

LAKE LURE TOWN COUNCIL SPECIAL MEETING PACKET

Wednesday, May 10, 2023
5:00 p.m.



Mayor Carol C. Pritchett
Mayor Pro Tem David DiOrio
Commissioner Patrick Bryant
Commissioner Scott Doster
Commissioner Jim Proctor

TOWN OF LAKE LURE
Town Council Special Meeting
Wednesday, May 10, 2023 - 2:00 PM
Lake Lure Municipal Center



Agenda

- I. Call to Order**
- II. Agenda Adoption**
- III. Discuss Drain Valve Bid Award Recommendations - Page 1**
- IV. Discuss Schnabel Engineering Reservoir Drain Construction Services - Page 6**
- V. Discuss GMP Submitted by Ruby-Collins - Page 19**
- VI. Discuss Horizontal Directional Drilling (HDD) Project - Page 31**
- VII. Discuss 2024 Drawdown Schedule - Page 32**
- VIII. Discuss Dam Bridge Replacement - Page 33**
- IX. Adjournment**

III

DISCUSS DRAIN VALVE BID AWARD RECOMMENDATIONS

May 4, 2023

Mr. Michael Dydula, PE
Project Manager
Town of Lake Lure
2948 Memorial Highway
Lake Lure, NC 28746

**Subject: Lake Lure Dam Reservoir Drain – Construction Contract Award Recommendation,
Town of Lake Lure, North Carolina**

Dear Mr. Dydula:

We have tabulated and reviewed the bids submitted for the Lake Lure Dam Reservoir Drain construction project on April 11, 2023. Bids were submitted by Morgan Corporation (Morgan) and Kiewit Infrastructure South Co. (Kiewit). Morgan's total bid price was \$7,463,660.00, and Kiewit's total bid price was \$9,693,800.00. No mathematical or transcription errors were found in the bids. A tabulation of the bids is included as an attachment to this letter.

The bids submitted by Morgan and Kiewit are complete as required by the Project Manual, including the bid form, bid security, evidence of authority to do business in North Carolina, contractor licensing information, qualifications and supporting data, and schedule. The qualifications and supporting data provided by Morgan and Kiewit demonstrate that both contractors are qualified to perform this project. The schedules provided by Morgan and Kiewit indicate that they plan to achieve substantial completion in 340 calendar days and 322 calendar days, respectively, of contract award. These durations are more than double the contract duration of 150 calendar days for substantial completion included in the bid documents.

Based on our review of the contents of the apparent low bid submitted by Morgan, we consider the bid to be responsive and responsible. In addition, based on our video conference with Morgan and the Town of Lake Lure on April 25, 2023, it is our opinion that Morgan understands the project requirements and are comfortable with the bid prices provided. Therefore, we recommend the project be awarded to Morgan. As previously discussed with the Town, following contract award we will work with Morgan to identify potential adjustments that could lead to cost and schedule efficiencies, though based on previous conversations, we understand these opportunities are limited.

Please note that financial information provided by Morgan and Kiewit should not be made publicly available and/or subject to FOIA requests, as agreed to in Bid Addendum No. 1 dated February 21, 2023.

We appreciate the opportunity to be of service for this project. Please contact us with any questions regarding this letter.

Sincerely,

SCHNABEL ENGINEERING SOUTH, P.C.



Jonathan Pittman, PE
Principal / Project Manager

JP:BS:CJ

Attachment:

- 1) Bid Tabulation

Engineer's Bid Tabulation and Comparison

Project Name: Lake Lure Dam - Reservoir Drain

Prepared By: Schnabel Engineering South, PC

Bid Opening Date: April 11, 2023

Bid Item	Bid Item Description	Estimated Quantity	Unit	Morgan Corp.			Kiewit Infrastructure South Co.			Avg Unit Price From Bidders	Avg Percent of Bid Total	Difference Between Bidders (High Bidder - Low Bidder)
				Unit Price	Total	Percent of Bid Total	Unit Price	Total	Percent of Bid Total			
1	Mobilization and Demobilization	1	LS	\$350,000	\$350,000	5%	\$915,000	\$915,000	9%	\$632,500	7%	\$565,000
2	Contractor Quality Control	1	LS	\$200,000	\$200,000	3%	\$215,000	\$215,000	2%	\$207,500	2%	\$15,000
3	Temporary Facilities and Controls	1	LS	\$1,355,000	\$1,355,000	18%	\$1,280,000	\$1,280,000	13%	\$1,317,500	16%	(\$75,000)
4	Construction Surveying	1	LS	\$100,000	\$100,000	1%	\$715,000	\$715,000	7%	\$407,500	4%	\$615,000
5	Control of Water	1	LS	\$205,000	\$205,000	3%	\$345,000	\$345,000	4%	\$275,000	3%	\$140,000
6	Structure Demolition	1	LS	\$350,000	\$350,000	5%	\$425,000	\$425,000	4%	\$387,500	5%	\$75,000
7	Cast-In-Place Concrete	1	LS	\$1,550,000	\$1,550,000	21%	\$1,960,000	\$1,960,000	20%	\$1,755,000	20%	\$410,000
8	Upstream Bulkhead and Portal	1	LS	\$1,082,000	\$1,082,000	14%	\$872,900	\$872,900	9%	\$977,450	12%	(\$209,100)
9	Upstream Trash Rack	1	LS	\$200,000	\$200,000	3%	\$625,000	\$625,000	6%	\$412,500	5%	\$425,000
10	Reservoir Drain Pipe	1	LS	\$1,072,000	\$1,072,000	14%	\$1,180,000	\$1,180,000	12%	\$1,126,000	13%	\$108,000
11	Knife Gate Valve Installation	1	LS	\$45,000	\$45,000	1%	\$100,000	\$100,000	1%	\$72,500	1%	\$55,000
12	Jet Flow Gate Valve Installation	1	LS	\$9,900	\$9,900	0%	\$90,000	\$90,000	1%	\$49,950	1%	\$80,100
13	Valve Electrical Service	1	LS	\$100,000	\$100,000	1%	\$400,000	\$400,000	4%	\$250,000	3%	\$300,000
14	Unclassified Excavation and Dewatering	500	CY	\$135	\$67,500	1%	\$175	\$87,500	1%	\$155	1%	\$20,000
15	Rock Excavation	50	CY	\$332	\$16,600	0%	\$450	\$22,500	0%	\$391	0%	\$5,900
16	Rock Foundation Preparation	460	SY	\$121	\$55,660	1%	\$65	\$29,900	0%	\$93	1%	(\$25,760)
17	Backfill Concrete	100	CY	\$1,100	\$110,000	1%	\$750	\$75,000	1%	\$925	1%	(\$35,000)
18	Encasement Backfill	400	CY	\$150	\$60,000	1%	\$165	\$66,000	1%	\$158	1%	\$6,000
19	Erosion and Sedimentation Controls	1	LS	\$50,000	\$50,000	1%	\$40,000	\$40,000	0%	\$45,000	1%	(\$10,000)
20	Sanitary Sewer Piping Relocation	1	LS	\$485,000	\$485,000	6%	\$250,000	\$250,000	3%	\$367,500	5%	(\$235,000)

