
AGREEMENT FOR PROFESSIONAL SERVICES

BETWEEN

Madison County

AND

NEEL-SCHAFFER, INC.

This is an Agreement made on _____, 2017, between the Madison County Board of Supervisors, Madison County, Mississippi, the OWNER, and NEEL-SCHAFFER, INC., the ENGINEER.

The OWNER intends to improve Bozeman Road from MS 463 to Gluckstadt Road, which is described in more detail in Exhibit A, *Project Description*, and hereinafter called the "Project."

Exhibit B contains the "Scope of Design Phase Services" while the "Project Schedule" is contained in Exhibit C. Compensation is detailed in Exhibit D, "Payment to Engineer".

The OWNER and the ENGINEER, in consideration of the mutual covenants herein, agree with respect to the performance of professional engineering services by the ENGINEER relative to the Project and the payment for these services by the OWNER as set forth herein.

SECTION 1 — BASIC SERVICES OF ENGINEER

1.1 ENGINEER shall provide for OWNER professional engineering services for all phases of the Project to which this Agreement applies as hereinafter provided. These services will include serving as OWNER's professional engineering representative for the Project, providing consultation and advice and furnishing customary engineering services.

1.2 By execution of this Agreement, OWNER authorizes ENGINEER to provide Basic Services for the Design Phase of the Project in accordance with Exhibit B, "Scope of Design Phase Services."

SECTION 2 — ADDITIONAL SERVICES OF ENGINEER

If authorized in writing by OWNER, ENGINEER shall provide, or obtain from other qualified persons or firms, Additional Services which are not included as part of the Basic Services specified in Section 1. Additional Services shall include, but are not limited to, the following:

2.1. Services resulting from significant changes in the general scope, extent or character of the Project designed or specified by ENGINEER or its design including, but not limited to, changes in size, complexity, OWNER's schedule, character of construction or method of financing; and revising

previously accepted studies, reports, design documents or Contract Documents when such revisions are required by changes in laws, rules, regulations, ordinances, codes or orders enacted subsequent to the preparation of such studies, reports or documents, or are due to any other causes beyond ENGINEER's control.

2.2. Preparing documents for alternate bids requested by OWNER for Contractor's work which is not executed or documents for out-of-sequence work.

2.3. Services resulting from the award of more than one separate prime contract for construction, materials or equipment for the Project unless multiple awards were contemplated and included as part of Basic Services in Section 1.

2.4. Assistance in connection with rebidding or renegotiating contracts for construction which involve modifying the Contract Documents to revise the Project's general scope, extent or character as necessary to reduce or increase the Construction Cost to bring it within the cost limit.

2.5. Preparing to serve or serving as a consultant or witness for OWNER in any litigation, arbitration or other legal or administrative proceeding involving the Project.

2.6. Services in making revisions to Contract Documents occasioned by the acceptance of

substitutions proposed by Contractor; and services after the award of the construction contract in evaluating and determining the acceptability of an unreasonable or excessive number of substitutions proposed by Contractor.

2.7. Services resulting from significant delays in Project schedule which occurred through no fault of ENGINEER.

2.8. Additional or extended services during construction made necessary by (a) work damaged by fire or other cause during construction; (b) a significant amount of defective, neglected or delayed work of Contractor or supplier; (c) protracted or extensive assistance in the startup or utilization of any equipment or system; (d) acceleration of the progress schedule involving services beyond normal working hours; and (e) default or bankruptcy by Contractor.

2.9. Services during out-of-town travel required of ENGINEER other than visits to the Project site or OWNER's office.

2.10. Additional Services in connection with the Project, including services which are to be furnished by OWNER in accordance with Section 3 and services not otherwise provided for in Basic Services as specified in Section 1 of this Agreement.

SECTION 3 — OWNER'S RESPONSIBILITIES

OWNER shall do the following in a timely manner so as not to delay the services of ENGINEER and bear all costs incident thereto:

3.1. Designate in writing a person to act as OWNER's representative with respect to the services to be rendered under this Agreement. Such person shall have complete authority to transmit instructions and receive information, with respect to ENGINEER's services for the Project.

