Waggoner Engineering, Inc.
And Madison County Board of Supervisors
Task Order Form

Task Order No. 11	
Additional Pages Attached: __9___	
Date of Task Order: ___April 7_____, 2025	

TASK ORDER TO THE GENERAL SERVICES AGREEMENT BETWEEN WAGGONER ENGINEERING, INC. AND MADISON COUNTY, MS BOARD OF SUPERVISORS

This Task Order to the General Services Agreement between Waggoner Engineering, Inc. and Madison County Board of Supervisors dated ___July 6, 2020, is a part of, and is subject to all the terms and conditions of the Agreement unless specifically provided otherwise herein.

1. **Project Name:** King Ranch Road Improvements
2. **Project Number:** WEI Project #2500056.000
3. **Project Manager for Client:** County Administrator
   Greg Higginbotham
4. **Project Manager for Waggoner:** Darion Warren, CFM
5. **Method of Compensation:** Lump Sum
6. **Task Order Compensation:** $1,464,450.00
7. **Scope of Work (see additional pages attached):** See attached

8. **Schedule of Performance (see additional pages attached):** See Attached

9. **Approved Subconsultants:** Horrocks, Burns Cooley Dennis, Inc., Headwaters, Inc.

10. **Special Provisions:** n/a

IN WITNESS WHEREOF, the parties hereto have caused this Task Order to be executed by their duly authorized representatives effective as of the date set forth above.

MADISON COUNTY BOARD OF SUPERVISORS	**WAGGONER ENGINEERING, INC.**
By: Gerald Steen	By: Zach Adams
Title: Board President	Title: Vice President

Madison County Board of Supervisors

King Ranch Road Improvements

Madison County, MS **April 2025**

I. Project Description

Madison County has seen significant growth over the past two decades, driven by increased sprawl development, which has created a growing demand for both commercial and residential spaces. As a result, traffic congestion has become a critical issue. To address this, the Madison County Board of Supervisors has planned improvements to King Ranch Road, aiming to widen it from W. Peace St. to Green Acres Dr. The project will expand the current 2-lane roadway to either a 3-lane or 4-lane section, spanning from the intersection at W. Peace St. and tie back into Green Acres Drive. A traffic impact analysis will be conducted to assess the current traffic flow patterns and determine the necessary lane expansion to accommodate increasing vehicle volume and ensure optimal road safety and efficiency.

Waggoner Engineering will provide all necessary professional services required to support the project, including on-site field reviews, traffic impact analysis, the preparation of final right-of-way plans, maps, and deeds, as well as the delineation of wetlands and other U.S. waters. Additionally, Waggoner Engineering will secure necessary permits for wetlands and water resources, prepare structural design of bridges, and complete the final roadway and hydraulic designs.

The following engineering services will be performed by Waggoner Engineering for the Madison County Board of Supervisors (MCBOS), the CLIENT, as outlined in this CONTRACT and under the direction of MCBOS.

TYPICAL ITEMS/MATERIALS PROVIDED BY THE MCBOS:

Based upon availability, the CLIENT will provide within normal resources, the following:

1. Copies of previous studies/analyses, environmental assessments, conceptual plan, and other information pertaining to the project;

2. Names, addresses, and telephone numbers of points of contact which may prove useful to the CONSULTANT in conducting this analysis;

3. A single point of contact within the MCBOS for day-to-day coordination of each CONTRACT;

4. Computer files (depending on availability) may include Computer Aided Design and Drafting (CADD) files, GIS data, or Survey Control Points set by other Surveyors on or near the project employed by the MCBOS;

5. Plans and other related materials for adjacent projects having potential impacts on the planned execution of this project.

GENERAL REQUIREMENTS

Unless otherwise instructed by CLIENT, the CONSULTANT shall comply with the current version of the following publications:

Roadway Design:

A. MDOT *Roadway Design Manual*, and supplemented with updated design policies as described in Design Memos located on Roadway Design Division's website;
B. MDOT Roadway Design Standard Drawings;
C. MDOT Roadway Design Special Design Sheets;
D. MDOT *Roadway Design CADD Manual*;
E. MDOT *Survey Manual*;
F. MDOT *Access Management Manual*;
G. MDOT Traffic Engineering's *Typical Signing Details*;
H. MDOT *Intelligent Transportation Systems Design Manual*;
I. *Mississippi Standard Specifications for Road and Bridge Construction*;
J. AASHTO'S *A Policy on Geometric Design of Highways and Streets*;
K. AASHTO *Roadside Design Guide*;
L. AASHTO *Highway Safety Manual* (HSM);
M. *Manual on Uniform Traffic Control Devices* (MUTCD); and
N. Any other publications listed in Exhibit 8, or as instructed by MDOT.

