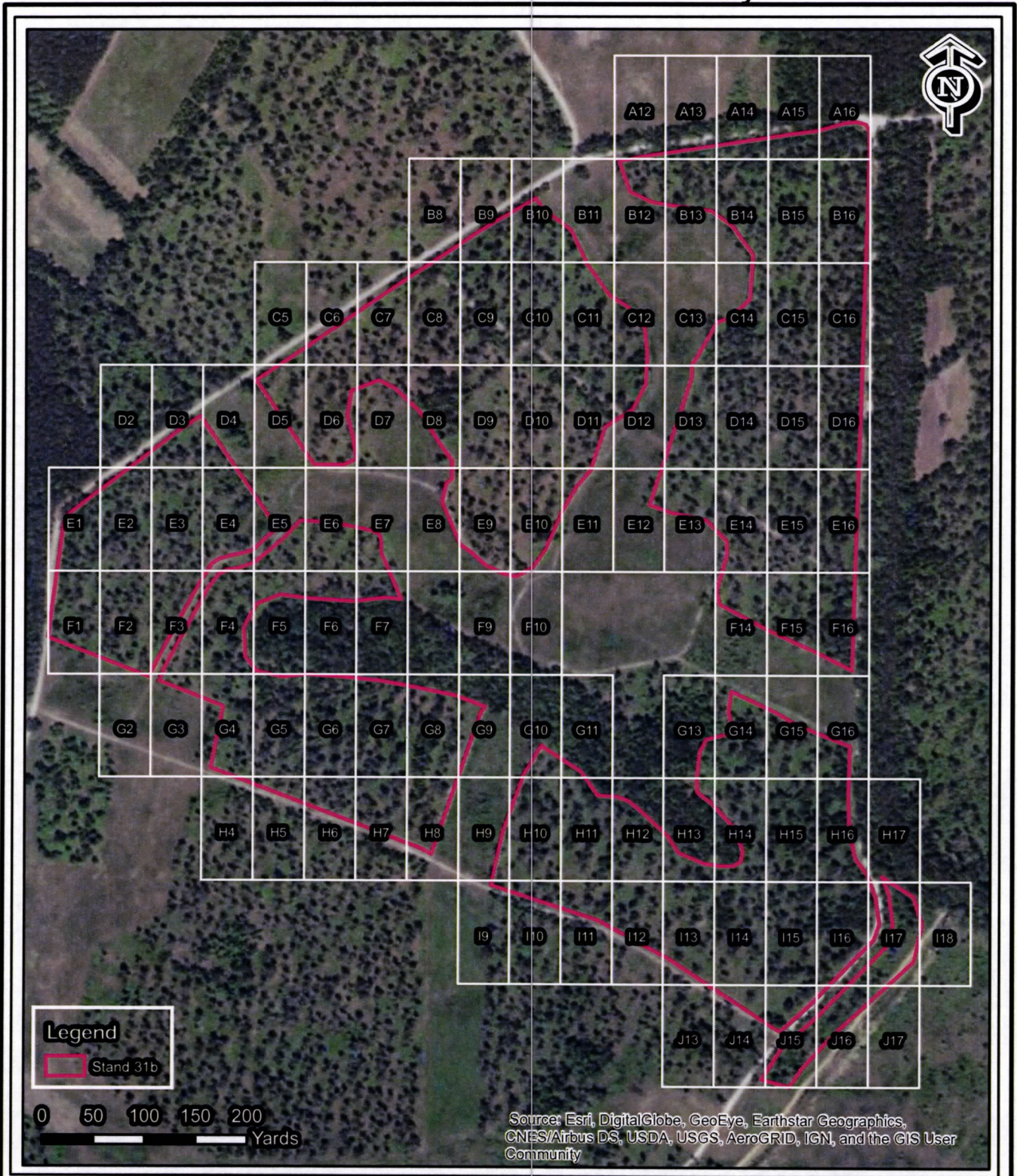
**Red-cockaded
 Woodpecker
 Habitat Survey**

