



May 27, 2020

Mr. Shannon Baldwin
Town Manager
Town of Lake Lure
2948 Memorial Highway
Lake Lure, NC 28746

Subject: 18P21021.03, Work Order No. 5, Professional Dam Engineering Services for the Reservoir Drain System Design for the Lake Lure Dam Rehabilitation Project, Lake Lure, North Carolina

Dear Mr. Baldwin:

SCHNABEL ENGINEERING SOUTH, P.C. (Schnabel) is pleased to submit this work order proposal for professional dam engineering services for the proposed reservoir drain system associated with the Lake Lure Dam Rehabilitation project.

BACKGROUND

In accordance with our Work Order No. 3 authorized by the Town on October 24, 2019, we evaluated several dam rehabilitation and replacement alternatives to address various NC DEQ Dam Safety requirements and extend the service life of the structure. Our draft alternatives evaluation report was submitted to the Town on February 19, 2020. Based on our discussions with the Town following submission of this report, we understand the Town desires to proceed with the installation of the reservoir drain as the first phase in the overall dam rehabilitation project. In addition to addressing a major dam safety requirement, the reservoir drain will allow the Town to further lower the reservoir level, beyond the limitations of the existing spillway gates, to support the rehabilitation of the sanitary sewer system and additional maintenance activities such as lake dredging. This work will be implemented regardless of whether the Town chooses to rehabilitate the existing dam or replace it. During the virtual workshop held on March 17, 2020 with representatives from the Town, the Town's consultants, NC DEQ Dam Safety, and the regulatory agencies responsible for the sanitary sewer system, NC DEQ Dam Safety indicated that they were agreeable to this phased approach. At this time, LaBella Associates, P.C. (LaBella), the Town's consultant responsible for the sanitary sewer system improvements, is in the process of developing the environmental evaluation and permitting documents required to support the sanitary sewer system rehabilitation and reservoir drain construction.

SCOPE OF SERVICES

The objective of our services proposed under this work order is to prepare design documents suitable for bidding and constructing the reservoir drain system projects and to assist the Town in obtaining the

permits required to construct the reservoir drain system. The reservoir drain system design will be coordinated with the sanitary sewer system improvements being designed by LaBella. Services for this project will be performed under the supervision of a Professional Engineer(s) licensed in the State of North Carolina. The scope of services for this phase of the project is described in detail below.

Task 01 – Field Investigations

Additional information on the dam is needed to support the design of the reservoir drain system. This task includes an underwater investigation of the upstream face of the dam in the areas of Bays 4 through 6 using a remotely-operated underwater vehicle. We will work with an experienced underwater subcontractor to perform the investigation, which will provide additional information on the condition of the dam in the area of the proposed reservoir drain opening.

In addition to the underwater investigation, we will work with a local concrete coring subcontractor to obtain at least three concrete cores from the arch, starter block, and/or buttresses in Bay 5, the bay where we anticipate the new reservoir drain system will be installed. The concrete cores will be shipped to a certified materials testing laboratory and tested for compressive strength in accordance with ASTM standards. The condition of the concrete cores and laboratory test results will provide additional information on the engineering properties of the existing concrete for incorporation into the structural analyses and design of the reservoir drain system discussed below.

Schnabel representatives will be on-site to observe and guide the underwater investigation and concrete coring, which we anticipate will take one to two days to complete. The results of the investigations will be summarized in the Design Report discussed under Tasks 02 and 03 below.

Task 02 – 50% Design

Hydraulic Analyses and Design

We will perform hydraulic analyses to develop the elevation, size, and layout of the reservoir drain system. Analyses will also be performed to address the cavitation potential and energy dissipation of the reservoir drain flows, as needed.

Structural Analyses and Design

The primary structural concern with this project is the distribution of stresses from the existing arch to the new concrete encasement for the reservoir drain. We will perform stability analyses to develop the appropriate size and configuration for the concrete encasement. Additional engineering analyses for design of foundation anchors may also be required. We will also incorporate other structural-related components into the design, such as structural anchors, waterstops, and concrete mix design requirements. Rock foundation preparation requirements will also be developed as a part of this task.

Additional Design Considerations

Additional considerations related to site access, construction staging, control of water during construction, underwater work, long-term operation and maintenance, and other factors will be coordinated with the Town and LaBella and incorporated into the design. We will also discuss constructability of the various

reservoir drain system features with our construction subconsultant, Crowder Construction, and incorporate this feedback into the design as appropriate.

Design Progress Drawings

We will prepare design progress drawings during this task. The design progress drawings will include a plan, cross-section(s), and details of the reservoir drain system. The drawings will also include information related to site access, construction staging, and other associated components. Drawings will be prepared in AutoCAD.

List of Technical Specifications

We will provide a list of technical specifications that will be required for the reservoir drain project. The technical specifications will follow the current Construction Specification Institute (CSI) master format.