3.2. Provide all criteria and full information as to OWNER's requirements for the Project, including design objectives and constraints; space, capacity and performance requirements; and flexibility, expendability, and any budgetary limitations. Also furnish copies of additional design and construction standards which OWNER will require to be included in the Contract Documents.

3.3. Assist ENGINEER by placing at ENGINEER's disposal available information pertinent to the Project including previous reports; geotechnical information; utility locations; property descriptions, zoning, deed and other land use restrictions; and any other data relative to design or construction of the Project. ENGINEER shall not be liable for any claims for injury or loss arising from errors, omissions or inaccuracies in documents or other information provided by the OWNER.

3.4. Arrange for access to and make all provisions for ENGINEER to enter upon public and private property as required for ENGINEER to perform services under this Agreement.

3.5. Examine studies, reports, sketches, drawings, specifications, proposals and other documents presented by ENGINEER and render in writing decisions pertaining thereto within a reasonable time so as not to delay the services of ENGINEER.

3.6. Acquire property for easements and rights-of-way required for construction of the Project.

3.7. Give prompt written notice to ENGINEER whenever OWNER observes or otherwise becomes aware of any development that affects the scope or timing of ENGINEER's services, or any defect or nonconformance in the work of the ENGINEER or of any Contractor.

SECTION 4 — PERIOD OF SERVICE

4.1. The provisions of this Section 4 and the various rates of compensation for ENGINEER's services provided for elsewhere in this Agreement have been agreed to in anticipation of the orderly and continuous progress of the Project through completion of all phases to which this Agreement applies. Specific periods of time and/or completion dates for

rendering services are set forth in Exhibit C, "Project Schedule."

4.2. If OWNER requests modifications or changes in the scope, extent or character of the Project, or if periods of time and/or completion dates are exceeded through no fault of ENGINEER, the period of service and amount of compensation for ENGINEER's services shall be adjusted equitably.

4.3. In the event that the work designed or specified by ENGINEER is to be performed under more than one prime construction contract, the period of service and/or amount of compensation for ENGINEER's services shall be adjusted equitably unless multiple awards were contemplated and included as part of Basic Services in Section 1.

SECTION 5 — PAYMENTS TO ENGINEER

5.1. **Methods of Payment.** OWNER shall pay ENGINEER for Basic Services rendered under Section 1 and Additional Services rendered under Section 2 in accordance with the provisions of Exhibit D, "Payments to Engineer."

5.2. **Times of Payment.** ENGINEER shall submit monthly statements for Basic and Additional Services rendered. For lump sum and percentage methods of payment, statements will be based upon ENGINEER's estimate of the proportion of the total

services actually completed at the time of billing. For cost-plus-fixed-fee method of payment, the amount of fixed fee billed will be based on the proportion of the costs incurred at the time of billing to the maximum allowable costs established for this Agreement. OWNER shall make prompt monthly payments in response to ENGINEER's monthly statements.

5.3. **Delinquent Payments.** The OWNER recognizes time is critical with respect to payment of the ENGINEER's statements, and that timely payment is a material part of the consideration of this Agreement. ENGINEER's statements shall be due and payable within 30 calendar days of statement date. If OWNER objects to all or any portion of an invoice, OWNER shall notify the ENGINEER within 14 calendar days of the invoice date, identify the cause of the disagreement and pay when due that portion of the statement not in dispute. If OWNER fails to make any payment due ENGINEER for services and expenses, excepting any portion of the statement in dispute, within 60 calendar days after receipt of ENGINEER's statement, the amounts due ENGINEER shall include a charge at the rate of one percent per month from the 60th day unless special arrangements have been previously made and agreed to by both parties in writing. Payment will be credited first to interest and then to principal. In the

event of a disputed or contested billing, only that portion so contested may be withheld from payment, and the undisputed portion will be paid.

5.4. **Termination Payment.** In the event of termination by OWNER or ENGINEER under Paragraph 6.2, OWNER shall pay ENGINEER for services and expenses provided to date of termination in accordance with the methods of payment specified in Paragraph 5.1.