TOTAL

\$7,463,660

\$9,693,800

Reservoir Drain Project

WO #5 - Field, Design, Permit	\$185,710.00
WO #7 - Permits, Valves, Bidding	\$108,534.00
WO #7A - Construction Admin	\$797,493.22
Morgan Corp - Low Bid	\$7,463,000.00
Cost of Valves	\$1,404,311.00
Electical 480v Service	\$398,809.00
	<hr/>
	\$10,357,857.22

Total Cost:

\$12,558,836.22

Replacement Dam Project

WO #8 Conceptual Design	\$58,568.00
WO #9 - Field Investigations	\$1,397,070.00
WO #10 - 30% Design	\$745,341.00
	<hr/>
	\$2,200,979.00

Total Cost with 10% Contingency

\$13,814,719.84

Estimate Budget

\$16,500,000.00
\$3,200,000.00
\$1,600,000.00
\$1,600,000.00
\$1,600,000.00
<hr/>
\$24,500,000.00
-\$13,814,719.84
<hr/>
\$10,685,280.16

- 2022 State allocation, rec'd
- 2023 Rec'd from LL tax already
- 2024 LL Tax
- 2025 LL Tax
- 2026 LL Tax

Total Cost with 10% Contingency

left as of 2026

IV

**DISCUSS SCHNABEL
ENGINEERING RESERVOIR
DRAIN CONSTRUCTION
SERVICES**

May 8, 2023

Mr. Michael Dydula, PE
Project Manager
Town of Lake Lure
2948 Memorial Highway
Lake Lure, NC 28746

Subject: 18P21021.04.02, Work Order No. 7A, Professional Dam Engineering Services for the Reservoir Drain Construction at Lake Lure Dam, Lake Lure, North Carolina

Dear Mr. Dydula:

SCHNABEL ENGINEERING SOUTH, P.C. (Schnabel) is pleased to submit this work order proposal for professional dam engineering services associated with the construction of the planned reservoir drain at Lake Lure Dam.

BACKGROUND

The Town of Lake Lure (Town) is implementing the reservoir drain as the first phase in the overall rehabilitation of Lake Lure Dam. 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 or work on the spillway gates. During the virtual workshop held on March 17, 2020, with representatives from the Town, the Town's consultants, NCDEQ Dam Safety, and the regulatory agencies responsible for the sanitary sewer system, NCDEQ Dam Safety indicated that they were agreeable to this phased approach of first installing the reservoir drain. The reservoir drain design is complete and has been approved by NCDEQ Dam Safety. Bids were received on April 11, 2023, and the apparent low bidder is Morgan Corporation (Morgan) of Spartanburg, SC. The Town intends to award the reservoir drain construction contractor to Morgan during their next work session on May 9 or 10, 2023, and provide Notice-to-Proceed shortly thereafter pending easement acquisition and environmental permit approvals. The Town has procured the reservoir drain valves under a separate contract, and valve delivery is tentatively scheduled for summer 2023.

SCOPE OF SERVICES

The objectives of Schnabel's services proposed under this work order are to provide construction phase services for the installation of the reservoir drain at Lake Lure Dam. 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 portion of the project is described in detail below.

Task 01 – Construction Phase Services

The construction services scope of work proposed herein includes providing construction observation and documentation as will be required by the contract documents. In addition, Schnabel will provide contract administration services for the execution of the contract between the Owner (Town) and the selected Contractor. This is a unique project requiring a high level of engineering support and observation during construction since the work will be performed under near full head conditions (at or above the existing spillway gate sill elevation). As a result, Schnabel proposes to provide an on-site Resident Project Representative (RPR) to meet the quality assurance demands of the project. Our fees for this work order are based on the construction schedule provided by Morgan with their bid, which indicates a construction duration of 12 months. As indicated in the table below, we have assumed some construction activities will require full-time oversight by our RPR while other construction activities will only require periodic oversight by our RPR and/or engineering staff.

Roles and Responsibilities:

Schnabel's construction project team will consist of the following staff:

- Project Manager
- Project Engineer / Engineer-of-Record (EOR)
- Contract Administrator
- Resident Project Representative (RPR)
- Support Engineers to assist with construction observation, documentation, answer questions, confirm criteria, review submittals, respond to RFIs, review change orders, evaluate differing site conditions, etc.
- Construction Field Technicians, as necessary, to support the RPR with quality assurance observation and testing

The management of the project engineering team will be the responsibility of the Project Manager, and the Project Manager will also be the liaison with the Town. The Project Engineer / Engineer-of-Record (EOR) will be professionally responsible for evaluating the construction's conformance with the approved design documents. Our Project Engineer, Contract Administrator, and/or their designated representative(s) will make bi-weekly site visits and attend on-site progress meetings with the Town and the selected Contractor. We have allocated 24 hours per month on average for these site visits and meetings plus additional general coordination with our RPR and the selected Contractor and technical reviews. We have also allocated an additional 4 hours per week for routine project management activities.