Bridge Design:

A. MDOT *Bridge Design Manual*;
B. MDOT *Bridge Division CADD Manual*;
C. MDOT Bridge Standard Drawings;
D. MDOT Bridge Design Memos;
E. *Mississippi Standard Specifications for Road and Bridge Construction*;
F. AASHTO *LRFD Bridge Design Specifications*;
G. AASHTO *Guide Specifications for LRFD Seismic Bridge Design*;
H. AASHTO/AWS D1.5M/D1.5 *Bridge Welding Code*;
I. AASHTO *Guide Specification and Commentary for Vessel Collision Design of Highway Bridges*;
J. AASHTO *LRFD Bridge Construction Specifications*;
K. AASHTO *Construction Handbook for Bridge Temporary Works*;
L. AASHTO *Guide Design Specifications for Bridge Temporary Works*;
M. AASHTO *Manual for Bridge Evaluation*.

Survey:

Surveys shall comply with the following:

A. MDOT Survey Manual;
B. Mississippi Board of Registration for Professional Engineers and Land Surveyor's "Standards of Practice for Surveying" in Mississippi. All traverses and right of way monument locations (being set) shall meet with Class "A" of the standards of practice specifications and traverses shall be properly adjusted according to good surveying practices. Side ties or other locations of improvements or features shall meet the class specification normally required by said minimum standards;

C. Land Surveying laws as defined in the Mississippi Code of 1972 as well as current case law including interpretations of those laws by the judicial branches of the United States and State of Mississippi governments;
D. Local Zoning and Subdivision laws and regulations in the project area. (Properties falling within the required right of way are not subject to these regulations. However, the remainder portion of the original tract may be affected by the MDOT acquisitions.); and
E. Specific instructions as required by the Mississippi Department of Transportation on individual Projects.

Hydraulic Design

A. *Mississippi Standard Specifications for Road and Bridge Construction*;
B. AASHTO *Drainage Manual*;
C. AASHTO *LRFD Bridge Design Specifications*;
D. Federal Highway Administration (FHWA) Hydraulic Engineering Circulars and other publications;
E. 23 CFR Parts 625, 630, and 650;
F. 44 CFR Part 59-78;
G. Floodplain Management Regulations for the State of Mississippi;
H. National Flood Insurance Program regulations (NFIP);
I. Federal Emergency Management Agency (FEMA) regulations;
J. Local, state, or federal regulations as appropriate.

II. Scope of Work

Design Conference

The purpose of the Design Conference is to discuss any updated procedures or policies the CLIENT may have enacted that would impact the final design phase of the project. These items may constitute a change in scope. The design conference may also require a visit to the project site.

Phase 1 – Traffic Analysis

Study Area

The study area will focus on the following intersections and roads:

- Intersection: King Ranch Road and Peace Street
- Intersection: King Ranch Road & Green Acres Drive
- Roadway: King Ranch Road from Peace Street to Green Acres Drive

Data Collection

Traffic volume data will be recorded utilizing both video cameras and pneumatic tube counters. Horrocks will collect traffic counts at the following locations:

- Video Camera: King Ranch Road & Peace Street
- Pneumatic Tube Counters: These will be placed on King Ranch Road approximately 800 ft North of the project site access. Additionally, a counter will be placed just north of King Ranch Road & Lutz Avenue. These counters will collect the Average Daily Traffic (ADT) for King Ranch Road (see attached figure).

