National Forest Foundation

Building 27, Suite 3, Fort Missoula Road
Missoula, Montana 59804
TEL 406.542.2805
nationalforests.org

Request for Proposals

Prospect Bluff Shoreline Stabilization Design

Apalachicola National Forest, Florida

NFF Background:

The National Forest Foundation (NFF) is a congressionally chartered nonprofit organization with the simple mission of bringing people together to restore and enhance National Forests and Grasslands. The NFF is the leading organization inspiring personal and meaningful connections to our National Forests, the centerpiece of America's public lands. Working on behalf of the American public, the NFF leads forest conservation efforts and promotes responsible recreation. We believe these lands, and all they provide, are an American treasure and are vital to the health of our communities.

Project Background:

Hurricane Michael in 2018 and subsequent tropical storm runoff have impacted bank stability of the Apalachicola River along the Prospect Bluff heritage site. The project aims to stabilize the approximately 1500-2000 square feet and 150 linear feet of riverbank, directly below bench or below mean high water line, and protect it from further erosion. The project was conceptualized using nature-based solutions of structural and vegetation installations. The project is located in Franklin County within the Apalachicola National Forest (ANF). The project site is approximately six miles southwest of Sumatra, FL and 67 miles southwest of Tallahassee, FL.

In 2024, the USDA Forest Service (USFS) National Enterprise team conceptualized a living crib structure for the implementation of the project. Due to staff turnover and capacity, the plans were never finalized past a 20 - 30 percent design level.

Statement of Work:

NFF, in partnership with the USFS, is seeking a qualified architectural and engineering contractor for engineering design to restore and stabilize the shoreline of Prospect Bluff. The conceptualized design documents provided with this RFP are intended to inform interested bidders of the USFS preferred methodology. If the interested bidder has an alternative design they believe to be successful, they should provide pricing and narrative for the conceptual design and/or the alternative design. The final design documents will need to be stamped by a professional engineer licensed by the state of Florida.

While the focus of this RFP is for engineering design, NFF is open to design – build proposals. Respondents may submit proposals for either: (1) Design Services Only, or

(2) Design-Build Services. Bidders **may submit a proposal for one option or both**; however, each option must be submitted separately and clearly identified. The NFF will evaluate all proposals and select the delivery method that best serves the project's needs and represents the best value.

Timeline:

This Request for Proposals will close and all proposals will be due by close of business January 12, 2027. The NFF anticipates a projected contract start date of March 1, 2027. Changes in the closing date for this Request for Proposals will be updated on the NFF website at https://www.nationalforests.org/rfp under the link for this project's Request for Proposals. All contract related dates are estimates and subject to change at the NFF's sole discretion.

A mandatory pre-bid site visit will be scheduled for December 9, 2026 at 10:30 AM EST. The meeting location will be the Fort Gadsden/Prospect Bluff complex. NFF and USFS representatives will be at the Fort Gadsden Road turnoff and lead the tour. Cell reception is limited. Please confirm attendance to the POC listed below by close of business, December 7, 2026. A sign-in sheet will be available. **Proposals will only be considered from firms in attendance.**

Meeting Location: https://maps.app.goo.gl/ZStcG7VzSdYHPS6V8

Meeting Location Coordinates: 29.939785°, -85.009143°

I. PROJECT OVERVIEW AND REQUIREMENTS

A. Project Overview

1. Description of Work. This Request for Proposals is for architectural and engineering design services related to the Prospect Bluff Shoreline Stabilization project, located on the Apalachicola National Forest. Work on this project will include producing construction-ready design documents and drawings. After the designs and drawings are produced and approved by NFF and the USFS, NFF will enter a separate procurement process for the implementation of the design documents and drawings.

   Appendix B: Conceptualized Drawings lays out the USFS preferred concept. Note these drawings are conceptual and not complete. They lay out the previous engineer's overall vision.

   a) Concerns about existing conceptual drawings:
      i. Scour below structure and vertical and horizontal scour
      ii. Does not address or identify the source of erosion or grading issues above riverbank which is likely contributing to erosion of riverbank
         (a) Due to the sensitive nature of the historic site, digging on top of riverbank will be restricted. Additional fill placement for re-grading will likely be allowed.
         (b) Based on desktop review, 0.5 – 1 percent regrade at the top of bank was recommended by a retired FS hydrologist.
         (c) How does the structure keep the placed material from washing out?

      iii. Refusal depths for pilings
         (a) A coring report was prepared in 2016 and is included in Appendix C. It is not a substitute for geotechnical analysis.
      iv. Cross sections were taken in 2021 and included for information purposes in Appendix E.

   b) Design Work should be broken into stages and submittals.
      i. 30 percent designs
      ii. 60 percent designs
      iii. 90 percent designs
      iv. 100 percent designs that are construction ready once approved and stamped

   c) Designs should incorporate vegetation installation of native species as containerized stock, seedlings, grass plugs or live cuttings such as Yaupon holly (*Ilex vomitoria*), Carolina Willow (*Salix caroliniana*), Spartina (*Spartina sp.)*, and other woody species.

i. Designs should incorporate hydroseeding, broadcast seeding, or a mixture of both to the completed structure and impacted access paths. A commercially available native grass/forb seed mix will need to be identified by the selected contractor and approved by the NFF project manager. In addition, a quickly germinating sterile seed mix should be incorporated to protect from erosion, options include Brown top millet (*Brachiaria ramosa*) and winter rye (*Secale cereale*), among others.

d) Design work should be deliberate in planning to minimize damage to the footprint of the Historic Fort Site.
    i. The USFS has crane mats available at their workstation that will need to transported by the future implementation contractor. Additional mats will likely need to be added to the materials list depending on the mode of egress across the site.
e) Designs should assess source cause of erosion and address the erosion.
f) Bidders shall provide a full and complete materials list
    i. For complex or materials with longer lead times, the bidder should provide recommended suppliers and alternatives.
g) Site and Coordination Visits
    i. In the proposal, describe, including quantity, and price as lump sum the necessary number of site coordination visits required.
    ii. Provide pricing for a coordination visit during the first week of implementation during the mobilization of the implementation contractor.
h) Consulting
    i. Provide pricing for consulting hours during the implementation period.

The selected contractor(s) will be responsible for performing the following deliverables:

a) Construction ready design documents and drawings that are approved by NFF and the USFS and stamped by a professional engineer licensed by the State of Florida.
    i. Autocad Drawings should be made available for use by the USFS and implementation contractor.
    ii. Designs must be drawn to minimize impact to historic fort footprint.
    iii. Designs should incorporate native vegetation to stabilize riverbank and shoreline. Seeding must be applied to all disturbed areas within the project footprint.
    iv. Cost estimates of project implementation
b) Coordination and Site Visits
    i. Kickoff site visit with NFF and USFS

ii. Additional site visits to collect data are at the contractor's discretion.
iii. Implementation Site Visit

Optional: Design – Build

1a. Description of Work – This optional Request for Proposals is for architectural and engineering design services and construction services related to the Prospect Bluff Shoreline Stabilization project, located on the Apalachicola National Forest. Work on this project will include all preliminary work and producing stamped, construction ready design documents and drawings (see Design Award section above). After the designs and drawings are produced and approved by NFF and the USFS, the selected contractor will implement the designs and drawings. The selected contractor(s) will be responsible for performing the following deliverables:

a) Design Work – See Design Award Section Above
   i. Appendix B: Conceptualized Drawings lays out General Conditions that should be adhered to or incorporated into the specifications of the plans.
   ii. Preliminary Work – This is to include any survey, marking and staking, utility marking, and construction permitting. An Army Corps of Engineers permit has been secured for the work. It is included in Appendix B: Conceptualized Drawings. Additional permits may be needed.

b) Implementation of designs and construction of shoreline restoration/protection structure.
   i. Bidders, in the technical proposal, should identify the anticipated, if any, subcontractors.
   ii. All materials, labor, equipment, supervision, and quality control as necessary to complete the project.
   iii. Materials must be priced at cost. For big ticket materials such as pilings or aggregate, NFF, in consultation with the USFS and the selected contractor, may choose to procure internally.
   iv. Soil is available from a nearby borrow pit. In the pricing table and in the technical proposal, provide pricing for harvesting soil from the borrow pit and alternatively, import of topsoil. Location of Borrow Pit: 30.043702, -85.012911

c) Construction Inspections and production of an as-built report.

2. Specifications. Project work shall be accomplished in accordance with the following:
   a) Appendix A. Federal Funding Flowdowns
   b) Appendix B. Conceptual Drawings
   c) Appendix C. Coring Report

d) Appendix D. Fort Layout and Site Pictures
e) Appendix E. Cross Sections
f) Stay within all boundaries of the permit requirements.
g) Use a design similar or equivalent to the conceptual design that has been provided.

3. Project Location.

a) The project is located in Franklin County, Florida on the former site of Fort Gadsen along the Apalachicola River. The site is now referred to as Prospect Bluff. It is approximately 6 miles southwest of Sumatra, Florida and 67 miles southwest of Tallahassee, Florida. Project Coordinates: 29.937972°, -85.011934°.

b) Site Conditions: Site is accessed via a gravel road with a combination locked gate. Construction work will be focused on riverbank with a vertical drop of 10 – 15 feet. The construction zone and material/equipment access crosses through a historic fort footprint. Extreme caution will be required to prevent an excess of disturbance outside of the construction zone.

c) Utilities/Facilities: A vault toilet is available several hundred yards from the riverbank. Cell reception is limited.

4. Work Schedule.
   a) Work Start: Work is expected to commence within thirty days after a Notice to Proceed (NTP) is issued. The execution of an agreement between NFF and the selected contractor will serve as an NTP. Contractor should deliver a detailed work schedule within 2 weeks of award.
   b) Project Completion: December 31, 2027

B. Other Project Requirements

1. Minimum Insurance. In accordance with the terms of the Services Agreement, prior to the start of any work, the successful Bidder (the "Contractor") will be required to maintain, and ensure that its subcontractors performing work described in the proposal (Subcontractors) maintain, the minimum coverages and comply with the insurance requirements indicated below.

   a) Coverage Requirements

      i. Commercial General Liability Insurance ("CGL"). Commercial general liability insurance, including bodily injury, property damage, personal injury, advertising injury, products and completed operations and contractual liability in the amount no less than:
         - $1,000,000 each occurrence;
         - $1,000,000 products/completed operations limit;
         - $1,000,000 advertising injury and personal injury limit; and
         - $2,000,000 general aggregate.

      ii. Business Automobile Liability Insurance. If using motor vehicles (owned, hired, or borrowed) to deliver or perform the work described in

the proposal, business automobile liability insurance with a minimum limit of $1,000,000 combined single limit each accident for bodily injury and property damage for all owned, rented leased or hired vehicles used in conjunction with the performance of the services.

iii. Workers' Compensation Insurance. Statutory workers' compensation insurance in accordance with all state and local requirements of the state(s) in which services will be performed.

iv. Professional Liability/Errors and Omissions Insurance. Professional or errors and omissions liability insurance with combined single limits of $1,000,000 per occurrence and $1,000,000 aggregate, per year, covering the performance of the successful bidder and any of its Subcontractors under the Services Agreement.

b) Waiver of Subrogation. All insurance policies shall include a waiver of any and all rights of subrogation or recovery of the insurers thereunder against, inter alia, the NFF, and its assigns, successors, undertakings and their subsidiaries, affiliates, employees, insurers and underwriters, and of any right of the insurers to any set-off or counterclaim or any other deduction, whether by attachment or otherwise, in respect of any liability of any such person insured under any such policy or in any way connected with any loss, liability or obligation covered by such policies of insurance.

c) Primary and non-contributory. With the exception of Workers' Compensation and Professional Liability insurance (if applicable), all insurance required to be maintained by Contractor shall be primary with respect to all claims arising out of Contractor's performance and/or activities under this Agreement, and any insurance or self-insurance maintained by the NFF shall be excess only and not be required to contribute with it.

d) "Claims Made" Coverage. Any liability insurance purchased on a "claims made" basis must be continuously maintained for a period equal to the applicable statute of repose, but in any case, not less than 3 years, following final performance or termination of Services, either through the continued purchase of insurance or the purchase of an extended reporting period. The retroactive date applicable to such "claims made" insurance, if any, must precede the first date on which Services are to be performed.

e) Verification of Coverage. Contractor will have furnished to the NFF original certificates of insurance and amendatory endorsements or copies of the applicable policy language effecting coverage required herein prior to or at the time of execution of the Agreement, and shall further provide evidence that the foregoing is in place and will not be cancelled or reduced during the term of the agreement. Contractor's and any Subcontractors' certificates of insurance will list "The National Forest Foundation" as an Additional Insured on its or their commercial general liability policy and business automobile liability policy (as applicable). Contractor will submit updated certificates of insurance upon expiration of the required policies.

2. Additional Insurance Requirements. In addition to the minimum insurances set-forth above, the NFF reserves the right to request additional coverage as reasonably necessary based on the scope, nature, and risks associated with the services to be performed, including, but not limited to:

    a) Commercial/Contractor's Pollution Liability Insurance covering clean-up costs, legal fees, and third-party damages from environmental contamination.
    b) Loggers Broad Form Endorsement restoring liability protection for specific property damage and operational risk inherent to forestry operations to Contractor's CGL policy.
    c) Umbrella/Excess Liability Insurance raising the limit on existing primary policies if the primary insurance limits are reasonably considered insufficient.

3. Payment/Performance Security. If selected, Bidder(s) shall be required to provide security in the form of cash, a letter of credit, bond, or other financial security that is easily convertible into cash in a form acceptable to the NFF, in its sole determination. The security will be used to ensure completion of the work required under any subsequent agreement and payment of all amounts lawfully due to all persons. All persons shall include, but not be limited to, those supplying or furnishing to the Bidder or Bidder's Subcontractors with labor, laborers, materials, rental machinery, tools or equipment used or to perform the work. Bidders may incorporate required associated costs into mobilization costs or other approved expenses. Payment or Performance Security will be required in the following amounts, as applicable:

    a) For work that is classified as construction in accordance with the Miller Act or Little Miller Act or if required per conditions of the funding source, payment and performance bonding will be required in the full amount of the Agreement. For the purposes of this Request for Proposal, construction is defined as "any contract greater than $100,000 for the construction, alteration, or repair of any public building or public work where the federal government is the owner."
    b) If Contractor is subcontracting 15% or more of the total contract value, or if the cost of materials is in excess of the larger of $100,000 or 50% of the contract total, payment and performance bonding will be required in the full amount of the Agreement.
    c) If the value of the agreement is in excess of $250,000, Contractor will be required to post financial security in a form acceptable to the NFF in the amount of 5% of the total agreement value up to $250,000 in total financial security.

    The NFF will not provide blanket waivers of payment/performance security requirements, though reserves the right to negotiate payment and performance security terms and conditions with a selected Bidder based upon legal requirements and organizational needs and policies.

4. Prevailing Wage. Work performed under this RFP and any resulting contract is subject to prevailing wage regulations under the Federal Davis-Bacon Act. All contractors and subcontractors bidding on this project must factor prevailing wage rates, including mandatory fringe benefits, and the maintenance of certified payroll into their cost proposals.
5. Prohibited Telecommunications Services and Equipment. NFF contractors are responsible for compliance with the prohibition on certain telecommunications and video surveillance services or equipment identified in 2 CFR 200.216.
6. Flowdown Provisions. NFF funding for projects may vary but will frequently include public funds. As such, any Agreement associated with this RFP may be subject to flowdown requirements under associated federal or state funding agreements, which are included and made part of by this reference. Flowdown requirements are not negotiable and will not be removed or edited. While flowdown provisions may change depending on funding, the NFF has identified the following flowdown provisions as currently being required for any Work performed under this RFP and any resulting contract:
    - Appendix A: Federal Flowdowns for 1596153

II. PROPOSAL REQUIREMENTS

A. Technical Proposal

1. Minimum Requirements. Bidders shall submit a technical proposal for the work described in this RFP. Bidders shall consider all relevant factors when submitting proposals for this work. Bidders shall identify in their proposals what they can supply in terms of materials, labor, equipment, supplies, supervision, quality control, and incidentals required to complete the work as described. Proposals should account for the need of the selected contractor to make its own arrangements for temporary utilities and facilities, if required. Proposals shall be sufficient to guarantee that the selected contractor shall be able to perform all work in a safe and conscientious manner and in accordance with all industry standards. At a minimum, each proposal must include the following:
    a) An overview and description of the services, materials, supplies, labor, equipment, utilities, and facilities provided by the Bidder that align with the requests in this RFP.
    b) A description of the project management or administration approach that will be followed by the Bidder to ensure that the identified work is completed on time and within budget.
    c) A project work plan and schedule that lists in detail the stages of work expected to be completed in this project, all identifiable deliverables, and the dates on which the Bidder would anticipate being able to complete delivery of the work.
    d) Any change or risk management approaches utilized by the Bidder when completing projects of the type described in this RFP.
    e) A project personnel overview identifying key personnel to be utilized if selected to perform the work described in this RFP and any relevant or required credentials or certifications held by the key personnel.
        i. Anticipated subcontractors, if any, should also be identified in the proposal.
    f) Site and Coordination Visits
        i. In the proposal, describe, including quantity, and price as lump sum the necessary number of site coordination visits required.
        ii. Provide pricing for a coordination visit during the first week of implementation during the mobilization of the implementation contractor.
    g) Soil: If submitting a design – build proposal, soil is available from a nearby borrow pit. In the pricing table and in the technical proposal, provide pricing for harvesting soil from the borrow pit and, alternatively, import of topsoil.
2. Optional Requirements. If an alternative concept is proposed, bidders must provide an implementation and construction pricing table similar to the example below.

B. Bidder Qualifications. Bidders shall submit a statement of their qualifications for the work described in this RFP. The statement should include the following items in narrative format:

1. Experience

    a) Please provide a brief explanation of previous work experience with land management agencies, noting specifically any work performed on National Forests or Grasslands.

    b) Please provide a listing of relevant projects of similar size, scope, and total value performed by the Bidder within the past 5 years.

2. References

    a) Please provide three professional references, identifying as applicable any government or conservation nonprofit references.

    b) Provide the name, email address, and telephone number for each reference, as well as the dates of the projects during which the Bidder worked with each reference.

3. UEI. Successful bidders will be required to provide a Unique Entity Identifier (UEI). If you have a UEI, please provide it in your proposal or quote.

4. Federal Exclusion Verification. Bidder(s) will be required to affirm that neither it nor its principals are presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from participation in this transaction by any Federal department or agency.

C. Failed Projects or Legal Actions. Bidders shall identify any past failed projects and the reasoning behind the failure or incompletion. Bidders shall also identify any and all current or pending legal matters in which the Bidder or any of its principals is involved.

D. Pricing Schedule. Bidders shall price work according to the schedule below. If Bidders believe that an alternative method of pricing is more applicable, they may also provide an alternative pricing schedule in addition to the format requested below.

The NFF, in its sole discretion, reserves the right to utilize any alternative pricing schedule proposed by any Bidders.

All quantities and measurements identified in this RFP are based upon the best knowledge available to the NFF and are subject to change.

Due to the dynamic and changing nature of NFF funding, the NFF reserves the right to negotiate an increased cost with the selected Bidder in the event that prevailing wages become required for the work described in this RFP.

If the opportunity to add additional funding to the work described in this RFP arises, the NFF may increase the quantities of work to be performed as part of this project, as agreed upon by the NFF and the selected Bidder.

Option 1. Design only

	Task/Item	Units	Unit Cost	Extended Cost
(a)	Preliminary Work such as but not limited to: site assessment, survey, geotechnical or pre-design work.	LS		
(b)	Design Work and Production of Stamped Construction Ready Drawings	LS		
(c)	Coordination and Site Visits	LS		
(d)	Implementation Site Visit	LS		
(e)	Consulting Hours	24 Hours		
			Total Bid	

Option 2. Design – Build: Implementation and Construction*

	Task/Item	Units	Unit Cost	Extended Cost
(a)	Mobilization	LS		
(b)	Materials and Supplies	LS		
(c)	Construction and Implementation of Designed Bank Protection Structure with On-Site Soil Harvest	LS		
(d)	Import of required soil in lieu of on-site soil harvest	LS		
(e)	Vegetation Installation	LS		
(f)	Hydroseeding and site restoration	LS		
(g)	Construction Staking and Survey	LS		

(h)	As – Built Report	LS		
[redacted]			**Total Bid**	

*This pricing schedule is provided as an example. Bidders interested in submitting a Design – Build proposal should submit a pricing table they are most comfortable with and that also includes the Design Pricing table.

E. Payment Schedule. Bidders shall submit a proposed payment schedule consistent with their proposed pricing structure. Lump sum proposals should identify invoicing milestones tied to deliverables or project phases, while time-and-materials proposals should identify the anticipated invoicing frequency, cost of materials/supplies, and the applicable rates for invoicing. Proposed payment schedules are for evaluation purposes only. The final payment structure and invoicing terms will be negotiated with the selected Bidder and incorporated into the executed agreement.

Invoice Number	**Work Tasks/Items Performed**	**Corresponding Cost**
1.		
2.		
3.		
4.		
5.		
[redacted]	**Agreement Total**	

F. Bidders must identify the insurance coverage currently in place. If available, please attach sample certificates of insurance.

III. SUBMISSION, EVALUATION, AND CONTACTS

A. Bidder Selection Process:

1. Bid Submission. Bidders shall submit proposals containing all of the required information described above via email at the address specified below by the stated deadline:

   Submission Address: ajustis@nationalforests.org

   Submission Deadline: 1700 PST on January 12, 2027

   Proposals submitted after this RFP closes will not be considered unless approved by the NFF. The NFF will review all proposals determined to be responsive using the evaluation factors listed below. Proposals may be deemed non-responsive for failure to submit any required information or for failure to comply with any terms of this RFQ. Non-responsive proposals may be disqualified from evaluation in the sole discretion of the NFF.

2. Proposal Presentation. NFF may select bid finalist(s). If a bid finalist is selected, NFF will coordinate a virtual meeting for finalist(s) to present their proposal and allow NFF and its USFS partners the chance to ask questions about their proposal. The NFF reserves the right to ask bid finalist(s) to revise their proposal and pricing based on discussion during the presentation and funding availability.

3. Notification. If a proposal is selected by the NFF to advance to the contracting stage, the NFF will notify the successful Bidder via email. Once the selected Bidder has been notified, the NFF project representative will coordinate the drafting and negotiation of an NFF agreement outlining the terms and conditions of the work to be performed.

   Unsuccessful Bidders will be notified via email as soon as possible after the closing date of this RFQ. Please Note: The NFF **will not** share any information about the organizations submitting proposals nor any information regarding the proposals submitted by other organizations. If a Bidder has questions about its proposal, the Bidder may ask the NFF Point of Contact identified below. If an answer can be provided, the NFF will respond via email as soon as it is able to do so.

4. Request for Proposals Only. This is a request for proposals only and bids furnished do not bind the NFF in any way. Selection of a bid will result in the opportunity to contract with the NFF but will not guarantee a resulting contract or any amount of work. The NFF reserves the right to disqualify any incomplete or improper proposal submitted as non-responsive. The NFF may also decide not to select any proposals submitted to this RFP for advancement to contract negotiations. This request does not commit the National Forest Foundation to pay any costs incurred in the preparation or submission of the proposal or to contract for supplies or services.

B. Evaluation Factors and Scoring

The following factors will be used to evaluate any responsive submitted proposals. The

factors, as listed, are ordered from highest priority (Level 3) to lowest priority (Level 1). Each factor can receive a score from 1 point to 3 points. The number of points awarded will be multiplied by the priority level to determine the total score for each factor. (Example: If Price/Cost (level 3) is awarded 2 points, the total score for price would be 6 points.)

Level 3 Criteria
- Price / cost
- Equipment and contractor capability
- Timing of when contractor can begin and/or finish the project
- Past performance, references, and USFS feedback

Level 2 Criteria
- Technical proposal / proposed approach to project
- Overall strategic benefits to meeting NFF goals and grant needs, requirements, and timelines

Level 1 Criteria
- Benefits to the local community
- Relationship to local community

C. Point of Contact

Any questions about this Request for Proposals shall be submitted in writing to the NFF contact identified below. Questions determined to be of importance to all potential Bidders will be posted as an attachment to an updated version of this RFP at https://www.nationalforests.org/rfp.

Austin Justis
National Forest Foundation, Southern Region Program Coordinator
ajustis@nationalforests.org

D. Bid Submission

Submit bids via email to ajustis@nationalforests.org by Close of Business January 12, 2027.

E. Equal Opportunity Provider

In accordance with Federal law and U.S. Department of Agriculture policy, the National Forest Foundation is prohibited from discriminating on the basis of race, color, national origin, sex, age, religion, political beliefs, or disability.

Appendix A
Flowdown Provisions

NFF Funding Code: 1596153
NFF Funding Name: PA Prospect Bluff Shoreline Stabilization

Funder Agreement ID: 25-PA-11080500-570

PAID SICK LEAVE REQUIREMENTS.

Executive Order 13706, Establishing Paid Sick Leave for Federal Contractors, and its implementing regulations, including the federal contractor paid sick leave clause at 29 CFR Part 13, Appendix A, apply to the Cooperator and any subcontractors under this agreement. These regulatory requirements are incorporated by reference into this agreement as if fully set forth in this agreement.

PROHIBITION AGAINST INTERNAL CONFIDENTIAL AGREEMENTS.

All non federal government entities working on this agreement will adhere to the below provisions found in the Consolidated Appropriations Act, 2016, Pub. L. 114-113, relating to reporting fraud, waste and abuse to authorities:

1. The recipient may not require its employees, contractors, or subrecipients seeking to report fraud, waste, or abuse to sign or comply with internal confidentiality agreements or statements prohibiting or otherwise restricting them from lawfully reporting that waste, fraud, or abuse to a designated investigative or law enforcement representative of a Federal department or agency authorized to receive such information.

2. The recipient must notify its employees, contractors, or subrecipients that the prohibitions and restrictions of any internal confidentiality agreements inconsistent with paragraph (a) of this award provision are no longer in effect.

3. The prohibition in paragraph (a) of this award provision does not contravene requirements applicable to any other form issued by a Federal department or agency governing the nondisclosure of classified information.