Administrative issues pertaining to the Contract Documents, including Requests for Interpretation (RFIs), pay requests, work directives, change orders, shop drawings, submittals, and managing paperwork flow to the proper engineer review team, will be coordinated through and by the Contract Administrator. The Contract Administrator is budgeted for 8 hours per week for the duration of construction.

Support Engineers will be available to our project team to review submittals from the Contractor for items like dewatering, excavation, foundation anchors, reservoir drain gate/valve installation, concrete batching, concrete placement (steel tying, formwork, concrete pumping, and consolidation), reservoir drain gate/valve testing and commissioning, test data review, and other engineering aspects of the project.

Support engineering site visits are also anticipated to observe key aspects of construction and to assist the project team with unforeseen issues, clarify design intent, and resolve acceptability of questionable work. We have allocated 8 hours per week as a combined total for engineering support. In addition, we have included four shop inspections during fabrication, including one of the bulkhead, trash rack, knife gate valve, and jet flow gate valve.

Schnabel will also provide construction observation services to provide the selected Contractor with a clear understanding of the design approach and validate that activities are completed in a manner appropriate to the needs of the project. As a part of the quality assurance plan, Schnabel's RPR will provide the following services:

- Attend project coordination and construction progress meetings.
- Observe construction layout of the project.
- Take pre-construction site photographs to validate site conditions prior to the initiation of contractor activities at the site.
- Observe the selected Contractor's activities for compliance of work with the contract documents.
- Observe materials delivered to the site and compare to approved shop drawings and/or specification requirements.
- Assess performance of the work in relation to the project schedule.
- Maintain detailed log books; take photographs of all work in progress; document manpower and equipment on site; and prepare reports for concrete placements, structural modifications, and other activities at the sites.
- Provide regular contact and coordination with our EOR and designated personnel from the Town and other agencies.
- Coordinate site activities with the selected Contractor and review the selected Contractor's monthly payment estimates before they are submitted to the Town for processing.
- Manage and/or perform the required quality assurance testing and sample preparation activities in coordination with local quality assurance technicians (see below) and the selected Contractor's quality control personnel.
- Maintain record drawing information and coordinate Contractor record drawing information for use in developing complete record drawings of the projects.

Based on the construction schedule provided by Morgan, we have assumed the following level of oversight by our RPR:

Construction Activity	Estimated Duration	Assumed Level of Oversight
Access and Demolition	8 weeks	2 days per week
Excavation and Foundation Preparation	6 weeks	5 days per week
Phase 1 Concrete	13 weeks	3 days per week
Upstream/Underwater Work and Portal Penetration	6 weeks	5 days per week
Reservoir Drain Liner, Phase 2 Concrete, and Gate Installation	13 weeks	2 days per week
Electrical Service, Valve Commissioning, and Site Restoration	4 weeks	2 days per week

In addition to the RPR and engineering support through construction, Schnabel will subcontract with a local construction testing firm to perform field and laboratory quality assurance testing services for concrete. Based on our experience with similar projects, we have assumed that technician support will be required for up to 16 full-day site visits, primarily during Phase 1 and Phase 2 concrete construction.

Close-Out Documents:

Project close-out documents will include final record documents prepared by Schnabel and reservoir drain operation and maintenance instructions provided by the gate/valve manufacturer. The Contract Administrator will coordinate development of the Record Drawings. He or she will consolidate our records with those maintained by the Contractor and oversee development of a final set of Record Drawings. These Record Drawings will be approved and sealed by the EOR and provided to NCDEQ Dam Safety for approval. We have assumed that the Town will provide any construction approval fees required by NCDEQ Dam Safety.

Schnabel will also provide services for construction close-out including a final walk through with the Owner and Contractor, development of punch list(s), review of final pay application, and processing of Contractor closeout submittals.

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:

- Payment of construction approval fees required by NCDEQ Dam Safety.
- Construction services other than those listed and beyond the durations discussed above.
- Preparation of a comprehensive Operation and Maintenance (O&M) Manual for the dam.
- Post-construction monitoring.

PROJECT FEES

The lump sum fee for these services is **\$797,493.22**. 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.

PAYMENTS

Invoices will be submitted monthly for services provided during the preceding month. A breakdown of labor hours and expenses will be provided with each invoice. Payment terms will be in accordance with the Professional Services Agreement between Schnabel and the Town (Attachment 3).

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

BFS:JMP:CMJ

Attachments:

- (1) Detailed Fee Breakdown (1 sheet)
- (2) Schedule of Personnel Fees (1 sheet)
- (3) 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	Senior Associate/ Senior Reviewer	Principal / Project Manager	Associate / Engineer of Record	Senior Engineer / Contract Administration and Engineering Support	Senior Staff Engineer / Engineering Support	Construction Resident / Senior RPR	Technician Support	TOTAL SE PERSONNEL TIME	TOTAL SE PERSONNEL COST	TRAVEL AND LIVING								Subtotal Travel Expense	Subtotal Travel Mileage	Subtotal Travel OTAs	TOTAL ALL TRAVEL & LIVING COSTS	OUTSIDE LAB TESTING COSTS		TOTAL OUTSIDE LAB COSTS (\$21.01)	TOTAL IN-HOUSE EXPENSES	TOTAL SUBCONTRACTED EXPENSES	TOTALS			
	Fischer	Pittman	Johnson	Smith, Khodair, Germann, Duke	TBD	TBD	Local Technician(s)			Hotel	Meals	Rental Car + Gas	Airfare	Per Diem RPR	Mileage from Greensboro (320 Miles Per Trip)	Per Diem Local Tech	(531.14) with					(531.10) with	(531.13) with					with	Concrete Lab	with
	2023 Greensboro Rates	275	303	244	205	157	140			75	\$ 130.00 Day	\$ 35.00 Day	\$ 75.00 Day	\$ 800.00 Roundtrip	\$157 Day	\$0.655 Mile	\$59 Day					10% markup	10% markup					10% markup	10% markup	Cost
Task 01 - Construction Phase Services	280.0	242.0	460.0	1,060.0	160.0	1,490.0	160.0	3,852.00	\$ 725,586.00	36.0	48.0	18.0	9.0	149.0	37,440.0	16.0	\$ 16,401.00	\$ 26,975.52	\$ 26,770.70	\$ 70,147.22	1,600.0	-	\$ 1,760.00	\$ 70,147.22	\$ 1,760.00	\$ 797,493.22				
Initial Value Engineering Coordination with Morgan and the Town	8.0	16.0	12.0	12.0				48.0	\$ 12,436.00								\$ -	\$ -	\$ -	\$ -			\$ -	\$ -	\$ -	\$ 12,436.00				
Pre-Construction Meeting (includes minutes)			12.0	12.0				24.0	\$ 5,388.00		2.0				320.0		\$ 77.00	\$ 230.56	\$ -	\$ 307.56			\$ -	\$ 307.56	\$ -	\$ 5,695.56				
Contract Administration (8 hrs/week for 12 months)				420.0				420.0	\$ 86,100.00								\$ -	\$ -	\$ -	\$ -			\$ -	\$ -	\$ -	\$ 86,100.00				
Submittal Review (Bulkhead, Trash Rack, Knife & Jet Flow Valve, Others)	96.0		56.0	100.0				252.0	\$ 60,564.00								\$ -	\$ -	\$ -	\$ -			\$ -	\$ -	\$ -	\$ 60,564.00				
Shop Inspections (Bulkhead, Trash Rack, Knife Valve, Jet Flow Valve)	48.0		48.0	96.0				192.0	\$ 44,592.00	8.0	12.0	12.0	8.0				\$ 9,636.00	\$ -	\$ -	\$ 9,636.00			\$ -	\$ 9,636.00	\$ -	\$ 54,228.00				
Periodic Site Visits / Attendance at Progress Meetings by EOR and CA (24 hrs/month for 12 months)			140.0	140.0				280.0	\$ 62,860.00		12.0	12.0		3,840.0			\$ 2,178.00	\$ 2,766.72	\$ -	\$ 4,944.72			\$ -	\$ 4,944.72	\$ -	\$ 67,804.72				
Dam Penetration, Valve Install, Startup and Commissioning - Engineering Oversight	40.0		60.0	120.0				220.0	\$ 50,240.00	4.0	6.0	6.0	1.0		640.0		\$ 2,178.00	\$ 461.12	\$ -	\$ 2,639.12			\$ -	\$ 2,639.12	\$ -	\$ 52,879.12				
Construction Oversight - Access and Demo Activities (Assume 2 days/week for 8 weeks)						160.0		160.0	\$ 22,400.00				16.0	5,120.0			\$ -	\$ 3,688.96	\$ 2,763.20	\$ 6,452.16			\$ -	\$ 6,452.16	\$ -	\$ 28,852.16				
Construction Oversight - Excavation and Foundation Prep (Assume 5 days/week for 6 weeks)						300.0		300.0	\$ 42,000.00				30.0	1,920.0			\$ -	\$ 1,383.36	\$ 5,181.00	\$ 6,564.36			\$ -	\$ 6,564.36	\$ -	\$ 48,564.36				
Construction Oversight - Phase 1 Concrete (Assume 3 days/week for 13 weeks)						300.0		300.0	\$ 54,600.00				30.0	8,320.0			\$ -	\$ 5,994.56	\$ 6,735.30	\$ 12,729.86			\$ -	\$ 12,729.86	\$ -	\$ 67,329.86				
Construction Oversight - Upstream Work and Portal Penetration (Assume 5 days/week for 6 weeks)						300.0		300.0	\$ 42,000.00				30.0	1,920.0			\$ -	\$ 1,383.36	\$ 5,181.00	\$ 6,564.36			\$ -	\$ 6,564.36	\$ -	\$ 48,564.36				
Construction Oversight - Reservoir Drain Liner, Phase 2 Concrete, and Gate Installation (Assume 2 days/week for 13 weeks)						260.0		260.0	\$ 36,400.00				26.0	8,320.0			\$ -	\$ 5,994.56	\$ 4,490.20	\$ 10,484.76			\$ -	\$ 10,484.76	\$ -	\$ 46,884.76				
Construction Oversight - Electrical, Valve Commissioning, and Site Restoration (Assume 2 days/week for 4 weeks)						80.0		80.0	\$ 11,200.00				8.0	2,560.0			\$ -	\$ 1,844.48	\$ 1,381.60	\$ 3,226.08			\$ -	\$ 3,226.08	\$ -	\$ 14,426.08				
Construction Technician Support (Provided by Local Subconsultant - Assume 16 days on-site plus travel)						160.0		160.0	\$ 12,000.00						16.0		\$ -	\$ -	\$ 1,038.40	\$ 1,038.40	1,600.0	\$ 1,760.00	\$ 1,038.40	\$ 1,760.00	\$ -	\$ 14,798.40				
Engineering Office Review and Support (Avg 8 hrs/wk for 12 months)	80.0		100.0	120.0	120.0			420.0	\$ 89,840.00	12.0	12.0			3,840.0			\$ 2,178.00	\$ 2,766.72	\$ -	\$ 4,944.72			\$ -	\$ 4,944.72	\$ -	\$ 94,784.72				
Project Management (4 hrs/wk for 12 months)		210.0						210.0	\$ 63,630.00								\$ -	\$ -	\$ -	\$ -			\$ -	\$ -	\$ -	\$ 63,630.00				
Completion Walkthroughs / Punchlist (Assume 2 visits)				24.0				40.0	\$ 8,824.00		4.0			640.0			\$ 154.00	\$ 461.12	\$ -	\$ 615.12			\$ -	\$ 615.12	\$ -	\$ 9,439.12				
Construction Closeout and Record Documents	8.0	16.0	16.0	40.0				96.0	\$ 20,512.00								\$ -	\$ -	\$ -	\$ -			\$ -	\$ -	\$ -	\$ 20,512.00				
									\$ -								\$ -	\$ -	\$ -	\$ -			\$ -	\$ -	\$ -	\$ -				
QUANTITY	280.0	242.0	460.0	1,060.0	160.0	1,490.0	160.0	3,852.00		36.0	48.0	18.0	9.0	149.0	37,440.0	16.0														
TOTAL COST	#####	\$ 73,326.00	\$ 112,240.00	\$ 217,300.00	\$ 25,120.00	\$ 208,600.00	\$ 12,000.00		\$ 725,586.00	\$ 4,680.00	\$ 1,680.00	\$ 1,350.00	\$ 7,200.00	\$ 23,393.00	\$ 24,523.20	\$ 944.00	\$ 16,401.00	\$ 26,975.52	\$ 26,770.70	\$ 70,147.22	\$ 1,600.00	\$ -	\$ 1,760.00	\$ 70,147.22	\$ 1,760.00	\$ 797,493.22				

