

SHELBY COUNTY GOVERNMENT
 160 N. Main Street, Suite 900, Purchasing
 MEMPHIS, TENNESSEE 38103
 (901) 222-2250

Purchase Order No.
S013008

Issue Date
10/22/20

Purchase Order COPY

Vendor No.	Delivery Required	Terms	Ship Via	F.O.B.	Requisition No.
A2959	10/22/20	N30		DEST	

Issued **BARGE DESIGN SOLUTIONS**
 To 60 GERMANTOWN COURT
 SUITE 100
 CORDOVA, TN 38018

Ship **SHELBY COUNTY ROADS & BRIDGES**
 To 6449 HALEY ROAD
 MEMPHIS, TN 38134

EOC #: EOC-S-1120-28312
 Buyer: SONJA WORTHY

IF MATERIAL SAFETY DATA SHEETS ARE
 REQUIRED ON PRODUCT(S) THAT YOU WILL BE
 PROVIDING. PLEASE SUBMIT SAME WITH
 PRODUCT(S) DELIVERED.

Item	Quantity	U/M	Description	Unit Price	Extended Price				
1			ENGINEERING SERVICES RELATED TO CHANGES TO THE NATIONAL DISASTER RESILIENCE COMPETITION GRANT FOR THE BIG CREEK PROJECT CA1738741 COMMODITY: 961/27 ACCOUNT DISTRIBUTION: 297-271271-6678	90500.00000	90500.00				
<table border="1"> <tr> <td colspan="2">I hereby certify that the goods/services on attached invoice(s) have been received and that payment is in order. This is a <input checked="" type="checkbox"/> Partial payment <input type="checkbox"/> Final payment on this P.O. Payment amount approved: \$ _____</td> </tr> <tr> <td>Signature _____</td> <td>Date _____</td> </tr> </table>					I hereby certify that the goods/services on attached invoice(s) have been received and that payment is in order. This is a <input checked="" type="checkbox"/> Partial payment <input type="checkbox"/> Final payment on this P.O. Payment amount approved: \$ _____		Signature _____	Date _____	
I hereby certify that the goods/services on attached invoice(s) have been received and that payment is in order. This is a <input checked="" type="checkbox"/> Partial payment <input type="checkbox"/> Final payment on this P.O. Payment amount approved: \$ _____									
Signature _____	Date _____								
Total of Purchase Order					90500.00				

ORDER SUBJECT TO TERMS AND CONDITIONS ON REVERSE SIDE
 BILLING INSTRUCTIONS: SHOW PURCHASE ORDER NUMBER
 ON ALL INVOICES. NOTE: PAYMENTS MAY BE DELAYED UNLESS
 BILLING INSTRUCTIONS ARE FOLLOWED EXACTLY.

SEND ORIGINAL INVOICE TO:
 SHELBY COUNTY ROADS & BRIDGES
 6449 HALEY ROAD
 MEMPHIS, TN 38134

901-222-7705

Christin L. Webb

 APPROVED: ADMINISTRATOR OF PURCHASING

10/22/20 _____
 Date Authorized Signature

Christin L. Webb

**Amendment to Agreement Between Shelby County Government and
Barge Design Solutions, Inc. f/k/a Barge, Waggoner, Sumner, and
Cannon, Inc.**

Contract Number CA173874-1

THIS AMENDMENT (hereinafter "Amendment") is made and entered into this 22ND day of October, 2020 by and between Shelby County Government (hereinafter "County") and Barge Design Solutions, Inc. f/k/a Barge, Waggoner, Sumner, and Cannon, Inc. (hereinafter "CONSULTANT").

WHEREAS, the parties previously entered into an agreement (hereinafter "Agreement") dated August 25, 2015, for professional engineering design services for the Big Creek National Disaster Resilience Design Project (Shelby County Contract No. CA163874) and Amendment No. 1 (Shelby County Contract No. CA173874), dated April 24, 2017; and

WHEREAS, the Consultant's name has now changed to Barge Design Solutions, Inc. but is the same company, just operating under a new name; and

WHEREAS, the parties now desire to enter into this Amendment to revise the Scope of Work and increase the contract amount.

NOW, THEREFORE, for and in consideration of the mutual promises of the parties to this agreement and other good and valuable consideration, the receipt of which is hereby acknowledged, the parties hereto do hereby agree as follows:

1. Section I of the Agreement entitled SCOPE OF WORK is hereby amended to reflect the additional services as outlined in Exhibit "A", attached hereto and incorporated fully herein by reference. In the event of a conflict between the terms of this Amendment and the Exhibit, this amendment shall control.
2. The total cost for these revisions to the SCOPE OF WORK shall not exceed NINETY THOUSAND FIVE HUNDRED and 00/100 dollars (\$90,500.00) payable in accordance with the terms of the original Agreement. This is in addition to the current contract amount of \$2,752,800.00.
3. The terms and conditions of the original Agreement, except as amended herein, shall remain in full force and effect.