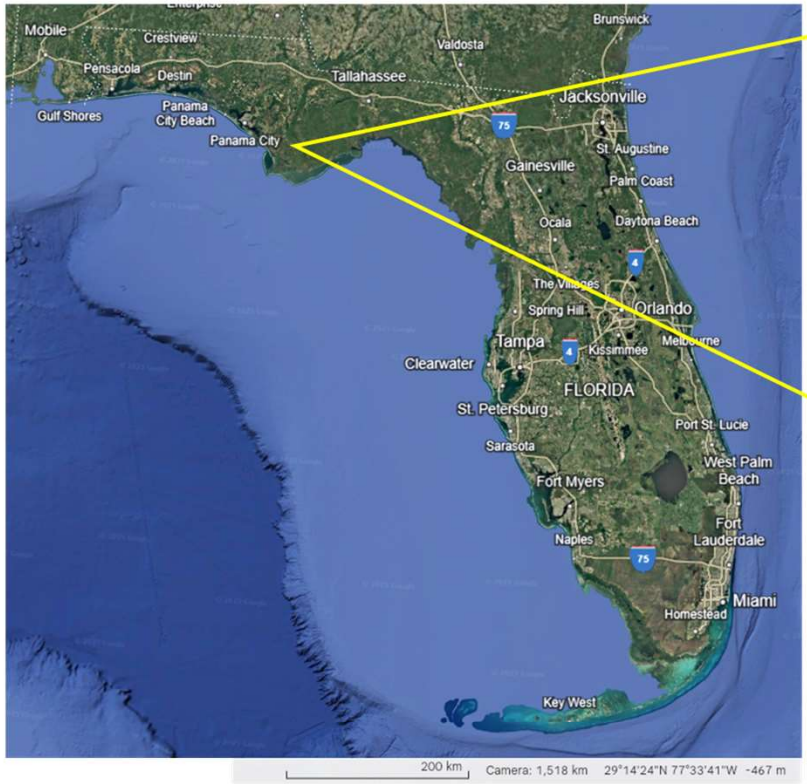
4. If the Government determines that the recipient is not in compliance with this award provision, it:

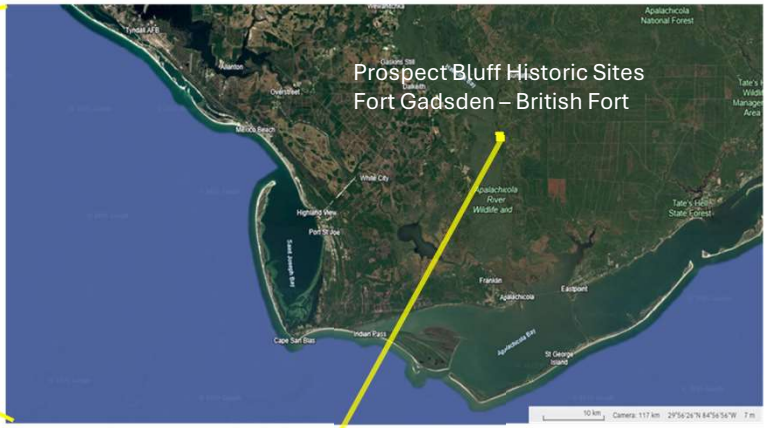
    a. Will prohibit the recipient's use of funds under this award, in accordance with sections 743, 744 of Division E of the Consolidated Appropriations Act, 2016, (Pub. L. 114-113) or any successor provision of law; and

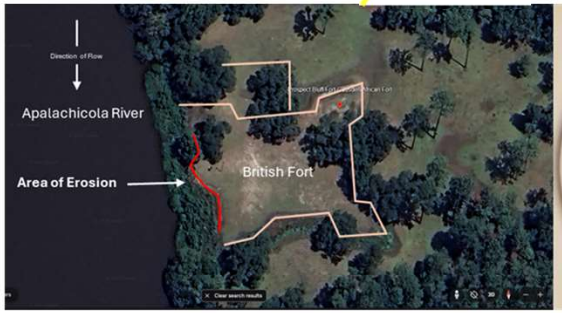
    b. May pursue other remedies available for the recipient's material failure to comply with award terms and conditions.

Appendix B: Conceptual Designs











Google Earth accessed April 2025

USDA FOREST SERVICE
United States Department of Agriculture
Forest Service

R8
FLORIDA
NATIONAL FOREST

STAMPS, LOGOS, AND SEALS

NO.	REVISION / ISSUE	DATE
4		
3		
2		
1		

PROJECT NAME

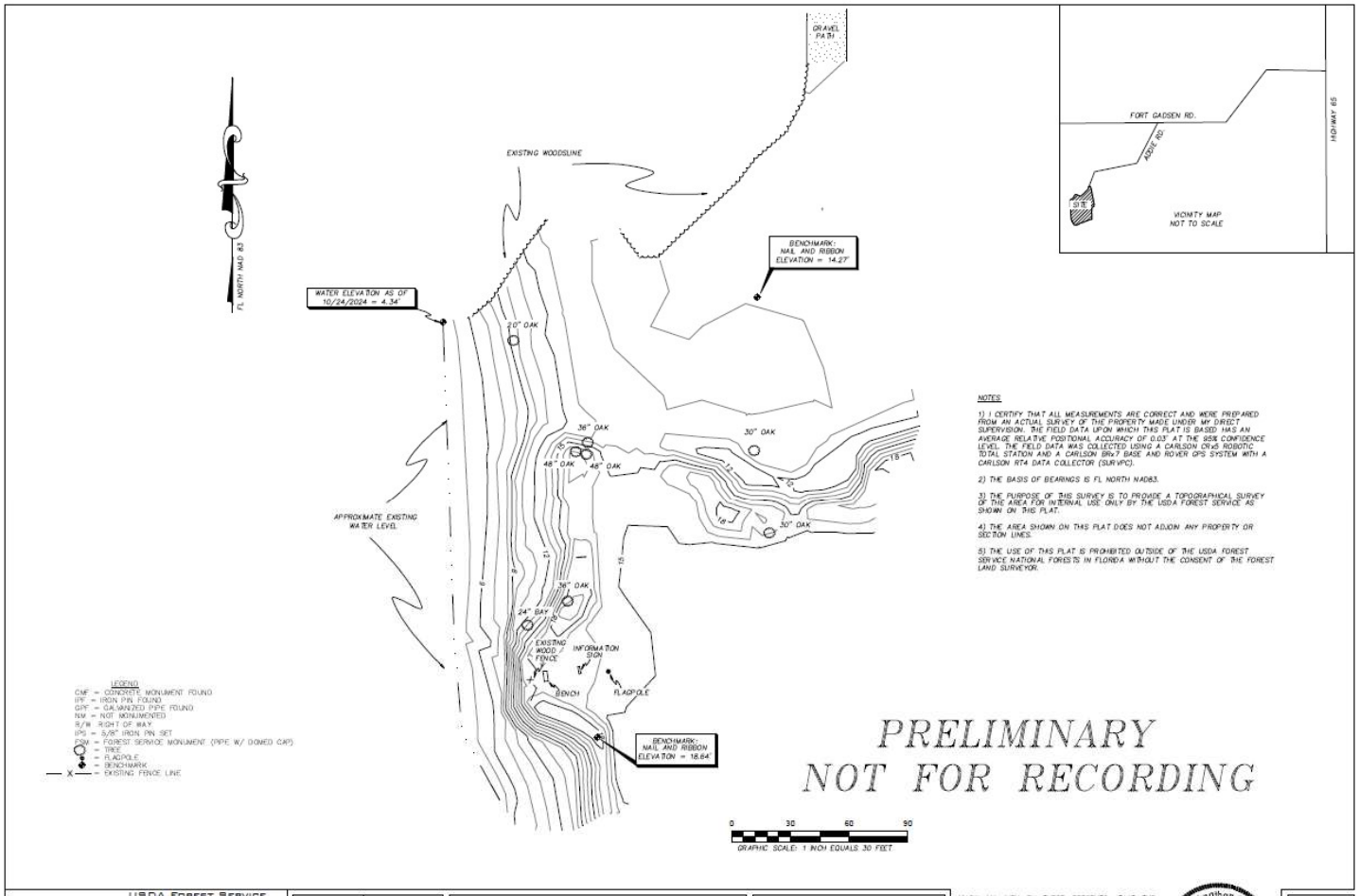
PROSPECT BLUFF REHABILITATION AND SITE PRESERVATION

APALACHICOLA NATIONAL FOREST

DRAWING TITLE

PROJECT AREA MAPS

DATE	ARCHIVE NO.
DESIGNER T.B. BAIR	DRAWING SHEET NO.
DRAWN T.B. BAIR	
CHECKED	SHEET 1 OF 24
PROJECT NO.	



NOTES

1) I CERTIFY THAT ALL MEASUREMENTS ARE CORRECT AND WERE PREPARED FROM AN ACTUAL SURVEY OF THE PROPERTY MADE UNDER MY DIRECT SUPERVISION. THE FIELD DATA UPON WHICH THIS PLAT IS BASED HAS AN AVERAGE RELATIVE POSITIONAL ACCURACY OF 0.03' AT THE 95% CONFIDENCE LEVEL. THE FIELD DATA WAS COLLECTED USING A CARLSON CR+5 ROBOTIC TOTAL STATION AND A CARLSON BRx7 BASE AND ROVER GPS SYSTEM WITH A CARLSON RT4 DATA COLLECTOR (SURVPC).

2) THE BASIS OF BEARINGS IS FL NORTH NAD83.

3) THE PURPOSE OF THIS SURVEY IS TO PROVIDE A TOPOGRAPHICAL SURVEY OF THE AREA FOR INTERNAL USE ONLY BY THE USDA FOREST SERVICE AS SHOWN ON THIS PLAT.

4) THE AREA SHOWN ON THIS PLAT DOES NOT ADJOIN ANY PROPERTY OR SECTION LINES.

5) THE USE OF THIS PLAT IS PROHIBITED OUTSIDE OF THE USDA FOREST SERVICE NATIONAL FORESTS IN FLORIDA WITHOUT THE CONSENT OF THE FOREST LAND SURVEYOR.

PRELIMINARY NOT FOR RECORDING

USDA Forest Service
Florida National Forests
325 John Knox Road, Suite F210
Tallahassee, FL 32303
Phone: 850-523-8500
https://www.fs.usda.gov/florida

SURVEY BY	NJS
SURVEY DATE	10-24-24
PLAT DATE	10-30-24
SCALE	1" = 30'
COMPUTED BY	NJS
DRAWN BY	NJS

TOPOGRAPHIC SURVEY OF 1.50 ACRES
PROSPECT BLUFF HISTORIC SITE
APAPLACHICOLA NATIONAL FOREST
FRANKLIN COUNTY, FLORIDA

THIS SURVEY WAS MADE AT MY REQUEST FOR FOREST MANAGEMENT PURPOSES.

IVAN GREEN, NFF FOREST SUPERVISOR DATE

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, BEING A PROFESSIONAL SURVEYOR AND MAPPER, FULLY LICENSED TO PRACTICE IN THE STATE OF FLORIDA, DOES HEREBY CERTIFY THAT THIS PLAT WAS PREPARED UNDER HIS DIRECTION AND SUPERVISION AND THAT THIS PLAT COMPLIES WITH ALL OF THE SURVEY REQUIREMENTS OF CHAPTER 177, PART I, PLATTING, FLORIDA STATUES.

NOAH J. SIMMONS, REGISTRATION # 7538 DATE

Noah Johnathan Simmons License Number 7538 STATE OF FLORIDA Professional Surveyor and Mapper

INTRODUCTION

Prospect Bluff is extremely culturally significant and played an important role in Florida history. The site contains two successive forts with an interpretive area that offers detailed information about the site along with trails, river access and a picnic area.

Hurricane Michael in 2018 and subsequent tropical storm runoff have impacted bank stability of the Apalachicola River along the Prospect Bluff heritage site. The area of concern is an approximately 100ft section of bank located along the left bank (eastern) shoreline of the Apalachicola River, approximately where the 1812 artillery emplacement was located. Bank erosion along the streambank of the old fort area is due to a combination of vegetation removal, preferential flow failure including piping (Hagerty, 1991); high pore pressure; liquefaction and seepage forces especially during the falling stages of normal ordinary high water and the receding limb of floods. These types of bank failures are also known as rotational slip or slumps which is a downward movement of unconsolidated soil material (sand in this case) that moves suddenly along a curvilinear plane. Additional causes include wave action from boat wakes, burrowing animals and saturated conditions.

RECOMMENDATIONS: The recommendations below capture the spirit and intent of the project. It does not describe every step necessary to complete the project; the contractor should utilize its experience and expertise in all aspects of the project.

To prevent further erosion at the site the toe and remaining bank will need to be stabilized, the recommended streambank / shoreline stabilization methods to stabilize and protect the Prospect Bluff heritage site consists of structural and vegetative bioengineered streambanks.

Stabilizing streambanks with natural vegetation combined with tree, log and wood structural components have many advantages over hard engineering and provide for better water quality and fish and wildlife habitat.

The method recommended for preserving the Prospect Bluff site are “Living crib walls”. Living crib walls create a cohesive interlocking network of log, tree, timber or pole frames combined with soil, stone and vegetation cores. There are alternatives to construction materials and methods and the sketches provided in this document represent the recommended construction materials and sequences.

1. Pilings – for this structure treated freshwater pilings could be used and would likely provide the greatest long-term stability if driven to refusal.

   Freshwater pilings are typically treated with CCA (Chromated Copper Arsenate) at lower concentrations than saltwater pilings. Treated piles are also the most expensive option. The second-best option would be non-treated southern pine, again driven to refusal. Non-treated wood will rot faster and since it is not tempered splitting and shattering will happen more frequently during pile driviing. Less expensive than treated piles but 5-10% extra pieces should be purchased due to the potential for damage during driving.

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PROJECT NAME

PROSPECT
BLUFF
REHABILITATION
AND
SITE
PRESERVATION

APALACHIACOLA
NATIONAL
FOREST

DRAWING TITLE

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RECOMMENDATIONS CONTINUED

Twelve-foot wooden fence post driven in with an excavator bucket could also be used but would very likely not be driven to refusal and stability of the structure would rely solely on the ballast rock.

2. Horizontal, parallel and perpendicular timber structure members – the perpendicular and parallel timbers used to construct each cell could consist of freshwater treated poles (like the pilings), untreated poles or logs or whole trees with rootwads. If treated or untreated poles or logs are used, they should be bolted or pinned to the pilings and each other to secure the structure. Rootwad trees can also be used to create a living crib emulated log jam. These structures are constructed to maximize aquatic/fish habitat and or when natural aesthetics (Wild and Scenic Rivers) are a consideration. Rootwad emulated log jams can be constructed without bolts or pins but still require ample ballast rock. Construction of these structures can also be complicated due to the irregular dimensions of the rootwad trees.





Figure 1. Living emulated log jam crib post construction and two years after. Sandy River near Farmington Falls Maine.

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APALACHICOLA NATIONAL FOREST

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SHEET 4 OF 24

MATERIALS LIST: The following is an non-exhaustive material list for the freshwater treated pole structure. Incidental items such as crane mats and other site preparation materials are not listed. If pilings or perpendicular/parallel members are damaged during installation, contractor should have enough on hand to not delay project. Additional pilings needed due to damage during installation should be included in base pricing. If noted below with a "*", additional material quantities are suggestions.

1. Seventeen, 20'x8" diameter treated piles. Length depends on refusal depth. Seventeen to be used in the structure, *five extra in case of damage during installation.
2. Ten, 12'x8" treated fence post to be used as piles. Ten to be used in the structure, *five extra in case of damage during installation.
3. Sixty, 12" diameter, 25' length treated piles used for perpendicular and parallel members. Sixty to be used in the structure, *five extra in case of damage during installation.
4. 150, two-foot rebar for pins, timber tie lags/spikes, or bolts. 150 to be used to tie the structure,*50 additional as needed
5. Four rolls (7.5'X120' or 8' x 112.5') of dense mesh coconut fiber blanket with burlap jute/netting or biodegradable jute netting and associated non-metal anchoring components.
6. 1,500 live stake cuttings, three-to-five-foot lengths (whips). Install a mix of willow cuttings and yaupon holley on the lower two levels and yaupon holly and other native species such as *Spartina bakeri* on the above layers at a recommended spacing as directed by the Forest Ecologist.
7. Hydroseed. Coverage area calculated onsite post construction.
8. 1,200 cubic yards of soil.
9. 2,300 cubic yards of ballast rock; oyster shells, lime rock, shell rock or a combination (Aggregate materials).

Construction Sequence: The following is an non-exhaustive construction sequence for the project and its freshwater treated pole structure. As stated previously, this schematic, material list, and construction sequence allows for the spirit of the project goals to be met. But, it does not describe every step necessary to complete the project; the contractor should utilize its experience and expertise in all aspects of the project.

1. Site survey and site preparation such as erosion control, haul routes, stocking of materials, etc.
2. Cut back brush/trees vegetation to soil surface prior to construction of structures components. Stockpile cut vegetative material for scattering after project completion
3. Frame Construction Sequence (FCS) Frame Base Layer and First Parallel Frame Layer - Sheet 9 and Crib Cell Construction Sequence (CCCS) - Sheet 18 : Drive the 17 20' treated piles, install coconut blanket along face of the slope (retaining as much of the existing vegetation on the slope as possible), and install fence posts. Lay first layer of live stake cuttings, four whips every three feet or as prescribed by the Forest Ecologist. Place 4-6" of soil on top of the live stake cuttings. Install coconut blanket over the soil layer.
4. FCS First Parallel Frame Layer - Sheet 9 and CCCS - Sheet 19: Install 25' treated piles as parallel base logs pinned with appropriate fastener.
5. FCS First Perpendicular Frame Layer - Sheet 10 and CCCS - Sheet 20 and 21: Install 8 25' treated piles pinned to parallel base logs and initial frame piles. Fill each cell with aggregate materials to top of perpendicular logs.
6. Repeat and alternate Parallel Frame Layer (Sheets 11, 13, and 15) processes with Perpendicular Frame Layer (Sheets 12, 14, and 16). After pinning parallel members, add soil layers under and over live stake cuttings. After pinning perpendicular members, add ballast stone. The final layer will be a parallel layer (Sheet 17).
7. After installing the final parallel layer place 4" of soil and live stake cuttings. Install spartina plugs. Work should be completed around 2 feet from top of bank.

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8. Regrade berm at top of bankful bench.

9. Complete site cleanup. Hydroseed project and disturbed areas.

NOTES:

LIVE WILLOW AND YAUPON HOLLEY LIVE STAKE CUTTINGS

Live willow and yaupon holley live stake cuttings should be soaked in water for 7-14 days before planting, submerging at least 50-80% of their length, to promote root bud development. Soaking willow stakes in water before planting helps hydrate the stems and stimulates root primordia to swell, leading to faster and more successful root formation. Live stakes or “willow whips” can be soaked in buckets or the river. Keep cuttings soaking up to the day of planting.

LOG CRIB FASTENERS

Bolts, rebar or timber tie lags can be used to pin the structure together. Rebar would likely be the least expensive but would also likely be the most labor intensive.

LOG DIAMETERES

Smaller diameter logs and poles could be used for the perpendicular and parallel members however additional layers would need to be added to reach the top of structure elevation (two feet below top of existing bank).

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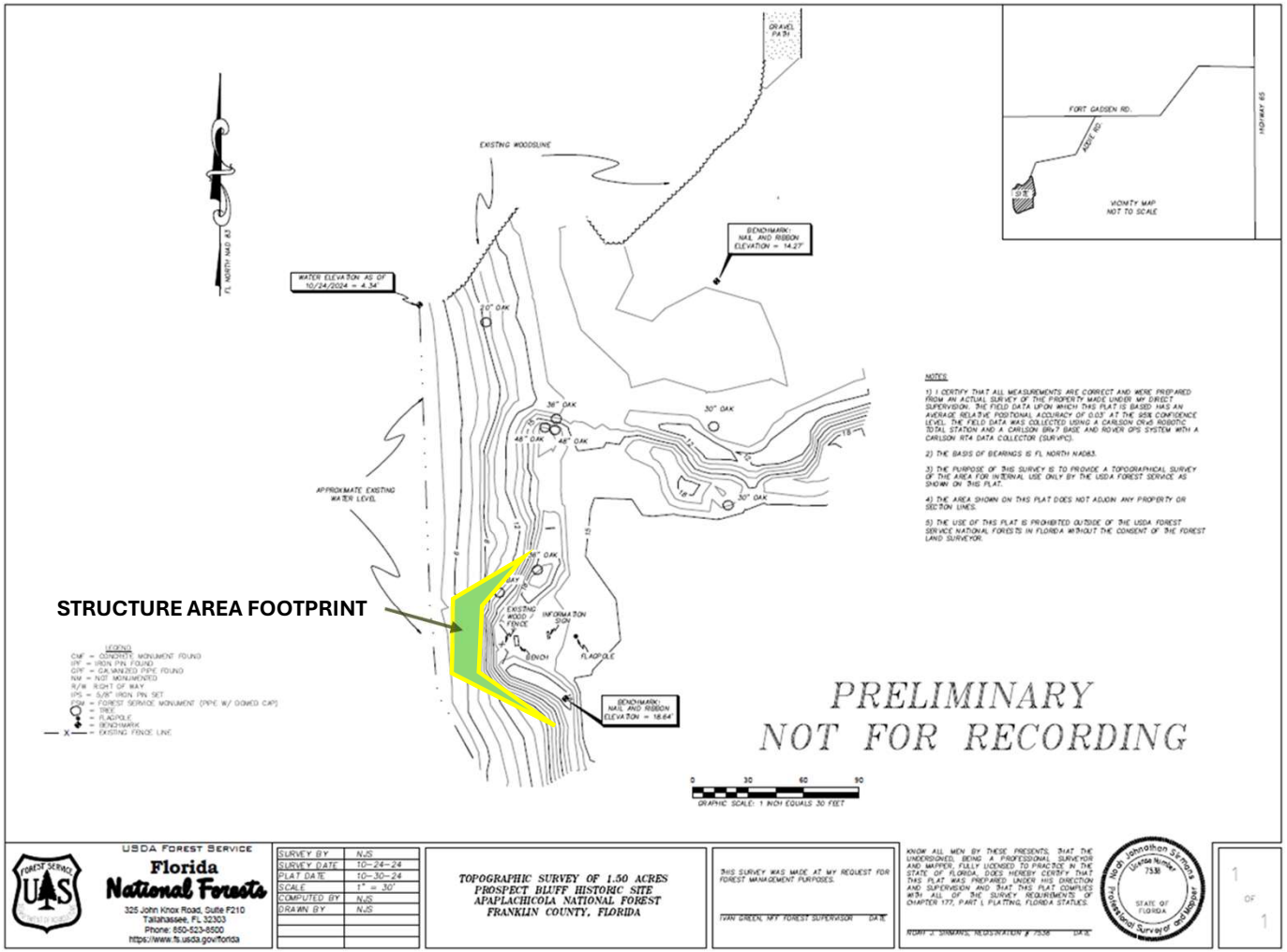
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TOPOGRAPHIC SURVEY OF 1.50 ACRES
PROSPECT BLUFF HISTORIC SITE
APAFLACHICOLA NATIONAL FOREST
FRANKLIN COUNTY, FLORIDA

THIS SURVEY WAS MADE AT MY REQUEST FOR FOREST MANAGEMENT PURPOSES.

IVAN GREEN, NFF FOREST SUPERVISOR DATE

KNOW ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED, BEING A PROFESSIONAL SURVEYOR AND MAPPER, FULLY LICENSED TO PRACTICE IN THE STATE OF FLORIDA, DOES HEREBY CERTIFY THAT THIS PLAT WAS PREPARED UNDER HIS DIRECTION AND SUPERVISION AND THAT THIS PLAT COMPLIES WITH ALL OF THE SURVEY REQUIREMENTS OF CHAPTER 177, PART I, PLATTING, FLORIDA STATUES.

ROBERT J. SIMMONS, REGISTRATION # 7536 DATE

Nolan Johnathon Simmons
License Number 7536
STATE OF FLORIDA
Professional Surveyor and Mapper

1 OF 1

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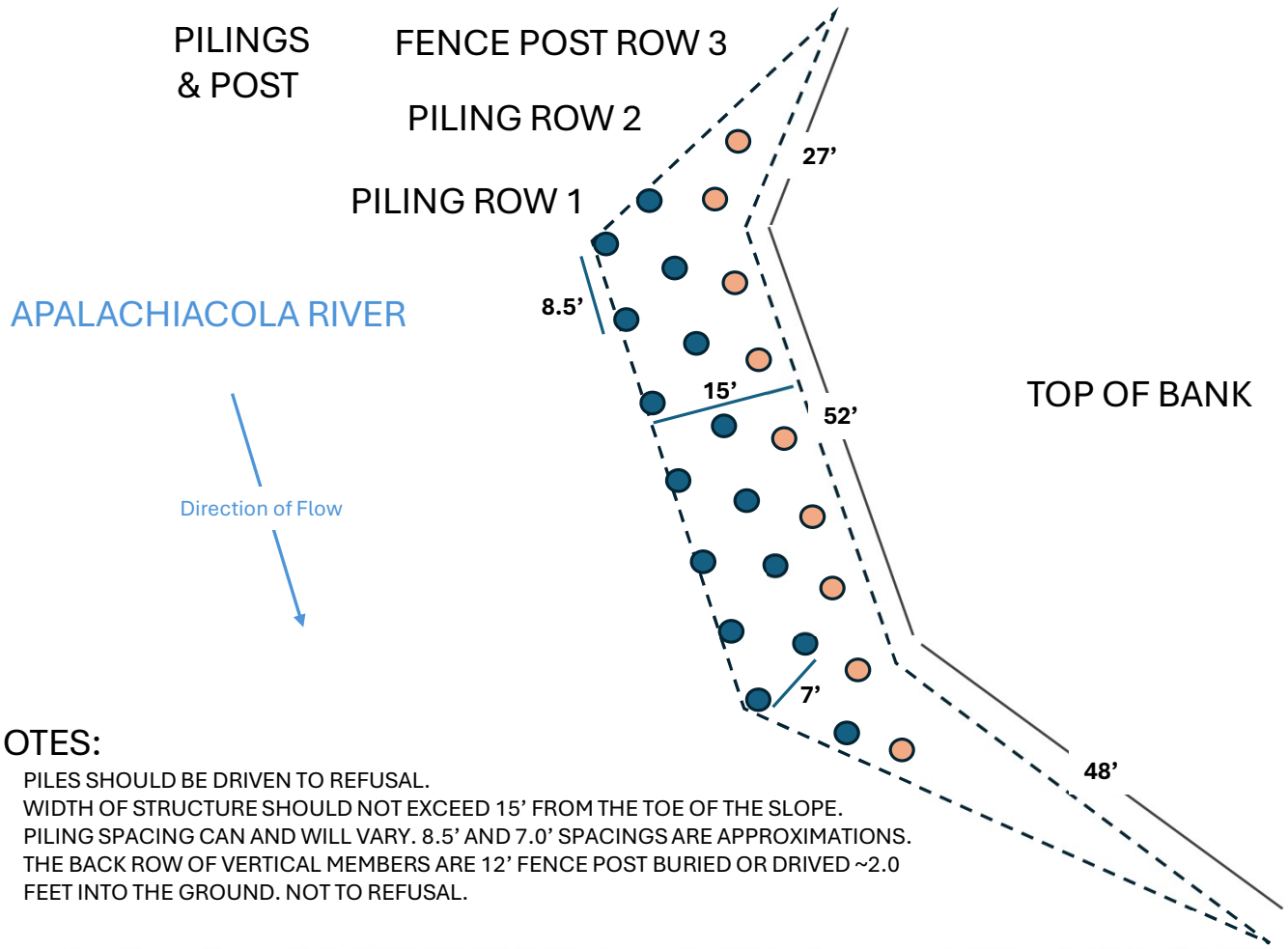
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FRAME CONSTRUCTION SEQUENCE



NOTES:

- PILES SHOULD BE DRIVEN TO REFUSAL.
- WIDTH OF STRUCTURE SHOULD NOT EXCEED 15’ FROM THE TOE OF THE SLOPE.
- PILING SPACING CAN AND WILL VARY. 8.5’ AND 7.0’ SPACINGS ARE APPROXIMATIONS.
- THE BACK ROW OF VERTICAL MEMBERS ARE 12’ FENCE POST BURIED OR DRIVED ~2.0 FEET INTO THE GROUND. NOT TO REFUSAL.