SCHEDULE OF PERSONNEL FEES – GREENSBORO, NORTH CAROLINA
Effective until December 31, 2023

Senior Consultant	\$307.00/hr
Principal	303.00/hr
Senior Associate	275.00/hr
Associate	244.00/hr
Senior Engineer/Scientist	205.00/hr
Project Engineer/Scientist	177.00/hr
Construction Resident Engineer/Resident Project Representative	177.00/hr
Senior Staff Engineer/Scientist/Technologist	157.00/hr
Staff Engineer/Scientist/Technologist	136.00/hr
Senior Technician II/Construction Resident Technician (see note 4)	129.00/hr
Senior Technician I (see note 4)	109.00/hr
Technician III (see note 4)	95.00/hr
Technician II (see note 4)	79.00/hr
Technician I (see note 4)	70.00/hr
CADD III	145.00/hr
CADD II	131.00/hr
CADD I	110.00/hr
Clerical/Admin	84.00/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 15% to cover handling, insurance and overhead. Travel by air or rail, lodging and meal expenses for personnel in the field will be billed at cost plus a 15% markup.
3. Per Diem rates for out-of-town or overnight travel will be in accordance with U.S. General Services Administration rates published on website www.GSA.gov for the area in which the project is located.
4. Overtime for Technicians is time for work on Saturday, Sunday and federal holidays, time in excess of 8 hours per day, and time between the hours of 7:00 P.M. and 7:00 A.M. A surcharge of \$15/hr is added to the above rate for overtime.
5. Subcontractors and other non-labor project expenses are marked up 15% to cover the cost of handling, insurance and overhead.
6. Schedule of Fees will increase on January 1, 2024 and not less frequently than annually thereafter based on the Consumer Price Index as provided by the U.S. Department of Labor, Bureau of Labor Statistics – All Urban Consumers – U.S. City Average.

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: [Signature]

Name: Jonathan Pittman
(print)

Title: Senior Vice President

Date: September 15, 2018

CLIENT:

Town of Lake Lure

By: [Signature]

Name: Kurtis J. Conkey
(print)

Title: Mayor

Date: September 15, 2018

Exhibits:

None
Rev 2018-08

V

**DISCUSS GMP SUBMITTED BY
RUBY-COLLINS**

Date: May 01, 2023
Project: Subaqueous Sanitary Sewer (SASS) Replacement Project Lake Lure, NC
Reference: NCDEQ Plan Set Lake Lure GLS North SS1 Alignment and Outfall Sewer
Subject: Spring 2023 North SS1 and Outfall Sewer Preliminary GMP
Owner: Town of Lake Lure, North Carolina
Design-Builder: Ruby-Collins, Inc.

We appreciate the opportunity to provide preliminary GMP pricing for the North Sanitary Sewer 1 alignment as well as pricing for the outfall sewer that connects the lake pipe to the force main east of the dam. We are considering this submittal along with its attachments as being the first step of several towards finalizing the estimated cost to install North SS1 and the outfall sewer. We believe that the details enclosed offer enough information for the Town to at least have preliminary discussions with the council on May 11th.

The work described here is dependent on the valve being installed. Our goal is that if the Town chooses to move forward, then by June 01 we would have an understanding as a team as it relates to final GMP amounts, work available for 2023-2024, firm project schedules and resource allocation. It would be presumptuous at this time to assume that we are full steam ahead and dive deep into a schedule of completion without the valve being installed. But if the Town does move forward then we could do more bores at the 12 foot draw down level or we could install the pipe east of the dam or anything else that made sense to make progress even if the valve is not in place.

The first attachment that you will find with this document is a very elementary view of the North SS1. You will notice on the map as well as the cost detail that we have subdivided North SS1 and the outfall sewer into five work zones with each zone getting its own cost breakdown. This will allow the Town a “one step at a time” view of the work in North SS1. Maybe that will help in discussions with funding sources, and we know it will help in scheduling and resource allocation decisions as the winter approaches.

Summary Pricing and Zone Durations

Note: Working Day durations are shown with each zone to show the reader how the zone fits inside of a winter working window. During the available working time in one winter a 5-day work week allows +/-104 days of production. Our intent would be to attack multiple zones at the same time if resources are available. The durations shown below should be the “long” view of the schedule. Our goal would be to dig deeper into the schedule well ahead of the winter working window as the Town decides to go forward or not and develop a plan based on water levels, funding available, resources available, final design impacts, material delivery release and lead times etc...

North SS1 Station 1+00 to 5+50 = 80 working days

Construction	\$662,900.00
Engineering	\$64,360.00
General Conditions	\$84,120.00
Contingency	\$60,855.00
Builder's Fee	\$78,505.00
Allowances	\$20,000.00
Bonds and Insurance	\$19,415.00
Total	\$990,155.00

North SS1 Station 5+50 to 15+50 = 85 working days

Construction	\$1,387,650.00
Engineering	\$126,570.00
General Conditions	\$89,380.00
Contingency	\$120,270.00
Builder's Fee	\$155,150.00
Allowances	\$30,000.00
Bonds and Insurance	\$38,185.00
Total	\$1,947,205.00

North SS1 Station 15+50 to 50+50 = 115 working days

Construction	\$1,929,200.00
Engineering	\$174,840.00
General Conditions	\$120,920.00
Contingency	\$166,875.00
Builder's Fee	\$215,265.00
Allowances	\$30,000.00
Bonds and Insurance	\$52,745.00
Total	\$2,689,845.00

