

CONTRACT ROUTING FORM

1. Complete the information below BEFORE printing and completing items 2 through 7. Items in red are required.

Department: Parks and Recreation

Department contract file name (use effective date): Freese and Nichols_Parks and Recreation_20240705

Project Code: Click here to enter text.

Contract type: Agreement

Contracted Services/Goods: Click here to enter text.

Contract Component: Master

Change Order Number/Addendum Number: Click here to enter text.

Vendor Name: Freese and Nichols

Effective Date: 07/16/2024

Approved by: Commissioners

Date approved by the BOC: July 15, 2024

Ending Date: 6/30/2025

Total Amount: \$214,765

Please Return Contract to:

Name: J. Stamey _____

Email:

jina.stamey@chathamcountync.gov

Special Instructions for Clerks

Office:

2. Department Head or his/her designee has read the contract in its entirety.

By: Jay But (Department Head signature required)

3. County Attorney has reviewed and approved the contract

County Attorney has reviewed and rejects the contract Reason: _____

This is an automatic renewal and does not require approval from the County Attorney: Yes No



If this box is checked the County Attorney's Office has reviewed the contract but has not made needed changes to protect the County because the contract is a sole source contract and the services required by the County are not available from another vendor.

4. Technical/MIS Advisor has reviewed the contract if applicable. Yes No

5. Vendor has signed the contract. Yes No

6. A budget amendment is necessary before approval. Yes No

If budget amendment is necessary, please attach to this form.

7. Approval

Requires approval by the BOC - contracts over \$100,000.00. Follow Board submission guidelines.

Requires approval by the Manager – contracts \$100,000 or less.

8. Submit to Clerk.

Clerk's Office Only

Finance Officer has signed the contract

The Finance Officer is not required to sign the contract



MASTER PROFESSIONAL SERVICES AGREEMENT
TASK AUTHORIZATION

Chatham County North Carolina
PO Box 1809
Pittsboro, North Carolina 27312

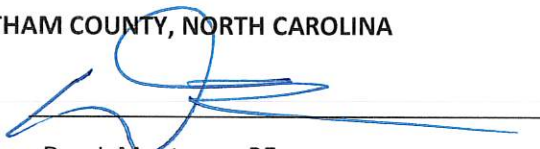
FNI Project: TBD
Client Contract: N/A
Date: 7/1/2024

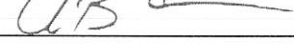
Project Name: Northwest District Park Dam Phase II and II
Description of Services: See attached proposal.
Deliverables: The deliverables will be as specified in the attached proposal.
Schedule: The schedule will be as specified in the attached proposal.
Compensation Type: Lump Sum Fee
Amount Authorized: \$214,765

The services described above shall proceed upon execution of this Task Authorization. All other provisions, terms, and outlined in the Agreement for Goods and/or Services executed on July 1, 2022 and amended on June 8, 2023.

CHATHAM COUNTY, NORTH CAROLINA

FREESE AND NICHOLS, INC.

By: 
Name: Dan J. Montagne, PE
Title: County Manager
Date: 7/1/2024

By: 
Name: Charles B. Archer
Title: Vice President
Date: June 27, 2024

NORTH CAROLINA
CHATHAM COUNTY

SECOND AMENDMENT TO AGREEMENT

This Second Amendment to the Agreement (this "Second Amendment") is made and entered into this 4th day of June, 2024, by and between Chatham County (the "County") and Freese and Nichols, Inc. (the "Contractor").

RECITALS

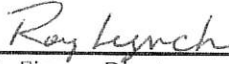
- A. The County and the Contractor entered into a series of Agreements, the last of which became effective June 8, 2023.
- B. The County has requested that the Term of Agreement be amended to extend the Agreement to June 30, 2025.
- C. The Contractor has agreed to amend the Agreement as requested by the County.

NOW, THEREFORE, in consideration of the mutual covenants and the conditions contained herein, the County and Contractor agree as follows:

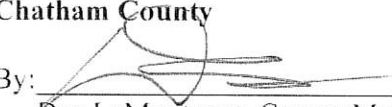
- I. The Term of Agreement is extended to June 30, 2025.

AGREEMENT TO REMAIN IN FULL FORCE AND EFFECT. Except for the amendments set forth, the original Agreement dated July 1, 2022, shall remain in full force and effect.

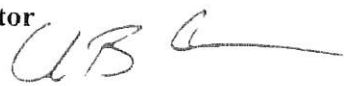
This instrument has been pre-audited in the manner required by the Local Government Budget and Fiscal Control Act.