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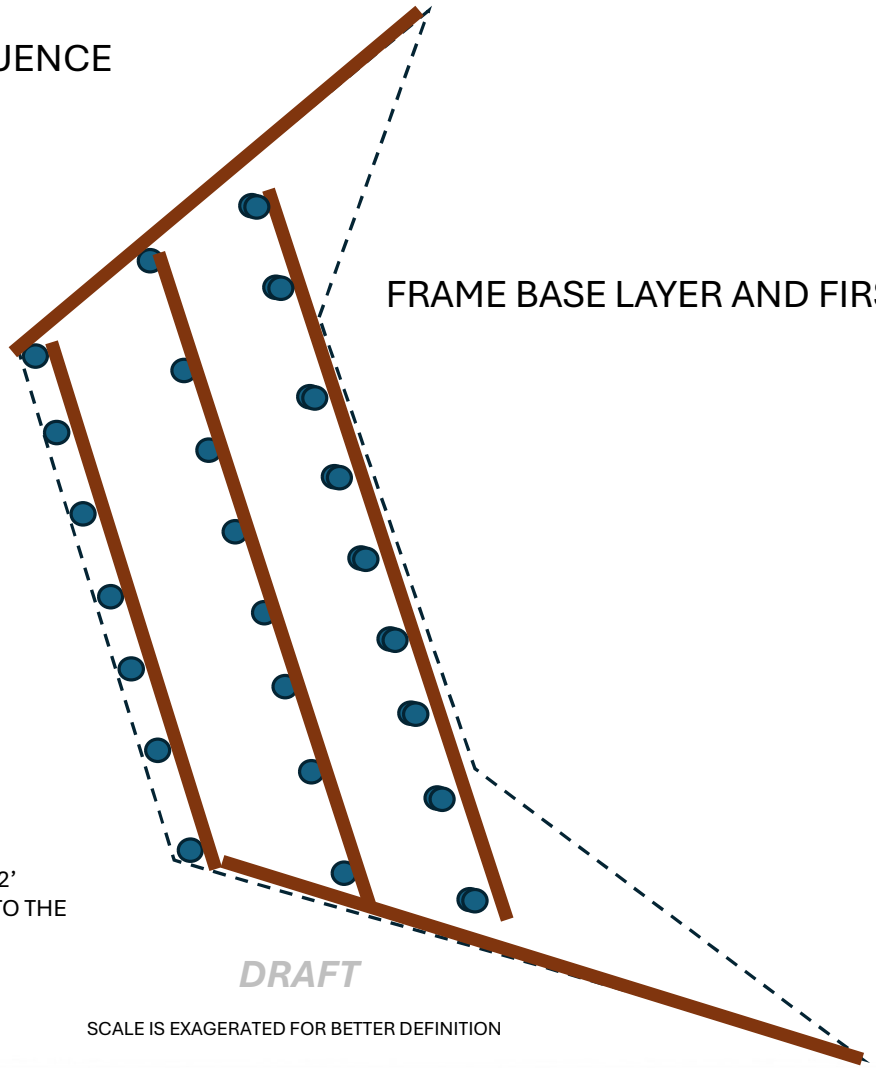
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DRAWING TITLE
PLAN VIEW
FOOTPRINT DIMENSIONS AND PILING LAYOUT

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FRAME CONSTRUCTION SEQUENCE



FRAME BASE LAYER AND FIRST PARALLEL LAYER

NOTES:

THE BACK ROW OF VERTICAL MEMBERS ARE 12’ FENCE POST BURIED OR DRIVED ~2.0 FEET INTO THE GROUND. NOT TO REFUSAL

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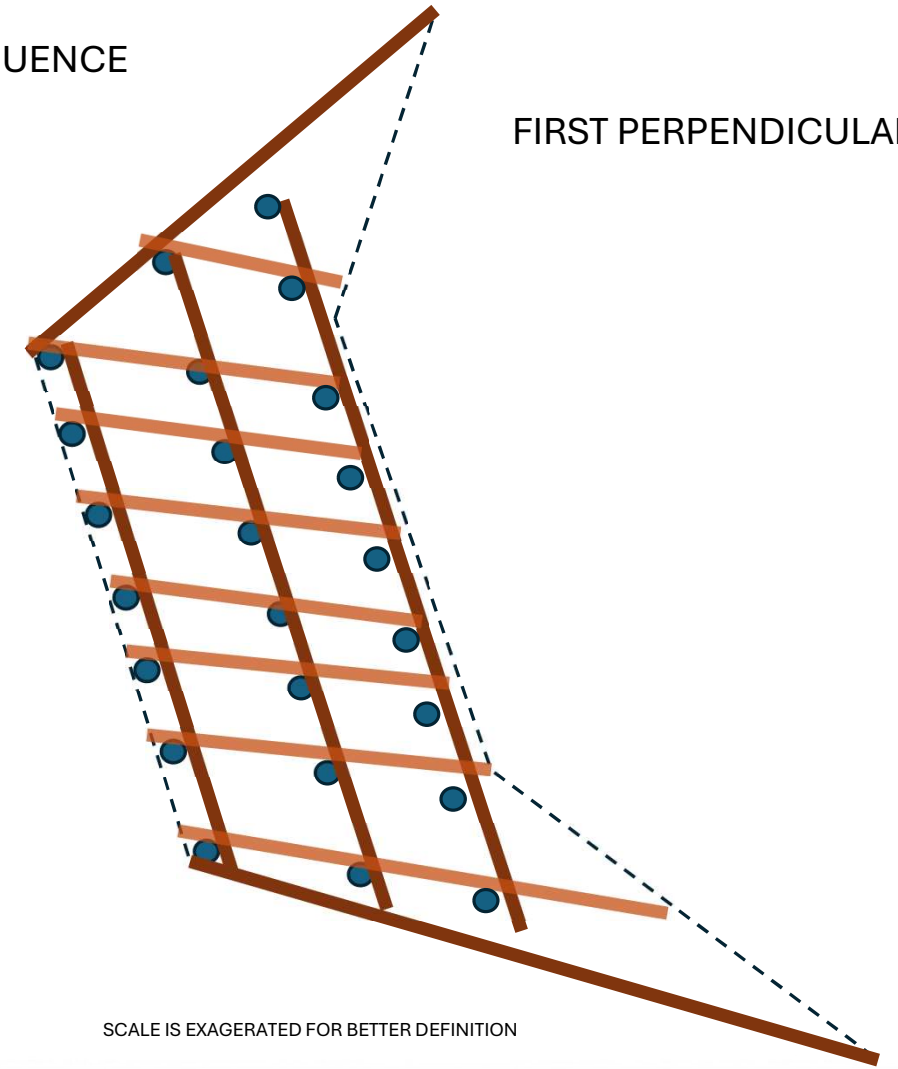
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PLAN VIEW
BASE LAYER

DATE	ARCHIVE NO.
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FRAME CONSTRUCTION SEQUENCE

FIRST PERPENDICULAR FRAME LAYER



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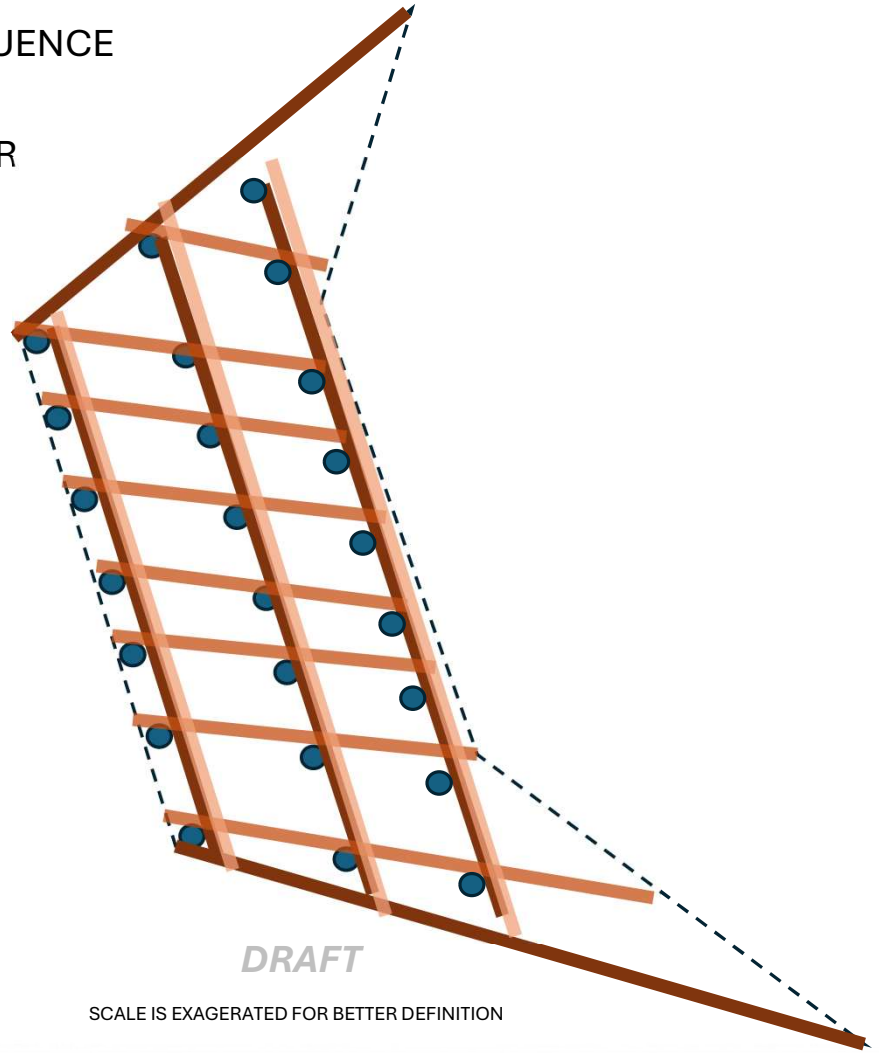
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PLAN VIEW
PERPENDICULAR
LAYER 1

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FRAME CONSTRUCTION SEQUENCE

SECOND PARALLEL LAYER



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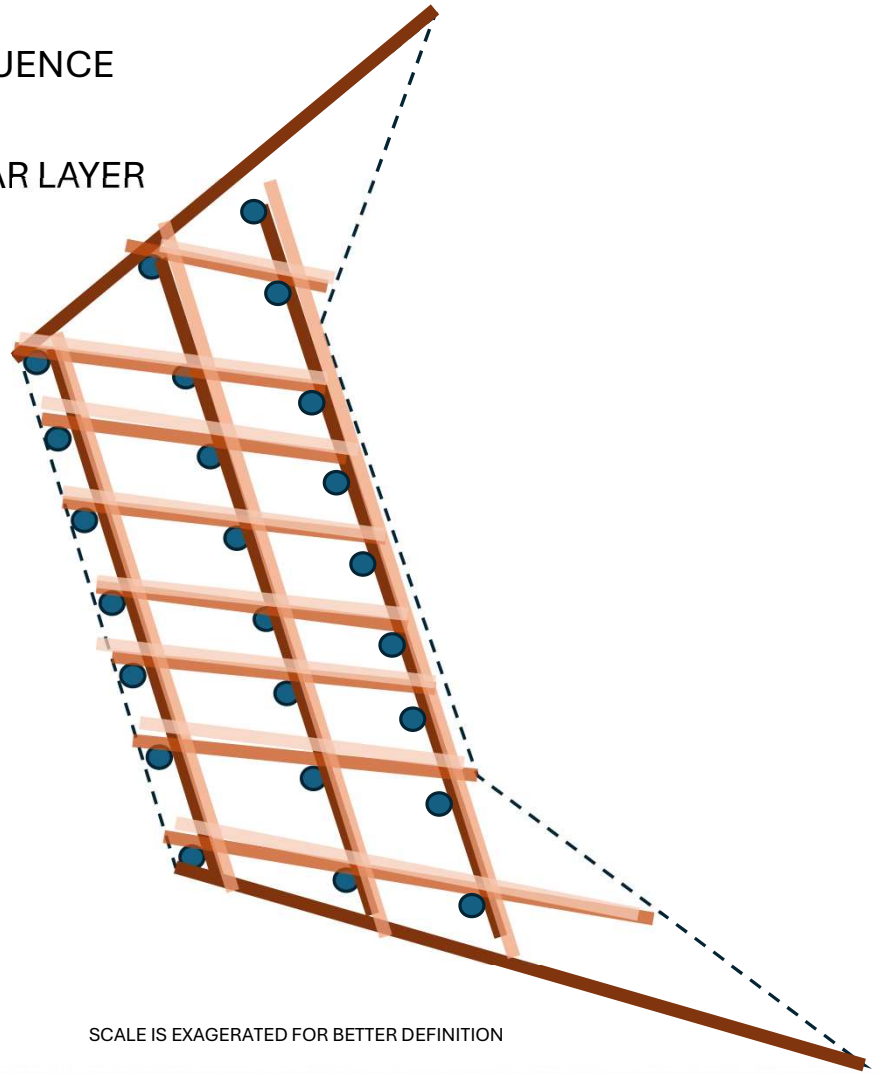
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PLAN VIEW
PARALLEL
LAYER 2

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FRAME CONSTRUCTION SEQUENCE

SECOND PERPENDICULAR LAYER



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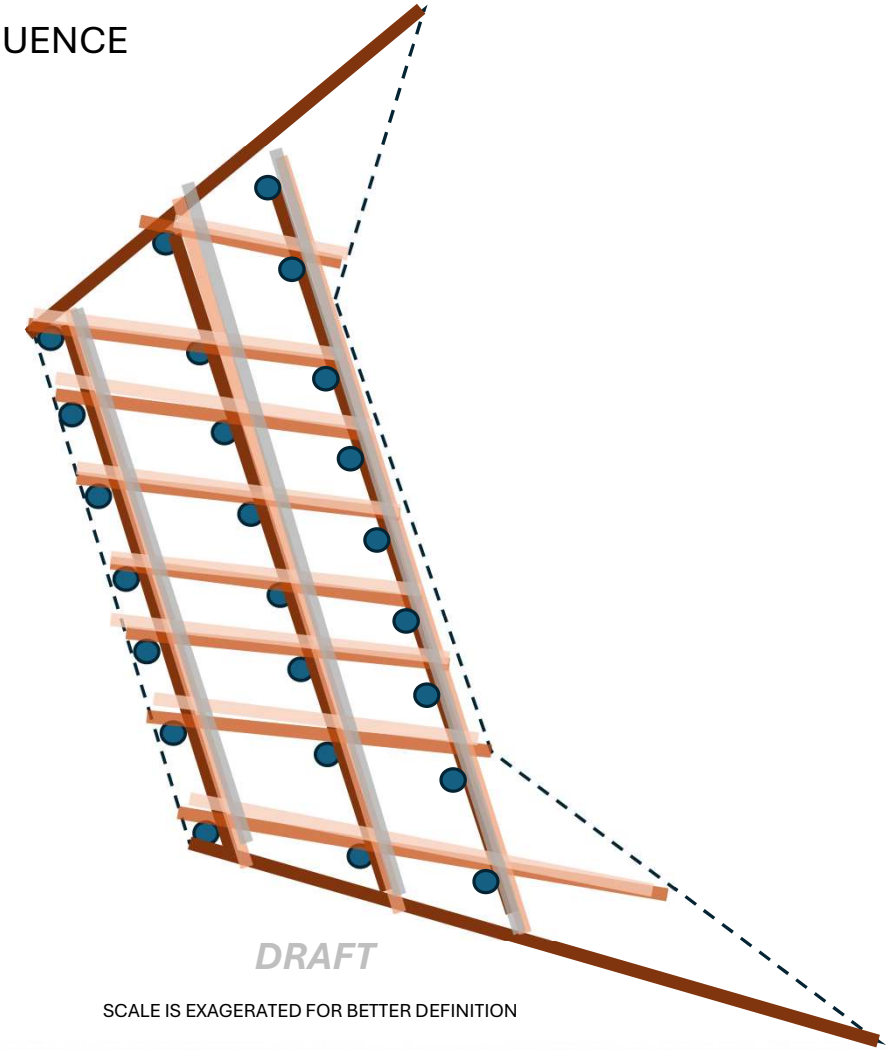
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PLAN VIEW
PERPENDICULAR
LAYER 2

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FRAME CONSTRUCTION SEQUENCE

THIRD PARALLEL LAYER



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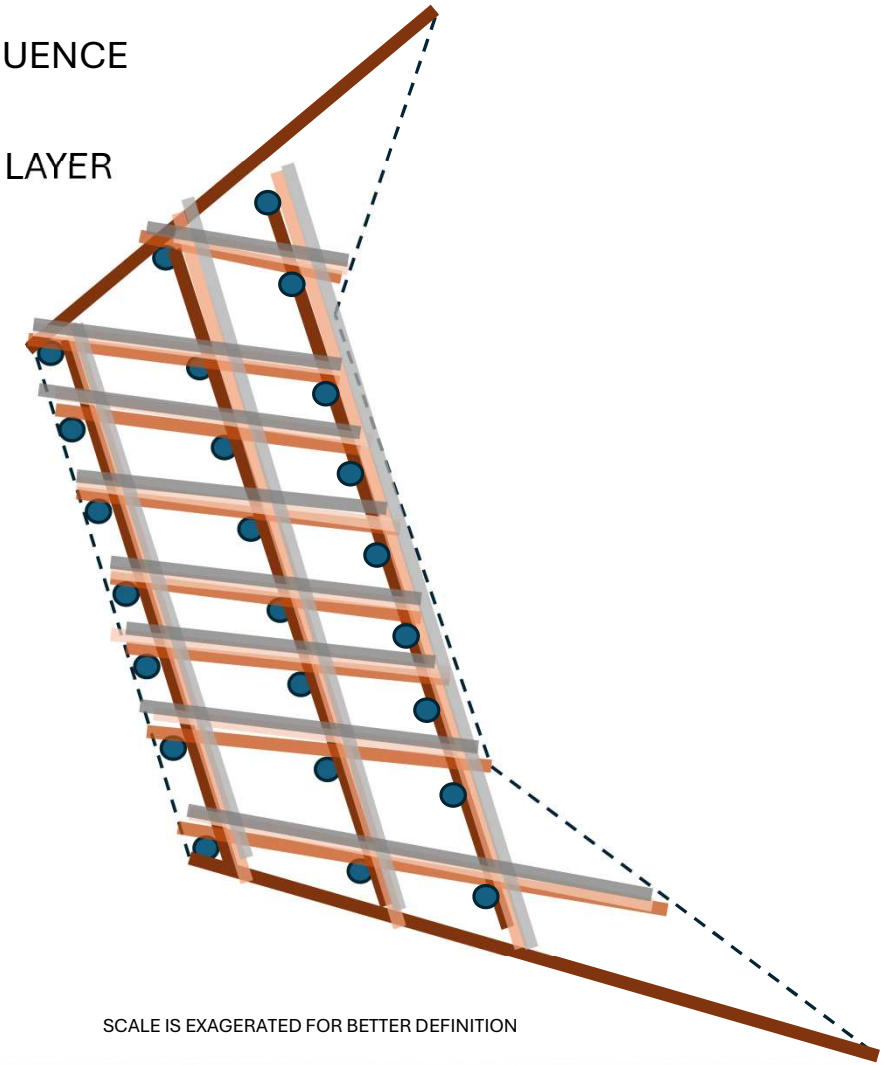
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PLAN VIEW
PARALLEL
LAYER 3

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FRAME CONSTRUCTION SEQUENCE

THIRD PERPENDICULAR LAYER



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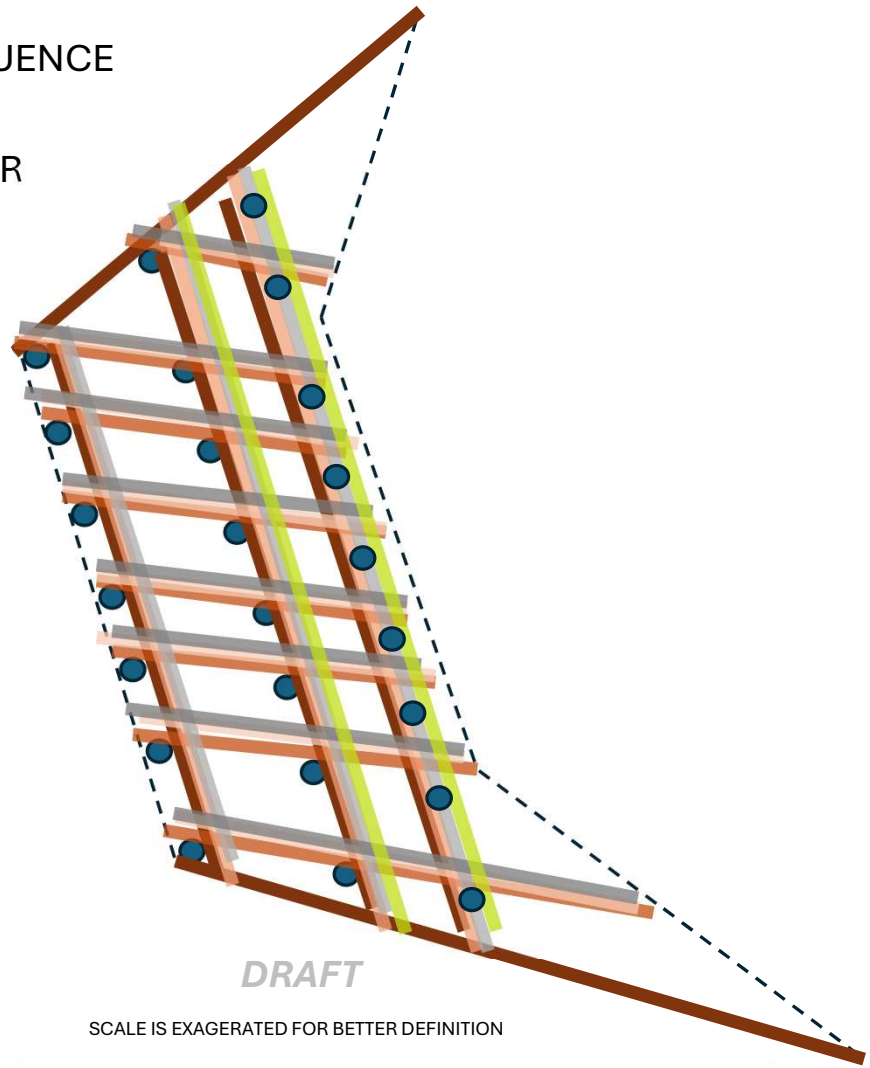
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FRAME CONSTRUCTION SEQUENCE

PARALLEL TERRACE LAYER



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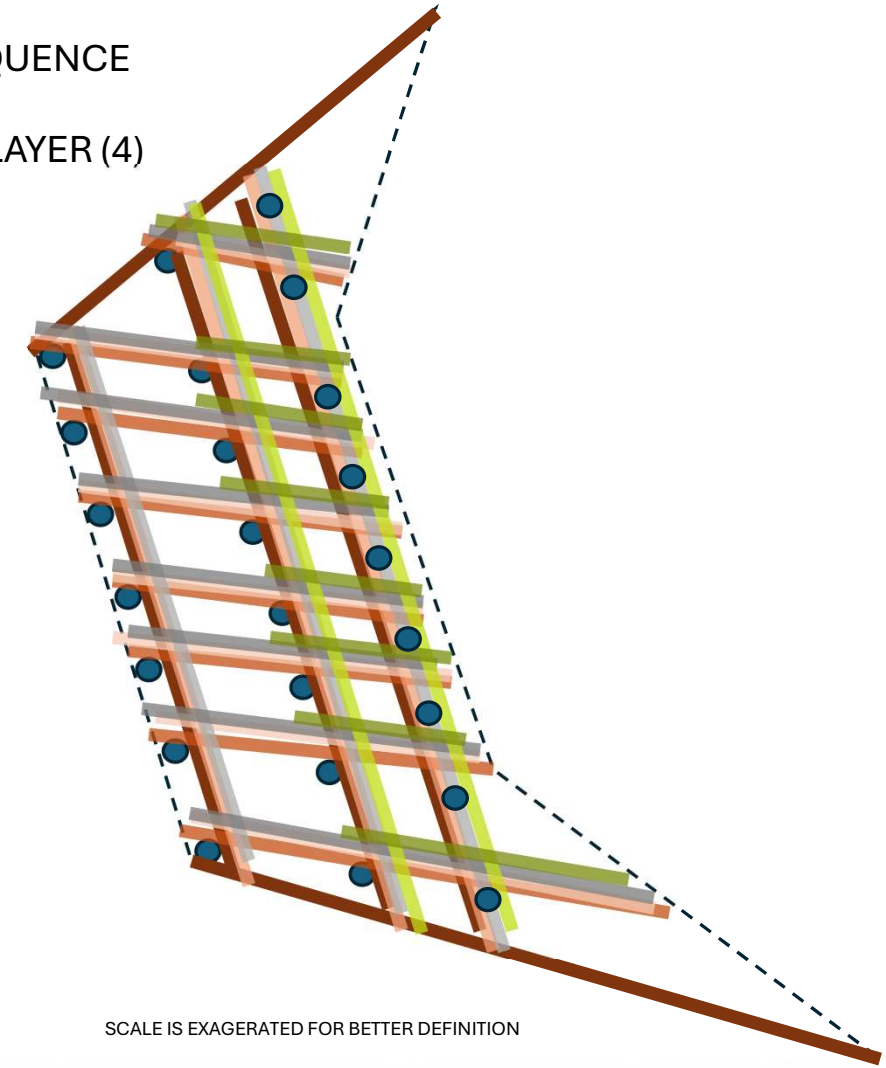
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PLAN VIEW
PARALLEL
TERRACE LAYER