Construction Cost Opinion and Construction Schedule Estimate

We will prepare an engineer's opinion of probable construction cost and a preliminary construction schedule. The quantities will be estimated from the design progress drawings and unit and lump sum prices will be assigned based on published references, manufacturers' information, bid tabs from other similar dam rehabilitation projects, and input from our constructability subconsultant, Crowder Construction. The preliminary construction schedule will be based on an assumed construction sequence and will include critical milestones that will be encountered during construction. These estimates will be further refined during final design.

Design Progress Report

A Design Progress Report will be developed to summarize the investigations, analyses, and design performed to date. The report will consist of a short narrative describing the design approach, references, assumptions, and loads used for the design. A summary of the results of the analyses will also be provided. Detailed calculations and computer program output files will be included as appendices to the report.

Summary of Deliverables and Review Meeting

The following deliverables will be submitted to the Town and LaBella in digital (pdf) format upon completion of this task:

- Design progress drawings,
- List of technical specifications,
- Construction cost opinion and construction schedule estimate; and a
- Design Progress Report.

If possible, we will meet with the Town and LaBella face-to-face to review the design progress. If a face-to-face meeting is not possible, we will meet via video conference call. Review comments provided by the Town and LaBella on these progress deliverables will be incorporated into the final design deliverables discussed under Task 03 below.

Task 03 – Final Design

The 50% design documents will be updated to develop final design documents suitable for bidding and constructing the project. Final design phase services will include:

- Updating the hydraulic and structural engineering analyses performed under Task 02 above;
- Refining the various additional design considerations discussed under Task 02 above;
- Preparation of final design drawings including updated and/or additional plans, sections, details and notes;
- Preparation of technical specifications in CSI format to delineate the technical requirements for the project work, materials, installation requirements, and acceptable tolerances;
- Preparation of an erosion and sediment control plan for submission to NC DEQ under Task 04 below;
- Preparation of an updated construction schedule and engineer's opinion of probable construction cost for the proposed design; and
- Preparation of a Final Design Report.

We will provide these deliverables to the Town and LaBella in digital (pdf) format. Up to four hard copies will also be provided, if requested.

We will meet with the Town and LaBella via video conference call to present and discuss the final design deliverables. Following this meeting and review of the permit applications by the regulatory agencies, we will incorporate review comments into the design and finalize the documents for bidding and construction.

Task 04 – Permitting

On behalf of the Town, we will prepare the dam safety and erosion and sediment control permit documentation and applications described below. These permits submittals will be provided to the respective regulatory agencies in conjunction with submitting the final design deliverables to the Town for review. We have assumed that the Town will pay for all permit fees separately. These fees are not included in our fees. We have also assumed that the Town or LaBella will handle any environmental permitting required for the reservoir drain project, as a part of the overall sanitary sewer system rehabilitation project.

North Carolina Dam Safety

We will prepare the permit application and supporting documentation required by NC DEQ Dam Safety for the proposed dam safety modifications. The supporting documentation will include the design report, construction drawings, and technical specifications prepared under Task 03 above. We will coordinate with NC DEQ Dam Safety, as needed, throughout the design process and will address review comments received.

Erosion and Sediment Control Plan and Narrative

For dam construction activities, a soil erosion and sediment control plan will need to be implemented. Schnabel will prepare the erosion and sediment control plan and narrative as required by NC DEQ. We will develop soil erosion and sediment control requirements for each phase of construction. The erosion

and sediment control plan and narrative will be submitted to NC DEQ for review and approval, and we will address review comments received.

EXCLUSIONS

Services not specifically identified above are not included in the scope of services under this agreement. The following services are specifically not included in our proposed scope:

- Attendance at additional meetings not listed above.
- Geotechnical investigations.
- Preparation of funding applications or funding support.
- Environmental studies and permitting services.
- Permitting fees.
- Bid phase services.
- Construction phase services.

Upon completion of the design and receipt of the required permits, we will provide a proposal for bid phase and construction phase services.

PROJECT FEES

The lump sum fee for these services is **\$185,710**. A summary of this fee by task is included in the table below, and a detailed breakdown of this fee is included as Attachment 1. The fee for work requested beyond the scope of services included herein will be based on our current unit prices at the time the work is authorized or a negotiated lump sum. Our current Schedule of Personnel Fees is included as Attachment 2.

Breakdown of Fees

Task	Fee Type	Fee
Task 01 – Field Investigations	Lump Sum	\$20,990
Task 02 – 50% Design	Lump Sum	\$80,255
Task 03 – Final Design	Lump Sum	\$72,085
Task 04 – Permitting	Lump Sum	\$12,380
Total Lump Sum Fee:		\$185,710

SCHEDULE

We will begin planning for the field investigations upon receipt of notice-to-proceed (NTP) from the Town. We anticipate completing the field investigations within about four weeks from NTP and completing the 50% design (Task 02) within 13 weeks from NTP. We anticipate completing the final design within eight weeks of receipt of review comments on the 50% design. We will submit the permit documents to NC DEQ concurrent with submission of the final design documents to the Town and LaBella. The schedule for permit review and approval will be dictated by the regulatory agencies; however, we will respond to review comments from the regulatory agencies within two weeks of receipt.