Orangeburg County, South Carolina

Date: **October 2018**
 Scale: **1:4,500**
 Job No.: **18-318**
 Drawn By: **WCB** Checked By: **AMM**

**Stand 31a
 Loblolly
 25 y.o.**

Martin Marietta: RCW Survey



Prepared For:

Martin Marietta

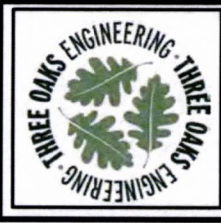
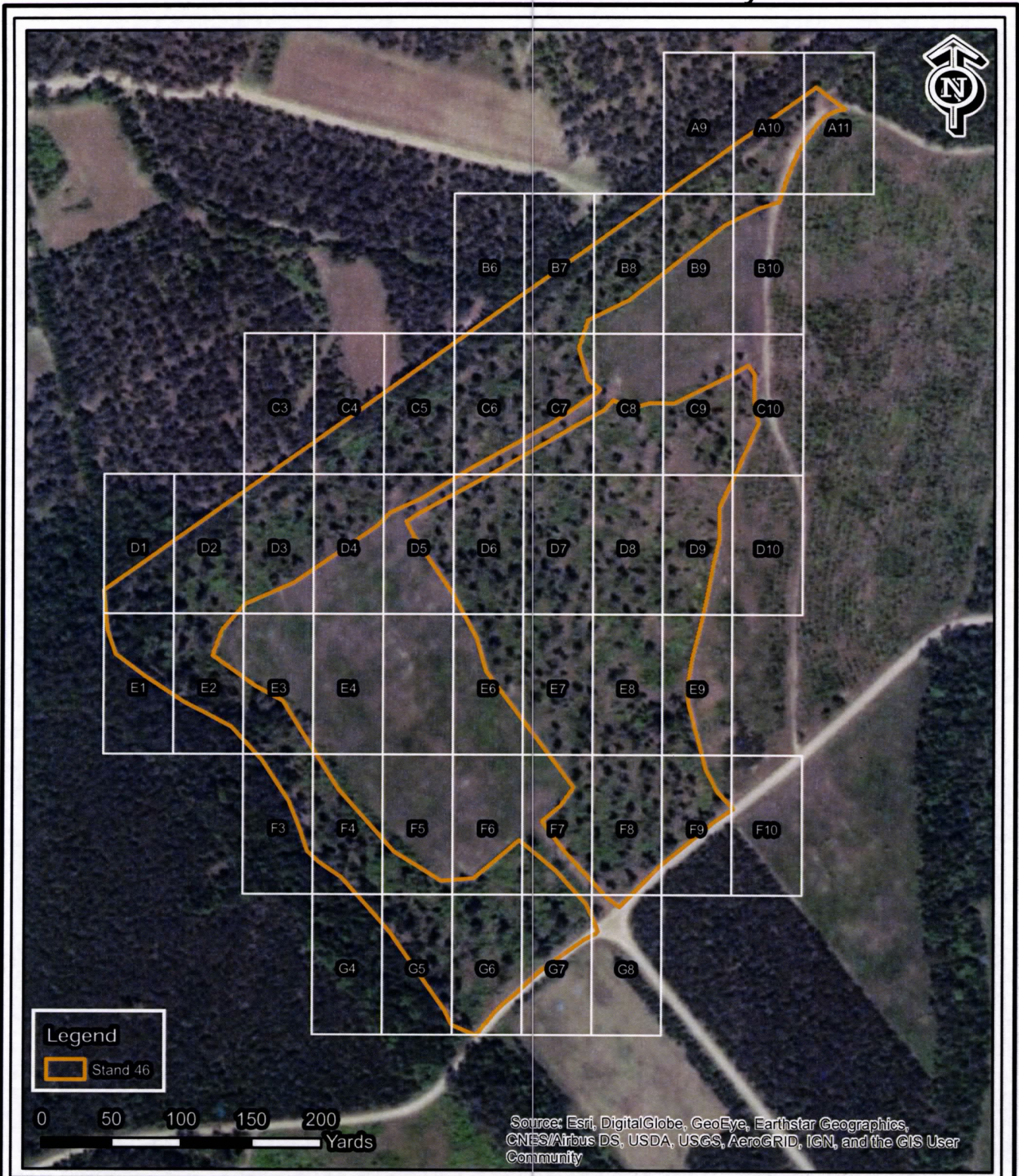
**Red-cockaded
 Woodpecker
 Habitat Survey**

