

Department of Engineering
Dan Gaillet, P.E., County Engineer

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MEMORANDUM

June 11, 2018

To: Sheila Jones, Supervisor, District I
Trey Baxter, Supervisor, District II
Gerald Steen, Supervisor, District III
David Bishop, Supervisor, District IV
Paul Griffin, Supervisor, District V

From: Dan Gaillet, P.E.
County Engineer

Re: Drainage Investigation & Recommendations
East Sowell Road

The Engineering Department is requesting the Board hire Mendrop Engineering Resources, LLC to conduct a drainage investigation and provide recommendations to alleviate the flooding on East Sowell Road, for a fee not to exceed \$14,725.00.

**Madison County Engineering Department
Task Order**

Task Order No. #2018-1

Additional Pages Attached 5

**Task Order to the General Services Agreement Between
The Board of Supervisors of Madison County, Mississippi
and Mendrop Engineering Resources, LLC
(Company)**

This Task Order to the General Services Agreement between the Board of Supervisors of Madison County, Mississippi ("County") and Mendrop Engineering Resources, LLC ("Engineer") is a part of and is subject to all the terms and conditions of the Agreement unless specifically provided otherwise herein.

1. Project Name: East Sowell Road Drainage Investigation and Recommendations
2. Project Number: N/A
3. Project Manager: for County: Dan Gaillet, P.E. for Engineer: Blake Mendrop, P.E.
4. Method of Compensation: X Per Exhibit(s) to the Agreement
 Other (Attach)
5. Task Order Allowable Cost (attach additional pages if necessary): Not to exceed \$14,725
6. Scope of Work (Describe, attach additional pages if necessary): See Attached
7. Schedule of Performance (attach additional pages if necessary):
8. Approve Subconsultants (list, if any): none
9. Special Provisions: none

Accepted and approved by County and Engineer as of the last date of execution below.

Board of Supervisors of Madison County, MS

Date: _____

By: _____
Dan Gaillet, P.E., County Engineer

Date: _____

By: _____
(Engineer)

**WORK ASSIGNMENT NO. 17
DRAINAGE INVESTIGATION AND RECOMMENDATIONS
FOR EAST SOWELL ROAD BETWEEN U.S. HIGHWAY 51 & SMITH-CARR ROAD
MADISON COUNTY**

THIS WORK ASSIGNMENT TO THAT CERTAIN GENERAL ENGINEERING SERVICES CONTRACT IS EXECUTED BY AND BETWEEN MADISON COUNTY BOARD OF SUPERVISORS AND **MENDROP ENGINEERING RESOURCES, LLC**, EFFECTIVE THE 5th DAY OF JUNE, 2018, IS INCORPORATED THEREIN AS IF COPIED FULLY IN BOTH WORDS AND FIGURES AS A PART OF EXHIBIT NO. 1.

LET IT BE KNOWN THAT:

WHEREAS, the parties to the above stated CONTRACT are now desirous of implementing an additional Work Assignment or phase thereunder: and,

WHEREAS, each of said parties represents that it continues to have authority to execute this Work Assignment and that all certifications previously made in said CONTRACT remain in effect;

NOW THEREFORE, the parties hereto do further contract and agree to add the following items of work to the above CONTRACT under the additional terms and conditions as are hereinafter stated:

SPECIFIC SCOPE OF WORK FOR THIS WORK ASSIGNMENT

The CONSULTANT, in accordance with the General Services Agreement, shall (1) complete drainage investigation for the bridge crossing at Bear Creek at East Sowell Road near Gluckstadt, MS., while utilizing and updating the FEMA effective hydraulic model to a georeferenced HEC-RAS model (2) review drainage patterns within the area of concern during studied storm events in February and March, 2018, (3), include a hydraulic analysis of the East Sowell Road roadside ditches during the aforementioned studied events, (4) assess the hydraulic effects of a potential East Sowell Road grade rise, and (4) provide documentation of findings.

The following engineering services shall be performed by the CONSULTANT on behalf of Madison County in accordance with the CONTRACT at the direction of the County Engineer or his designee, unless otherwise modified by the Madison County Board of Supervisors (MCBOS).