PAYMENTS

Invoices will be submitted monthly as a percentage of completion of the lump sum fee. Payment terms will be in accordance with the Professional Services Agreement between Schnabel and the Town (Attachment 4).

GENERAL

The Terms and Conditions of the Professional Services Agreement between Schnabel and the Town will apply to the services proposed herein. Your acceptance of this work order proposal by signing and returning one copy of this letter will form our agreement for these services. You may transmit your acceptance of this proposal electronically with the understanding that the signature on the electronic document will be considered an original signature. This work order proposal is valid for 90 days from the date shown.

We appreciate the opportunity to submit our proposal for these services and look forward to continuing to work with the Town on this project. Please contact us if you have any questions regarding this proposal.

Sincerely,

SCHNABEL ENGINEERING SOUTH, P.C.



Jonathan M. Pittman, PE
Project Manager / Senior Vice President

JMP:LSF:SAK:CMJ:MEL

Attachments:

- (1) Detailed Fee Breakdown (1 sheet)
- (2) Schedule of Personnel Fees (1 sheet)
- (3) Design Schedule Estimate (1 sheet)
- (4) Professional Services Agreement and Terms and Conditions (5 sheets)

This work order proposal is:

ACCEPTED BY: _____ **TOWN OF LAKE LURE, NC**

SIGNATURE: _____

PRINTED NAME: _____

TITLE: _____ **DATE:** _____

ITEM	PRINCIPAL (11)	SR. ASSOC. ENG. (21)	ASSOC. ENG. (31)	SENIOR ENG. (41)	PROJECT ENG. (51)	SR. STAFF ENG. (61)	CLERICAL / ADMIN (95)	TOTAL SE PERSONNEL TIME	TOTAL SE PERSONNEL COST	TRAVEL AND LIVING			Subtotal Travel Expense	Subtotal Travel Mileage	TOTAL ALL TRAVEL & LIVING COSTS	OTHER SUBCONTRACTORS				TOTAL OTHER SUB COSTS (521.03)	TOTAL IN- HOUSE EXPENSES	TOTAL SUBCONTRACTED EXPENSES	TOTALS	
	Landis, Samuelson	Pittman	Johnson	Shearin- Feimster	Khodaie	TBD	Sherwood			Hotel	Meals and Incidentals	Mileage	(531.14) with	(531.10) with		with	Underwater Subcontractor	Constructability Subconsultant	Concrete Coring Subcontractor					Lab Testing of Concrete Cores
2020 Greensboro Rates UNIT or COST as shown in column heading	\$ 277 HOUR	\$ 244 HOUR	\$ 212 HOUR	\$ 185 HOUR	\$ 158 HOUR	\$ 135 HOUR	\$ 80 HOUR	HOUR		\$ 135.00 Day	\$ 30.00 Day	\$ 0.575 Mile	10% markup	10% markup	10% markup	Input \$ Below Cost	Input \$ Below Cost	Input \$ Below Cost	Input \$ Below Cost	10% markup	Cost	Cost	Cost	
Task 01 - Field Investigations	2.0	4.0	4.0	-	26.0	38.0	-	74.00	\$ 11,616.00	2.0	2.0	330.0	\$ 363.00	\$ 208.73	\$ 571.73	3,500.0	-	4,000.0	500.0	\$ 8,800.00	\$ 571.73	\$ 8,800.00	\$ 20,987.73	
Planning and Available Information Review					8.0	8.0		16.00	\$ 2,344.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 2,344.00	
Field Reconnaissance, Underwater Investigation, and Concrete Coring					14.0	14.0		28.00	\$ 4,102.00	2.0	2.0	330.0	\$ 363.00	\$ 208.73	\$ 571.73	3,500.0		4,000.0	500.0	\$ 8,800.00	\$ 571.73	\$ 8,800.00	\$ 13,473.73	
Video Review, Lab Test Assignments, and Field Report Preparation					4.0	16.0		20.00	\$ 2,792.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 2,792.00	
Review and QA	2.0		4.0					6.00	\$ 1,402.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 1,402.00	
Project Management		4.0						4.00	\$ 976.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 976.00	
Task 02 - 50% Design	24.0	48.0	38.0	24.0	136.0	184.0	4.0	458.00	\$ 77,504.00	-	-	-	\$ -	\$ -	\$ -	-	2,500.0	-	-	\$ 2,750.00	\$ -	\$ 2,750.00	\$ 80,254.00	
Hydraulic Analysis for Reservoir Drain Opening				8.0		16.0		24.00	\$ 3,640.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 3,640.00	
Hydraulic Analysis for Energy Dissipation of Reservoir Drain Flows				8.0		16.0		24.00	\$ 3,640.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 3,640.00	
Structural Analyses and Detail Considerations			16.0		80.0			96.00	\$ 16,032.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 16,032.00	
Foundation Anchor Design					4.0	16.0		20.00	\$ 2,792.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 2,792.00	
Site Access, Constructability, and O&M Considerations			4.0		16.0	16.0		36.00	\$ 5,536.00				\$ -	\$ -	\$ -		2,500.0			\$ 2,750.00	\$ -	\$ 2,750.00	\$ 8,286.00	
50% Design Drawings			8.0		16.0	80.0		104.00	\$ 15,024.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 15,024.00	