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FRAME CONSTRUCTION SEQUENCE

PERPENDICULAR TERRACE LAYER (4)



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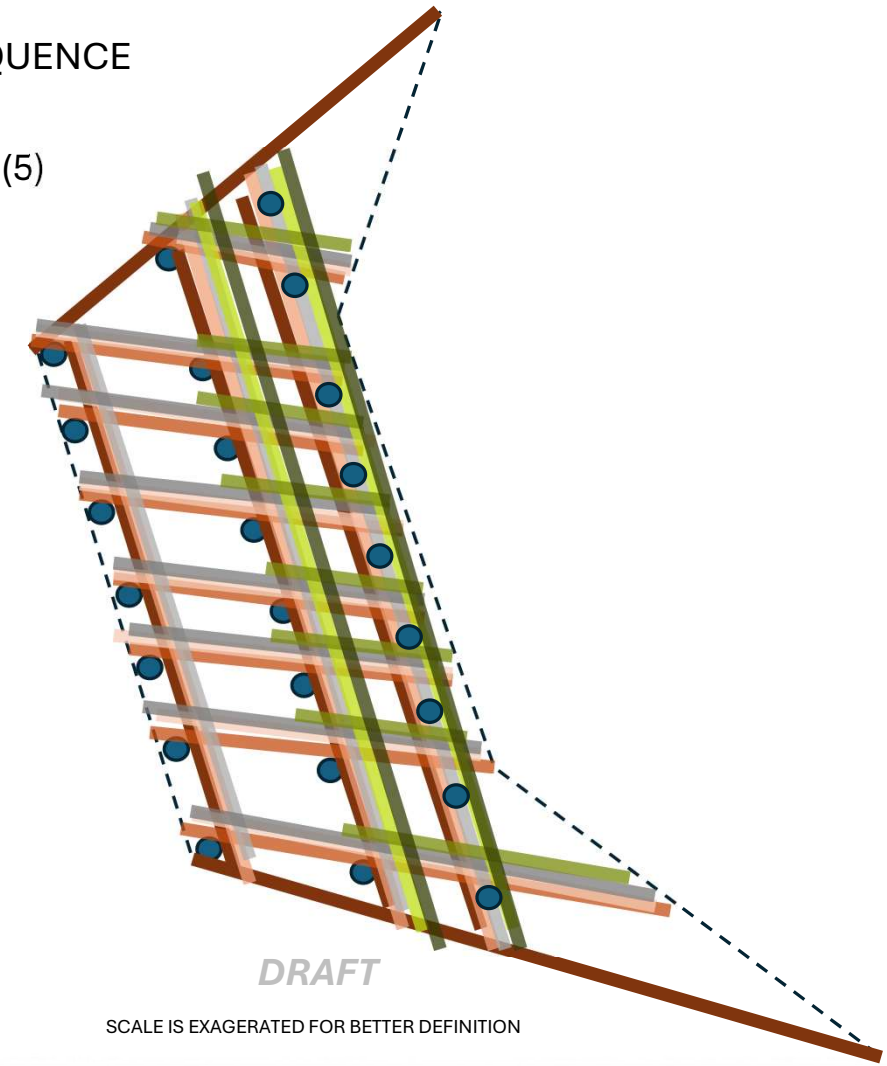
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PLAN VIEW
PERPENDICULAR
LAYER 4

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FRAME CONSTRUCTION SEQUENCE

PARALLEL TERRACE LAYER (5)
FINAL LAYER



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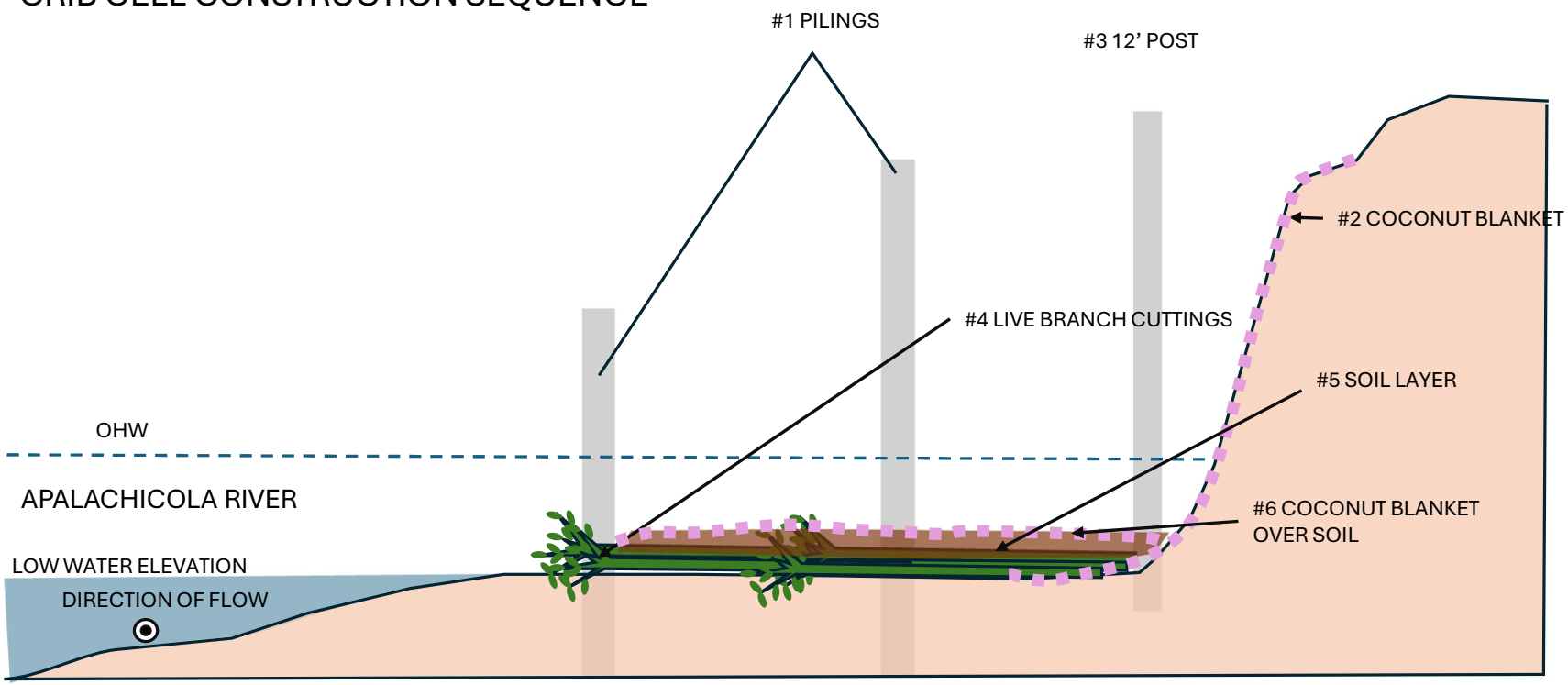
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PROJECT NO.	

CRIB CELL CONSTRUCTION SEQUENCE



USDA FOREST SERVICE

United States Department of Agriculture
Forest Service

R8
FLORIDA
NATIONAL FOREST

STAMPS, LOGOS, AND SEALS

NO.	REVISION / ISSUE	DATE
4		
3		
2		
1		

PROJECT NAME

PROSPECT BLUFF REHABILITATION AND SITE PRESERVATION

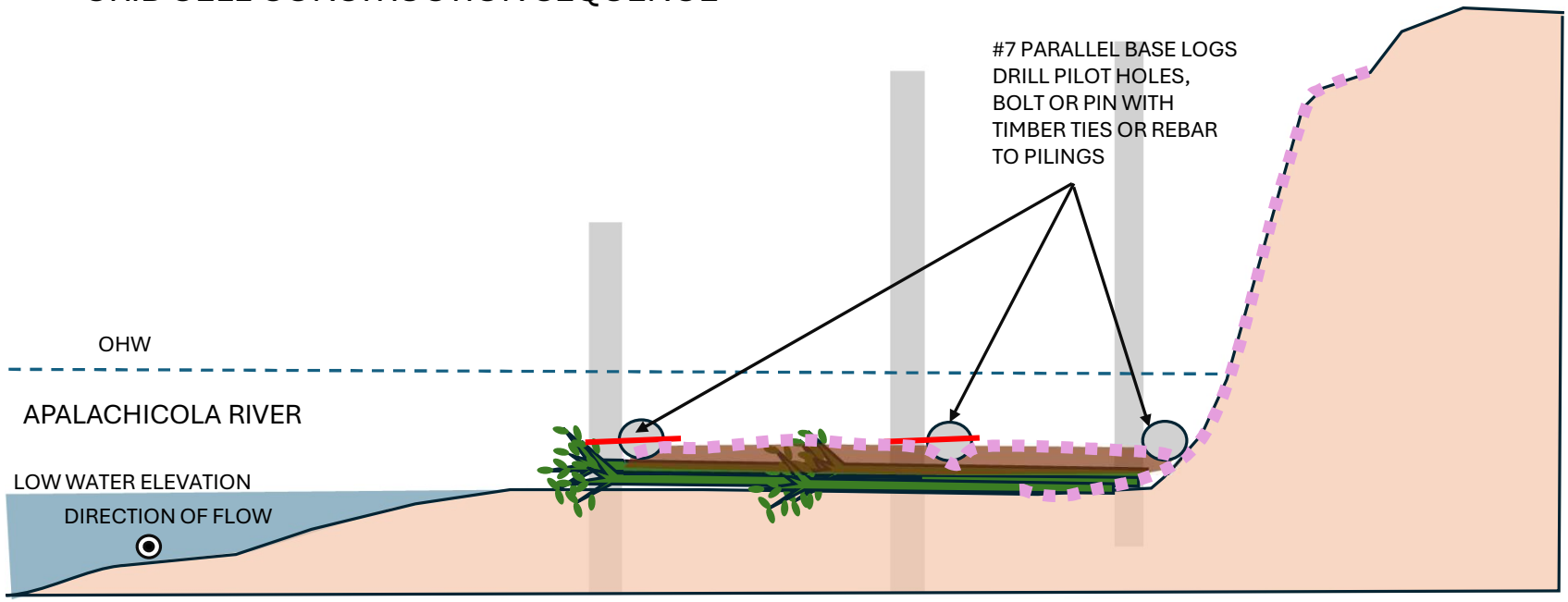
APALACHIACOLA NATIONAL FOREST

DRAWING TITLE

BI-SECTION VIEW
CRIB CELL CONSTRUCTION SEQUENCE

DATE	ARCHIVE NO.
DESIGNER: T.B. BAIR	DRAWING SHEET NO.
DRAWN: T.B. BAIR	
CHECKED	SHEET: 18 OF 24
PROJECT NO.	

CRIB CELL CONSTRUCTION SEQUENCE



DRAFT

USDA FOREST SERVICE

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Forest Service

R8
FLORIDA
NATIONAL FOREST

STAMPS, LOGOS, AND SEALS

NO.	REVISION / ISSUE	DATE
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PROJECT NAME

PROSPECT
BLUFF
REHABILITATION
AND
SITE
PRESERVATION

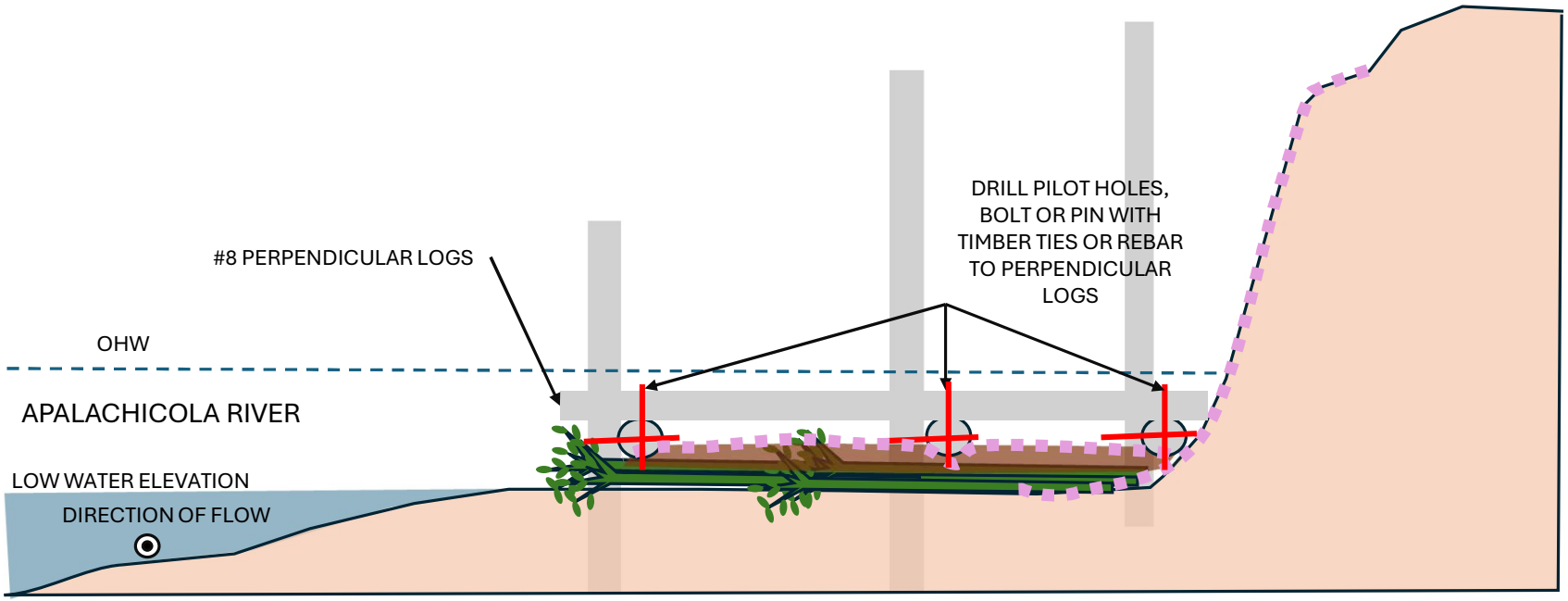
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NATIONAL
FOREST

DRAWING TITLE

BI-SECTION VIEW
CRIB CELL
CONSTRUCTION
SEQUENCE

DATE	ARCHIVE NO.
DESIGNER T.B. BAIR	DRAWING SHEET NO.
DRAWN T.B. BAIR	
CHECKED	SHEET 19 OF 24
PROJECT NO.	

CRIB CELL CONSTRUCTION SEQUENCE



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R8
FLORIDA
NATIONAL FOREST

STAMPS, LOGOS, AND SEALS

NO.	REVISION / ISSUE	DATE
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PROJECT NAME

PROSPECT BLUFF REHABILITATION AND SITE PRESERVATION

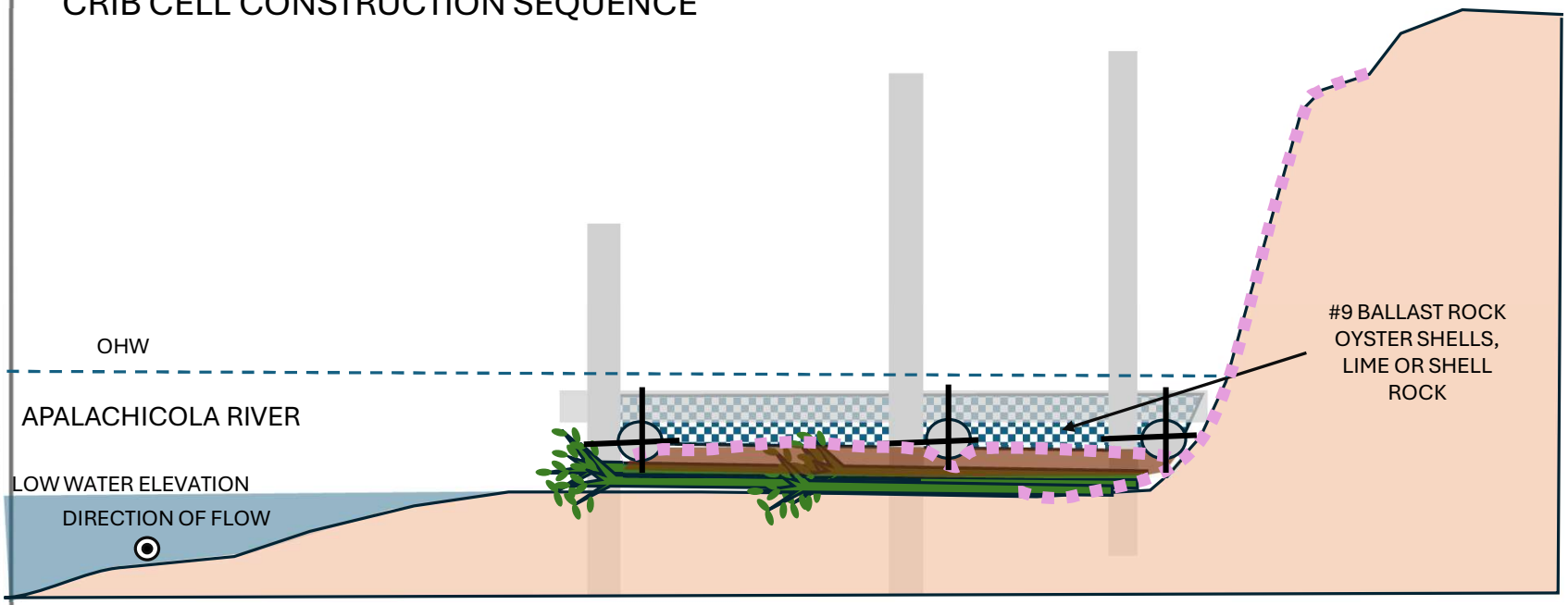
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DRAWING TITLE

BI-SECTION VIEW
CRIB CELL CONSTRUCTION SEQUENCE

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DESIGNER: T.B. BAIR	DRAWING SHEET NO.
DRAWN: T.B. BAIR	
CHECKED	SHEET: 20 OF 24
PROJECT NO.	

CRIB CELL CONSTRUCTION SEQUENCE



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Forest Service
R8
FLORIDA
NATIONAL FOREST

STAMPS, LOGOS, AND SEALS

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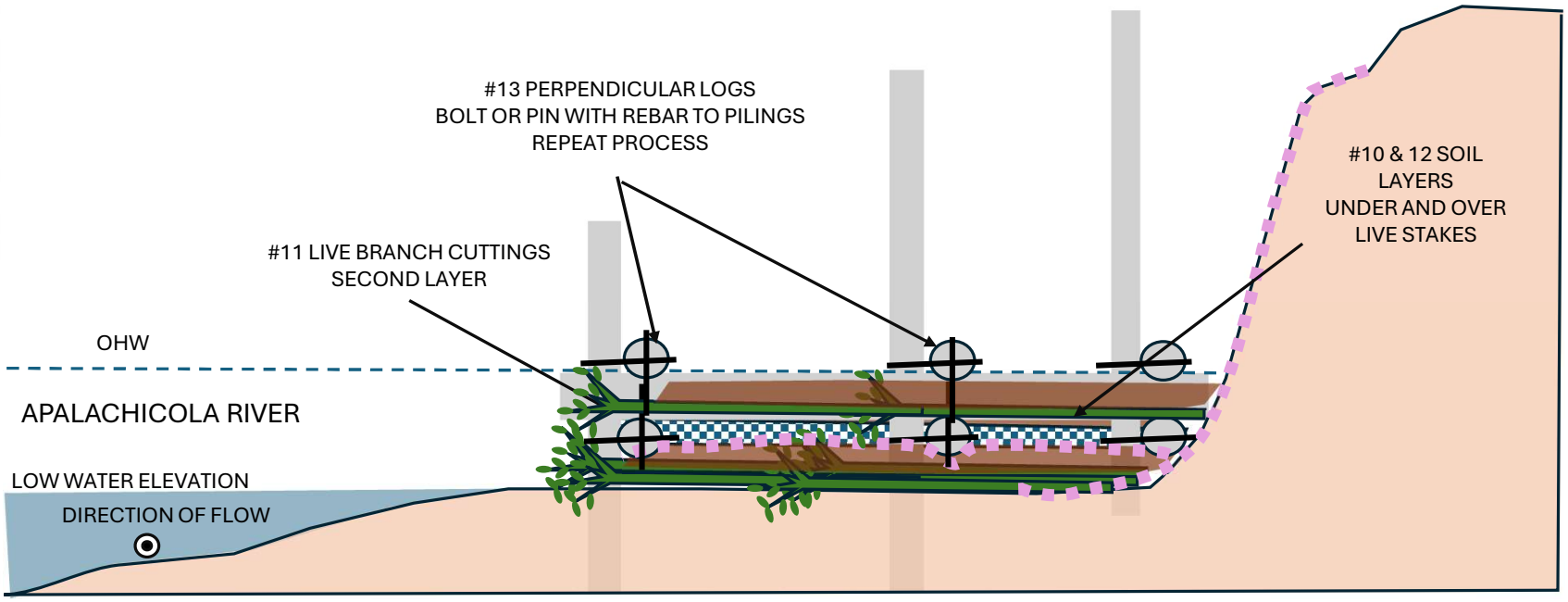
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PROSPECT
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REHABILITATION
AND
SITE
PRESERVATION

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NATIONAL
FOREST

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BI-SECTION VIEW
CRIB CELL
CONSTRUCTION
SEQUENCE

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CRIB CELL CONSTRUCTION SEQUENCE



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R8
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NATIONAL FOREST

STAMPS, LOGOS, AND SEALS

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PROJECT NAME

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REHABILITATION
AND
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PRESERVATION

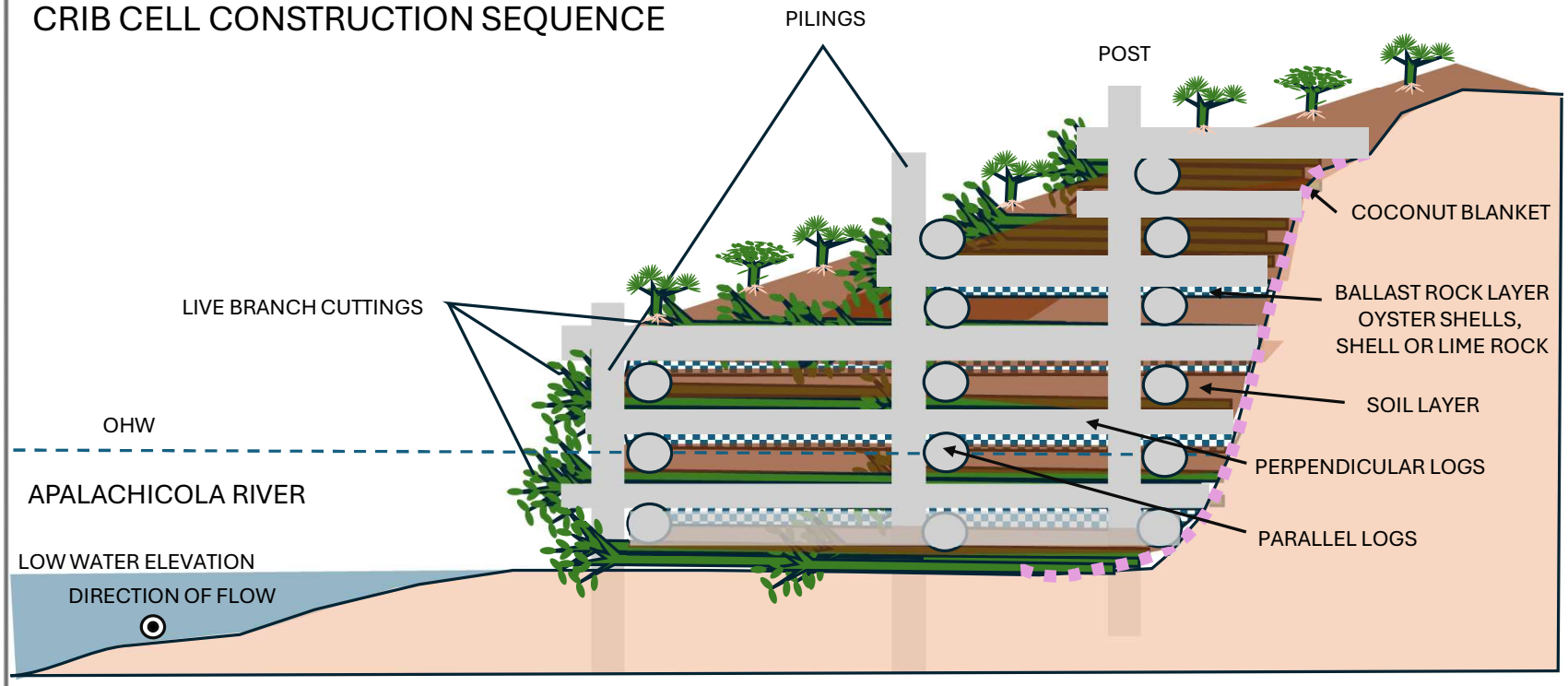
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NATIONAL
FOREST

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DRAWN: T.B. BAIR	
CHECKED	
PROJECT NO.	SHEET: 22 OF 24

CRIB CELL CONSTRUCTION SEQUENCE



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Forest Service

R8
FLORIDA
NATIONAL FOREST

STAMPS, LOGOS, AND SEALS

NO.	REVISION / ISSUE	DATE
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PROJECT NAME