Orangeburg County, South Carolina

Date:	October 2018
Scale:	1:4,750
Job No.:	18-318
Drawn By:	WCB
Checked By:	AMM

Stand 31b
 Loblolly
 25 y.o.

Martin Marietta: RCW Survey



Prepared For:

Martin
 Marietta

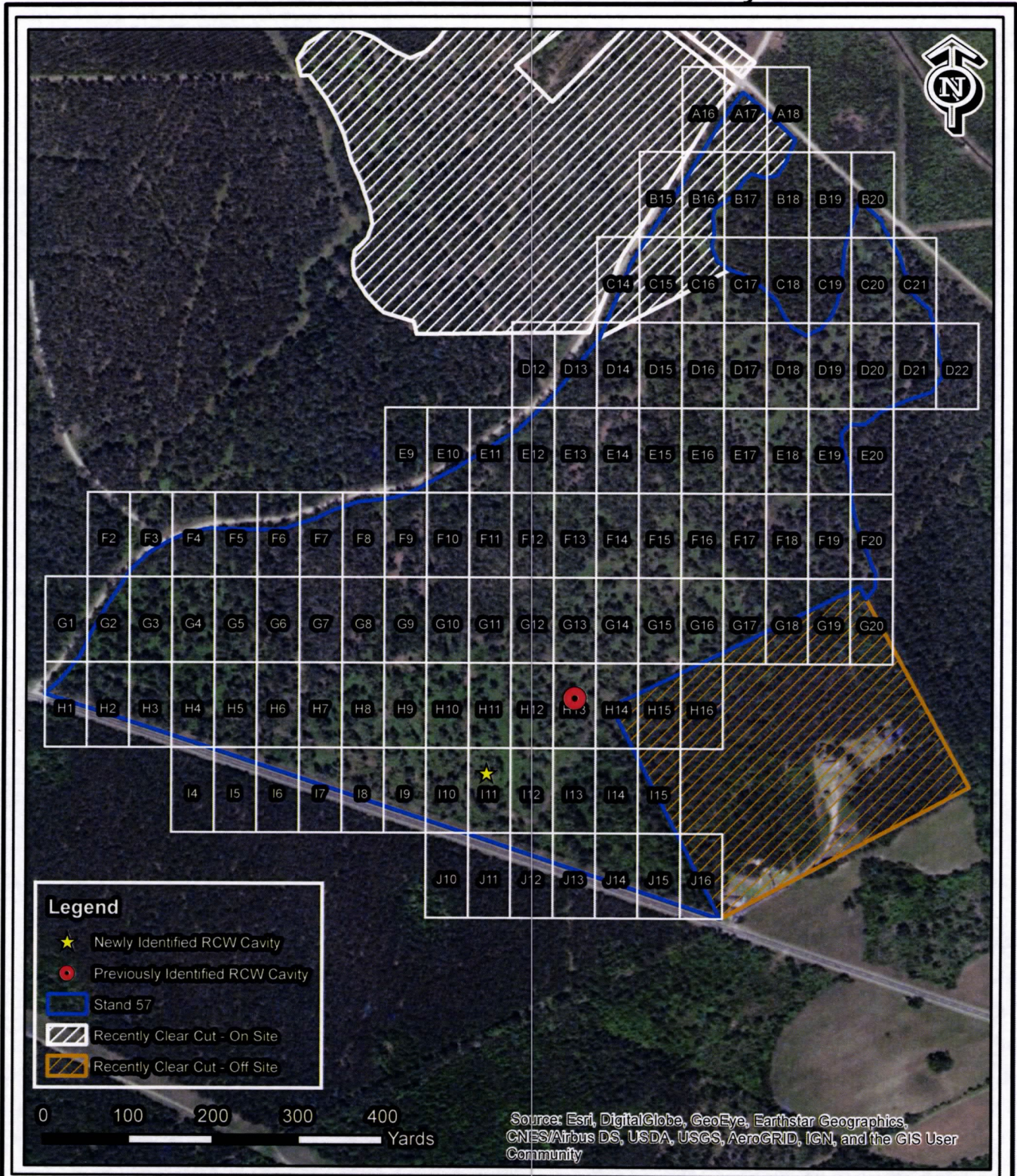
Red-cockaded
Woodpecker
Habitat Survey

Orangeburg County, South Carolina

Date: October 2018
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 Job No.: 18-318
 Drawn By: WCB
 Checked By: AMM

Stand 46
