

May 25, 2023

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**SUBJECT:** Proposal for Tuckaleechee Pike Bridge Replacement – Blount County, TN  
GeoStabilization International - Vendor ID: 0000160610  
TDOT Contract Number: 0000000000000000000066906  
Title: SWC 191 - Slope Stabilization Services

Mr. Chico Messer:

GeoStabilization International® (GSI®) is pleased to offer this proposal to provide permanent stabilization to existing bridge abutments, installation of side walls and bridge deck replacement along Tuckaleechee Pike in Blount County, TN for the Blount County Highway Department (BCHD). The project is located at the GPS Coordinate: 35.746310, -83.906741.

**PROJECT OVERVIEW**

This proposal addresses the stabilization of the bridge abutments, installation of side walls and bridge deck replacement for an existing skewed concrete bridge / culvert. Sections of the current bridge deck are deteriorating and BCHD plans to replace the entire concrete deck and stabilize the existing abutments which are approximately 22 feet apart. Additionally, due to the bridge skew and abutment alignment, the corners of the abutments are exposed and susceptible to future scour, therefore GSI will install side walls, as needed.

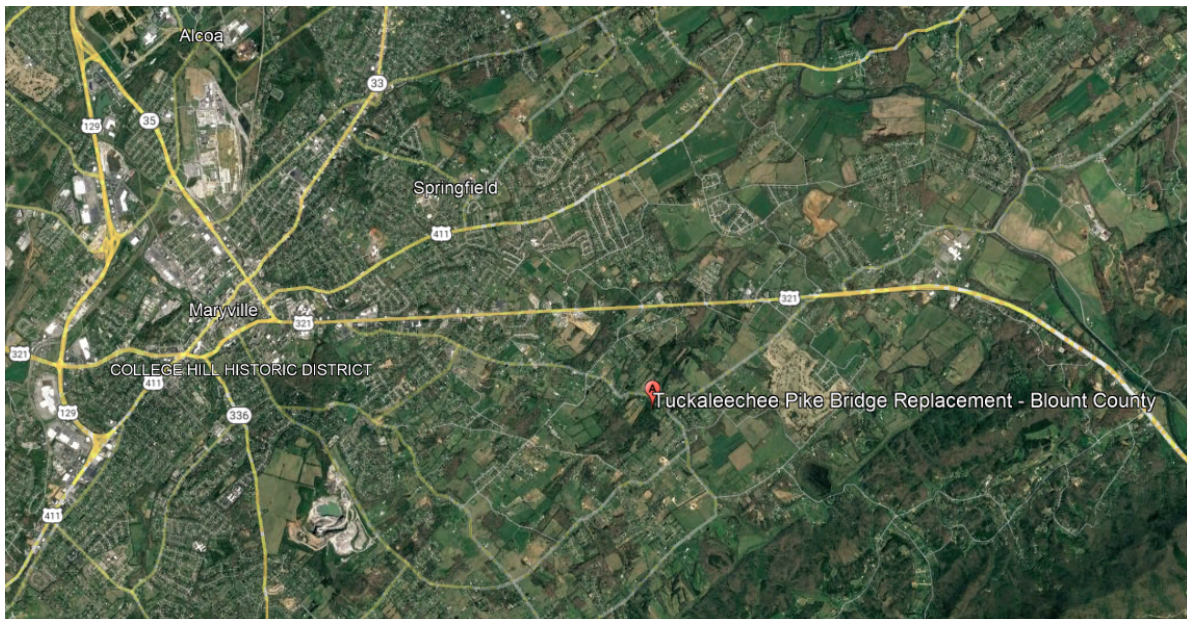


Figure 1 – Approximate project location





Figure 2 – Upstream bridge conditions as of 5/18/23



Figure 3 – Downstream bridge conditions as of 5/18/23



## **SCOPE OF WORK**

1. Prior to GSI mobilization, BCHD shall establish traffic control by shutting down the entire road.
2. GSI will arrive onsite with a competent person to help guide BCHD with additional pavement removal and excavation for the micropile grade beam foundation for the bridge abutments.
3. GSI will begin drilling the vertical micropiles behind the existing abutment walls and install the micropile grade beam foundation.
4. BCHD shall remove existing concrete bridge deck.
5. GSI will layout core locations and core through existing abutment walls to install self-drilling soil nails.
6. GSI will contract with Henry Pate, PE with Neel-Schaffer (Phone: 615-308-1168) to design the concrete bridge deck panels.
7. GSI will contract Blalock Construction to pre-cast the panels and deliver them to the site.
8. BCHD to provide crane to install new bridge deck panels. GSI will help guide the setting of the panels on top of the concrete micropile grade beam foundations.