Model Scenarios:

Horrocks will provide intersection delay and level of service analysis at the study intersections for both the AM peak hour (typically 7 AM – 9 AM) and PM peak hour (typically 4 PM – 6 PM) under the following scenario conditions:

- 2025Existing Conditions
- 2035 Background (including project developments) Conditions
- 2035 with Roadway Improvements – This scenario includes a conceptual design for key intersections and an overall roadway concept for a 3 or 4-lane road
- 2040 Background Conditions
- 2040 Background Improvement Scenario The above will be modeled and analyzed using PTV Vistro software, which delivers intersection analysis utilizing standard traffic industry methodologies included in the Highway Capacity Manual (HCM).

Analysis

The roadway and site access geometries will be analyzed to determine if modifications to the roadway and/or intersection are needed for pedestrian and vehicle safety. This will be analyzed utilizing standards found in the Highway Capacity Manual and the AASHTO Greenbook 7th ed. This analysis will include:

- The impact the project will have on the King Ranch Road & Peace Street intersection
- Identify the cross-section needed to accommodate the additional traffic produced by the development

Trip Generation

- Project trip generation rates will be estimated based on the Institute of Transportation Engineers (ITE) Trip Generation Manual, 11th edition guidelines. Horrocks will determine new trips that the project will generate during the average weekday.

Trip Distribution and Assignment

- The distribution and assignment of existing site, background, and future traffic volumes on the surrounding road network of the study area will be documented.
- Project trips will be distributed to the existing road network based on existing traffic counts, proximity to freeways, and other attractions.

Phase 2 – Field Survey

Topographical / Supplemental Surveying Phase

A. All surveying tasks shall be performed during this phase shall be performed under the supervision and guidance of a Professional Land Surveyor who is properly registered and in good standing with the Mississippi State Board of Registration for Professional Engineers and Land Surveyors.

B. Prior to beginning the field survey, document “good faith” efforts that the owners of the adjacent properties are notified by letter of the project and the required field surveying required for the design of the proposed widening of the existing Yandell Road.

C. The horizontal datum used for this survey shall be based upon the North American Datum of 1983, (NAD 83), Mississippi State Plane Coordinate System, West Zone and the vertical datum used for this survey shall be based upon the North American Vertical Datum 1988. (NAVD 88). All measurements shall be based upon US Survey feet. Any distances or bearings shown on survey shall be grid based.

D. A centerline profile shall be performed along the mainline at 50-foot intervals plus grade breaks.

E. Three (3) cross-sections shall be obtained on intersecting routes; and two (2) on intersecting streets. Cross-sections to extend 100 feet each way of centerline.

F. Survey and Map locations (horizontal and vertical top of ground) of the soil borings.

G. Establish a minimum of four (4) horizontal and vertical control points for future use. The horizontal and vertical control points shall be established utilizing a combination of GPS/RTK and conventional surveying, and their locations shall be property identified on the completed survey.

H. The actual location of any underground utilities will be shown as per markings by the Mississippi One Call System, Madison County, or the utility owner or from any utility drawings that may be provided by the utility owner. In that the underground utilities are based at least in part, on information from others, WEI cannot and does not warrant their completeness or accuracy.

I. Determine the physical location of any existing public Rights of Way, prepare a base map of existing Rights of Way and adjoining property owners used to determine any potential additional Right of Way needs.

J. Maps and deeds associated with Right of Way acquisition is not included in this scope of work and will be performed under a Supplemental Agreement once the number of parcels have been determined.

Phase 3 - Geotechnical Engineering

The scope of work includes geotechnical explorations including the following:

Structure/ Project	No. of Borings	UD/SS Boring Depth (ft)	Auger Boring Depth (ft)
Bridge over Hot Water Ditch	1	70	-
Bridge over Stormwater Drainage	1	70	-
Bridge over Batchelor Creek	1	100	-
Roadway Widening (W. Peach St. to Green Acres Dr.)	26		5

A. Soil samples will be obtained in the borings. These samples will be taken at intervals necessary to produce continuous logs. The sampling interval will not exceed 5 ft.