 Loblolly
 25 y.o.

Martin Marietta: RCW Survey

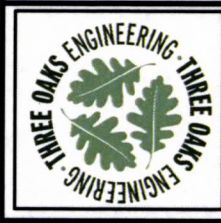


Legend

- ★ Newly Identified RCW Cavity
- Previously Identified RCW Cavity
- ▭ Stand 57
- ▨ Recently Clear Cut - On Site
- ▨ Recently Clear Cut - Off Site

0 100 200 300 400
Yards

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community



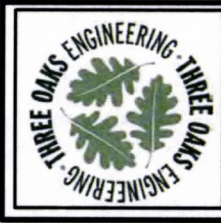
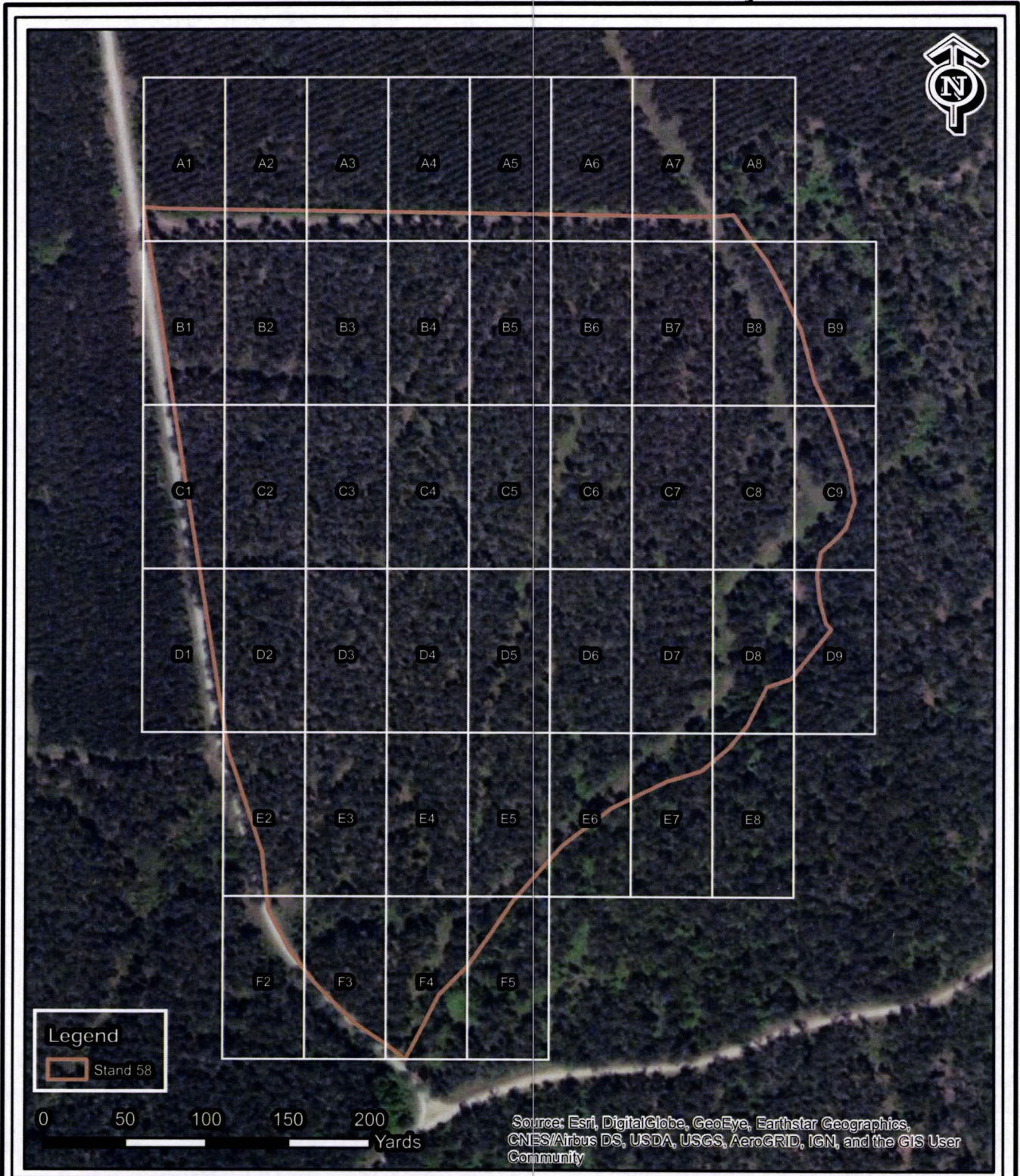
Prepared For:
Martin Marietta