PROSPECT
BLUFF
REHABILITATION
AND
SITE
PRESERVATION

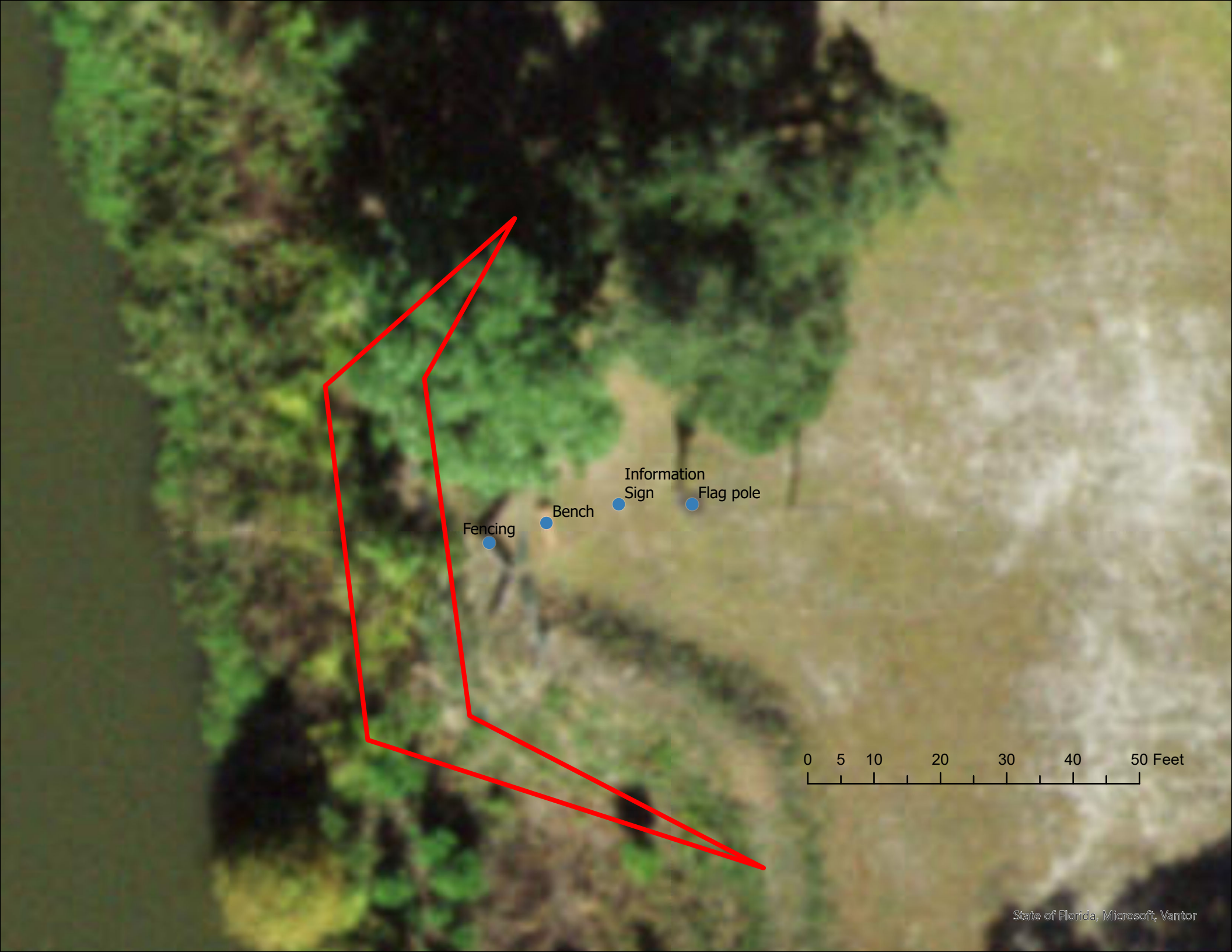
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NATIONAL
FOREST

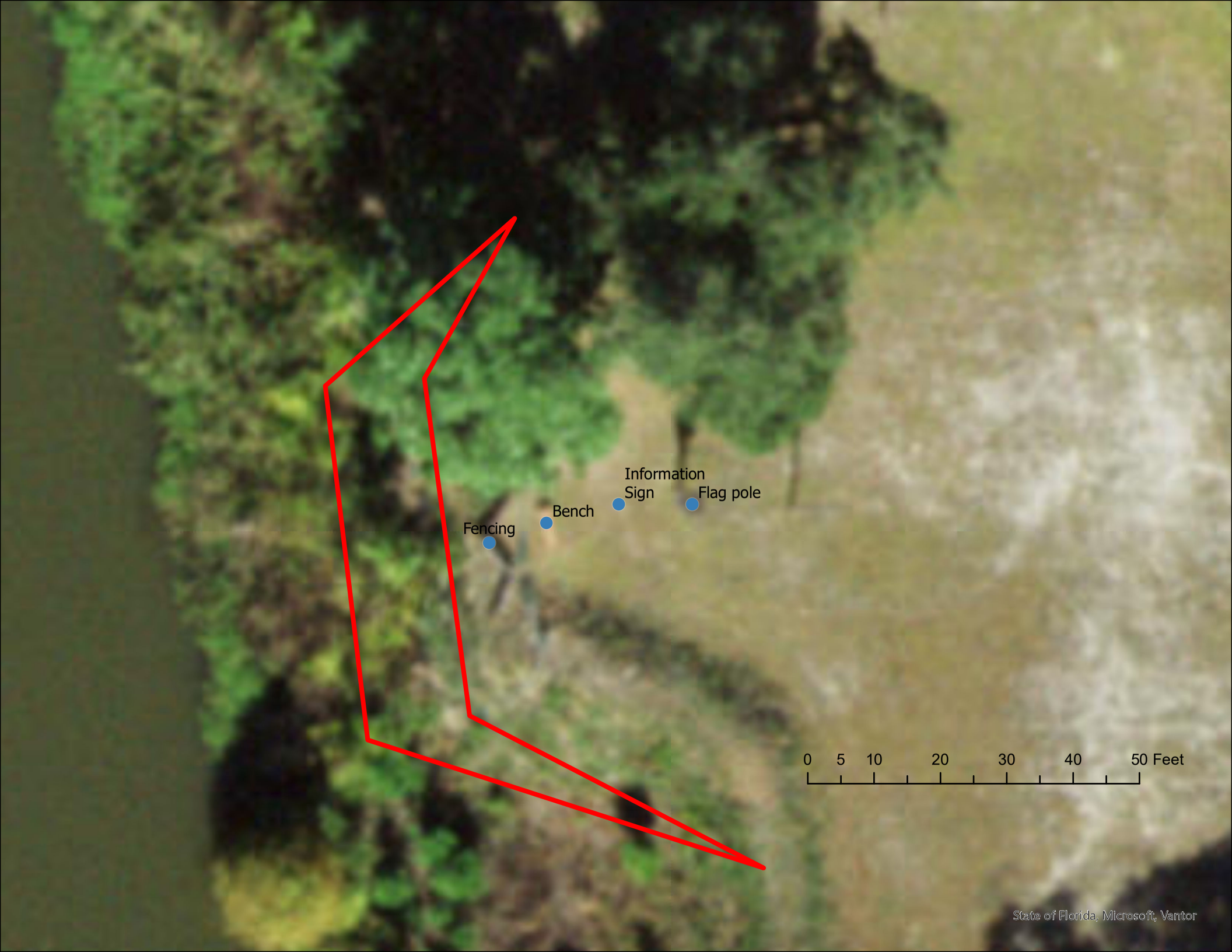
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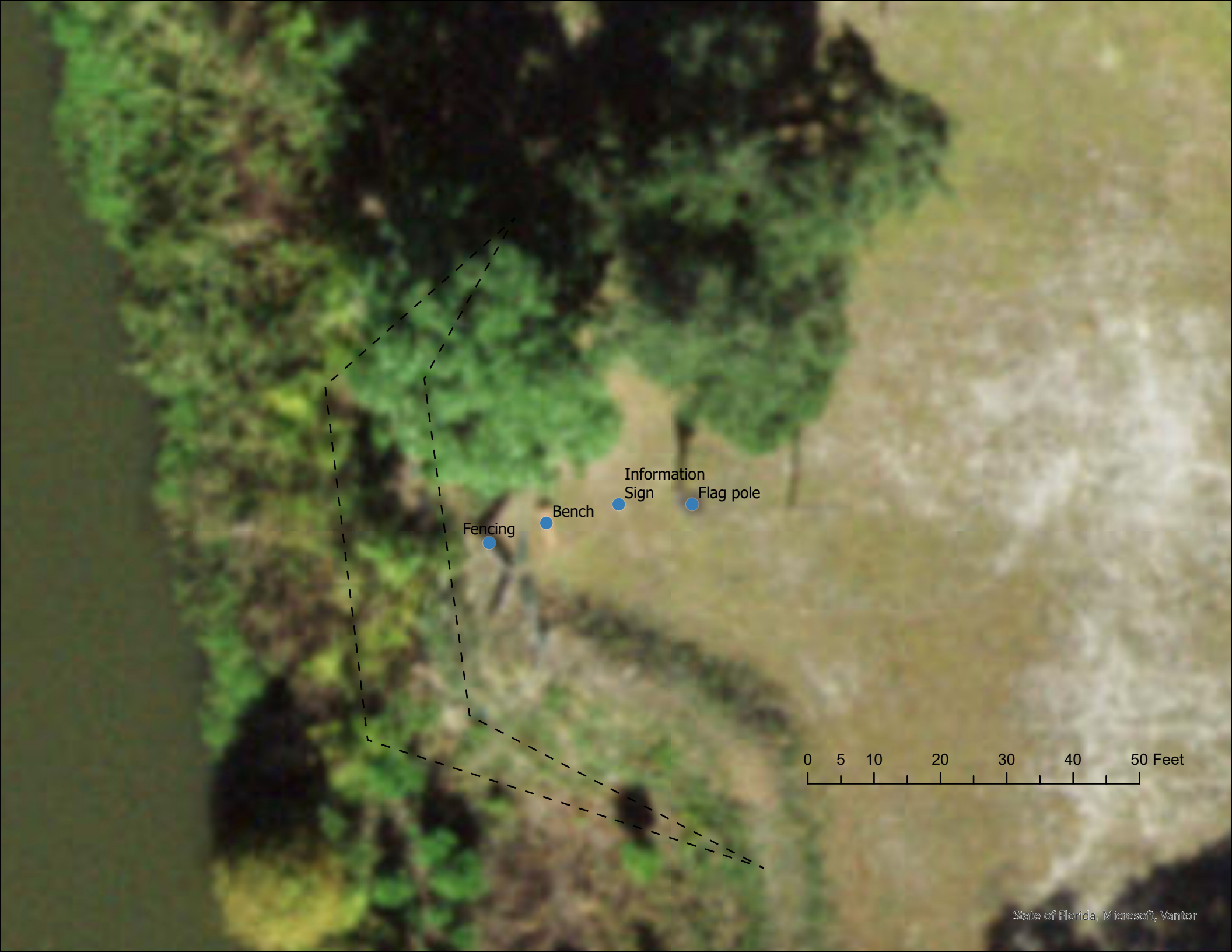
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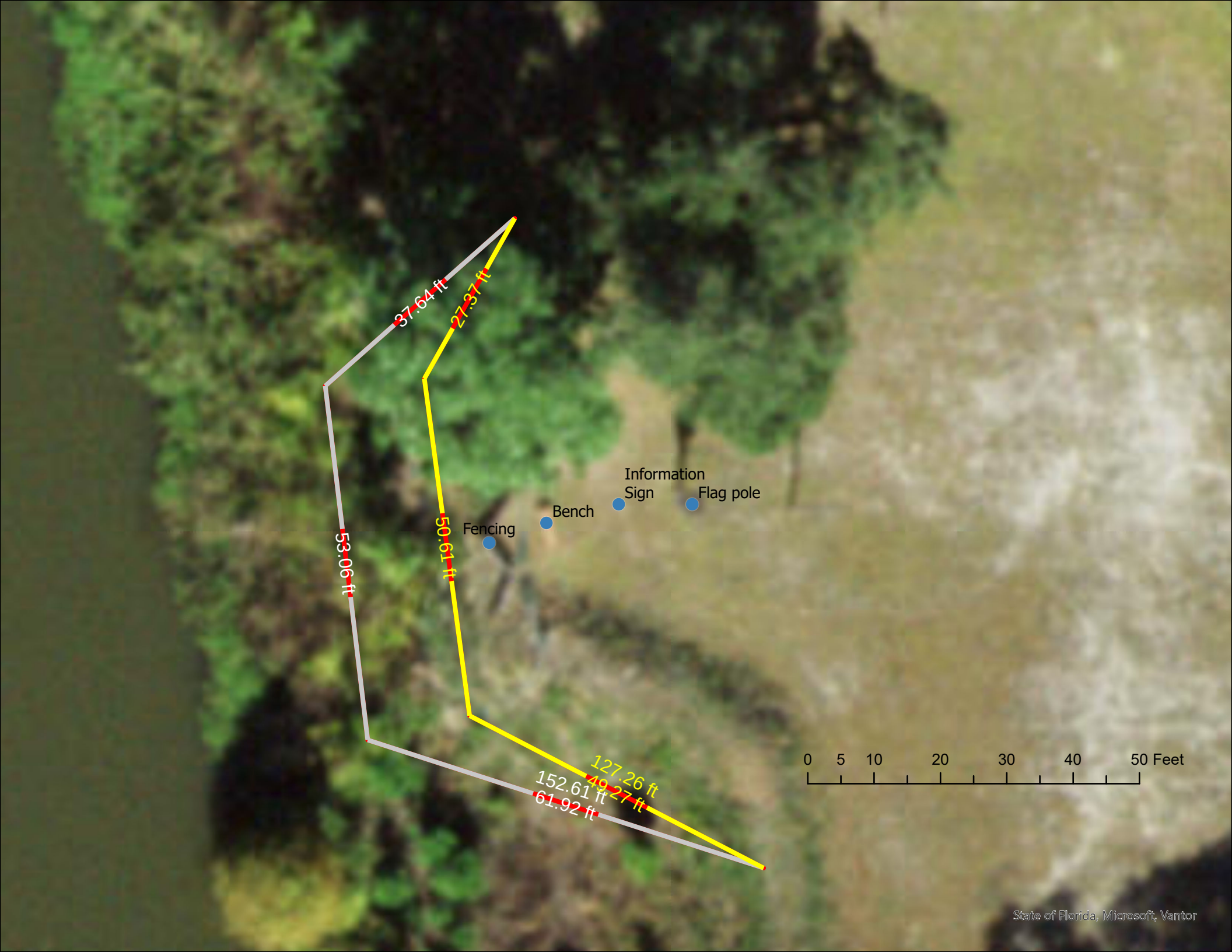
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PROJECT NO.	

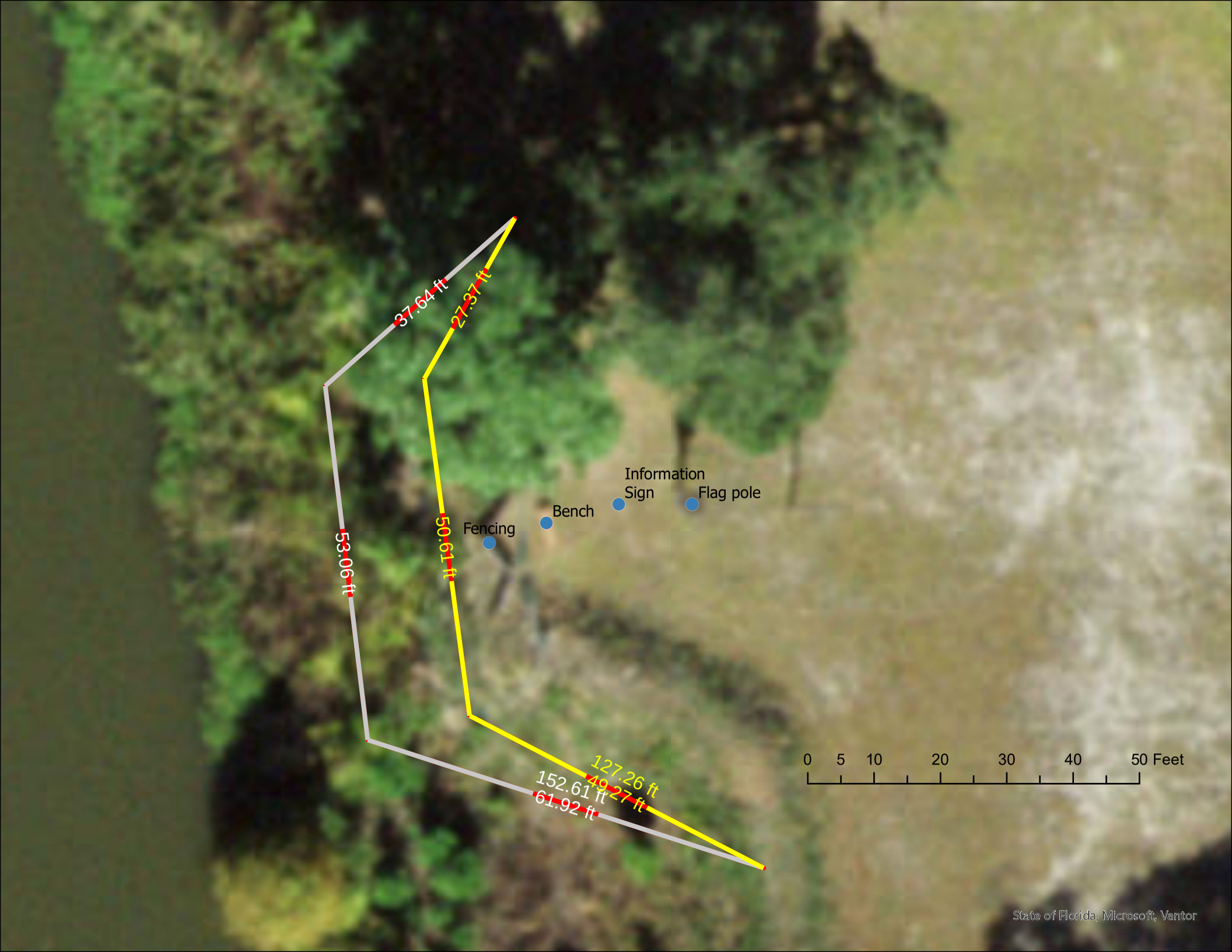
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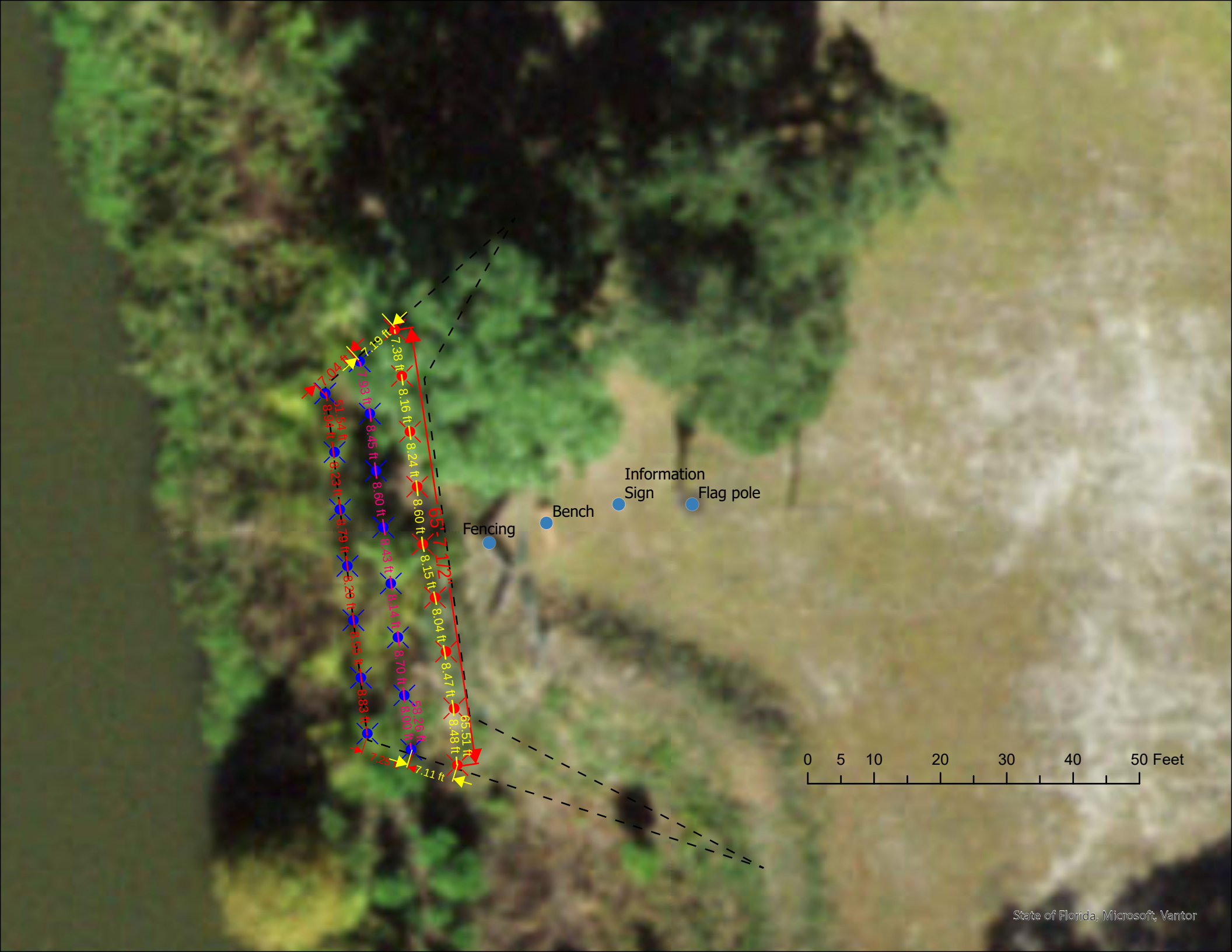

Information
Sign
Flag pole
Bench
Fencing
0 5 10 20 30 40 50 Feet
State of Florida, Microsoft, Vantor

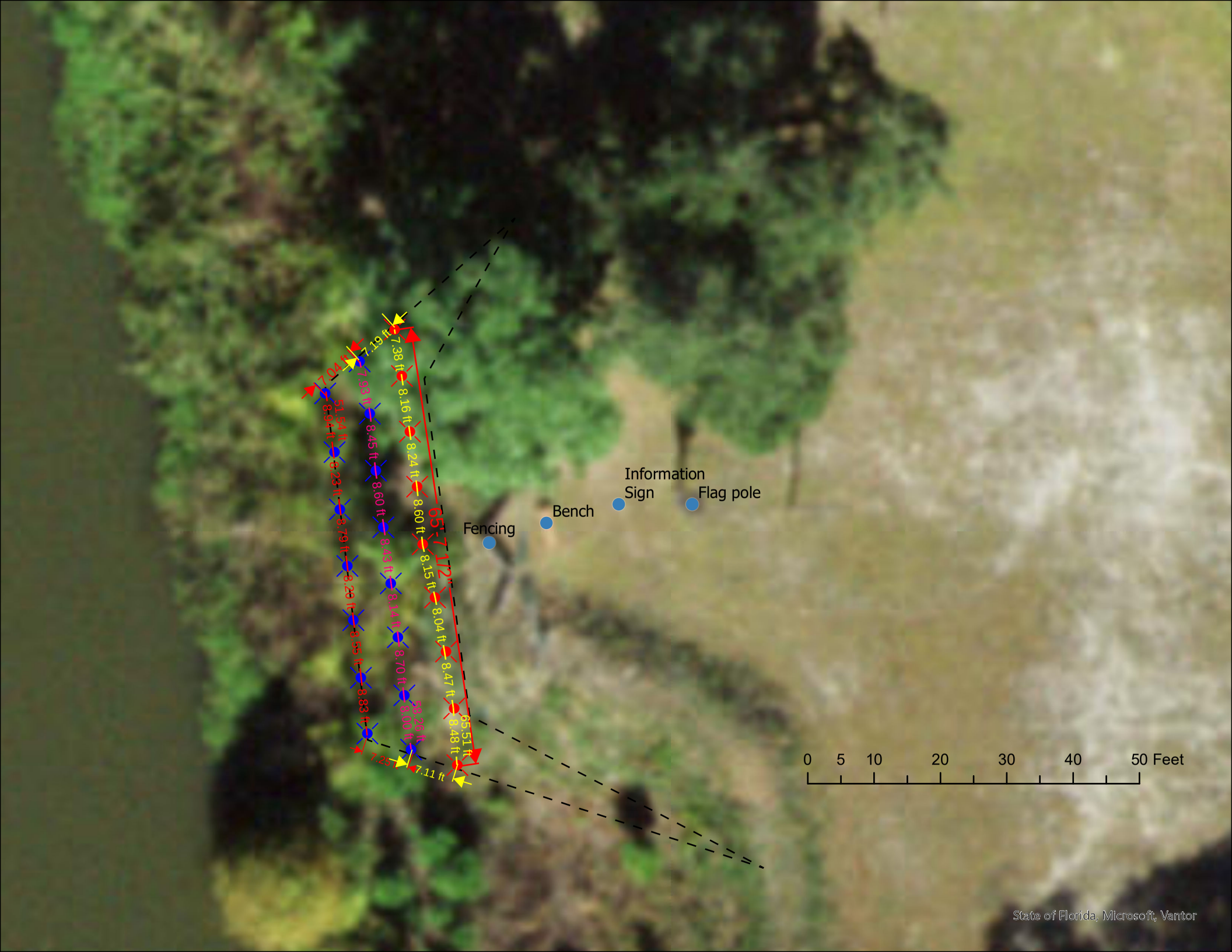

Information
Sign
Flag pole
Bench
Fencing
0 5 10 20 30 40 50 Feet
State of Florida, Microsoft, Vantor

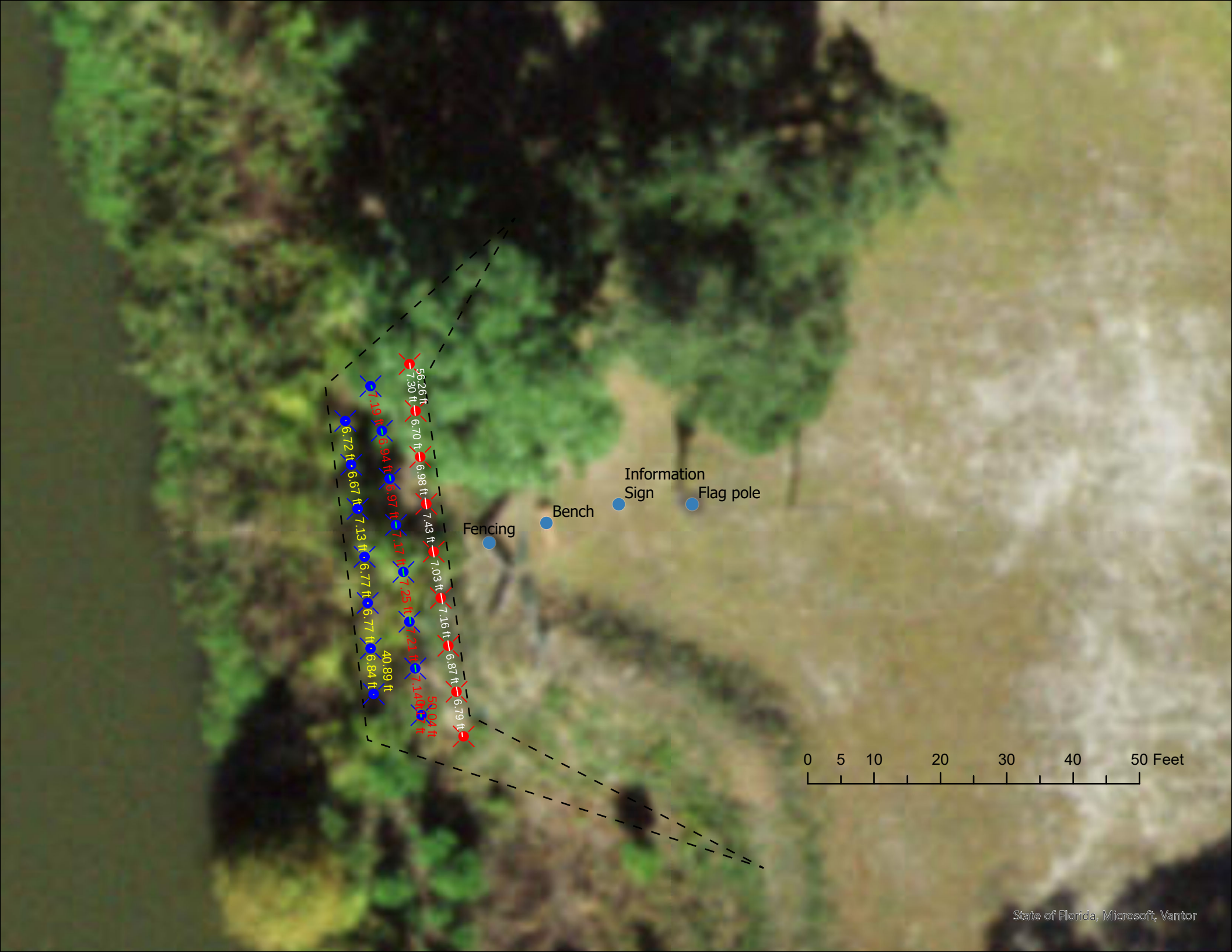

Information
Sign
Flag pole
Bench
Fencing
0 5 10 20 30 40 50 Feet
State of Florida, Microsoft, Vantor