IN WITNESS WHEREOF, the parties have executed this Amendment on the 22ND day of October 2020.

APPROVED AS TO FORM
AND LEGALITY:

SHELBY COUNTY GOVERNMENT

[Signature]
Contract Administration/
Assistant County Attorney

[Signature]
Lee Harris, County Mayor

BARGE DESIGN SOLUTIONS, INC.

By: [Signature]
Title: Vice President

CORPORATE ACKNOWLEDGMENT

STATE OF TENNESSEE
COUNTY OF Shelby County Government

Before me, the undersigned Notary Public, in and for the State and County aforesaid, personally appeared Randy Hudgins, with whom I am personally acquainted or proved to me on the basis of satisfactory evidence, and who, upon oath, acknowledged himself/herself to be president or other officer authorized by appropriate Corporate action and/or Resolution to execute the preceding instrument of the Barge Design Solutions the within named bargainor, a corporation, and that he as such Vice President, executed the foregoing instrument for the purpose therein contained, by signing the name of the corporation by himself/herself as Vice President.

WITNESS my hand and official seal at office this 23rd day of July, 2020.

[Signature]
Notary Public

My Commission Expires: 7-31-2022



July 8, 2020

Contract Amendment 002

Client:

Shelby County Tennessee
160 N. Main, Suite 301
Memphis, TN 38013

ATTN: Chris Masin

RE: Big Creek Resilience Design
Shelby County Contract # CA173874
P.O. # S010313
NDR Project # 4-NDR-06
Barge Project # 3508507

Location: Big Creek Project in Millington TN

The following contract amendment is requested for the identified project. Delivery of services for this amendment will be governed under the existing agreement for Consulting Services Agreement (CSA) between Barge Design Solutions, Inc. and Shelby County Tennessee dated April 24, 2017.

Description of change of scope item:

This Contract Amendment #2 serves to include the additional effort related to the changes in the field work required for the project. The changes are associated with the Additional Data Collection and the Final Design Tasks. Supporting documentation can be provided upon request.

Additional Data Collection

The original CSA includes \$32,000 to perform mist net surveys, telemetry surveys, and emergence surveys necessary to determine the presence or absence of the Indiana Bat and the Northern Long-Eared Bat. On May 22, 2018, the US Fish and Wildlife provided guidance for addressing potential bat concerns. The guidance states that "in areas where suitable roost habitat is present, but there are no known occurrences", a "not likely to adversely affect" determination would be appropriate for clearing trees. Since Shelby County does not include any known occurrences the mist net surveys are no longer required and this resulted in a \$32,000 credit that has already been applied to subsequent tasks below prior to this amendment.

The original CSA assumed that the wetland delineations, hydrologic determinations, and jurisdictional determinations would be performed by others and provided to Barge. In a November 8, 2017 Memorandum from Shelby County it was requested that Barge prepare the Jurisdictional Determination (JD) and the Hydrologic Determination (HD) reports and submit them to the US Army Corps of Engineers (USACE) and the Tennessee Department of Environment and Conservation (TDEC) for approval. Barge prepared these and received approval for the JD and HD reports on October 19, 2018. The additional fee associated with the preparation of these reports and additional agency coordination was covered by the credit mentioned above.

Per the TDEC Request for Additional information dated December 18, 2019, TDEC stated, "assessments must be conducted to determine the resources values of each wetland area." The Tennessee Rapid Assessment Methodology (TRAM) for wetlands was developed to determine the condition of the resource relative to a reference standard. Classifying the wetlands using the TRAM methodology provides for a baseline for the Section 401/404 permitting process, reflecting the wetland condition at a point in time, prior to construction of the proposed activities. The baseline information is used to understand restoration targets and assist with compensatory mitigation decisions during the permitting process. The additional effort requested in this amendment associated with the TRAM is \$8,500.