50% Design Report (In-Progress)			8.0	8.0	16.0	24.0		56.00	\$ 8,944.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 8,944.00	
Engineer's Opinion of Probable Construction Cost (EOPCC)			2.0		4.0	16.0		22.00	\$ 3,216.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 3,216.00	
Review and QA	24.0	16.0					4.0	44.00	\$ 10,872.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 10,872.00	
Project Management		32.0						32.00	\$ 7,808.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 7,808.00	
Task 03 - Final Design	24.0	48.0	42.0	12.0	96.0	172.0	4.0	398.00	\$ 68,192.00	4.0	4.0	660.0	\$ 726.00	\$ 417.45	\$ 1,143.45	-	2,500.0	-	-	\$ 2,750.00	\$ 1,143.45	\$ 2,750.00	\$ 72,085.45	
Final Hydraulic Analyses				8.0		16.0		24.00	\$ 3,640.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 3,640.00	
Final Structural Analyses			8.0		24.0	8.0		40.00	\$ 6,568.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 6,568.00	
Final Site Access, Constructability, and O&M Considerations			4.0		12.0	12.0		28.00	\$ 4,364.00				\$ -	\$ -	\$ -		2,500.0			\$ 2,750.00	\$ -	\$ 2,750.00	\$ 7,114.00	
Final Design Drawings			8.0		16.0	80.0		104.00	\$ 15,024.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 15,024.00	
Erosion and Sediment Control Plan						24.0		24.00	\$ 3,240.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 3,240.00	
Final Design Report			4.0	4.0	12.0	8.0		28.00	\$ 4,564.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 4,564.00	
Technical Specifications			8.0		16.0	16.0		40.00	\$ 6,384.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 6,384.00	
Updated EOPCC			2.0		4.0	8.0		14.00	\$ 2,136.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 2,136.00	
Review and QA	16.0	16.0					4.0	36.00	\$ 8,656.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 8,656.00	
Design Workshop	8.0	8.0	8.0		12.0			36.00	\$ 7,760.00	4.0	4.0	660.0	\$ 726.00	\$ 417.45	\$ 1,143.45					\$ -	\$ 1,143.45	\$ -	\$ 8,903.45	
Project Management		24.0						24.00	\$ 5,856.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 5,856.00	
Task 04 - Permitting	6.0	8.0	12.0	-	8.0	32.0	8.0	74.00	\$ 12,382.00	-	-	-	\$ -	\$ -	\$ -	-	-	-	-	\$ -	\$ -	\$ -	\$ 12,382.00	
Coordination with NC Dam Safety (one round of review comments)					4.0	16.0	4.0	24.00	\$ 3,112.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 3,112.00	
Coordination with E&S Regulator (one round of review comments)					4.0	16.0	4.0	24.00	\$ 3,112.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 3,112.00	
No Permitting Fees								-	\$ -				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ -	
								-	\$ -				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ -	
								-	\$ -				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ -	
Review and QA	6.0		12.0					18.00	\$ 4,206.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 4,206.00	
Project Management		8.0						8.00	\$ 1,952.00				\$ -	\$ -	\$ -					\$ -	\$ -	\$ -	\$ 1,952.00	
QUANTITY	56.0	108.0	96.0	36.0	266.0	426.0	16.0	1,004.00		6.0	6.0	990.0												
TOTAL COST	\$15,512.00	\$26,352.00	\$20,352.00	\$ 6,660.00	\$ 42,028.00	\$ 57,510.00	\$ 1,280.00		\$ 169,694.00	\$ 810.00	\$ 180.00	\$ 569.25	\$ 1,089.00	\$ 626.18	\$ 1,715.18	\$ 3,500.00	\$ 5,000.00	\$ 4,000.00	\$ 500.00	\$ 14,300.00	\$ 1,715.18	\$ 14,300.00	\$ 185,709.18	



SCHEDULE OF PERSONNEL FEES – GREENSBORO, NORTH CAROLINA

Effective until December 31, 2020

Senior Consultant	\$297.00/hr
Principal	277.00/hr
Senior Associate	244.00/hr
Associate	212.00/hr
Senior Engineer/Scientist	185.00/hr
Project Engineer/Scientist	158.00/hr
Senior Staff Engineer/Scientist	135.00/hr
Staff Engineer/Scientist/Technologist	118.00/hr
Senior Technician II (see note 3)	112.00/hr
Senior Technician I (see note 3)	93.00/hr
Technician III (see note 3)	82.00/hr
Technician II (see note 3)	69.00/hr
Technician I (see note 3)	58.00/hr
CADD III	123.00/hr
CADD II	115.00/hr
CADD I	94.00/hr
Clerical/Admin	80.00/hr

NOTES:

1. Personnel fees will be based upon the actual hours charged times the appropriate hourly rate.
2. Travel by auto to and from jobs will be charged at the current IRS prevailing rate, plus a markup of 10% to cover handling, insurance and overhead. Travel by air or rail, lodging and meal expense for personnel in the field will be billed at cost plus a 10% markup.
3. Subcontractors and other non-labor project expenses are marked up 10% to cover the cost of handling, insurance and overhead.