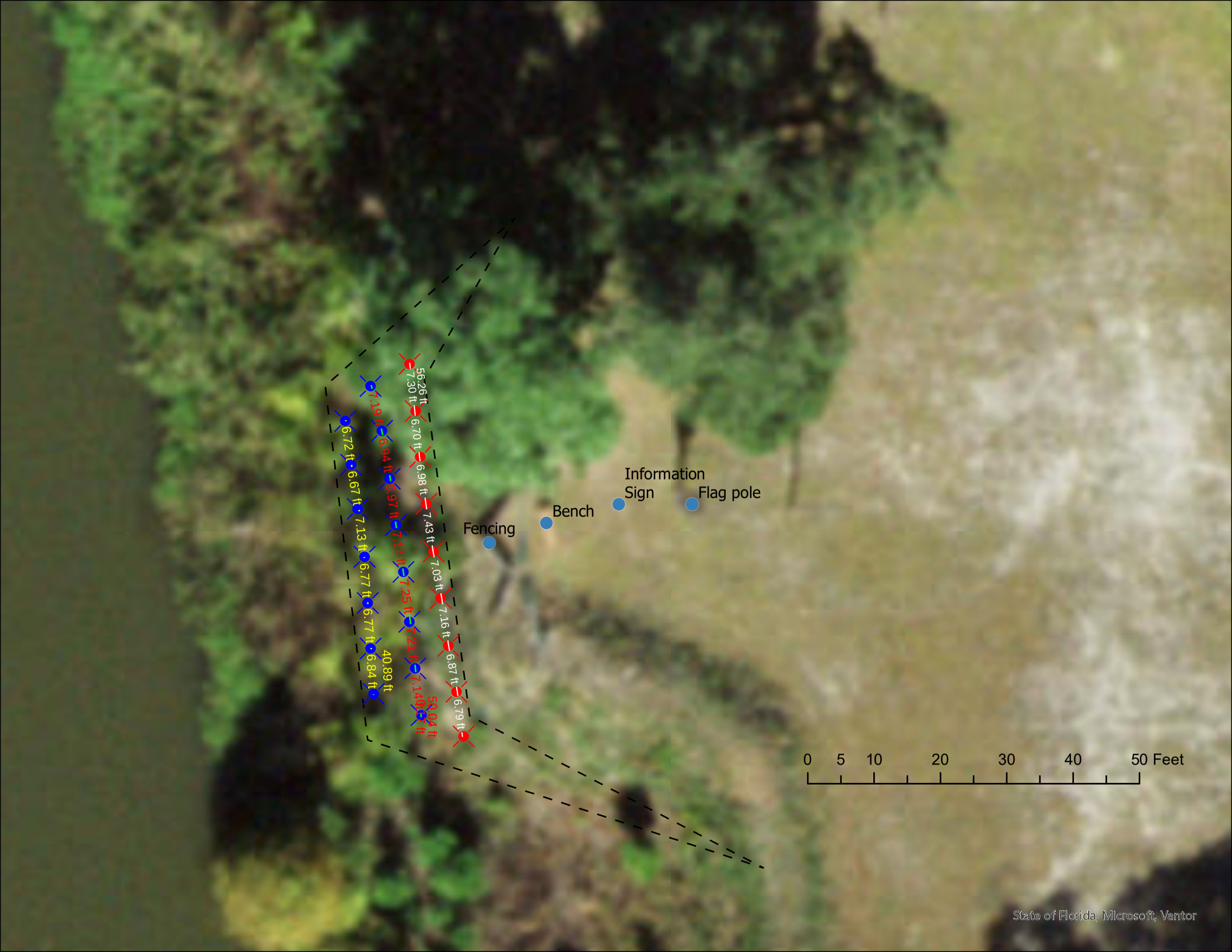

37.64 ft
27.37 ft
53.06 ft
50.61 ft
Information Sign
Flag pole
Bench
Fencing
127.26 ft
49.27 ft
152.61 ft
61.92 ft
0 5 10 20 30 40 50 Feet
State of Florida, Microsoft, Vantor


37.64 ft
27.37 ft
53.06 ft
50.61 ft
Information Sign
Flag pole
Bench
Fencing
127.26 ft
49.27 ft
152.61 ft
61.92 ft
0 5 10 20 30 40 50 Feet
State of Florida, Microsoft, Vantor


Information Sign
Flag pole
Bench
Fencing
65.51 ft
53.26 ft
51.54 ft
0 5 10 20 30 40 50 Feet
State of Florida, Microsoft, Vantor


Information
Sign
Flag pole
Bench
Fencing
65.71 ft
7.19 ft
7.38 ft
8.16 ft
8.24 ft
8.60 ft
8.15 ft
8.04 ft
8.47 ft
8.48 ft
65.51 ft
7.11 ft
7.25
53.26 ft
8.00 ft
8.70 ft
8.14 ft
8.43 ft
8.60 ft
8.45 ft
7.93 ft
7.04 ft
51.54 ft
8.94 ft
8.23 ft
8.79 ft
8.29 ft
8.55 ft
8.83 ft
0 5 10 20 30 40 50 Feet
State of Florida, Microsoft, Vantor


Information Sign
Flag pole
Bench
Fencing
56.26 ft
7.30 ft
6.70 ft
6.98 ft
7.43 ft
7.03 ft
7.16 ft
6.87 ft
6.79 ft
50.04 ft
7.14 ft
7.21 ft
7.25 ft
7.17 ft
6.97 ft
6.94 ft
7.19 ft
6.72 ft
6.67 ft
7.13 ft
6.77 ft
6.77 ft
6.84 ft
40.89 ft
0 5 10 20 30 40 50 Feet
State of Florida, Microsoft, Vantor


Information
Sign
Flag pole
Bench
Fencing
56.26 ft
7.30 ft
6.70 ft
6.98 ft
7.43 ft
7.03 ft
7.16 ft
6.87 ft
6.79 ft
50.04 ft
7.14 ft
7.21 ft
7.25 ft
7.17 ft
6.97 ft
6.94 ft
7.19 ft
6.72 ft
6.67 ft
7.13 ft
6.77 ft
6.77 ft
6.84 ft
40.89 ft
0 5 10 20 30 40 50 Feet
State of Florida, Microsoft, Vantor

Appendix C: Coring Report



Coring Results at Prospect Bluff (8FR64) Archaeological Site Erosion Area

Accession #APAF00354

March 2017

Jack Rink, Jim Dunbar, Willet Boyer and Ed Green of the Aucilla Research Institute

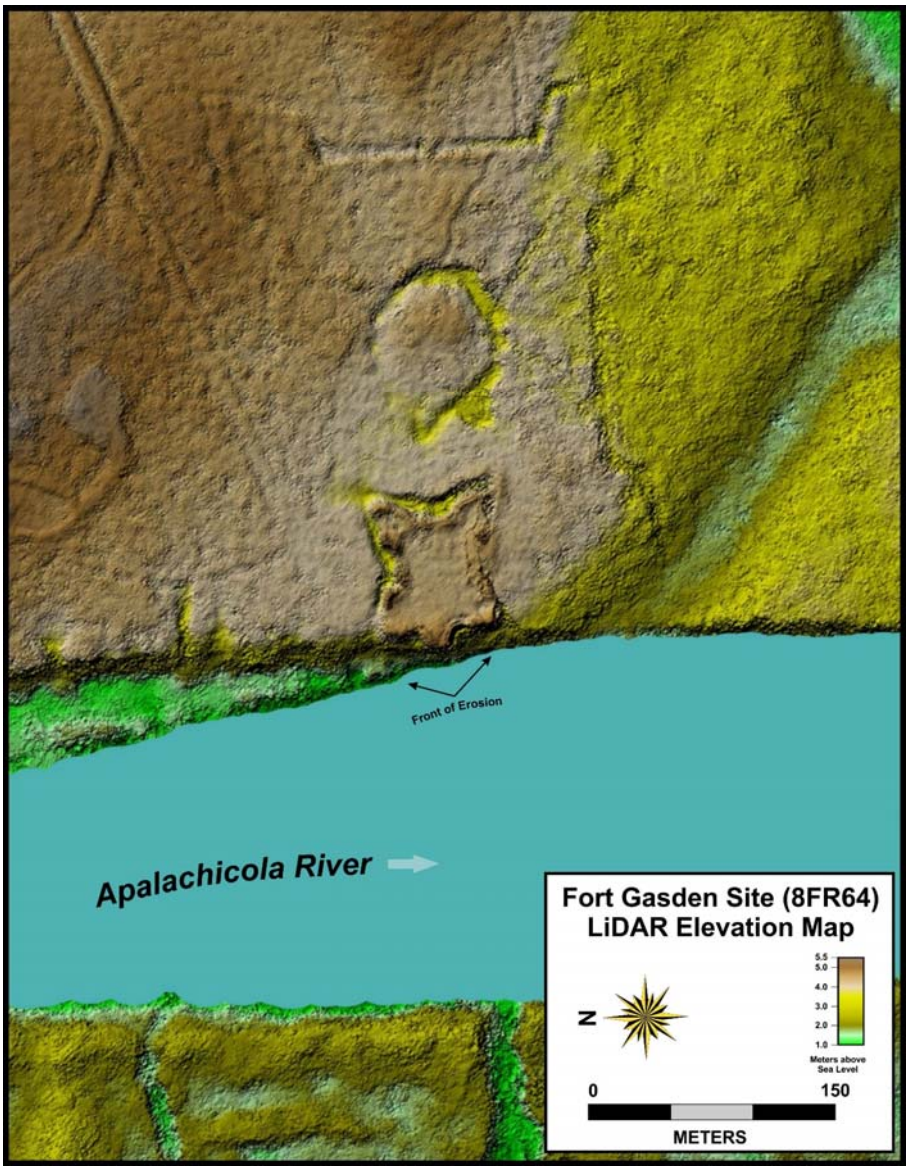


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Core FG-3 9
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Coring Results at Prospect Bluff (8FR64) Archaeological Site Erosion Area

Jack Rink, Jim Dunbar, Willet Boyer and
Ed Green of the Aucilla Research Institute

Introduction

This project was carried out under Challenge Cost Sharing Agreement 16-CS-11080500-023 between the Aucilla Research Institute, Inc. (501(c)(3)) hereafter referred to as ARI and the USDA, United States Forest Service, National Forests in Florida, hereafter referred to as Forest Service. Work took place under the authority of the Interior and Related Appropriations Act of 1992 (Interior Appropriation) in fulfillment of this project.

Background: Earthworks associated with the British Fort National Historic Landmark and Fort Gadsden Historic Site located on the bank of the Apalachicola River within the Apalachicola National Forest are suffering erosion and require stabilization before more adverse effects occur. Forest Service engineers needed data about the soil substrate that was acquired by ARI using a vibracore device fitted with three-inch diameter core tubes. Archaeological monitoring was incorporated in the sample strategy to best insure minimal impact on the archaeological remains while, at the same time, securing the necessary information to halt continued site erosion once the Forest Service develops and implement preventive measures.

The project carried out by ARI with the Forest Service has benefited both entities. The ARI crew consisted of one geologist (Jack Rink), two archaeologists (Willet Boyer and Jim Dunbar), and one very dedicated avocational archaeologist (Ed Green) who was a former president of the Michigan Archaeological Society before moving to Florida. ARI had recently acquired the vibracore coring equipment but did not have a core splitter. This partnership allowed ARI to assemble all the axillary equipment needed to conduct coring operations in the future. This effort has also allowed ARI to initiate a dataset of cores it has, and will be, accumulating into the future. We believe that the Forest Service also benefited by having the combined geological and archaeological experience that ARI brought into the field and subsequently during the analysis. The staff at ARI would like to thank the US Forest Service for this opportunity.

Coring Operations

On December 15 and 16, 2016 a crew with the Aucilla Research Institute, Inc., conducted vibracore operations on a water battery and demi-bastion at the Prospect Bluff (the site of British fort during the War of 1812 and an overlying fort named Fort Gadsden, 8FR64) site. The purpose of the coring operation was to collect information about the sediment along a front of erosion towards the Apalachicola River bank (Figure 1). Here the river has been slowly migrating into the riverbank compounded by the effects of modern boat wakes that have acted to reduce the westward, riverside, point of the earthworks. USFS engineers require information about the nature of the sediment to make plans for erosion control at the site.

A vibracore device fitted with three-inch diameter core tubes was utilized to collect five sediment cores. The geographic locations of the cores are listed in Table 1 and depicted in Figure 2.

Table 1. Core locations

Core ID	Longitude North	Latitude West	Comments
FG-1	29° 56' 16.6359"	85° 00' 42.8735"	In core line is South of FG-2
FG-2	29° 56' 16.8188"	85° 00' 42.9202"	In core line is South of FG-5
FG-3	29° 56' 16.3500"	85° 00' 42.7918"	In core line is on South end of line
FG-4	29° 56' 16.7334"	85° 00' 42.6116"	Offset east northeast 7.6 m from FG-1
FG-5	29° 56' 17.0801"	85° 00' 43.0051"	In core line is on North end of line

The stratigraphy identified in each core is documented in three sets of information for each core:

1. A coring form with information collected while in the field, as well as, a continuous but compacted image of each core's contents for quick reference;
2. A table of information about the sediments encountered in each core; and
3. A composite photograph depicting the sediment in each core in discontinuous and uncompact sections.

This project was not solely a geologic data-gathering mission. It also had an archeological component in exploring the human-made and natural stratigraphy, as well as collecting possible artifacts. It should be mentioned that core FG-4, placed east (inland) of the others, yielded an interesting set of five levels between 35 cm to 51 cm that may be some type of culturally derived deposit (see discussion section page 16). Yet another interesting feature in core FG-4 was a single sherd of Swift Creek pottery located below those mentioned above in level 51-66 cm. The sherd may have been part of the fill related to battery construction but is located below what appears to be a burnt surface that may be from battery clearing and thus the Swift Creek pottery may be an *in situ* recovery.

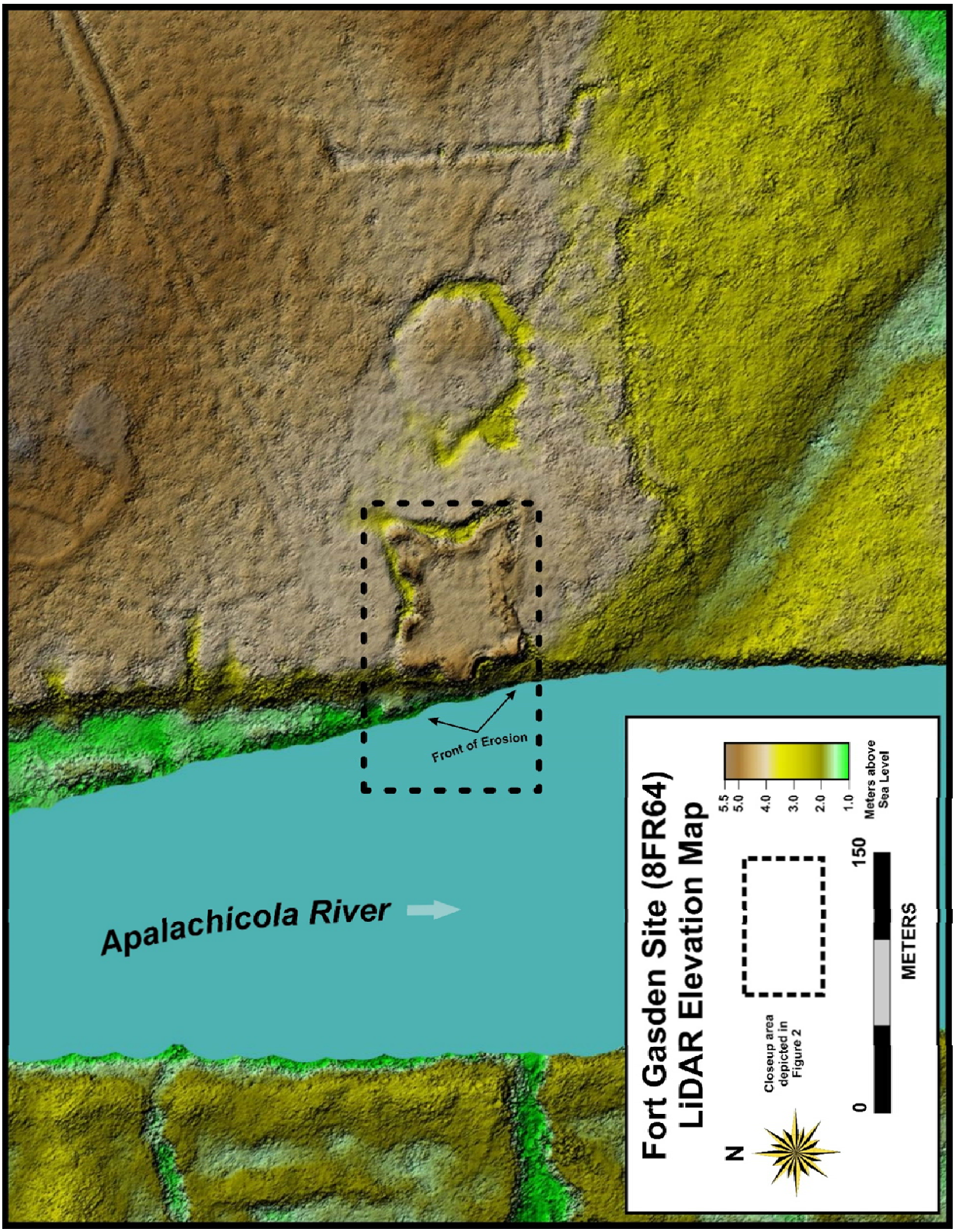


Figure 1. Shows the Prospect Bluff (Ft. Gadsden) site

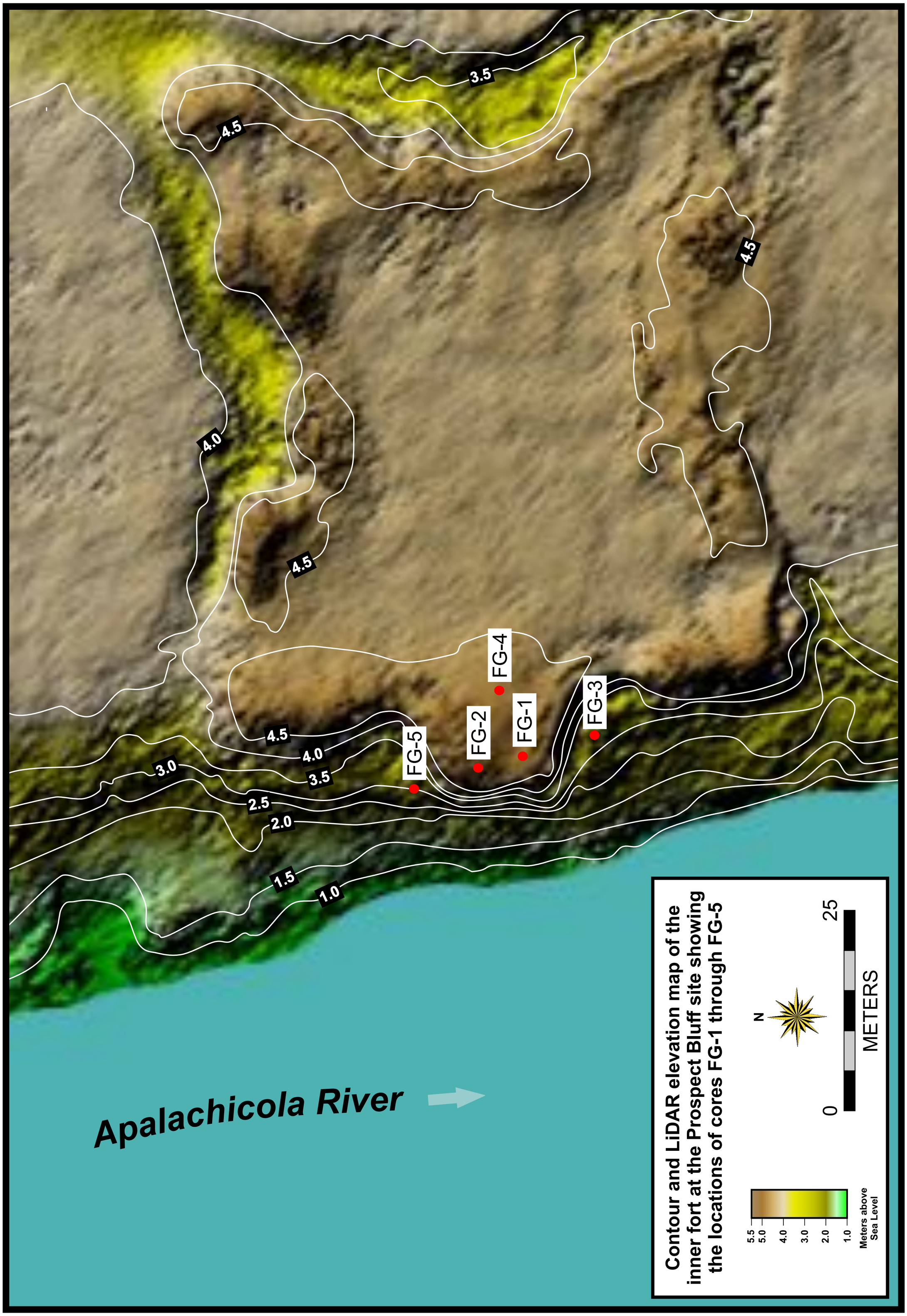


Figure 2. Shows the core locations

AUCILLA RESEARCH INSTITUTE CORING FORM

Core ID FG-1

Type of Core Device Vibracore

Location or Site ID Ft. Gadsden (8FR64)

Crew Ed Green, Willet Boyer, Jack Rink, and Jim Dunbar of ARI and Rhonda Kimbrough and Andrea Repp of USFS

Date: December 15, 2016

Weather: Clear, sunny

Type of Coring Pipe Aluminum
(i.e. aluminum, steel, etc.)