Red-cockaded Woodpecker Habitat Survey
Orangeburg County, South Carolina

Date: **October 2018**
Scale: **1:5,750**
Job No.: **18-318**
Drawn By: **WCB** Checked By: **AMM**

Stand 57
Longleaf
56 y.o.

Martin Marietta: RCW Survey



Prepared For:



Martin
Marietta

Red-cockaded
Woodpecker
Habitat Survey

Orangeburg County, South Carolina

Date: October 2018

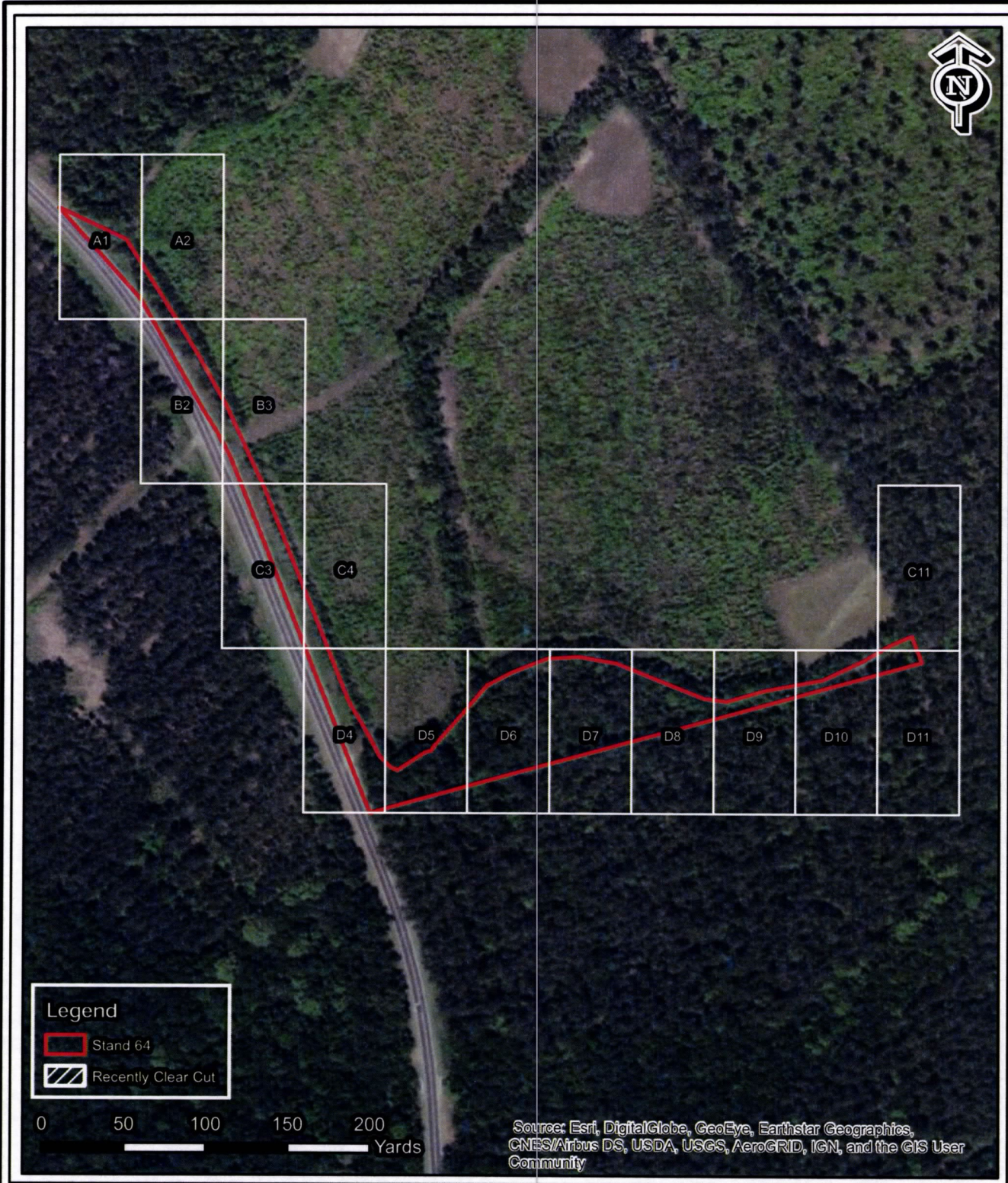
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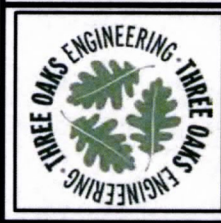
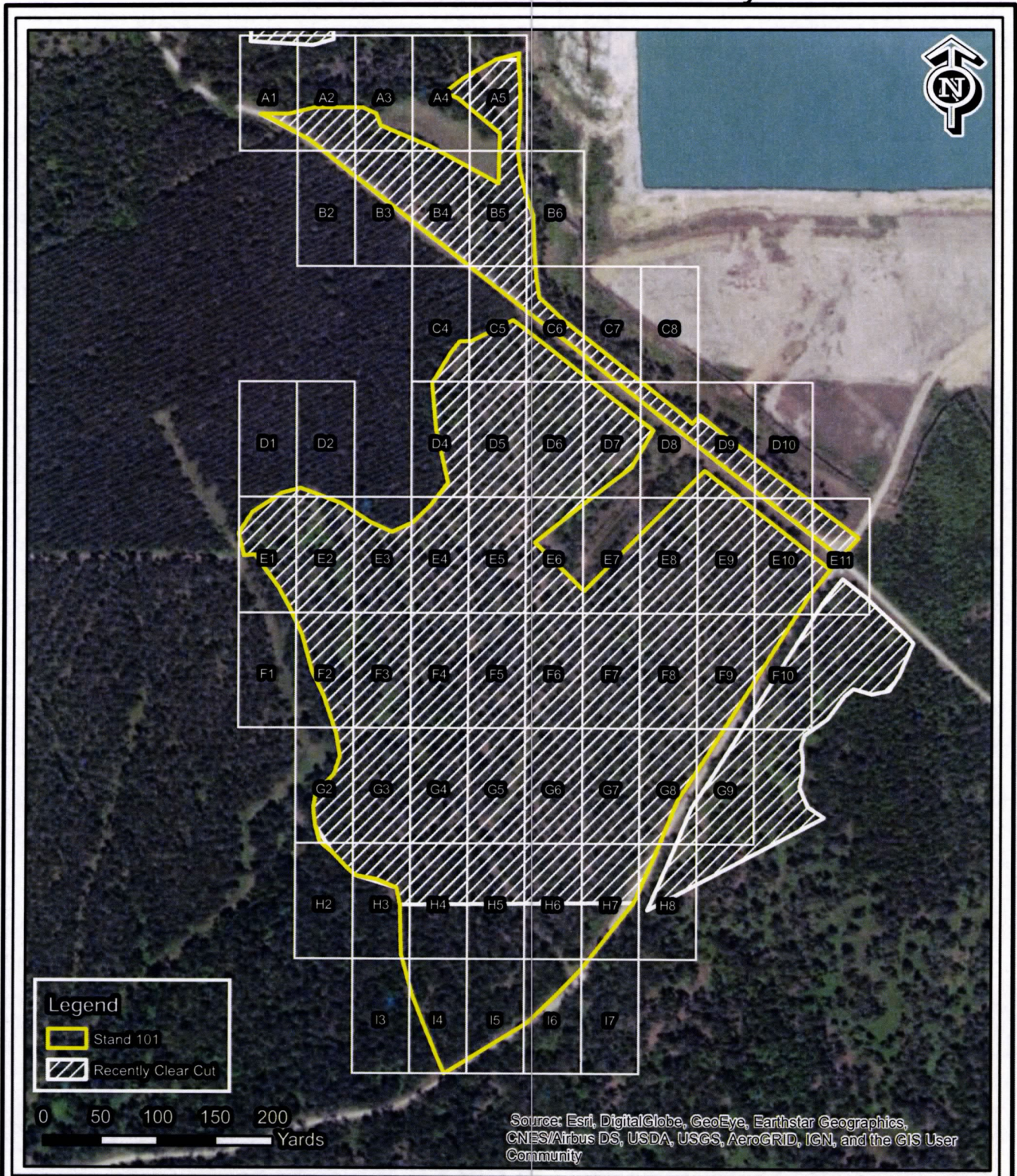
Stand 58
Loblolly
28 y.o.