**Lake Lure Dam Rehabilitation - Reservoir Drain System
Design Schedule Estimate
May 2020**

ID		Task Mode	Task Name	Duration	Start	Finish	Predecessors																												
1			Assumed Notice-to-Proceed	0 days	Mon 7/13/20	Mon 7/13/20																													
2																																			
3			Task 01 - Field Investigations	23 days	Mon 7/13/20	Wed 8/12/20																													
4			Planning	10 days	Mon 7/13/20	Fri 7/24/20	1																												
5			Field Investigations	3 days	Mon 7/27/20	Wed 7/29/20	4																												
6			Lab Testing	10 days	Thu 7/30/20	Wed 8/12/20	5																												
7																																			
8			Task 02 - 50% Design	52 days	Thu 7/30/20	Fri 10/9/20																													
9			Hydraulic Analyses	10 days	Thu 7/30/20	Wed 8/12/20	5																												
10			Structural Analyses	15 days	Thu 8/13/20	Wed 9/2/20	9,6FS-5 days																												
11			Additional Design Considerations	10 days	Thu 8/27/20	Wed 9/9/20	10FF+5 days																												
12			Design Drawings	20 days	Thu 8/27/20	Wed 9/23/20	10FS-5 days																												
13			Construction Cost and Schedule Estimates	3 days	Thu 9/24/20	Mon 9/28/20	12																												
14			Design Report	15 days	Fri 9/11/20	Thu 10/1/20	9,10,11,13FF+3 days																												
15			Senior Review	5 days	Fri 10/2/20	Thu 10/8/20	14																												
16			Submit 50% Design Deliverables to Town and LaBella	1 day	Fri 10/9/20	Fri 10/9/20	15																												
17																																			
18			Task 03 - Final Design	37 days	Mon 10/12/20	Tue 12/1/20																													
19			Hydraulic Analyses	3 days	Mon 10/12/20	Wed 10/14/20	8																												
20			Structural Analyses	5 days	Thu 10/15/20	Wed 10/21/20	19																												
21			Additional Design Considerations	5 days	Thu 10/15/20	Wed 10/21/20	20FF																												
22			Design Drawings	15 days	Thu 10/22/20	Wed 11/11/20	19,20,21																												
23			Technical Specifications	15 days	Thu 10/29/20	Wed 11/18/20	22FF+5 days																												
24			Construction Cost and Schedule Estimates	5 days	Tue 11/10/20	Mon 11/16/20	22FF+3 days																												
25			Design Report	15 days	Tue 11/3/20	Mon 11/23/20	23FF+3 days,24FF																												
26			Senior Review	5 days	Tue 11/24/20	Mon 11/30/20	25																												
27			Submit Final Design Deliverables for Permit Reviews	1 day	Tue 12/1/20	Tue 12/1/20	26																												

Project: Att 3 - Reservoir Drain Date: Tue 5/26/20	Task		Project Summary		Manual Task		Start-only		Deadline	
	Split		Inactive Task		Duration-only		Finish-only		Progress	
	Milestone		Inactive Milestone		Manual Summary Rollup		External Tasks		Manual Progress	
	Summary		Inactive Summary		Manual Summary		External Milestone			

PROFESSIONAL SERVICES AGREEMENT

This Professional Services Agreement ("Agreement"), dated as of September 12, 2018 (the "Effective Date"), is by and between the **Town of Lake Lure** (hereinafter "Client"), with an office at 2948 Memorial Highway, Lake Lure, NC 28746 and **Schnabel Engineering South, P.C.** (hereinafter "Consultant") with an office at 11-A Oak Branch Drive, Greensboro, NC 27408 (hereinafter collectively "Parties").

This Agreement is specific to services ("Services") required to rehabilitate and/or upgrade Lake Lure Dam, its hydro-electric generating facility, and appurtenances to meet NCDEQ Dam Safety requirements and extend the service life of the facility ("Project"). Services may include review of existing documents, investigation of the existing condition of the structure, analysis of existing and proposed conditions, design of repairs or modifications, bidding support, construction administration and oversight, and related services. The work will be performed in phases, and the Scope of Work, fees and method of compensation, schedule, and deliverables of service will be presented in individual Task Order Proposals for each phase. Services provided under this Agreement will be performed under the supervision of a Professional Engineer licensed in the State of North Carolina.