Measurements in Centimeters

A. 396

B. 124

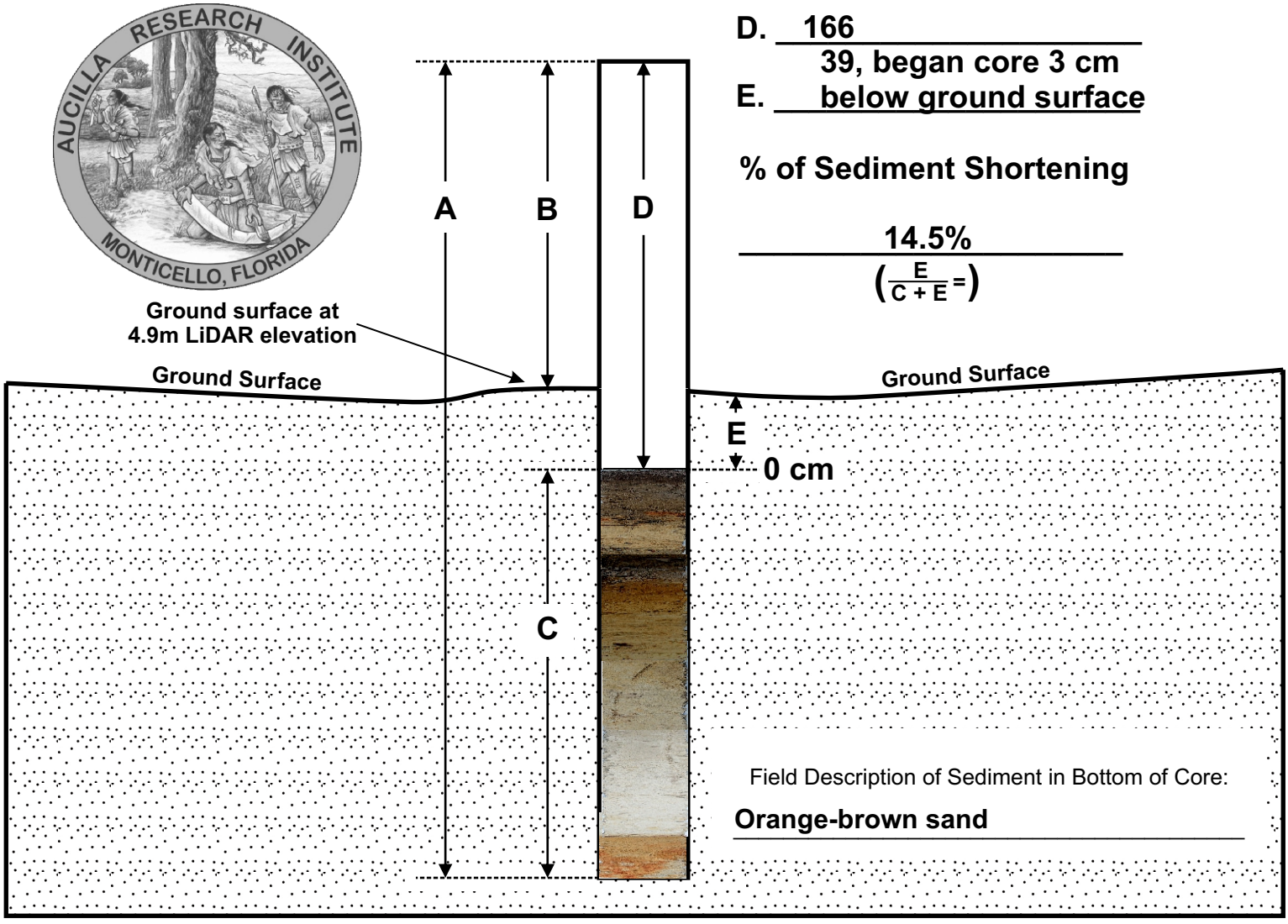
C. 230

D. 166

E. 39, began core 3 cm below ground surface

% of Sediment Shortening

$$\left(\frac{E}{C+E}=\right) \quad 14.5\%$$



Field Description of Sediment in Bottom of Core:

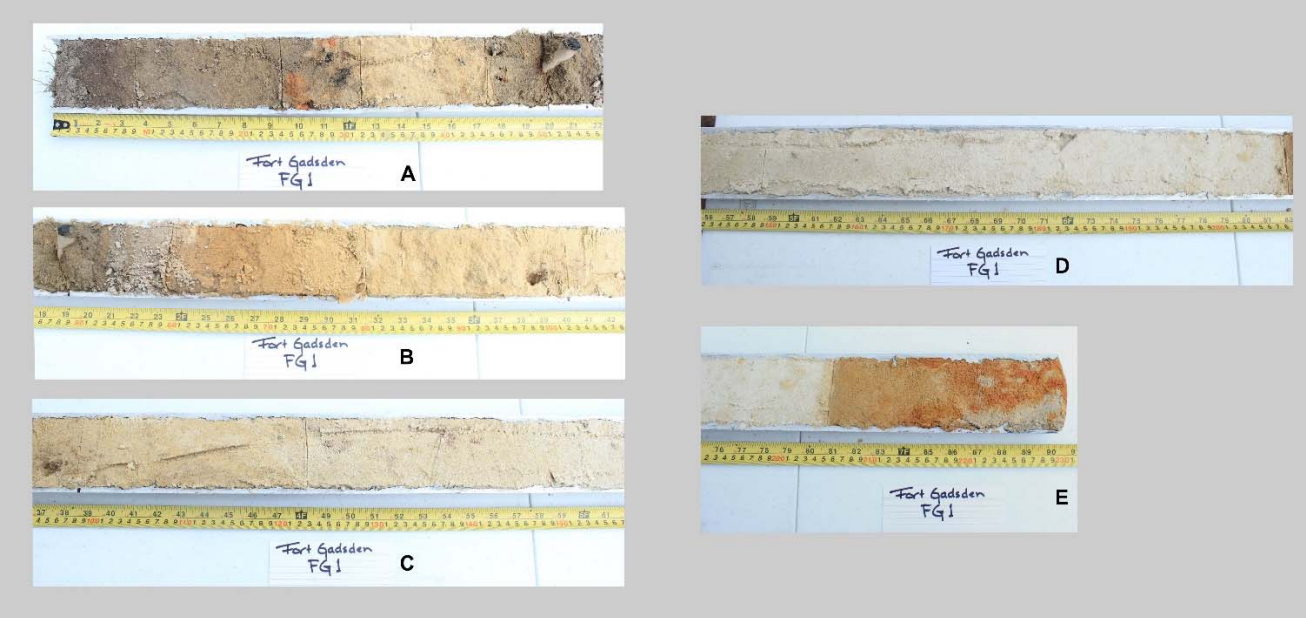
Orange-brown sand

Core FG-1

Level and Sediment Description

Core Description FG-1		
Interval cm	**Description**	**Comments**
0-10	Dark greenish-brown sandy loam	Image FG-1A
10-24	Light greenish brown sand	Image FG-1A
24-32	Orange mottled charcoal-rich cream to brown sand	Image FG-1A, charcoal fragments
32-44	Cream color sand w/ charcoal flecks at bottom	Image FG-1A, charcoal fragments
44-60	Brown to light gray (at base) sand	Image FG-1A & 1B, with 1.5 cm diameter root @ 58-59 cm depth, charcoal flecks at top
60-80	Cream orange sand	Image FG-1B
80-100	Cream sand	FG-1B, 1C, & 1D, finer sand than above grading from cream at top to very white at bottom
100-123	Tan sand	
123-150	Dirty white sand	
150-206	Very white sand	
206-229	Orange and oxidized red mottled clayey sand	FG-1E

Photos of Core FG-1 contents



AUCILLA RESEARCH INSTITUTE CORING FORM

Core ID FG-2

Type of Core Device Vibracore

Location or Site ID Ft. Gadsden (8FR64)

Crew Ed Green, Willet Boyer, Jack Rink, and Jim Dunbar of ARI and Rhonda Kimbrough and Andrea Repp of USFS

Date: December 15, 2016

Weather: Clear, sunny

Type of Coring Pipe Steel
(i.e. aluminum, steel, etc.)

Measurements in Centimeters

A. 400

B. 184

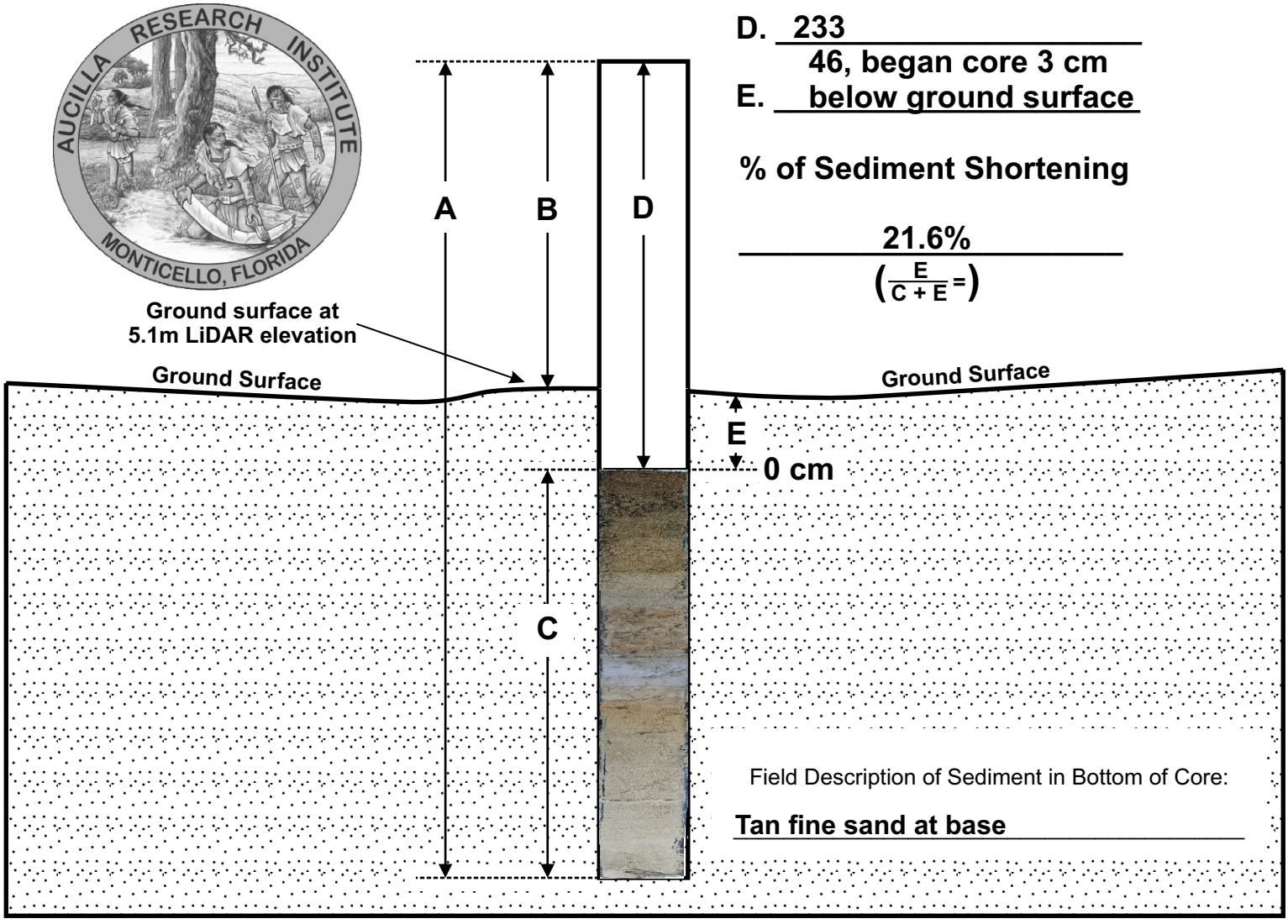
C. 167

D. 233

E. 46, began core 3 cm below ground surface

% of Sediment Shortening

$$\left(\frac{E}{C+E}=\right) \quad 21.6\%$$



Field Description of Sediment in Bottom of Core:

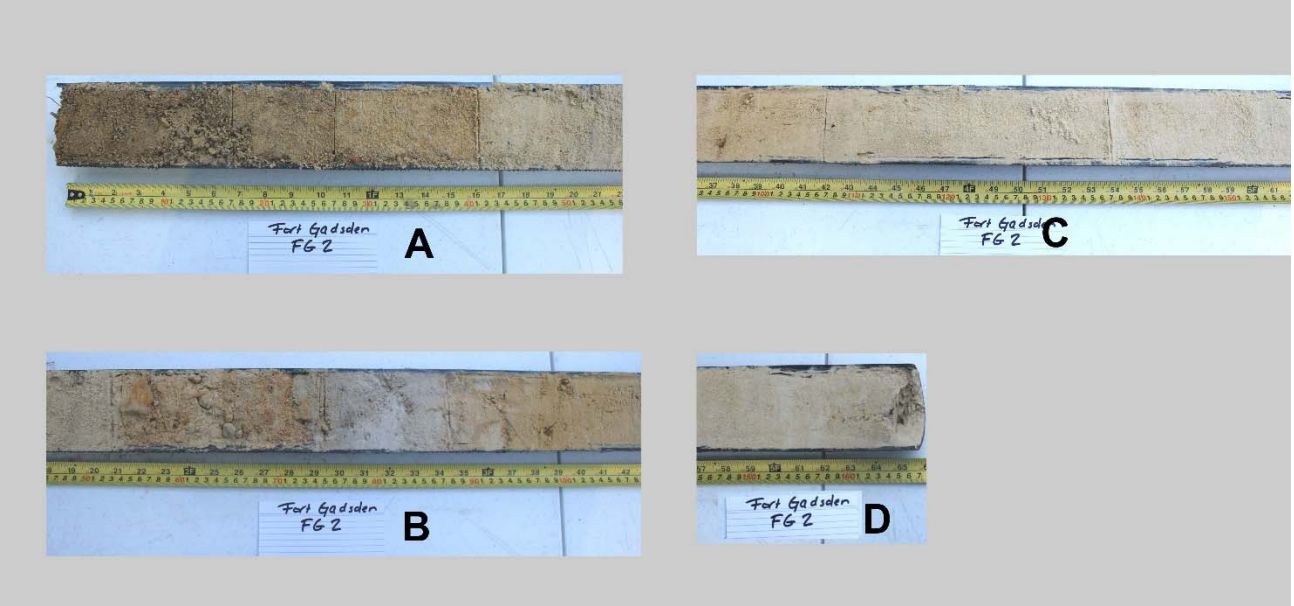
Tan fine sand at base

Core FG-2

Level and Sediment Description

Core Description FG-2		
Interval cm	**Description**	**Comments**
0-18	Tan creamy sand	Image FG-2A, some orange near top
18-27	Tan creamy more compressed sand	Image FG-2A
27-40	Orange mottled tan creamy sand	Image FG-2A
40-54	whitish tan sand	Image FG-2A
54-75	Orange mottled sand with lumps of clay	Image FG-2B, clay lumps 0.5 to 4 cm in size
75-87	Whitish to light gray sand	Image FG-2B, some charcoal
87-107	Whitish at top grading into light orange sand	Image FG-2B, fine roots
107-136	Tan sand	Image FG-2C, fine roots
136-168	Whitish sand, very fine	Image FG-2C & 2D, with root at base of core

Photos of Core FG-2 contents



AUCILLA RESEARCH INSTITUTE CORING FORM

Core ID FG-3

Type of Core Device Vibracore

Location or Site ID Ft. Gadsden (8FR64)

Crew Ed Green, Willet Boyer, Jack Rink, and Jim Dunbar of ARI and Rhonda Kimbrough and Andrea Repp of USFS

Date: December 15, 2016

Weather: Clear, sunny

Type of Coring Pipe Aluminum
(i.e. aluminum, steel, etc.)

Measurements in Centimeters

A. 396

B. 239

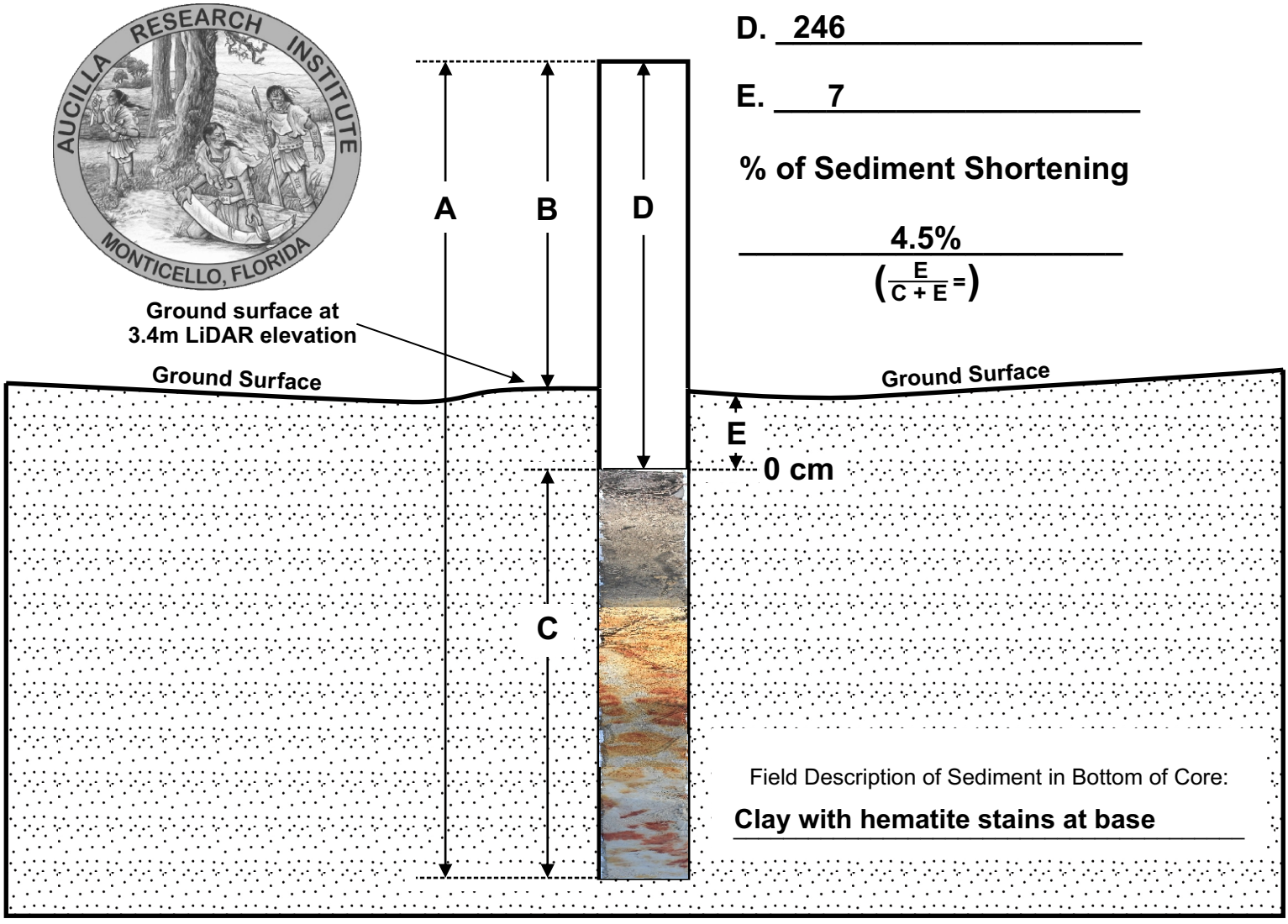
C. 150

D. 246

E. 7

% of Sediment Shortening

$$\frac{4.5\%}{\left(\frac{E}{C+E}=\right)}$$

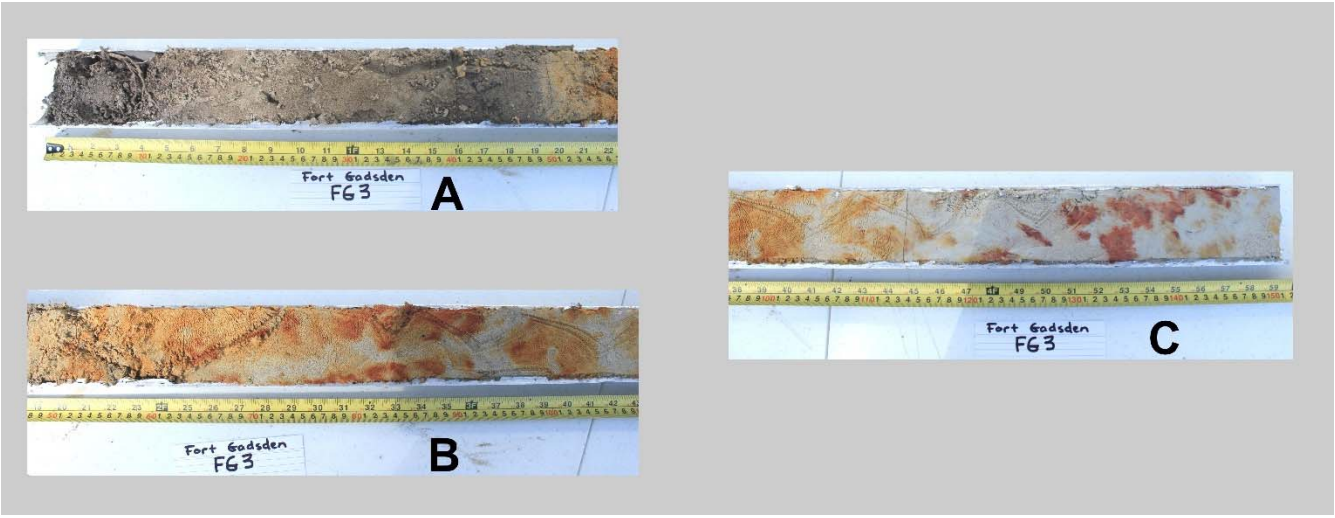


Core FG-3

Level and Sediment Description

Core Description FG-3, down slop and south of battery		
Interval cm	**Description**	**Comments**
0-3	Void	3 cm removed before taking core
3-12	Dark gray sandy loam	Image FG-3A, with roots
12-41	Light to dark tan sand	Image FG-3A
41-50	Dark gray sand	Image FG-3A, some charcoal
50-54	Light tan sand w/ some orange stains	Image FG-3B
54-65	Clayey sand with heavy orange mottling	Image FG-3B
65-115	Highly oxidized reddish-orange mottling in medium gray clayey sand	Image FG-3B, clay content increases toward base, not screened
115-145	Reddish-orange and orange mottled medium gray clay	Image FG-3B, clay content increases toward base, not screened
145-150	Same as above with greater silt and clay content	Image FG-3B and 3C

Photos of Core FG-3 contents



AUCILLA RESEARCH INSTITUTE CORING FORM

Core ID FG-4

Type of Core Device Vibracore

Location or Site ID Ft. Gadsden (8FR64)

Crew Ed Green, Willet Boyer, Jack Rink, and Jim Dunbar of ARI and Rhonda Kimbrough and Andrea Repp of USFS

Date: December 16, 2016

Weather: Clear, sunny

Type of Coring Pipe Steel
(i.e. aluminum, steel, etc.)

Measurements in Centimeters

A. 400

B. 134

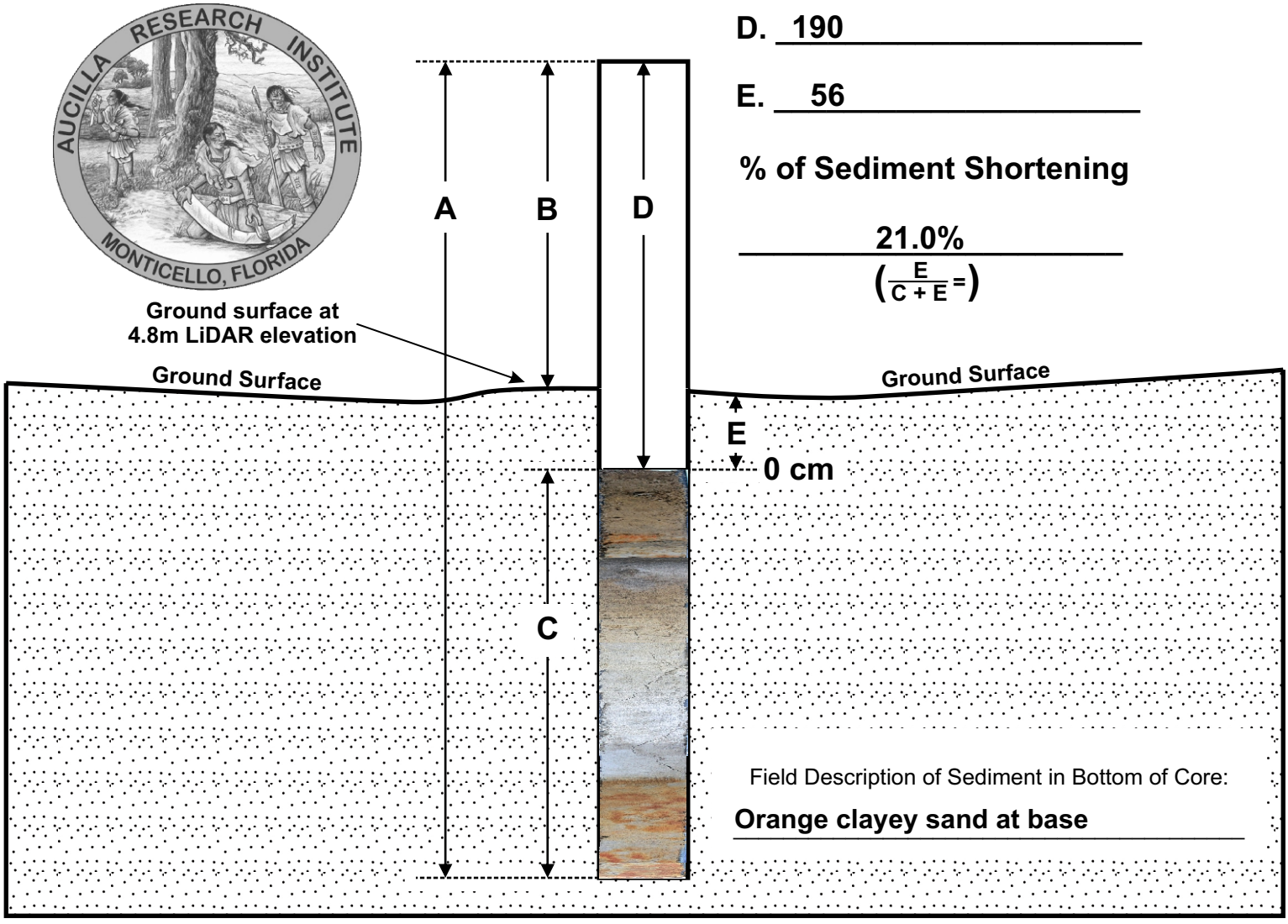
C. 210

D. 190

E. 56

% of Sediment Shortening

$$\left(\frac{E}{C+E}=\right) \quad 21.0\%$$



Field Description of Sediment in Bottom of Core:

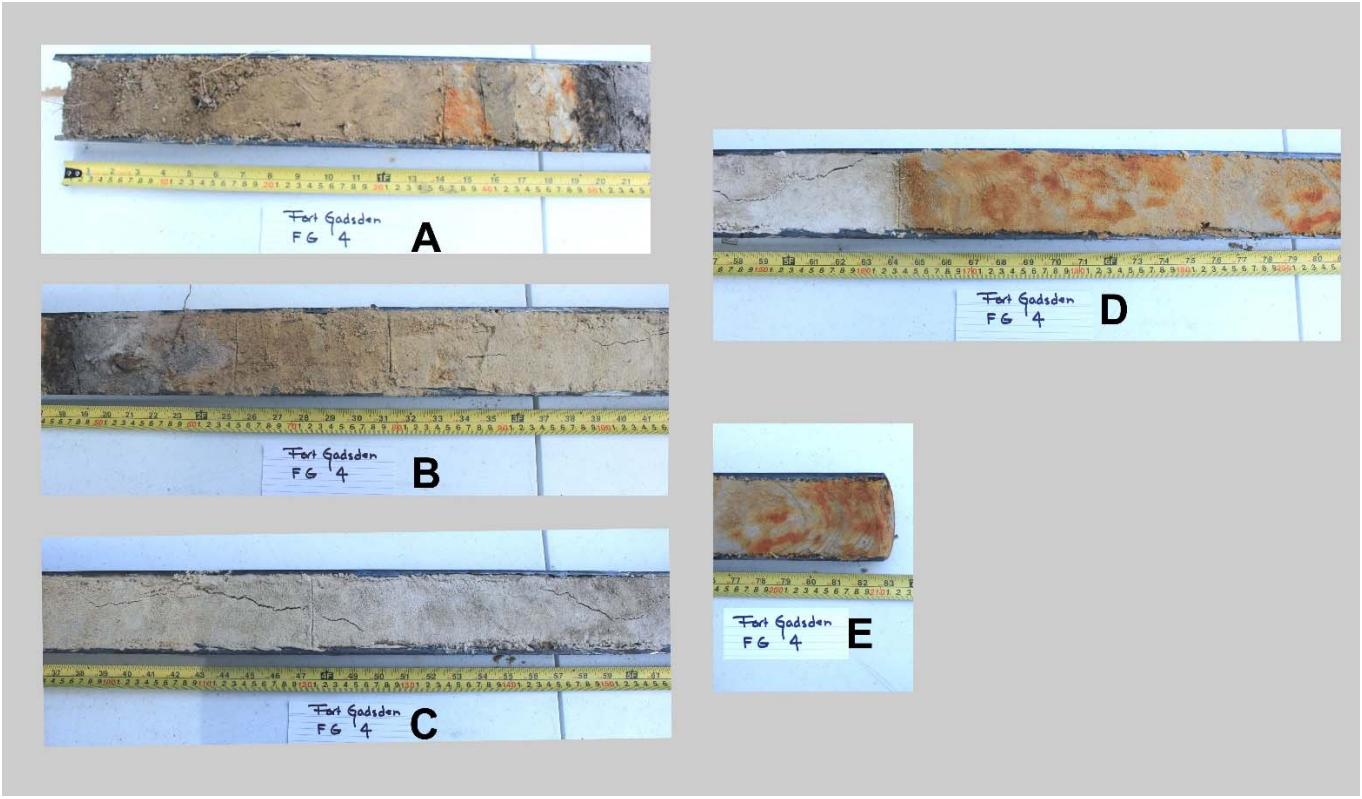
Orange clayey sand at base

Core FG-4

Level and Sediment Description

Core Description FG-4		
Interval cm	**Description**	**Comments**
0-1	Void	1 cm removed before taking core
1-3	Gray sandy loam	Image FG-4A, with roots
3-35	Brown-tan sand	Image FG-4A, with large root at 14 cm
35-39	Orange oxidized red mottled tan to creamy sand	Image FG-4A, with charcoal flecks at base
39-42	Brown-tan sand	Image FG-4A, with abundant fine charcoal (imparts a blackish tone to the sediment)
42-45	Creamy tan sand	Image FG-4A, larger charcoal flecks
45-47	Red oxidized to orange mottled sandy clay	Image FG-4A,
47-51	Very blackish gray to cream sand	Image FG-4A, charcoal-rich
51-66	Medium to light gray sand with pendant of light gray sand below and into next level	Image FG-4B, Swift Creek complicated stamped pot sherd
66-81	Creamy brown sand grading lighter towards its base	Image FG-4B
81-121	Light brown sand grading into whiter sand	Image FG-4B & 4C
121-164	White sand	Image FG-4C
164-211	Red oxidized to orange mottled clayey sand	Image FG-4D & 4E

Photos of Core FG-4 contents



AUCILLA RESEARCH INSTITUTE CORING FORM

Core ID FG-5

Type of Core Device Vibracore

Location or Site ID Ft. Gadsden (8FR64)

Crew Ed Green, Willet Boyer, Jack Rink, and Jim Dunbar of ARI and Rhonda Kimbrough and Andrea Repp of USFS

Date: December 16, 2016

Weather: Clear, sunny

Type of Coring Pipe Steel
(i.e. aluminum, steel, etc.)