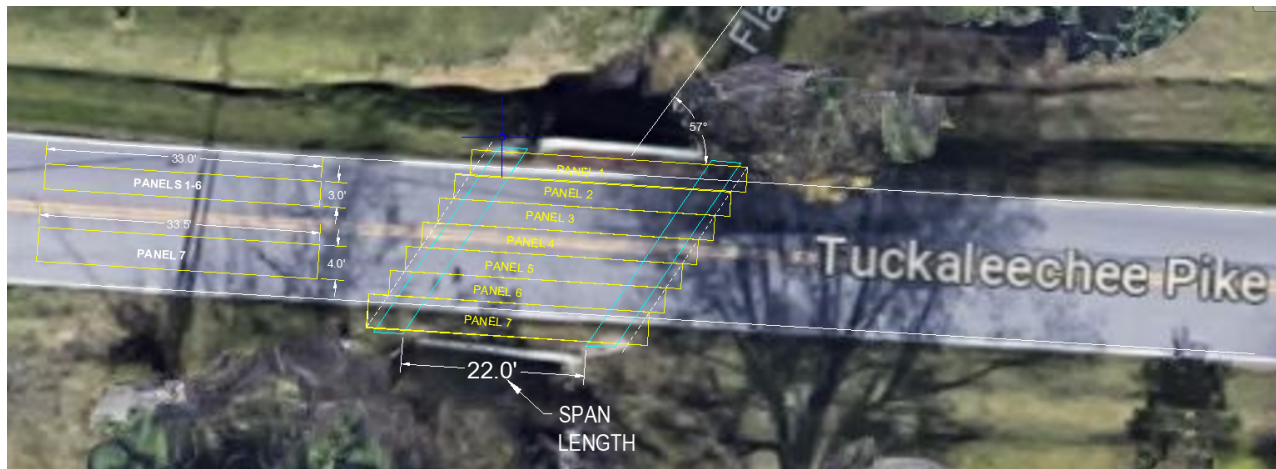
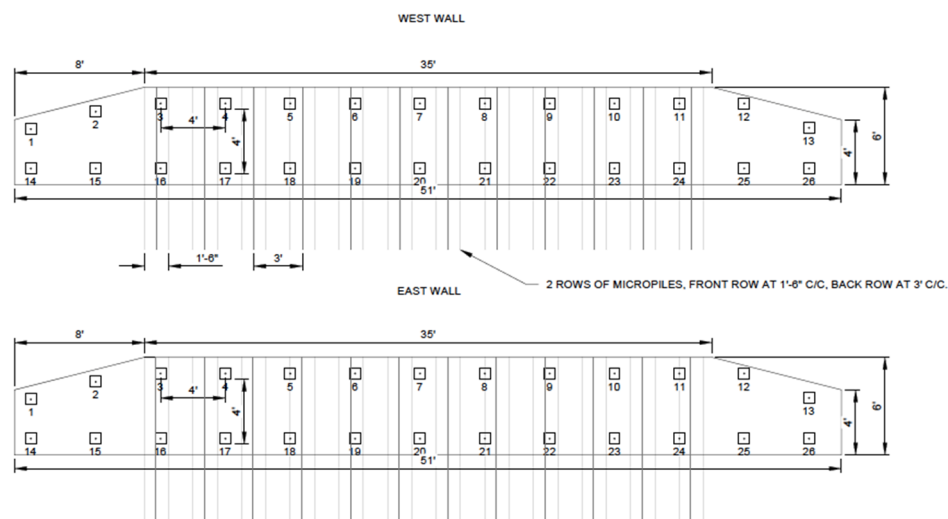


Figure 4 – Proposed bridge deck panels



| ESTIMATED QUANTITIES  |     |          |      |
|---|-----|----------|------|
| PAY ITEM  | QTY | QTY (AB) | UNIT |
| NAILS, SELF-DRILLING SOIL, UP TO 20 FT                            | 52  | -        | EA   |
| NAILS, SELF-DRILLING SOIL, UP TO 20 FT (VERTICAL)                 | 72  | -        | EA   |
| SHOTCRETE, NOMINAL 12-IN THICKNESS (STD. WEATHER) (MICROPILE CAP) | 210 | -        | EA   |

**A** TYPICAL PROFILE  
SCALE: 1" = 5'

*TAKEOFF*

Figure 5 – UPDATE LAYOUT!!!