In consideration of the mutual agreements herein expressed, the Parties contract, covenant, and agree as follows:

1. SCOPE OF SERVICES/COMPENSATION.

1.1 Consultant shall perform the Services set forth in individual Task Orders, which shall be governed by this Agreement. Each executed Task Order shall include the Scope of Work, fee compensation amounts and method of billing, the schedule of performance, and descriptions of the deliverables of Services..

1.2 Client shall pay Consultant for Services rendered under this Agreement on the basis set forth in each executed Task Order.

2. TERM OF AGREEMENT. Upon execution by the Parties, this Agreement shall have the Effective Date as set forth above and shall remain in force until all obligations related to the Services have been fulfilled, unless sooner terminated as provided herein.

3. ENTIRE AGREEMENT.

3.1 The Agreement between Consultant and Client consists of this Agreement, executed Task Orders, and any exhibits or attachments attached or incorporated herein. Together these elements will constitute the entire Agreement, superseding all prior written or oral negotiations, statements, representations, correspondence, and/or agreements. The Services to be provided by Consultant pursuant to this Agreement are described in each executed Task Order and include the Scope of Work. Both Client and Consultant must mutually acknowledge any changes to this Agreement in writing. All work performed by Consultant on or relating to the Project is subject to the terms and limitations of this Agreement.

3.2 If work is performed, but the parties do not reach agreement concerning modifications to the Scope of Work or compensation, then the terms and conditions of this Agreement apply to such work. Disputes concerning modifications to Scope of Work or compensation shall be resolved pursuant to Article 15, "Dispute Resolution."

4. STANDARD OF CARE, DISCLAIMER OF WARRANTIES.

4.1 Consultant shall perform Services under this Agreement in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. NO OTHER REPRESENTATION AND NO WARRANTY OR GUARANTEE, EITHER EXPRESS OR IMPLIED, IS INCLUDED OR INTENDED BY THIS AGREEMENT.

5. SITE ACCESS, SITE CONDITIONS, SAMPLES.

5.1 Client will provide rights of entry and access for Consultant to perform its Services.

5.2 Consultant will take reasonable precautions to avoid damage or injury to subterranean structures or utilities in the prosecution of his work. Client agrees to advise Consultant of known or

suspected underground features in the area of the work, and Consultant will not be responsible for damage to below grade features not brought to its attention, or incorrectly shown on plans provided.

5.3 Client shall promptly pay and be responsible for the removal and lawful disposal of contaminated samples and cuttings, and hazardous substances, unless other arrangements are mutually agreed in writing.

6. OWNERSHIP OF DOCUMENTS, RESTRICTIONS ON REUSE.

6.1 All documents, including opinions, conclusions, certificates, reports, drawings and specifications and other documents, prepared or furnished by Consultant and Consultant's independent professional consultants pursuant to this Agreement (collectively "Documents") are instruments of Service. Consultant retains all ownership and property interests in the Documents, including all common law, statutory and other reserved rights, including copyrights, whether or not the Project is completed. Consultant will provide signed and sealed versions of the final deliverables to the Client in both hard copy and electronic format. Client may make and retain copies of them for information and reference in connection with permitting, financing, bidding and construction of renovations and facility improvements relating to the Lake Lure Dam, Hydro-electric Plant and appurtenances as addressed by this Project; however, such copies are not intended or represented to be suitable for reuse by others, and may not be used on other projects or for additions to this Project outside the Scope of the Work.

6.2 At Client's request, Client may negotiate with Consultant to acquire ownership of Documents for a mutually agreed amount. If Client acquires ownership of Documents prepared by Consultant, Client agrees: a) that any subsequent reuse or modification of them by Client or any party obtaining them through Client will be at Client's sole risk and without liability to Consultant, and b) Client will defend, indemnify and hold harmless Consultant from and against any claims, damages, and liabilities arising from or related to any use, reuse or modification of Documents by Client or any party obtaining them through Client. Client agrees that Consultant may retain copies of all documents for its files.

6.3 Electronic communications and CADD data transferred by Email, websites or computer disks (collectively "E- Data") are provided only as an accommodation by Consultant for the benefit of Client. Signed paper prints of documents constitute the contract deliverables. Client assumes the risk that E-Data may differ from the paper deliverables. Client agrees to indemnify and hold harmless Consultant from and against claims, damages, and liabilities for defects or inappropriate use of E-Data created or transmitted by Consultant.

7. THIRD PARTY RELIANCE UPON DOCUMENTS.

7.1 Consultant's performance of the Services, as set forth in this Agreement, is intended solely and exclusively for the Client's benefit and use. No party may claim under this Agreement as a third party beneficiary. Client agrees not to distribute, publish or otherwise disseminate Consultant's Documents, without first obtaining Consultant's prior written consent.

7.2 No third party may rely upon Consultant's Documents including, but not limited to, opinions, conclusions, certificates, reports, drawings and specifications unless Consultant has agreed to such reliance in advance and in writing.