The Scope of Work shall include the following:

Part 1 –FIELD RECONNAISSANCE

The CONSULTANT shall make an initial site visit to document existing site conditions and other information which may be pertinent to the study.

Part 2 – FIELD SURVEY

The CONSULTANT shall perform topographic survey for the following, as per Attachment 1, in accordance with current Survey Standards. The survey information shall include, but is not limited to, site specific topographic data to document the size of existing channels, drainage structures, invert elevations, finish floor elevations of structures within the investigation area, roadway profile of East Sowell Road, and other pertinent survey information that will be part of the study. The field survey shall not be all inclusive of topographic data that would be required for preliminary or final design.

Part 3 – HYDROLOGIC/HYDRAULIC ANALYSES & MITIGATION ALTERNATIVES

The hydraulic study and recommendations shall include the following as a minimum:

- A. **HYDROLOGIC ANALYSES:** The CONSULTANT shall utilize the FEMA Effective hydrology for the study area from the FEMA Engineering Library. The FEMA peak discharges for Bear Creek shall be verified using the USGS Regression Equation hydrologic method, and the FEMA flowrates shall be modified, if needed, to more accurately represent discharges at the subject crossing for East Sowell Road. Additionally, studied storm events during February and March, 2018 shall be reviewed for recurrence interval assignment, and the corresponding peak discharges will be used for hydraulic model calibration, if applicable.
- B. **HYDRAULIC ANALYSES:** The CONSULTANT shall use the U.S. Army Corps of Engineers (USACE) Hydrologic Engineer Center, River Analysis System (HEC-RAS) software to perform a one-dimensional steady flow analysis of Bear Creek within the study area. The area of concern is located in or across a FEMA regulatory floodway with determined base flood elevations as noted on the NFIP maps; therefore, the CONSULTANT shall utilize the step-backwater hydraulic model for the specified streams and community from FEMA. The field survey data will be incorporated into the FEMA effective hydraulic data, and then updated to a georeferenced HEC-RAS model to assess existing hydraulic conditions. The aforementioned studied storm events shall be analyzed within HEC-RAS, and the bounding East Sowell Roadside ditches shall be evaluated for hydraulic capacity during the studied events. Hydraulic computations will then be performed for assess hydraulic effects of up to two (2) potential Sowell Road Improvements.
- C. **HYDRAULIC REPORT:** Hydraulic report shall include as a minimum a narrative that describes the project scope; statements defining any additional sources of information including cross sections, topographic data, and other supporting information; analysis considerations; supporting documentation stating analysis procedures including existing and proposed conditions; documentation of all modifications made to models to correctly represent the conditions; recommendations and details to help mitigate frequent roadway overtopping, if applicable; tables comparing water surface elevations between the models;

The CONSULTANT shall submit a draft preliminary engineering recommendations to MCBOS for review. Subsequent to MCBOS review, a meeting will be scheduled to review and discuss the findings of the study. Subsequent to the review meeting, the CONSULTANT shall make all necessary changes which arise during the review prior to submitting final recommendations. All pertinent hydraulic data, documentation, and reports shall be included in the submittal.

These recommendations do not include a Conditional Letter of Map Revision (CLOMR) or LOMR, as per FEMA regulations, for the potential proposed improvements. However, if CLOMR and LOMR submittals are determined to be necessary, the appropriate documentation can be provided as additional services.

MAXIMUM ALLOWABLE COST

The CONSULTANT'S fee for completion of this Work Assignment shall be **\$14,725**, which sum shall be paid incrementally each month. Services will be billed monthly on an hourly basis for cost incurred during the period, but shall not exceed the total estimated fee without prior written authorization from the Client.

SO EXECUTED AND AGREED THIS THE _____ DAY OF _____, 2017.

THE MADISON COUNTY BOARD OF SUPERVIORS

SO EXECUTED AND AGREED THIS THE _____ DAY OF _____, 2017.

MENDROP ENGINEERING RESOURCES, LLC

ATTEST: (affix seal)