Measurements in Centimeters

A. 400

B. 305

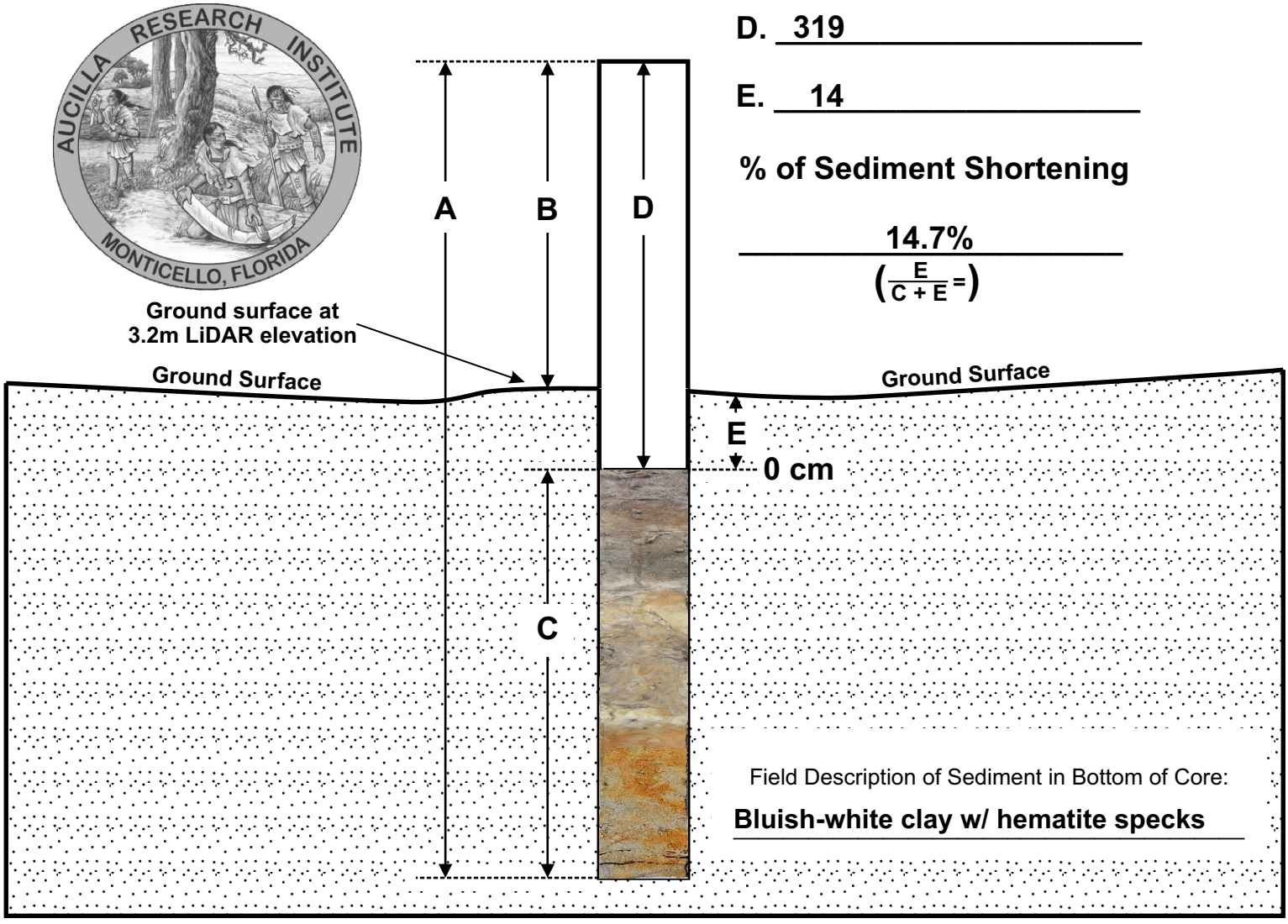
C. 81

D. 319

E. 14

% of Sediment Shortening

$$\left(\frac{E}{C+E}=\right) \quad 14.7\%$$

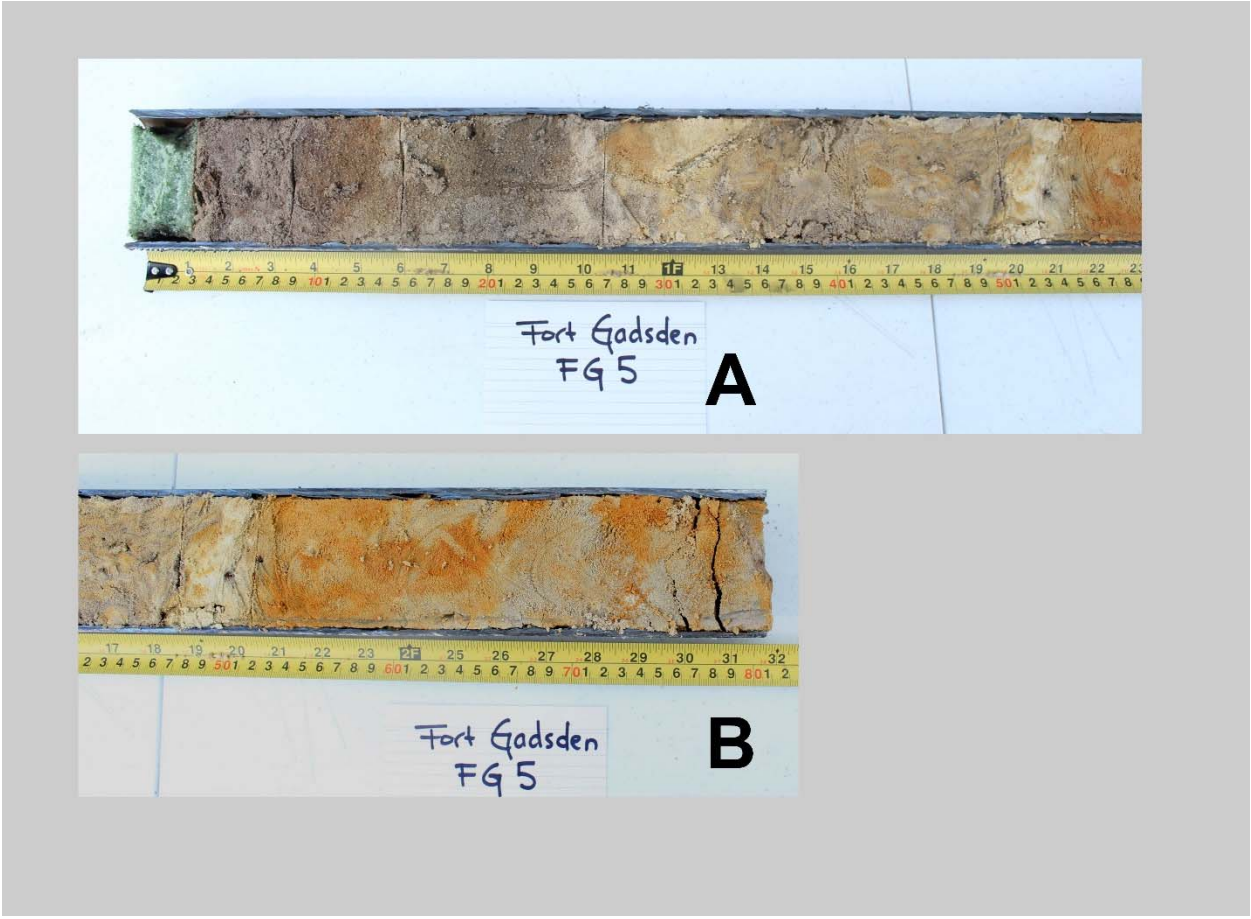


Core FG-5

Level and Sediment Description

Core Description FG-5, down slop and north of fort battery		
Interval cm	**Description**	**Comments**
0-4	void	4 cm removed before taking core
4-10	Light gray sandy loam	Image FG-5A
10-16	Light orange brown sand	Image FG-5A
16-27	Medium brownish-gray sand	Image FG-5A
27-49	Creamish-orange tan sand	Image FG-5A
49-54	whitish-eggshell colored sand	Image FG-5A
54-80	Orange mottled light gray clayey sand	Image FG-5B

Photos of Core FG-5 contents



Discussion

Coring Results and Interpretation

All five cores were characterized by sandy horizons in the upper interval, and clay rich horizons in the lower interval (except core 2; see footnote for Table 2). The clay-rich unit's lithology ranged from clayey sand, to sandy clay to clay. None of the cores contacted the local water table although, as might be expected, the clayey sediments were more moist compared to the sand. The water table on the lowlands generally west of the elevated gun battery fluctuates with river level highs and lows. At the time of testing, the river level and groundwater table were below all the cores taken.

The depth to clay-rich units in the cores were corrected by adding an amount equal to the void at the top of the core (below ground surface, quantity E in each coring form). Actual depths below ground surface of the top of the clay-rich units were calculated and ranged from 0.68 to 2.48 m. The assumption made in the void correction was that only the sand was compacted in the core length (thus creating the void distance between the ground surface and the top of the sediment in the core), while the clay did not undergo any compaction during coring.

Table 2. Core Shortening Information

Core Name	Lidar Ground Surface Elevation (m)	Depth to Clay-Rich Unit in Core (m)	Shortening void in core at top of sediment (m)	Depth to Clay-Rich Unit below Ground Surface (m)	Elevation of top of clay-rich unit (m)
FG 1	4.50	2.06	0.39	2.48	2.02
FG 2	4.50	(1.68)	0.46	(2.14)	2.39
FG 3	3.25	1.15	0.70	1.22	2.03
FG 4	4.50	1.64	0.56	2.20	2.30
FG 5	3.0	0.54	0.14	0.68	2.32
Mean of FG 1, 2 and 4				2.27	2.21 +/- 0.15

Footnotes for Table 2- Parenthesis on FG2 values indicates that values were determined by assuming that the refusal of downward motion of core was due to reaching clay-rich horizon, even though the clay rich horizon was not recovered in the core. The value 1.68m was the bottom of the recovered material, only sand was recovered above this level.

On the high platform of the fort earthworks, where cores FG1, 2 and 4 were recovered, the depths to the clay-rich unit below ground surface were fairly

uniform ranging from 2.20 to 2.48 m, with a mean of 2.27 m (about 7.5 ft). This is an estimate of the thickness of the sand on the high platform in the coring area.

The top of the clay unit among all five cores was found to range in elevation from 2.02 to 2.39 m above sea level. This was obtained by subtracting depths to the clay-rich unit below the ground surface from LiDAR surface elevations. A mean value of 2.21 ± 0.15 m above sea level was obtained for this contact between the underlying clay and the overlying sand. The ± error is the standard deviation of the mean for the five cores.

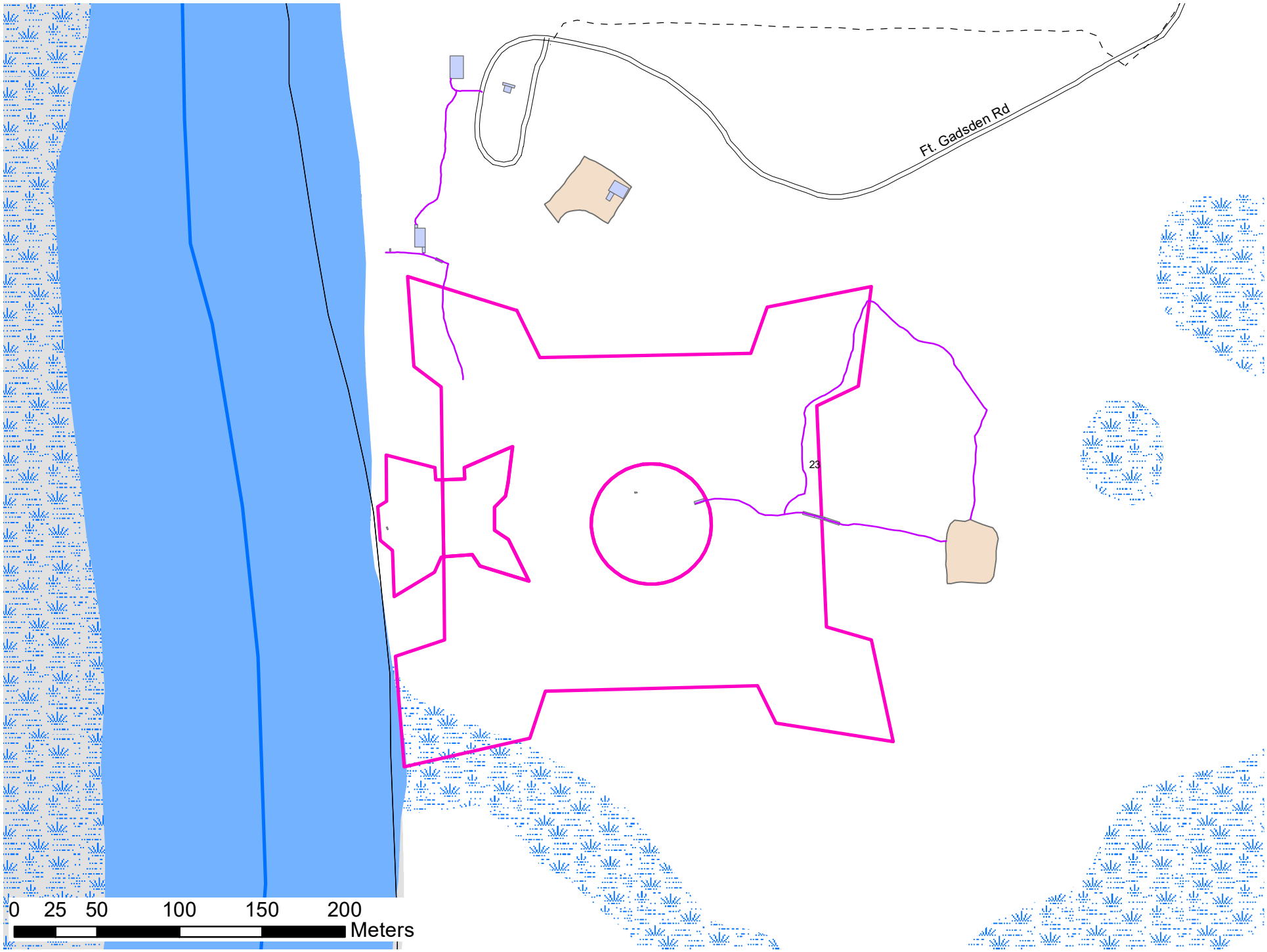
It appears that the clay-rich unit underlies the entire coring study area at a more or less consistent elevation considering the errors associated with LiDAR elevation and compaction in the core. It is believed the accuracy of absolute elevation above sea level in the LiDAR data is about 1 foot (0.31m), thus the plus or minus error would be about half that value (about 0.16 m). This error would be incorporated into a total error estimate for the mean elevation of the clay (which already has an error of 0.15 m based on the mean of the five cores), if that value was needed.

Possible Anthropogenic Levels in Core FG-4

There will always be a degree of uncertainty when attempting to interpret the archaeological significance of a stratigraphic column as seen through a 7.6 cm diameter core. Nevertheless, the sediment sequence in FG-4 is unusual and differs greatly when compared to the other cores that were collected. Beginning at 35 cm and extending to 47 cm are four levels, two of which appear to be very similar in color to the clay-rich units found at much deeper depths. Above and below the first orange oxidized level at 35 – 39 cm are levels of brown-tan sand at 3-35 cm and 39-42 cm. These units are followed by a cream-tan level (42-45 cm) followed by yet another red-oxidized mottled sandy clay level (45-47 cm). Below the deepest red-oxidized level is a very blackish gray to cream sand (47-51 cm) which contains abundant charcoal. The dark charcoal level almost certainly is related to some type of burning event although the horizontal extent of the level remains uncertain. Below the dark charcoal level is a medium to light gray sand, which yielded a sherd of Swift Creek pottery. Whatever the six levels, from brown-tan to dark charcoal, represent they likely post-date the Woodlands interval. It is interesting that the potential anthropogenic sequence occurs on a 4.5 meter elevated platform of the inner fort that what was likely a primary gun battery. So a research question might be - does this sequence represent sediment fill related to fort construction? The possibility that this sediment sequence is related to overbank flooding seems unlikely because the area lies more or less at the same height as FG-1 and FG-2 and overbank sediments usually consist of fine silts that tend to blanket everything. It is also difficult to imagine overbank deposits of such a diverse nature.

Appendix D: Fort Layout and Site Pictures




Ft. Gadsden Rd
23
0 25 50 100 150 200
Meters



























Appendix E: Cross Sections

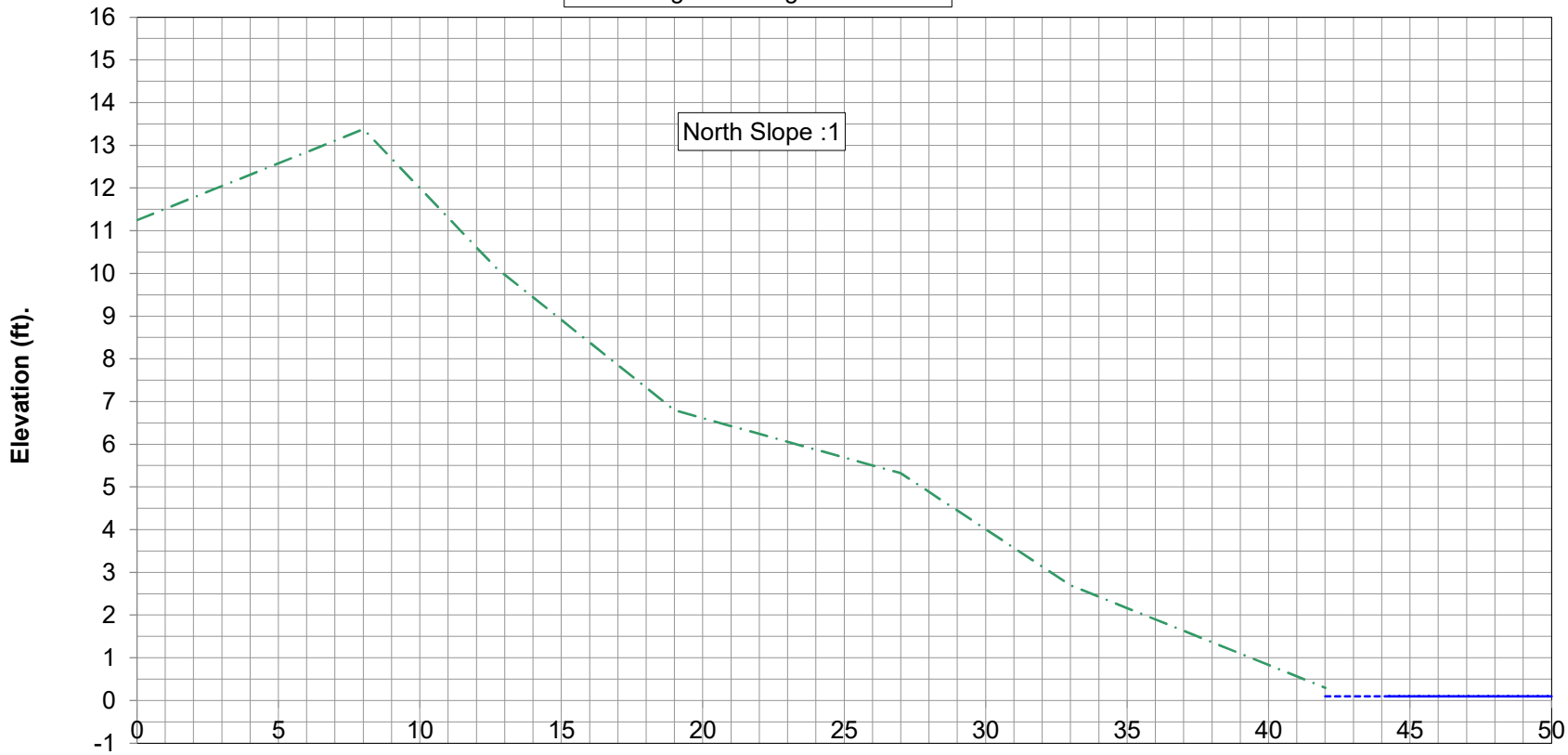


Existing Ground		***Top of Water***		***Constructed Grade***		***Riprap***	
Distance	Elevation	Distance	Elevation	Distance	Elevation	Distance	Elevation
0	11.25	42	0.1				
8	13.38	50	0.1				
12.7	10.13						
19	6.8						
27	5.32						
33	2.7						
42	0.3						
0	11.25	44.25	0.1				
24	10.95	50	0.1				
35	3						
38	1.9						
44.25	0.4						
0	11.25	64.5	0.1				
22	13.1	70	0.1				
45	3.8						
64.5	0.3						

X-sec @ Prospect Bluff

Site #__N_1____

Left to Right Looking Downstream



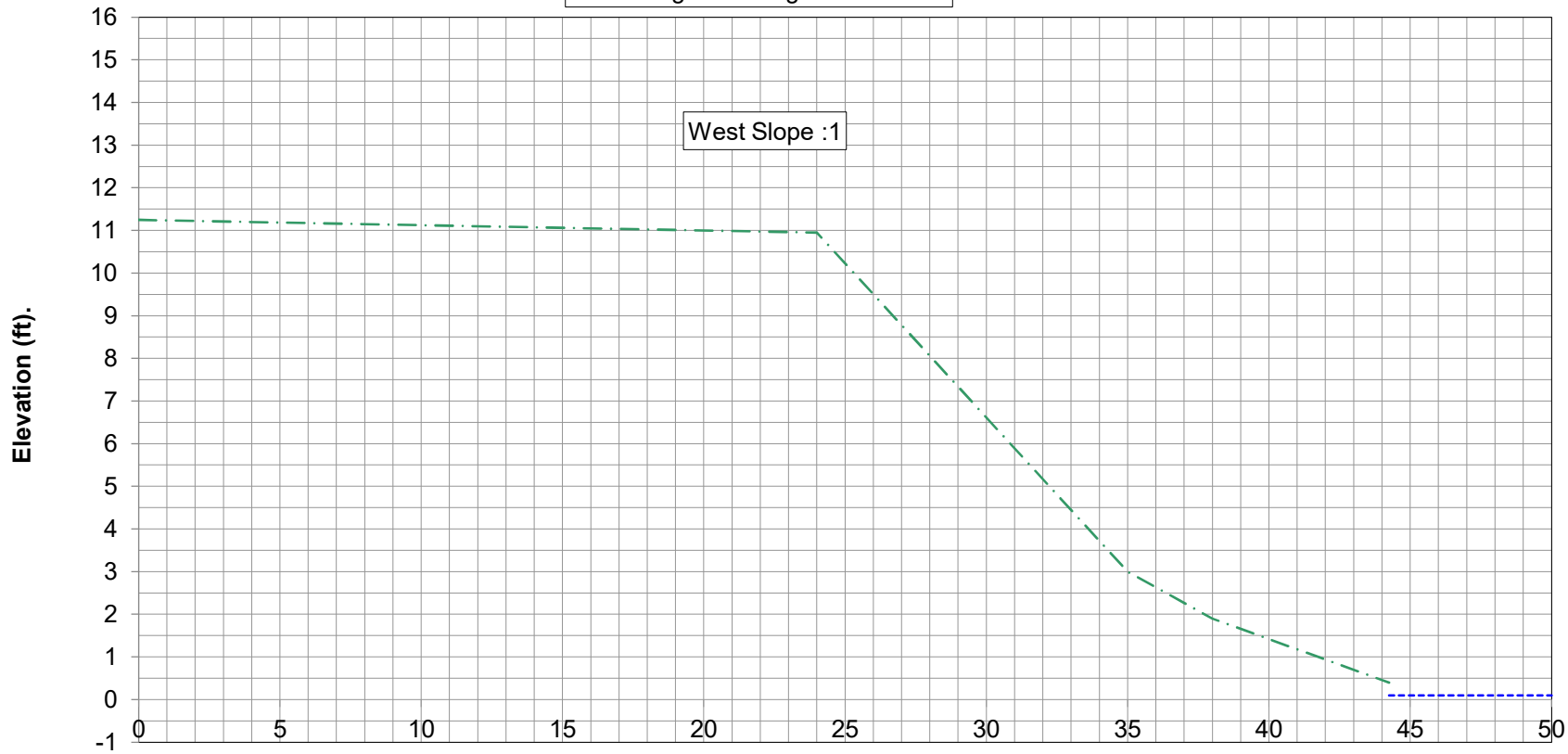
Notes:

Animal burrows in slope

X-sec @ Prospect Bluff

Site #__W_1____

Left to Right Looking Downstream



Notes:

Animal burrows in slope

X-sec @ Prospect Bluff

Site #__S_1____

Left to Right Looking Downstream



Existing Ground

Top of Water

Notes:

Animal burrows in slope