8. ASSIGNMENT, SUBCONTRACTING.

8.1 Neither Client nor Consultant may delegate, assign, sublet, or transfer all or any part of this Agreement, including its duties or interest in this Agreement without the written consent of the other party.

8.2 Notwithstanding Section 8.1, Consultant may subcontract subsurface exploration, testing, and other supplemental services without notification or consent of Client.

9. TERMINATION, SUSPENSION.

9.1 Termination for Convenience. The Client may terminate this Agreement for its convenience upon twenty-one (21) days written notice to Consultant. In the event of termination for convenience, Consultant shall be compensated for all services satisfactorily performed and costs incurred up to the effective date of termination for which Consultant has not been previously compensated. Consultant shall not be reimbursed for anticipatory profits.

9.2 Termination for Cause. The Client may terminate this Agreement upon fourteen (14) days written notice may terminate this Agreement if Consultant fails to substantially perform through no fault of Client and does not commence correction of such performance within five (5) days of written notice and

diligently complete the correction thereafter. In the event of termination for fault, Consultant shall be compensated for all services satisfactorily performed and costs incurred up to effective date of termination for which Consultant has not been previously compensated. All costs and charges incurred by Client to complete the Services beyond the total compensation available under this Agreement when terminated shall be deducted from any compensation due or which may become due to Consultant, and to the extent such deduction is insufficient to cover such costs and charges to Client, Consultant shall be and remain liable to pay Client the amount of such excess.

9.3 Client's Failure to Pay. In the event of any failure of payment by Client when due, Consultant shall have the right to suspend work on the Project and may retain any and all work products whether prepared by Consultant or submitted to Consultant by others, until payment has been brought current. In such event, Consultant shall have no liability for any damages or losses that may result from any delay associated the suspension of work or for the withholding of work products. If Client's failure to pay continues for more than sixty (60) days, Consultant may terminate this Agreement effective upon written notice to Client.

10. ALLOCATION OF RISK.

10.1 Consultant's total cumulative liability to Client (including, but not limited to, attorneys' fees and costs awarded under this Agreement) irrespective of the form of action in which such liability is asserted by Client or others, shall not exceed the total compensation received by Consultant under this Agreement or \$3,000,000, whichever is greater.

10.2 Client and Consultant agree to limit each's liability to the other in the following respects: Neither party will have liability to the other for any special, consequential, incidental, exemplary, or penal losses or damages including but not limited to losses, damages or claims related to the unavailability of the other party's property or facility, shutdowns or service interruptions, loss of use, lost profits or revenue, inventory or use, charges or cost of capital or claims of the other party's customer.

10.3 The limitations of liability of this Agreement shall survive the expiration or termination of this Agreement.

11. INSURANCE.

11.1 Consultant shall procure and maintain for the duration of the Project and three years following, with insurance carriers reasonably acceptable to the Client, the following insurance coverage:

- (a) Commercial General Liability on an occurrence form, including coverage for premises and completed operations/products, Contractual Liability, General Aggregate per Project, "xcu" coverages
 - \$1,000,000 each occurrence
 - \$ 10,000 Medical Expenses
 - \$1,000,000 Personal and Advertising Injury
 - \$2,000,000 General Aggregate
 - \$2,000,000 Products/Completed Operations Aggregate
- (b) Automobile Liability - Including coverage for Owned, Hired, and Non-Owned Autos
 - \$1,000,000 Combined Single Limit
- (c) Workers Compensation and Employer's Liability
 - Statutory Limits for Workers Compensation
 - \$500,000 each accident
 - \$500,000 each occurrence by disease
 - \$500,000 by disease - policy limit
- (d) Umbrella Liability – applying over all above-referenced policies
 - \$10,000,000 each occurrence
- (e) Professional Liability
 - \$3,000,000 each claim
 - \$3,000,000 annual aggregate

11.2 Additional Insured. Except for Workers Compensation and Professional Liability, policies shall include Client as Additional Insured on a primary and noncontributory basis, to include ongoing and completed operations.

12. INDEMNIFICATION.

12.1 Indemnification of Client. Subject to the provisions and limitations of this Agreement and to the extent allowable by law, Consultant agrees to indemnify and hold harmless Client, its shareholders, officers, directors, employees, and agents from and against any and all claims, suits, liabilities, damages, expenses (including without limitation reasonable attorney's fees and costs of defense) or other losses (collectively "Losses") to the extent caused by Consultant's negligent performance of its Services under this Agreement.

12.2 Indemnification of Consultant. Subject to the provisions and limitations of this Agreement and to the extent allowable by law, Client agrees to defend, indemnify and hold harmless Consultant from and against any and all claims by third parties related to services provided by Consultant under this Agreement, and against any and all Losses to the extent caused by the negligence of Client, its employees, agents and contractors. In addition, except to the extent caused by Consultant's sole negligence, Client expressly agrees to defend, indemnify and hold harmless Consultant from and against any and all Losses arising from or related to the existence, disposal, release, discharge, treatment or transportation of Hazardous Materials, or the exposure of any person to Hazardous Materials, or the degradation of the environment due to the presence, discharge, disposal, release of or exposure to Hazardous Material.