North SS1 Station 50+50 to 82+00 = 190 working days

Construction	\$2,646,620.00
Engineering	\$242,630.00
General Conditions	\$199,785.00
Contingency	\$231,680.00
Builder's Fee	\$298,865.00
Allowances	\$40,000.00
Bonds and Insurance	\$73,195.00
Total	\$3,732,775.00

Outfall Sewer East of the Dam = 35 days

Construction	\$742,575.00
Engineering	\$67,445.00
General Conditions	\$36,805.00
Contingency	\$63,515.00
Builder's Fee	\$81,930.00
Allowances	\$25,000.00
Bonds and Insurance	\$20,350.00
Total	\$1,037,620.00

Total North SS1 and Outfall Sewer = \$10,397,600.00

As always, we appreciate the opportunity to provide this pricing to the Town. Navigating the cost of a project like this during such uncertain times is challenging and complicated. We are committed to keeping the course for as long as the Town intends to move forward. We look forward to discussing the contents of this document at our next meeting. In the meantime, if you have any questions please advise.

Sincerely,
Ruby-Collins, Inc.

Monte Beasley

Monte Beasley

Cc S Cline
A Cook
J Rast
G Johanik

Preliminary
Engineering

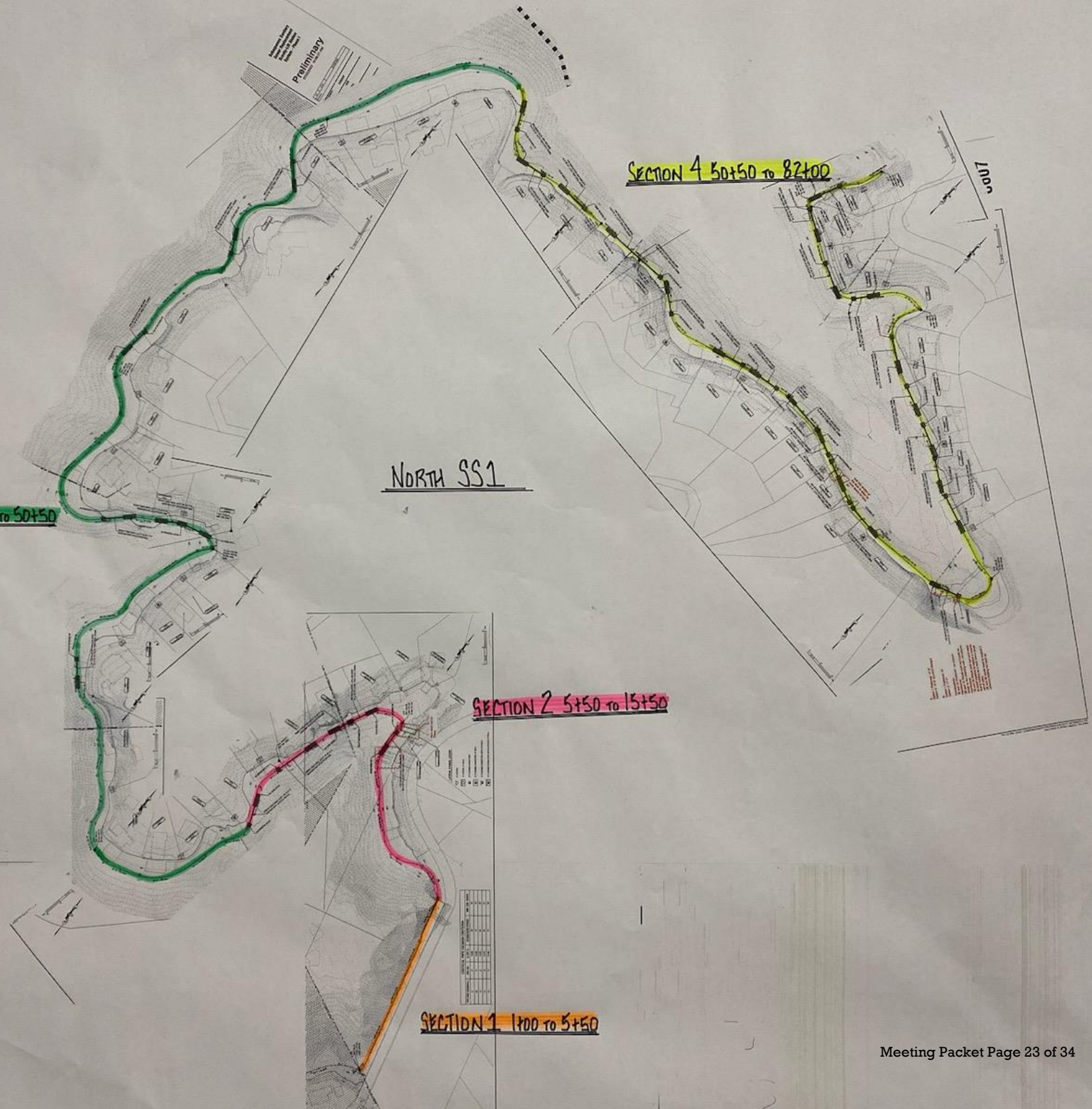
SECTION 3 15+50 to 50+50

NORTH SS1

SECTION 4 50+50 to 82+00

SECTION 2 5+50 to 15+50

SECTION 1 1+00 to 5+50



PROJECT:----- Lake Lure Spring 2023 - North SS1 GMP
This pricing is being submitted for work to be completed in winter 2023-2024 for North SS1

SUBJECT:----- GMP Pricing - Spring 2023

DATE:----- 5/1/2023

NORTH SS1 2023 SPRING GMP	
North SS1 - 1+00 to 5+50-----	\$662,898.50
North SS1 - 5+50 to 15+50-----	\$1,387,648.84
North SS1 - 15+50 to 50+50-----	\$1,929,198.69
North SS1 - 50+50 to 82+00-----	\$2,646,616.98
East of the Dam-----	\$742,574.80
Labella Design and Engineering-----	\$675,839.88
General Conditions-----	\$530,996.50
Contingency-----	7.50% \$643,183.06
Design Builder Fee--	9.00% \$829,706.15
ALLOWANCES	
Inflation Risk 2023-2024-----	\$40,000.00
Labella Construction Services-----	\$50,000.00
Dispute Resolution-----	\$55,000.00
Bonds & Insurance--	2.00% \$203,873.27
Total-----	\$10,397,536.68