B. For the bridge borings, undisturbed soil samples will be obtained in cohesive soil zones (AASHTO T207). Standard penetration tests will be conducted in cohesionless soil zones and in cohesive soil zones too hard to sample with a Shelby tube (AASHTO T206).
C. Disturbed auger cutting samples would be taken in the pavement borings.
D. Detailed logs of the borings will be prepared by a professional engineer. All soils encountered will be described, and each stratum will be geologically classified.
E. Foundation conditions, together with typical bent loads and elevations furnished by Waggoner Engineering, Inc. would be analyzed to develop feasible foundation support systems and general foundation designs.
F. Capacity curves would be developed in kips vs. feet for various sizes of steel and concrete piles. The curves would be developed for all bent locations and would take into account scour depth, if applicable. The sizes of piles, bent locations, and scour depths are to be suggested by Waggoner Engineering, Inc. Considerations pertaining to pile construction would be provided.
G. Four reports (one for each bridge and one for roadway widening) would be prepared describing the results of the explorations, with specific recommendations as to foundation design and construction, and embankment design and construction (if required). For the roadway widening report, earthwork and asphalt pavement widening, rehabilitation, and/or reconstruction recommendations would be provided. Each report would be prepared and signed by an engineer licensed in the State of Mississippi with a minimum of 10 years' experience in the practice of geotechnical engineering. The reports would contain:
    - Copies of the boring logs.
    - Results of the laboratory tests.
    - Locations of the boreholes referenced to the centerline survey and vertical control datum.
    - Results of the analysis and recommendations.
H. Excluded from this work are:
    - Survey locations and elevations of the borings.
    - Slope stability evaluation of the existing creek banks.
    - The design of measures to prevent and/or mitigate liquefaction.
    - Development of stiffness parameters for foundation elements.
    - Obtaining right-of-entry to private property.
    - Traffic Control, if required.

Phase 4 – Hydraulic Design

Hydraulic engineering analysis and design for bridge and roadway plans will include providing bridge and roadway hydraulic studies and recommendations and developing design plans. This will include:

A. Hydraulic field surveys and staking
B. Roadway hydraulic design including hydrology, channels, culverts, energy dissipators, storm drainage systems, and storage facilities;
C. Bridge hydraulic design including hydrologic and hydraulic analysis of bridge sites, stream stability, channel and stream bank stabilization, bridge deck drainage, one-dimensional and two-dimensional modeling, and scour analysis;
D. Phase I-IV scour evaluations of existing bridge sites;
E. Bridge and highway drainage design in coastal environments including hydraulic analysis and Vulnerability assessment of tidal water bodies, storm surge, long-term sea level rise, waves, accompanying scour, and countermeasure design;
F. FEMA studies and analysis including "No-Rise/No-Impact" Certifications as well as Conditional

Letter of Map Revision (CLOMR) application and Letter of Map Revision (LOMR) applications;

G. Conceptual structural design and preliminary plans for bridges or other projects involving construction of new bridges or appurtenances;
H. Analysis, design and preparation of complete construction plans for channel and stream stability countermeasures, bridge scour countermeasures, drift protection and any other scour or protective
measures as required.
I. Hydraulic reports to include all supporting documentation of hydraulic analysis and design and any additional information as referenced in the Work Assignment.

Phase 5 – Roadway Design

A. Title Sheet(s), typical sections, preliminary listing of pay items, plan-profile sheets showing all geometrics, profile grades, construction limits, cross sections, traffic control sheets, preliminary permanent directional signing layout sheets, preliminary pavement marking sheets, special design sheets where needed, phase construction sheets as required (plan & elevation) and right-of-way limits with or without property boundaries.

B. CADD Drawings:
The Construction Plan documents will be included as part of the PS&E assembly and may be submitted in either MicroStation (.dgn) or AutoCAD Civil 3D (.dwg) format. The Construction Plans shall contain Title sheet, Index, General Notes, Typical Sections, EQ Sheets, SQ Sheets, Plan and Profile Sheets, Paving and Drainage Sheets, Intersection Design, Cross Sections, Traffic Control Plan Sheets, Signage Sheets, and Striping Sheets.

Phase 6 – Bridge Design

A. Layout sheet(s) including plan and elevation, centerline soil profile, substructure details, superstructure details, miscellaneous details, pile details, notes, quantities and all other necessary details. Layout sheet(s) shall show: (1) complete geometric controls (as approved by the CLIENT), (2) grades (as approved by the CLIENT), (3) clearances, (4) topographic features (original and final), (5) design data, (6) quantities, (7) special notes, (8) pile notes and bearing requirements, and (9) all other pertinent details. A centerline soil profile will generally be compiled from field boring data and listed on separate sheets for the convenience of those involved in construction.