13. INVOICES, PAYMENTS.

13.1 Payment is due without retainage upon presentation of invoice and is past due thirty (30) days from invoice date, and will not be contingent upon receipt of funds from third parties. Client agrees to pay a service charge of one percent (1%) per month or fraction thereof on past due payments under this Agreement.

13.2 It is further agreed that in the event a lien or suit is filed to enforce overdue payments under this Agreement, Consultant will be reimbursed by Client for all costs of such lien or suit and reasonable Attorney's fees in addition to accrued service charges, where the court of appropriate jurisdiction enters a finding in favor of Consultant.

14. NOTICE. All notices, requests, claims, demands and other communications hereunder shall be in writing. Such notices shall be given (i) by delivery in person, (ii) by a nationally recognized commercial courier service; or (iii) by United States Postal Service, registered mail, postage prepaid and return receipt requested. Notices shall be effective upon actual delivery at the following addresses:

Client: Town of Lake Lure
2948 Memorial Highway
Lake Lure, NC 28746

Consultant: Schnabel Engineering South, P.C.
11-A Oak Branch Drive
Greensboro, NC 27407

or to that address which the receiving Party may from time to time give notice to the other Party in writing. Rejection or other refusal to accept, or the inability to deliver because of changed address of which no notice was given, shall be deemed to be receipt of the notice as of the date of such rejection, refusal to accept or inability to deliver.

15. DISPUTE RESOLUTION.

15.1 Claims, disputes, and other matters in controversy between Consultant and Client caused by or any way related to this Agreement will be submitted to non-binding mediation as a condition precedent to litigation. The cost for mediation including the mediator's fees, reproduction of documents, and miscellaneous out-of-pocket expenses will be borne equally by each party to this Agreement.

15.2 The law of the State of North Carolina will govern the validity of these terms, their interpretation and performance. Client and Consultant agree that venue for any litigation will be in the courts of the State of North Carolina, and Consultant and Client both hereby waive any right to initiate any action in, or remove any action to, any other jurisdiction.

16. FORCE MAJEURE.

16.1 Any delay in or failure of performance of, either party to this Agreement shall not constitute a default, if and to the extent such delay or failure is caused by occurrences beyond the reasonable control of the party affected, including but not limited to, acts of God or the public enemy, acts of war, public disorder, insurrection, rebellion, sabotage, flood, riot, or any causes a party is unable, with reasonable diligence, to prevent; provided, however, that a party who is prevented from performing for any reason shall immediately notify the other party in writing of the reason for the non-performance and the anticipated extent of any delay.

17. SEVERABILITY.

17.1 This Agreement reflects the entire agreement of the parties with respect to its terms and supersedes all prior agreements, whether written or oral. If any portion of this Agreement is void or voidable, such portion will be deemed stricken and the Agreement reformed to as closely approximate the stricken portions as the law allows.

IN WITNESS WHEREOF, the parties, by their duly authorized representatives, have hereunto executed this Agreement, on the day and year first above written.

CONSULTANT:

Schnabel Engineering South, PC

By: 

Name: Jonathan Pittman
(print)

Title: Senior Vice President

Date: September 15, 2018

CLIENT:

Town of Lake Lure

By: 

Name: Kevin J. Conkey
(print)

Title: Mayor

Date: September 15, 2018

Exhibits:

None

Rev 2018-08

PAYMENTS

Invoices will be submitted monthly as a percentage of completion of the lump sum fee. Payment terms will be in accordance with the Professional Services Agreement between Schnabel and the Town (Attachment 4).

GENERAL

The Terms and Conditions of the Professional Services Agreement between Schnabel and the Town will apply to the services proposed herein. Your acceptance of this work order proposal by signing and returning one copy of this letter will form our agreement for these services. You may transmit your acceptance of this proposal electronically with the understanding that the signature on the electronic document will be considered an original signature. This work order proposal is valid for 90 days from the date shown.

We appreciate the opportunity to submit our proposal for these services and look forward to continuing to work with the Town on this project. Please contact us if you have any questions regarding this proposal.

Sincerely,

SCHNABEL ENGINEERING SOUTH, P.C.



Jonathan M. Pittman, PE
Project Manager / Senior Vice President

JMP:LSF:SAK:CMJ:MEL

Attachments:

- (1) Detailed Fee Breakdown (1 sheet)
- (2) Schedule of Personnel Fees (1 sheet)
- (3) Design Schedule Estimate (1 sheet)
- (4) Professional Services Agreement and Terms and Conditions (5 sheets)

This instrument has been
preaudited in the manner required
by the Local Government Budget
and Fiscal Control Act

This work order proposal is:

ACCEPTED BY: TOWN OF LAKE LURE, NC
SIGNATURE: C. Shannon Baldwin
PRINTED NAME: C. SHANNON BALDWIN
TITLE: TOWN MANAGER DATE: MAY 13, 2021