BREAKDOWN BY LOCATION					
	\$2,200/LF	\$1,947/LF	\$768/LF	\$1,185/LF	\$2,256/LF
	NORTH SS1 - 1+00 TO 5+50	NORTH SS1 - 5+50 TO 15+50	NORTH SS1 - 15+50 TO 50+50	NORTH SS1 - 50+50 TO 82+00	EAST OF THE DAM
Construction-----	\$662,898.50	\$1,387,648.84	\$1,929,198.69	\$2,646,616.98	\$742,574.80
Design-----	\$64,359.40	\$126,567.27	\$174,839.37	\$242,629.33	\$67,444.51
GC's-----	\$84,118.26	\$89,375.65	\$120,920.00	\$199,780.86	\$36,801.74
Contingency-----	\$60,853.21	\$120,269.38	\$166,871.85	\$231,677.04	\$63,511.58
Fee-----	\$78,500.64	\$155,147.50	\$215,264.69	\$298,863.38	\$81,929.94
ALLOWANCES					
Inflation-----	\$5,000.00	\$5,000.00	\$10,000.00	\$10,000.00	\$10,000.00
Labella-----	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00	\$10,000.00
Dispute-----	\$5,000.00	\$15,000.00	\$10,000.00	\$20,000.00	\$5,000.00
Bonds & Ins-----	\$19,414.60	\$38,180.17	\$52,741.89	\$73,191.35	\$20,345.25
Total-----	\$990,144.61	\$1,947,188.81	\$2,689,836.50	\$3,732,758.94	\$1,037,607.82
Duration Per Zone-----	80.0 days	85.00 days	115.00 days	190.0 days	35.0 days
Manhours-----	37,030.80		Efficiency----- 3.67		

LAKE LURE - NORTH SS1 - 1+00 to 5+50 BRIDGE PIPE - OUR PLAN HERE IS TO FLOAT THE CASING PIPE TO THE DAM AND FLUCTUATE THE WATER LEVEL TO INSTALL THE PIPE IN THE HANGERS																	
Project Duration-----		80.0 working days		Material		Labor		Equipment		Subcontract		Direct POH		Estimated Duration			
Item	Description	Quantity	Unit	Unit \$	Extension	Unit \$	Extension	Unit \$	Extension	Unit \$	Extension	Unit \$	Extension	Activity	Quantity	Production	Days
1.0	Crew Foreman	100%	640.00	manhours	0.00	0.00	104.35	66,784.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
2.0	Class 4 Operator	100%	800.00	manhours	0.00	0.00	80.35	64,280.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.53
3.0	Class 5 Labor	100%	800.00	manhours	0.00	0.00	64.30	51,440.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4.0	Class 4 Labor	100%	800.00	manhours	0.00	0.00	59.70	47,760.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5.0	Surveyor	0%	0.00	manhours	with gc's		77.15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6.0	Job Site Vehicles - Surveyor and Foreman		640.00	hours	0.00	0.00	0.00	0.00	27.15	17,376.00	0.00	0.00	0.00	0.00	0.00	0.00	1.88
7.0	Yard Management JD624		640.00	hours	priced with common equipment in general conditions									0.00	0.00	0.00	
8.0	Job Made Barge		1.00	lmsm	10,000.00	10,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00
9.0	2200 Generator		1.00	each	priced with common equipment in general conditions				0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.67
10.0	Support Barge Boat		640.00	hours	priced with common equipment in general conditions									0.00	0.00	0.00	0.47
11.0	Local Miscellaneous Rentals		640.00	hours	0.00	0.00	0.00	0.00	16.05	10,272.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
12.0	Komatsu238 Excavator		640.00	hours	0.00	0.00	0.00	0.00	135.46	86,694.40	0.00	0.00	0.00	0.00	0.00	0.00	3.00
13.0	PIPE	16 Inch HDPE	450.00	feet	35.40	15,930.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	5.00
14.0	CASING	20 Inch Steel Casing	450.00	feet	102.00	45,900.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15.0		spacers	50.00	each	375.00	18,750.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16.0		end seals	2.00	each	375.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
17.0		weld casing joints	25.00	each	0.00	0.00	0.00	0.00	0.00	0.00	0.00	475.00	11,875.00	0.00	0.00	0.00	7.05
18.0		coat casing pipe inside and out	4,810.00	sqfeet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	29.85	143,578.50	0.00	0.00	0.00	77.60
19.0	MANHOLES	at 1+00	1.00	each	45,000.00	45,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20.0		couplings/connectors/finishing	1.00	each	1,250.00	1,250.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
21.0		beacon lights and vents	1.00	each	2,750.00	2,750.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
22.0		manhole cover	1.00	each	with structure cost		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
23.0	STONE PRODUCTS	57 stone	360.00	tons	21.25	7,650.00	0.00	0.00	0.00	0.00	12.50	4,500.00	0.00	0.00	0.00	0.00	
24.0		0.00 xxxx	0.00	xxxx	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
25.0		0.00 xxxx	0.00	xxxx	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
26.0	General Conditions-----		80.00	days	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,051.48	84,118.26	0.00	
	Sales Tax-----	7%	1.00	lmsm	10,358.60	10,358.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTALS-----					Materials	158,338.60	Labor	230,264.00	Equipment	114,342.40	Subcontract	159,953.50	Direct POH	84,118.26	747,016.76		