Roy Lynch, Finance Director

Chatham County
By: 

Dan LaMontagne, County Manager

Contractor
By: 

Charles Archer
Freese and Nichols, Inc.
1017 Main Campus Drive, Suite 1200
Raleigh, North Carolina 27606
919-637-3438
charles.archer@freese.com

February 20, 2024

Ms. Jina Stamey, CPRP
964 East Street, Suite 100
Pittsboro, NC 27312

Re: Northwest District Park Dam

Dear Ms. Stamey,

Freese and Nichols, Inc. (FNI) is pleased to submit this proposal for providing professional services to Chatham County, NC (CLIENT) for the Northwest District Park Dam (Camp Marantha Lake Dam).

PROJECT UNDERSTANDING

In response to our meeting with Ms. Jina Stamey on January 25, 2024, we are pleased to submit this proposal to continue with professional services to Chatham County (CLIENT) to address deficiencies for the Northwest District Park Dam (Dam). The North Carolina Dam Safety Program identifies the dam as Camp Marantha Lake Dam State ID: Chath-026). The dam has been classified by NC Dam Safety as a low-hazard dam.

The following describes the scope of services to complete work for Phases 2 and 3.

SCOPE OF SERVICES

Phase 1 – Investigation and Assessment (Complete)

Phase 1 tasks were authorized in a Letter Proposal dated July 11, 2023, and have been completed.

Phase 2- Conceptual Design

Geotechnical Analysis

Based on the field investigation and surveyed slopes, FNI will evaluate seepage through the embankment dam and slope stability for the existing geometry, hydraulic conditions, and load conditions for a single representative cross section. Seepage and slope stability will be performed using commercial software after representative engineering properties are developed from geotechnical information collected during Phase 1 to assess whether the minimum stability requirements established by NC DEQ Dam Safety Program are met. Water levels within the embankment will be estimated from finite element seepage analysis for slope stability and to identify whether internal erosion, heave, or uplift are concerns for future performance of the embankment. Analyses will be documented within the Preliminary Engineering Report. If preliminary analyses suggest that tests on the undisturbed samples collected in Phase 1 would improve design assumptions, FNI will conduct the following test program on these samples and revise the analyses accordingly:

- Up to two (2) grain size distribution tests (ASTM D 422)

- Up to two (2) hydrometer tests (ASTM D 7928)
- Up to two (2) Atterberg limits tests (ASTM D 4318)
- Up to two (2) hydraulic conductivity tests (ASTM D5084)
- Up to two (2) consolidated undrained (CU) triaxial shear strength tests (ASTM D 4767)

FNI will also evaluate the integrity of the existing auxiliary spillway. The boring within the road near the auxiliary spillway will be used as a basis for profile development and laboratory tests will characterize the stratigraphy at this location. The auxiliary spillway will be evaluated using the NRCS approach as implemented within SITES or WinDAM software suites as described within the Hydraulic Design section of this proposal (below).

Hydraulic Design

FNI will complete a hydraulic design for the reservoir including the elevation-storage and spillway discharge. The North Carolina Dam Safety Law of 1967 (NCGS 143-215.25A) defines the Dam as a small-sized, low-hazard dam. The required design storm for the dam is the 50-year return period rainfall event. We recommend also evaluating the 100-year return period and the 1/3 Probable Maximum Precipitation rainfall events to explore options in the event the hazard classification changes in the future. Spillway discharge rating curves will be calculated using standard weir, orifice, and pipe flow equations, and recommended spillway alternatives will be developed. The auxiliary spillway attack parameters will be modeled using WinDAM software. Hydraulic analysis and design and supporting calculations will be presented in the Preliminary Design Report.

Bathymetric Survey

FNI will procure a bathymetric survey of the existing reservoir. The purpose of the bathymetric survey of the reservoir is to support hydraulic modeling of the reservoir and design of a proposed low-level reservoir drain.

Spillway Layout

Based on the H&H calculations, FNI will develop options that will pass the design storm without dam overtopping. A single, drop box style overflow spillway is assumed to be sufficient to pass the design storm, and the proposed spillway will be located at the same location as the former spillway. Spillway layout details will be delineated on the design drawings.

Embankment Layout

Embankment modifications will be considered as needed to improve stability, operations, and maintenance (O&M), and park activities. Based on the results of the slope stability analysis, FNI will recommend a minimum downstream embankment slope, which will be discussed with park staff for consideration of O&M access and activities. Afterwards, shallower slopes may be recommended to support maintenance activities if the property footprint allows.

O&M Considerations

The dam, in its current configuration, is challenging for park staff to complete O&M activities for the dam such as maintain proper vegetation management, preventing the establishment of woody vegetation, or complete dam safety inspections. We will meet with park staff to discuss needs, limitations, and procedures for O&M as well as configuration of the dam and appurtenances that can improve conditions to allow prescribed O&M activities.

