Form 880-LG
Rev. 2-16-10

NORTH CAROLINA DEPARTMENT OF TRANSPORTATION SUPPLEMENTAL AGREEMENT or FORCE ACCOUNT DOCUMENTATION

SUPPLEMENTAL AGREEMENT NO 2 **FORCE ACCOUNT DOCUMENTATION NO:**

PROJECT NO: WBS # 48818.3.1 (EB-6021) **FEDERAL AID NO:** 0520125

COUNTY: Wake (Town of Apex) **CONTRACT NO:** CON-2023-288

CONTRACTOR: Fred Smith Company

1. **Description, Location, and Justification for Change:** **Locating waterline at Sta. 26+50 -L-** The Supplemental Agreement is written in accordance with the 2018 Standard Specifications for Roads and Structures Section 104-7 Extra Work. All work will be completed in accordance with Section 1500 General Utility Requirements. The negotiated price below will be full compensation for all work, labor, supervision, and materials associated with location of waterline. The location for this work is in the vicinity of Station -L- 26+50

2. **Justification**: This work required to locate Town of Apex's (TOA) waterline has been more complex than originally scoped. The contractor, TOA and TranSystems SUE groups took reasonable efforts to locate the waterline using vacuum trucks, penetration sonar and meetings with staff present during original installations with no success. The soil is too wet for conventual methods to work effectively. Additionally, this is an environmentally sensitive area and therefore all reasonable efforts must be taken to reduce impacts. This location has buried mud mats beneath the ground making it more difficult for the SUE vacuum. TOA discussed other options including a redesigned of area, but they are not beneficial to project. it was decided that this is the best option to find the waterline and move forward with original design. After interviewing Geotech Solution Limited the TOA is confident in their method of electronic magnetic location to locate the waterline.

3. **Estimation of quantities of work resulting from change and the basis of payment:**

Line Code No.	Description	Unit	Negotiated or Contract Price	Field Change		Original Plan	
				Quantity	Amount	Quantity	Amount
73	Waterline location	LS	$6050.00	1	$6050.00		

Total Field Change Amount: **$6050.00** **Total Original Plan Amount:** **$ 0.00**

Supplemental Agreement Net Underrun: **$ 0.00** **Supplemental Agreement Net Overrun:** **$6050.00**

4. **Extension of contract time (if applicable):**
   - No additional contract time beyond that allowed for overruns in accordance with article 108-10(B)1 of the Standard Specifications will be allowed for preforming the affected work.

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BASIS OF AGREEMENT BETWEEN
THE NORTH CAROLINA DEPARTMENT OF TRANSPORTATION AND CONTRACTOR

1. **The Contractor agrees to perform the work described in this Supplemental Agreement in consideration of the payment set out herein.**
2. **The terms and conditions of said contract are hereby ratified and remain in full force and effect except as modified by such Supplemental Agreement(s) as may heretofore have been entered into between the Department and the Contractor and as modified by this Supplemental Agreement.**
3. **All terms and conditions of this Supplemental Agreement are herein set out and there are no agreements relating thereto not expressed herein.**
4. **This Supplemental Agreement shall not constitute a release or waiver of any lawful claims that the Contractor has or may have against the Department under said contract pursuant to G.S. 136-29 except for the matters specifically covered herein.**

In witness whereof, the Department and the Contractor have caused this Supplemental Agreement to be executed by their duty authorized representatives.

APPROVAL RECOMMENDED: **BY:**_____ LOCAL GOVERNMENT OFFICIAL / SEPI ENGINEER **DATE:**_____	**CONTRACTOR:** **BY:**_____ AUTHORIZED REPRESENTATIVE **DATE:**_____
APPROVAL RECOMMENDED: **BY:**_____ NCDOT ENGINEER **DATE:**_____	**APPROVAL GRANTED:** **BY:**_____ NCDOT ENGINEER **DATE:**_____

FORCE ACCOUNT DOCUMENTATION

Documentation of the authorized Force Account work shall be completed for all state and Federally Funded projects.

APPROVAL GRANTED: **BY:**_____ RESIDENT ENGINEER **DATE:**_____	**APPROVAL GRANTED:** **BY:**_____ DIVISION ENGINEER **DATE:**_____

FOR CONSTRUCTION AND MATERIALS BRANCH USE ONLY

Approval of the Federal Highway Administration ☐ **is** ☐ **is not** **requested.**

APPROVED with the understanding that Federal participation in this work, the cost of which cannot be met from Federal aid funds provided for under the now effective project agreement, will be contingent upon additional Federal aid funds being made available for the project by a modified project agreement, to be executed prior to or at the final voucher stage.