LAKE LURE GENERAL CONDITIONS FOR NORTH SS1

Project Duration-----		9.50 months		Material		Labor		Equipment		Subcontract		Direct POH		Notes:	
Item	Description	Quantity	Unit	Unit \$\$	Extension	Unit \$\$	Extension	Unit \$\$	Extension	Unit \$\$	Extension	Unit \$\$	Extension		
1.0	Project Director	5.0%	83.60	manhours	0.00	0.00	231.70	19,370.12	0.00	0.00	0.00	0.00	0.00	0.00	We are housing common equipment with the GC's This is equipment that will support all crews GC Manhours 6,102.80 manhours Considering that we ill be able to use the Town's facilities
2.0	Division Director	10.0%	167.20	manhours	0.00	0.00	191.55	32,027.16	0.00	0.00	0.00	0.00	0.00	0.00	
3.0	Document Control	25.0%	418.00	manhours	0.00	0.00	84.15	35,174.70	0.00	0.00	0.00	0.00	0.00	0.00	
4.0	Senior Project Manager	25.0%	418.00	manhours	0.00	0.00	161.25	67,402.50	0.00	0.00	0.00	0.00	0.00	0.00	
5.0	Project Superintendent	100.0%	1,672.00	manhours	0.00	0.00	139.10	232,575.20	0.00	0.00	0.00	0.00	0.00	0.00	
6.0	Project Manager	100.0%	1,672.00	manhours	0.00	0.00	139.10	232,575.20	0.00	0.00	0.00	0.00	0.00	0.00	
7.0	Project Engineer	100.0%	1,672.00	manhours	0.00	0.00	110.05	184,003.60	0.00	0.00	0.00	0.00	0.00	0.00	
8.0	Job Site Vehicles		5,684.80	hours	0.00	0.00	0.00	0.00	27.15	154,342.32	0.00	0.00	0.00	0.00	
9.0	Mobilization Trips		60.00	each	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,300.00	78,000.00	
10.0	Contractor's Office	8.00		months	use town's facilities		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
11.0	Yard Rental	8.00		months	use golf course		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
12.0	Stone for Yard	288.00	tons		21.50	6,192.00	0.00	0.00	0.00	0.00	12.50	3,600.00	0.00	0.00	
13.0	Yard Gate/Fence	1.00	lmsm		none		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
14.0	Power Drop	1.00	lmsm		use town's facilities		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
15.0	Misc Utility Hook Ups	1.00	lmsm		use town's facilities		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
16.0	Office Furniture	1.00	lmsm		use town's facilities		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
17.0	Office Equipment	1.00	lmsm		use town's facilities		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
18.0	Office Supplies	1.00	months		use town's facilities		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
19.0	Office Utilities	8.00	months		use town's facilities		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
20.0	Job Video	east of dam	2,000.00	feet	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.25	2,500.00	
21.0	Misc Surveying		160.00	hours	2.15	344.00	77.15	12,344.00	27.15	4,344.00	0.00	0.00	0.00	0.00	
22.0	As Built Drawings		15.00	sheets	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	300.00	4,500.00	
23.0	Porta Jon	4 each	21.00	months	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1,400.00	29,400.00	
24.0	Wood Mats for Staging		6.00	loads	0.00	0.00	0.00	0.00	0.00	0.00	6,920.00	41,520.00	0.00	0.00	
25.0	Common Equipment		pricing common equipment here to take advantage of cost being used by multiple crews												
26.0	Yard 624 Loader		1,672.00	hours	0.00	0.00	0.00	0.00	90.52	151,349.44	0.00	0.00	0.00	0.00	
27.0	Fusing Machines, Generators etc...		2.00	each	100,000.00	200,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
28.0	Suitcase Generators, Ancillary Tools		1.00	lmsm	15,600.00	15,600.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
29.0	Freeman Support Group		1,672.00	hours	0.00	0.00	0.00	0.00	120.00	200,640.00	0.00	0.00	0.00	0.00	
30.0	Robbins Rock Head for Casing Bores		600.00	hours	0.00	0.00	0.00	0.00	101.40	60,840.00	0.00	0.00	0.00	0.00	
31.0	Sweeper		1,672.00	hours	0.00	0.00	0.00	0.00	103.61	173,235.92	0.00	0.00	0.00	0.00	
32.0	Trench Boxes/Steel Plates Multiple Crews		1.00	lmsm	127,000.00	127,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
33.0	Buck Rake Bagging Bucket		1.00	each	8,425.00	8,425.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
34.0	Crane Mats Barge		4.00	loads	11,000.00	44,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
35.0	Additional Barges		1.00	lmsm	100,000.00	100,000.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
36.0	Min Excavator		1,672.00	hours	0.00	0.00	0.00	0.00	62.60	104,667.20	0.00	0.00	0.00	0.00	
37.0	Travel Manhours-----	\$450/week/40hrs	37,030.80	manhours	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.25	416,596.50	
38.0			0.00	xxxx	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
	Sales Tax-----	7%	1.00	lmsm	35,109.27	35,109.27	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
TOTALS-----					Materials	536,670.27	Labor	815,472.48	Equipment	849,418.88	Subcontract	45,120.00	Direct POH	530,996.50	

Town equipment supply may be used to minimize or negate

GC'S Per Day \$1,051.48

Ruby Collins		Freeman	Imoco	Labor/Tradesmen	Barge	John Deere	Equipment	Steel Plates		Boats		T&M Boat	
\$640,000.00	#1009	\$17,850.00	92090	\$18,387.88	\$210,445.46	Excavator	\$570,144.62	Daystar	\$10,230.32	2nd boat	\$144,837.00	5424	\$4,083.76
\$850,000.00	#1012	\$19,250.00	92036	\$1,506.40	\$223,047.92					1st boat	\$119,319.00	5432	\$4,356.00
	#1020	\$21,850.00										5452	\$4,083.76
	#1032	\$25,150.00										5456	\$3,539.26
	#1035	\$6,000.00										5480	\$8,439.76
												5494	\$4,083.76
\$1,490,000.00		\$90,100.00		\$19,894.28	\$433,493.38		\$570,144.62		\$10,230.32		\$264,156.00		\$28,586.30

Ruby Collins	\$1,490,000.00
Lake Lure	\$1,416,604.90
Total	\$2,906,604.90

VI

**DISCUSS HORIZONTAL
DIRECTIONAL DRILLING (HDD)
PROJECT**

VII
DISCUSS 2024
DRAWDOWN SCHEDULE

VIII

**DISCUSS DAM BRIDGE
REPLACEMENT**

IX
ADJOURNMENT