Park Considerations

The dam is an integral part of the overall park aesthetic. The design will consider the general use and amenities directly associated with the dam such as the park access road, walking trail immediately downstream of the dam, and park visitors. Plans for the park associated with the vicinity of dam will be discussed with park staff for consideration in modification of the dam.

Preliminary Drawings

Under this Phase, we will prepare a preliminary drawing set (60% design) that depicts the proposed repair design to address observed deficiencies. The preliminary drawing set will provide grading plans, detail sheets, and notes required to repair the embankment dam. At a minimum, the proposed set will include the following drawings:

- Cover Sheet
- General Notes
- Existing Conditions
- Site Clearing Plan
- Proposed Grading Plan
- Embankment Cross Sections
- Principal Spillway Plan and Profile
- Auxiliary Spillway Plan and Profile

Preliminary Cost Estimate

Based on the preliminary design drawings, FNI will prepare a preliminary Opinion of Probable Construction Costs (OPCC) to inform the Client of anticipated construction expenses. The OPCC will be developed from a quantity take off from the preliminary design drawings and material and labor costs on recent projects (prior 1 to 2 years) in the North Carolina region and include a contingency to adjust potential cost increases over the upcoming 1 to 2 years. The preliminary OPCC will be provided as an attachment to the Preliminary Design Report.

Preliminary Design Report

FNI will prepare a Preliminary Design Report that documents the design basis for the proposed repair embankment and will include a description of the embankment and proposed repair, calculation assumptions, analyses, and results, and the preliminary OPCC. Design drawings and other evaluations prepared during Phase 2 will be provided as attachments, along with a list of technical specifications, and an estimated construction schedule. This deliverable will include the results of the topographic survey, geotechnical investigation, and borrow source testing as attached appendices. Final design analyses will be included within the Final Engineering Report (Phase 3).

Client Meeting

FNI will participate in a review meeting for the Preliminary Design with the CLIENT at the Chatham County Parks and Recreation office in Pittsboro, NC. During the meeting, we will discuss our proposed design and comments along with preferences of the CLIENT related to the design documents. We will document the discussion within formal meeting minutes, which will be provided within 1 week of the meeting.

Phase 3 – Final Design

FNI will develop the proposed repair design documents for the Dam from the preliminary (60%) phase to the final design phase design (100%). The following tasks will be performed to complete the final design:

Address Design Comments from Client Meeting

FNI will address or respond to design-related comments from the CLIENT meeting during Phase 2. Relevant comments will be implemented across the final design deliverable and the drawings, calculations, and reports will be updated accordingly. If comments are not implemented, FNI will provide a justification to CLIENT via e-mail on the reasoning behind not adopting the comment within final design.

Final H&H and Geotechnical Analyses

FNI will update the calculations and engineering report to address client comments or design revisions that occur between the preliminary and final design changes. Updated assumptions, calculations, and results, where appropriate, will be provided in the design drawings and within the Final Engineering Report.

Structural Design

FNI will prepare structural calculations to support the design of a principal spillway, if needed. Standard industry spillway structures and design will be considered to avoid custom or non-standard construction practices and limit design activities where possible. Design assumptions and requirements will be documented within the final design report.

Control of Water

FNI will evaluate approaches of best practices to control surface water during construction activities. For this evaluation, we will consider the 10-yr, 24-hr storm event to estimate whether a berm, bladder dam, or diversion will be suitable to control water during this event. These findings will be presented in the final design report, and the design and contract documents will require the contractor to select means and methods necessary to protect construction activities from the peak water surface elevation during this temporary design storm.

Construction Access and Staging Plans

FNI, in collaboration with the CLIENT, will locate an area where the contractor may store and stage equipment and materials for construction. We will identify and design an access road to allow equipment to access the repair area with limited damage to existing site infrastructure and include erosion and sediment control measures. These civil design plans will be included within the Final Design Drawings.

Environmental (401/404) Permitting (ePCN)

FNI assumes that the proposed project would require a Section 404 permit and can be authorized under Nationwide Permit (NWP) 3 *Maintenance* with a Pre-construction Notification (PCN) as well as a NC Department of Environmental Quality – Division of Water Resources Individual 401 Water Quality Certification No. 4239.

Individual Permitting (IP) and a Pre-Construction Notification of the proposed project are not included in the Scope of Services. If either action is required, FNI will work with the CLIENT to submit an amended permitting scope and fee.

The Project is within the Neuse River Basin and will be assessed to determine applicability of the Neuse River Basin Riparian Buffer rules (15A NCAC 02B .0233). FNI will conduct a wetland delineation and ecological function assessment of the wetlands and streams present using the NC Wetland Assessment Method (NCWAM) and NC Stream Assessment Method (NCSAM), prepare a water of the US report,

prepare a federally listed species habitat assessment and memo, and prepare a Jurisdictional Determination Report. Once all the issues and data have been collected, FNI will prepare and submit the USACE Wilmington District ePCN documentation, including a list of adjacent property owners and all necessary maps and drawings.