APPROVED: FEDERAL HIGHWAY ADMINISTRATION	**REVIEWED: CONSTRUCTION UNIT**
By:_____	**By:**_____
Date:_____	**Date:**_____

Comments:_____

FRED SMITH COMPANY
CONSTRUCTION

February 4, 2025

Town of Apex, NC
53 Hunter St.
Apex, NC 27502

Attn: Angela Reincke

RE: EB-6021 Beaver Creek Greenway Extensions, Phases 1, 2 and 1A

Subj: RCO-02-Waterline Locating-Electromagnetic Pipe Tracing-R2

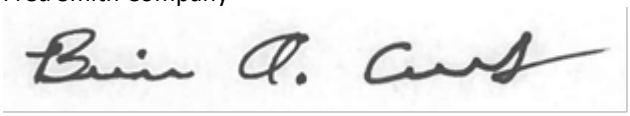
Mrs. Reincke:

We would like to submit this request for change order due to the waterline location issues which have been experienced on the project. FSC has spent several days pot holing and soft digging trying to locate the waterline, as well as the town of Apex. Due to some issues within the town, the town is not exactly sure of the waterline location and has asked FSC to hire Geo Solutions Limited, Inc to attempt to locate the 16" waterline. FSC would like to request the following item be added to the contract via supplemental agreement:

#	Description	Qty	Unit	Unit Price	Extention
1	Electromagnetic pipe tracing	1	LS	$ 6,050.00	$ 6,050.00

If you have any questions or concerns, please do not hesitate to call me at (919) 520-4154.

Respectfully,
Fred Smith Company



Brian Conrad
Project Manager

Cc: 1812575 File
Jason Hilton, Fred Smith Company

Backup:

#	Description	Qty	Unit	Unit Price	Total	Bond	Overhead	Mark Up	Sub Total
1	Electromagnetic pipe tracing	1	LS	$ 5,500.00	$ 5,500.00			10%	$ 6,050.00

Geo Solutions Limited, Inc
P.O. Box 293
Conway, NC 27820
252-578-3233
www.geosolutionsltd.com

January 07, 2025

Mr. Jon Persson, MESH
Gannett Fleming TranSystems
One Glenwood Avenue Suite 900
Raleigh, NC 27603

Re: **Proposal: Geophysical Evaluation – City of Apex Water Main**

Dear Mr. Persson:

Geo Solutions Limited, Inc. (Geo Solutions) is pleased to submit this proposal to Gannet Fleming TranSystems for a geophysical evaluation to detect and mark a water main in the area of a new Greenway for the City of Apex. One section of the greenway requires that an elevated walkway be constructed over a wet area. The water main runs through this area. It is critical that the piles for the elevated walkway not impact the water main. The City of Apex has tried to locate the pipe using traditional subsurface utility locating methods but have been unsuccessful. Vacuum excavation has also been completed to pothole the water main but has also been unsuccessful. Gannett Fleming TranSystems contacted Geo Solutions to discuss other methods for locating the pipe and requested a proposal to complete a geophysical evaluation of the area.

Technical Approach

Geo Solutions proposes to conduct the following geophysical evaluation to identify the water main at the area of the planned elevated walkway of the new greenway in Apex, NC. Below are three recommended methods to evaluation the location of the water main.

Electromagnetic (EM) Pipe Tracing

Geo Solutions recommends the completion of an EM pipe tracing evaluation using a Radio Detection RD 7800 pipe and cable locator. Based on conversation with the City of Apex, the pipe is constructed of ductile iron and is accessible a few hundred yards from the area of concern. Geo Solutions proposed to connect to the ductile iron pipe and trace it through the area of the construction. The depth of the pipe may also be estimated with this method. The location of the pipe will be painted with ground marking paint and wooden survey stakes through the area of construction.

Total Field Magnetic Evaluation

Geo Solutions recommends the completion of a detailed magnetometry evaluation also known as a total field magnetic evaluation. Here, Geo Solutions will utilize a GEM Systems GSMP-35 total field magnetometer equipped with a submeter accuracy GPS survey unit. The magnetometer responds to ferrous metal such as ductile iron pipe and has a detection depth of over 25 feet deep.

Ground-penetrating Radar (GPR) Evaluation

If the ground is not too wet, Geo Solutions will complete a ground-penetrating radar (GPR) evaluation to image the pipe in cross sectional view. However, it is unlikely that the pipe will be detectable due to clayey soil conditions. Geo Solutions proposes to utilize a GSSI SIR 4000 equipped with a 200 MHz antenna.

Limitations

The detection of subsurface objects is dependent upon parameters that include size, physical composition, and depth of burial. The combination of these parameters may produce a response that is below the detection threshold for a given geophysical method. Geo Solutions Limited, Inc cannot guarantee that the water main will be detectable.

Schedule and Cost

Below is a summary of costs and estimated project duration.

Item	Description	Unit	Estimated Duration	Lump Sum Cost
Geophysical Evaluation Field Work	Complete geophysical evaluation to detect and trace the water main. Deliverables for this project will include paint and wooden stakes on the ground and a map of the results.	Lump	1 Day	$5,500
	Lump Sum Cost			**$5,500**

If awarded, billing for this project will be **NET 45**. We are pleased to be provided this opportunity; please give me a call should you have any questions concerning the above.

Very truly yours,

GEO SOLUTIONS LIMITED, INC.

John DeLoatch, PG
Project Manager