B. Detail sheets for substructure and superstructure shall show all details necessary for their construction and shall include, but not be limited to: (1) all dimensions convenient to construction, (2) sufficient cross section details, (3) beam sizes, types and spacing, (4) elevations, (5) crown details, (6) reinforcing details, (7) pile bearing requirements, types and sizes, (8) prestressing data where required, (9) notes, and (10) proper cross referencing. Piling details, miscellaneous details and suitable special provisions as are available, shall be furnished by the CLIENT. All other details and special provisions that may be required shall be prepared by the CONSULTANT.

Phase 7 – Environmental

Wetland and Other Waters Assessment
We propose to complete a wetland and other waters assessment within the boundaries of the project (100' corridor along the existing roadway) to determine the extent and location of any jurisdictional wetlands and/or "other waters of the United States" that may exist under the U.S. Army Corps of Engineers (USACE), Vicksburg District's purview. Once this is established, we would submit a preliminary map to you for review. If acceptable, we would then complete the mapping and draft the wetland and other waters report. This report would contain the required information to coordinate our findings with the USACE for the issuance of a jurisdictional determination, if needed. This will define the extent and location of any jurisdictional waters on the property and include concurrence from the USACE after their review.

Nationwide Permit
We anticipate that the U.S. Army Corps of Engineers, Vicksburg District (USACE) will require the project to be authorized under a Nationwide Permit. This includes preparation of the pre-construction notification (PCN) submittal, agency meetings, and agency coordination required to complete the permit action. If an individual permit from the USACE is required, we would provide a separate budget specific to the permitting actions that would be required.
USFWS Threatened & Endangered Species Coordination
We would complete the field surveys for listed species during the wetland delineation. Please note that if specialized surveys, including but not limited to audible, mist netting, or aquatic, are required we would coordinate with your company and submit a supplemental budget.

Phase I Cultural Desktop Review
As part of the permitting process, The USACE Regulatory Division could require a cultural resources survey within jurisdictional waters and adjacent upland buffers for the permit actions as a condition of the Section 404 Wetlands Permit process. The survey area would include a 100' area around the three identified existing bridge/box structures. If additional survey requirements are necessary, we would submit an additional budget at that time.

Exclusions and Limitations
This SOW does not include the following services. These services can be provided under a separate SOW and budget if necessary.

- Section 404 Individual Wetland Permit from USACE
- Phase I Cultural Resource Survey for the entire length of the project
- Compensatory mitigation and/or credit reservation

Phase 8 – Utility Coordination

The CONSULTANT shall utilize MS811 in concert with information provided by the CLIENT, to identify to the extent possible, utility conflicts within the project limits. The CONSULTANT will coordinate with identified utility owners for the purpose of reviewing the relocation of utilities found to be in conflict with the project.

III. Project Schedule

Waggoner Engineering, Inc. will perform the work associated with this scope of work following the approval of Task Order #11.

Task	Duration (Months)	Cumulative Time (Year/Quarter)
Contract Execution	---	1 Day
Traffic Analysis	1 Month	1 Month (Q2 – 2025)
Conceptual Design and Survey	6 Months	7 Months (Q4 – 2025)
Environmental Documents	9 Months	16 Months (Q2 – 2026)
Preliminary Design	9 Months	25 Months (Q4 – 2026)
Final Design	12 Months	37 Months (Q2 – 2027)

IV. Budget

Waggoner Engineering will perform the services described above on a Lump Sum basis. Any additional services and reimbursables will be billed on an hourly basis. The estimated cost for the work described above is as follows:

Phase	Compensation Terms	Proposed Budget
Traffic Analysis	Lump Sum	$9,200.00
Field Survey	Lump Sum	$140,400.00
Geotechnical Engineering	Lump Sum	$59,200.00
Hydraulic Design	Lump Sum	$94,720.00
Roadway Design	Lump Sum	$757,930.00
Bridge Design	Lump Sum	$361,700.00
Environmental	Lump Sum	$41,300.00
Total	**Lump Sum**	**$1,464,450.00**