

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

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MEMORANDUM

June 13, 2019

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: Mendrop Engineering Resources, LLC  
Way Road Drainage Evaluation

The Engineering Department is recommending the Board hire Mendrop Engineering Resources, LLC to perform a drainage evaluation for Way Road, for a fee not to exceed \$14,150.

**WORK ASSIGNMENT NO. 23  
WAY ROAD DRAINAGE EVALUATION  
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 16<sup>th</sup> DAY OF FEBRUARY, 2016, 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 provide a hydrologic and hydraulic investigation of flooding at Way Road near the Kansas City Southern (KCS) Railroad crossing in Madison County.

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 CONSULTANT shall provide the following specific services as part of the watershed evaluation. The study shall include the hydrologic and hydraulic investigation of flooding issues and recommendations for possible alternatives to mitigate the flooding concerns at the locations designated above.

**Field Surveys, Hydrologic and Hydraulic Analyses, and Recommendations**

The CONSULTANT shall perform and provide services included in Phase I as the minimum scope of work.

**Task 1 –FIELD RECONNAISSANCE & DATA COLLECTION**

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

**Task 2 – FIELD SURVEY**

The CONSULTANT shall perform topographic surveys to gather information. The 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 residential structures, roadway profiles,

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.

### Task 3 – HYDROLOGIC AND HYDRAULIC ANALYSES & MITIGATION ALTERNATIVES

The CONSULTANT shall perform the necessary hydrologic and hydraulic analyses as well as mitigation alternative analyses in order to provide recommendations for flood prone areas on Way Road near the KCS railroad crossing.

A. HYDROLOGIC ANALYSES: The CONSULTANT shall perform the hydrologic analysis necessary to develop estimated peak discharges for the area. The CONSULTANT shall utilize the appropriate hydrologic methodologies for the respective drainage areas to estimate the peak discharges for the typical 2- through 500-year recurrence intervals.

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 within the study area

The HEC-RAS hydraulic model shall be utilized to evaluate the hydraulic capacity of the existing drainage structures along the subject roadways within the study area. These models shall be utilized to help evaluate flood prone roadways at the designated locations. The model geometry will utilize the field surveys collected as part of Task 2 merged with the readily available existing LiDAR elevation data for Madison County. LiDAR elevation data will be obtained from the dataset prepared by MDEQ as part of the flood map modernization.

C. RECOMMENDATIONS: Recommendations shall include necessary modifications needed to mitigate frequent flooding in the immediate study area. Recommendations shall be submitted in the form of a plan and/or plan/profile drawing reflecting elevations of existing and proposed structures, contour data and any other pertinent details to help mitigate frequent flooding.

**MAXIMUM ALLOWABLE COST**

The CONSULTANT'S fee for completion of this Work Assignment shall be **\$14,150**. 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 \_\_\_\_\_, 2019.

THE MADISON COUNTY BOARD OF SUPERVIORS

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SO EXECUTED AND AGREED THIS THE \_\_\_\_\_ DAY OF \_\_\_\_\_, 2019.

MENDROP ENGINEERING RESOURCES, LLC

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ATTEST: (affix seal)

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