Exhibit A

Final Design

The original concept for the project was to excavate the project area to provide additional flood storage. It was assumed the design would only require a clearing and grading plan of Area 3. During an October 5, 2017 coordination meeting with TDEC, TDOT, and USACE, the agencies provided feedback that they would not permit the amount of excavation required for the flood mitigation. After six agency coordination meetings with TDEC, TDOT, and USACE, a flood mitigation concept was agreed upon for the project. The current design concept is to construct flood storage structures using levees and gated structures. These seven additional flood control structures and levees require additional structural, electrical, mechanical, process design, and off-site power coordination that was not previously included in the original CSA. The additional effort requested in this amendment for the revised flood control concept is \$32,000. This requested amount does not reflect the total additional effort required to complete this task, the remainder of which will be requested in a separate amendment or project.

During the 30% design it was determined that box culverts were not feasible to construct for several of the greenway stream crossings. The channels were degraded and incised and required a pedestrian bridge. The original CSA assumes the design of two pedestrian bridges. The current concept requires the design of seven pedestrian bridges, four in Area 1 and three in Area 2. The additional bridges require abutment design and bridge detail sheets. It is not clear whether the Area 2 development will proceed, therefore this amendment does not include the three additional design for bridges in Area 2. The additional effort requested in this amendment for the two additional bridges in Area 1 is \$20,000.

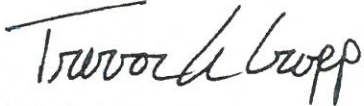
To protect both the existing and proposed infrastructure from degrading and further channel incision, the design of sheet pile grade control structures were proposed during the 60% Design Submittal. One grade control structure in Area 1 is required to mitigate the erosion and head cutting from the failed CN Railroad bridge. Bank erosion is threatening the existing Millington Levee to the north. At a meeting with the CN Railroad on February 18, 2020 it was confirmed that the area needed to be repaired. The remaining three grade control structures will protect proposed infrastructure improvements to the Heart of the Park and to proposed pedestrian bridges. The additional effort requested in this amendment for the design and detailing of the additional grade control structures is \$15,000. This amount incorporates the credit associated with the bat survey.

Barge and the County first met with the USACE Memphis District February 2, 2020 prior to the 30% Design Submittal to discuss the options for improving the Millington Levee. The USACE has been provided each design submittal showing the improvements to the Millington Levee. Each submittal indicated increasing the height of the levee four feet using either a reinforced concrete wall, which was too expensive, or using rip-rap or Turf Reinforced Matting at steeper 1:1 slopes. During a phone call on March 11, 2020 USACE rejected the 90% Design, and informed the team that it would only allow the levee to be increased 18" using a segmental block wall. Additionally it required that the project repair an existing 42" CMP under the levee that has collapsed. The project would need to either replace or fill the pipe with grout for the levee to have an "Acceptable" rating with the USACE. The additional effort associated with design a segmental block wall and developing a solution to replace or cap the existing 42" CMP requires \$15,000 of additional effort.

Task	Task Description	Current Contract Amount	Increase in Contract Amount	Amendment #2 Contract Amount
Task A	Contract Development	\$ 42,200		\$ 42,200
Task B	Additional Data Collection	\$ 262,900	\$ 8,500	\$ 271,400
Task C	Hydraulic Model and Preliminary Design	\$ 452,500		\$ 452,500
Task D	Public Involvement	\$ 68,000		\$ 68,000
Task E	Environmental Technical Studies	\$ 20,800		\$ 20,800
Task F	NEPA Documentation	\$ 150,200		\$ 150,200
Task G	Environmental Permitting Phase	\$ 325,800		\$ 325,800
Task H	Land Acquisition	\$ 108,000		\$ 108,000
Task I	Final Design	\$ 1,171,900	\$ 82,000	\$ 1,253,900
Task J	Construction Phase Services	\$ 150,500		\$ 150,500
Total:		\$ 2,752,800	\$ 90,500	\$ 2,843,300

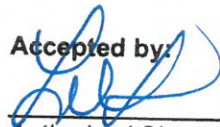
If the above change of scope item meets your approval, please sign below and return original to our office. Please retain a copy for your records.

Sincerely,



Trevor Cropp, PE
 Project Manager
 Barge Design Solutions, Inc.
 60 Germantown Court, Suite 100
 Memphis, TN 38018
 901-755-7166

Accepted by:

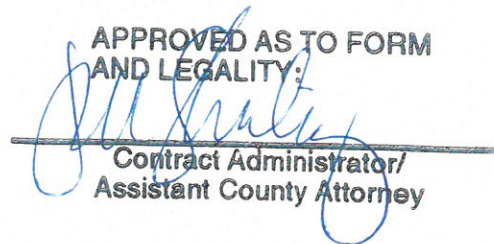


Authorized Signature

10/20/2021

Date

APPROVED AS TO FORM
 AND LEGALITY:



Contract Administrator/
 Assistant County Attorney