FNI assumes that any fees for permit processing or mitigation required would be through purchase of credits from an approved mitigation bank, services related to the coordination and purchase of mitigation credits is outside of this scope of services and can be provided for additional compensation.

Erosion & Sediment Control

FNI will develop an erosion and sediment control (E&SC) plan and permit application to limit soil erosion from the stockpile and repair areas from the Site. Between the two areas, over 1 acre of land disturbance is expected and requires a permit application with the North Carolina Department of Environmental Quality (NCDEQ) Department of Energy, Mineral, and Land Management (DEMLR). FNI will prepare E&SC plans to develop a permit application and will furnish application review fees for up to 5 acres of land disturbance during the project. FNI notes that we will require CLIENT to authorize the Financial Responsibility/Ownership (FR/O) form as a part of the application. E&SC plan sheets, construction details, and technical specifications will be included within the final design drawings and report.

Final Design Drawings

FNI will further develop the proposed repair design based on CLIENT comments and will provide additional drawings and details to depict the E&SC Plans and contractor staging areas. The following drawings will be added to the preliminary drawing set to develop the final design drawing set:

- Structural Design Plan, Sections, and Details
- Contractor Staging and Stockpile Plan
- Site Access Plan
- E&SC Plan ×2
- E&SC Construction and Permit Details ×3

FNI will provide the E&SC plan checklist, best management practice (BMP) details with construction and maintenance notes, and permit application notes on the E&SC plans and detail drawings.

Final Cost Estimate

Upon completion of the final design, FNI will update the OPCC with updated quantity take-offs and cost estimates of the anticipated construction expenses. The final OPCC will be provided as an attachment to the Final Design Report.

Technical Specifications

FNI will prepare technical specifications for the contractual requirements to implement the design delineated within the design drawings. FNI will include site-specific erosion and sediment control specifications to meet NCDEQ requirements for temporary and permanent seeding and erosion control. These specifications will be provided as an attachment to the Final Design Report.

Front-end Contract Documents

It is assumed CLIENT will develop front-end documents to secure the services of a qualified contractor to perform the work. CLIENT will use low-bid selection to retain the services of a qualified contractor.

Construction Schedule

Within the Final Design Report, FNI will prepare a high-level construction schedule for the CLIENT's consideration. The construction schedule will include time to bid the project, establish access to the site, install erosion and sediment control, repair the dam, and stabilize and demobilize from the Site.

Final Design Report

FNI will finalize the design report to document the design basis for the proposed project. Design drawings, technical specifications, analysis results, and cost/schedule estimates will be provided as attachments for reference. The Final Design Report will be provided to the CLIENT in draft format, and we have budgeted to address one round of design comments prior to a NC professional engineer sealing the construction documents for bid and construction. This deliverable will include the results of the topographic survey, geotechnical investigation, and environmental assessment as attached appendices.

Client Meeting

FNI will participate in a review meeting for the Final Design with the CLIENT at the Chatham County Parks and Recreation office in Pittsboro, NC. During the meeting, we will discuss our proposed design and comments or preferences of the CLIENT related to the design documents. We will document the discussion within formal meeting minutes, which will be provided within 1 week of the meeting.

Deliverables:

- Draft Final Design Report (CLIENT review)
- Final Design Report (NC Dam Safety Review)
- Issued For Bid Design Package (Sealed Construction Drawings and Technical Specifications)

PROJECT SCHEDULE

FNI recognizes the CLIENT will complete the phased approach over time based on the availability of funds. FNI will provide a schedule for each phase within two weeks of each phase notice-to-proceed (NTP).

COMPENSATION

FNI proposes to provide Phase 2 and 3 services as described herein for the lump sum fee of Two-Hundred-Fourteen-Thousand-Seven-Hundred-Sixty-Five dollars (\$214,765). The fee for additional phases will be prepared as requested by CLIENT as funds are available.

Phase	Description	Fee
2	Conceptual Design	\$91,944
3	Final Design	\$122,821
Project Total		\$214,765

We appreciate this opportunity to submit this proposal. If additional information or clarification is desired, please do not hesitate to contact us. If you agree with the services described above and wish for us to proceed with this assignment, please initiate contract proceedings.

Sincerely,
FRESE AND NICHOLS, INC.

Handwritten signature of Charles B. Archer in black ink, consisting of the initials 'CB' followed by a horizontal line.

Charles B. Archer
Vice President

Handwritten signature of Charles E. Crowell, Jr. in black ink, featuring a stylized 'C' and 'E'.

Charles E. Crowell, Jr., PE
Project Manager

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Items (2):	\$899.98
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