Martin Marietta: RCW Survey



	Prepared For:	Red-cockaded Woodpecker Habitat Survey	Date:	October 2018	Stand 64 Loblolly 53 y.o.
			Scale:	1:3,000	
		Orangeburg County, South Carolina	Job No.:	18-318	
			Drawn By:	WCB	Checked By:
					AMM

Martin Marietta: RCW Survey



Prepared For:

Martin Marietta

**Red-cockaded Woodpecker
 Habitat Survey**
 Orangeburg County, South Carolina

Date: **October 2018**
 Scale: **1:4,250**
 Job No.: **18-318**
 Drawn By: **WCB** Checked By: **AMM**

Stand 101
Loblolly
34 y.o.



Appendix B

List of Key Personnel Contributing to Fieldwork and Document Preparation

Martin Marietta

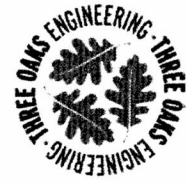
Richard Broughton, Environmental Services Manager

Three Oaks Engineering

Mark Mohr, Senior Environmental Planner

Wade Biltoft, Environmental Scientist

Tess Moody, Environmental Scientist



Appendix C

Photo Log

Date	10/29/2018-10/31/2018
Description	Active cavity in Stand 57



Date	10/29/2018-10/31/2018
Description	Active cavity zoomed in



Date	10/29/2018-10/31/2018
Description	Remnant cavity in Stand 57



Date	10/29/2018-10/31/2018
Description	Remnant cavity zoomed in



Date	10/29/2018-10/31/2018
Description	Stand 57



Date	10/29/2018-10/31/2018
Description	Stand 57



Date	10/29/2018-10/31/2018
Description	Stand 64



Date	10/29/2018-10/31/2018
Description	Stand 31B



Date	10/29/2018-10/31/2018
Description	Stand 30



Date	10/29/2018-10/31/2018
Description	Stand 58