### COST TABLE FOR TUCKALEEECHEE PIKE BRIDGE REPLACEMENT

| Item                | Description   | QTY | Unit | Unit Price  | Total Price         |
|---------------------|---|-----|------|-------------|---------------------|
| 17                  | Mobilization  | 1   | EA   | \$11,580.00 | \$11,580.00         |
| 1                   | Nails, Self-Drilling, up to 20 ft - Micropile Cap             | 48  | EA   | \$722.00    | \$34,656.00         |
| 1                   | Nails, Self-Drilling, up to 20 ft - Abutments Walls           | 20  | EA   | \$722.00    | \$14,440.00         |
| 1                   | Nails, Self-Drilling, up to 20 ft - Wing/Side Walls           | 48  | EA   | \$722.00    | \$34,656.00         |
| 16                  | Shoulder Build-Up, Road Service, as needed                    | 64  | LF   | \$155.00    | \$9,920.00          |
| 19                  | Shotcrete, Nominal 12-in thickness (Micropile Cap)            | 150 | SF   | \$50.80     | \$7,620.00          |
| 52                  | Approved Parts, Materials, Supplies and Equipment with Markup |     |      |             | \$0.00              |
|                     | Bridge Panel Engineering - Neel-Schaffer                      | 1   | LS   | \$10,000.00 | \$10,000.00         |
|                     | Bridge Panels - Blalock Construction                          | 728 | SF   | \$95.00     | \$69,160.00         |
|                     | Manlift - United Rentals (Month Rental)                       | 1   | MO   | \$1,930.00  | \$1,930.00          |
|                     | Oversized bearing plates (12"x12"x0.75")                      | 20  | EA   | \$50.00     | \$1,000.00          |
|                     | Core Barrel   | 1   | LS   | \$750.00    | \$750.00            |
|                     | Core Machine Rental   | 1   | WK   | \$320.00    | \$320.00            |
|                     | Rebar Doweling in Concrete Beam                               | 1   | LS   | \$5,000.00  | \$5,000.00          |
|                     | Cost +15% Per SWC 191   | 1   | LS   | \$0.15      | \$12,474.00         |
| <b>Total Price:</b> |   |     |      |             | <b>\$213,506.00</b> |

- Concrete for micropile cap will be 4000 psi

BCHD will need to provide the items listed below in the yellow highlighted area under Resources. The excavation for the bridge abutments will be performed by BCHD from the road platform under GSI guidance. BCHD will need to shut down the entire road to implement the proposed repair.

## **RESOURCES**

Items to be Provided By BCHD:

- Right-of-way space where available to receive and unload materials shipped by GSI, and an area to park our equipment.
- Installation/Removal of Guardrail if required.
- Removal of existing concrete bridge deck and installation of new concrete bridge deck, with support from GSI.
  - BCHD to provide crane.
- Erosion Control, Vegetation / Tree Removal, Clearing, Grubbing, Excavation, Benching, Temporary Access Construction Roads, & haul off along Work Area as directed by GSI.
  - An approximate 3-foot-wide excavation bucket is ideal for the micropile cap excavation.
- A supply of water suitable for construction use.
- Backfill material behind deck panels (approaches).
- The resulting disturbed soil areas should be stabilized with rip-rap or other shoulder / inlet and outlet protection by BCHD or others.
- BCHD should assess milling, pavement resurfacing, and first phase and permanent striping in the repair area.
- Traffic Control and Traffic Control Barriers/Signage.
- Bridge deck form work.

Our equipment will allow the work to be accomplished from the road platform. This work zone shall be provided and protected by BCHD forces. We will park our equipment off the road and near the site during non-working hours.

## **SCHEDULE**

Barring unforeseen delays, GSI work is based on BCHD maintaining the entire road closed duration of the project. This project should take approximately 1.5 - 2 weeks to complete. The schedules are based on GSI working 5 day work weeks during daylight hours for the slide repair, and Monday – Friday. Saturday work can be arranged upon request.

## **OTHER**

Our price also includes design and we will supply a Tennessee P.E. stamped typical section. Our work also carries a **seven-year warranty** commencing after GSI project completion for permanent installations. This warranty is void absent GSI receiving mutually agreed project payment. If at any point within the warranty period the repaired section becomes unstable, GSI will, in a timely manner, remedy the situation with a design/construction solution at no cost to the owner. This warranty does not cover work completed by others or shallow surface erosion problems that may develop in the future. Exceptions to the warranty include catastrophic seismic, weather, or other events outside reasonable accounting in design (including earthquakes and weather events exceeding expectation for the region) or further construction by third parties that destabilizes the repair (including utility trenches dug into or through any soil nails, deep excavations in the area, etc). Extreme storm water volumes may cause erosion which could

undermine the repaired area which may void this warranty. After such an event this area should be checked for erosion.

GeoStabilization International



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