5.5. **Records of Costs.** Records of costs pertinent to ENGINEER's compensation will be kept in accordance with generally accepted accounting principals. ENGINEER is only obligated to maintain these records for a period of three years following date of final payment for services rendered under this Agreement.

SECTION 6 — GENERAL TERMS AND CONDITIONS

6.1. Construction Cost.

6.1.1. **Opinions of Cost.** Since ENGINEER has no control over the cost of labor, materials, equipment or services furnished by others, or over the Contractor's methods of determining prices, or over competitive bidding or market conditions, ENGINEER's opinions of probable Construction Cost provided for herein are to be made on the basis of

experience and qualifications and represent ENGINEER's best judgment as an experienced and qualified professional, generally familiar with the construction industry; but ENGINEER cannot and does not guarantee that proposals, bids or actual Construction Cost will not vary from opinions of probable cost prepared by ENGINEER.

6.1.2. **Construction Cost Budget.** If a Construction Cost budget is established by written agreement between OWNER and ENGINEER and specifically set forth in this Agreement as a condition thereto, the following will apply:

6.1.2.1. The acceptance by OWNER at any time during the provision of services under this Agreement of a revised opinion of probable Construction Cost in excess of the then established budget will constitute a corresponding revision in the Construction Cost budget to the extent indicated in such revised opinion.

6.1.2.2. Any Construction Cost budget so established will include a contingency of 10 percent unless another amount is agreed upon in writing.

6.1.2.3. ENGINEER will be permitted to determine what materials, equipment, component systems and types of construction are to be included in the Contract Documents and to make reasonable adjustments in the extent of the Project to bring it within the budget.

6.1.2.4. If proposals or bids have not been obtained within six months after completion of the Design Phase, the established Construction Cost budget will not be binding on ENGINEER, and OWNER shall consent to an adjustment in such cost limit commensurate with any applicable change in the general level of prices in the construction industry between the date of completion of the Design Phase and the date on which proposals or bids are sought.

6.1.2.5. Use of an estimated or actual Construction Cost of the project as a basis of payment to the ENGINEER shall not be construed to mean that a Construction Cost budget has been established for the Project.

6.2. **Termination.** The obligation to provide further services under this Agreement may be terminated by either party upon 30 calendar days' written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof through no fault of the terminating party.

6.3. **Suspension.** Upon 14 calendar days' written notice to the ENGINEER, the OWNER may suspend the ENGINEER's work. Suspension for any reason exceeding 60 calendar days shall, at the ENGINEER's option, make this Agreement subject to re-negotiation or termination as provided for elsewhere in this Agreement. Any suspension shall extend the

period of service in a manner that is satisfactory to both the OWNER and the ENGINEER.

6.4. Ownership and Reuse of Documents.

6.4.1. Contract Documents and reports prepared by ENGINEER pursuant to this Agreement shall be the property of the OWNER. ENGINEER shall have the right to retain copies of all documents for his files.

6.4.2. Contract Documents prepared or furnished by ENGINEER and ENGINEER's independent professional associates and consultants, pursuant to this Agreement are instruments of service with respect to the Project. These documents are not intended or represented to be suitable for reuse by OWNER or others on extensions of the Project or on any other project. Any reuse without written verification or adaptation by ENGINEER for the specific purpose intended will be at OWNER's sole risk and without liability or legal exposure to ENGINEER, or to ENGINEER's independent professional associates or consultants. OWNER shall indemnify and hold harmless ENGINEER and ENGINEER's independent professional associates and consultants from all claims, damages, losses and expenses including attorneys' fees arising out of or resulting therefrom. Any such verification or adaptation will entitle ENGINEER to further

compensation at rates to be agreed upon by OWNER and ENGINEER.

6.5. Insurance.

6.5.1. The ENGINEER maintains workers' compensation insurance coverage and unemployment compensation coverage in an amount as required by state law; comprehensive general liability insurance with maximum limits of \$500,000/\$1,000,000; automotive liability insurance with maximum limits of \$500,000/ \$500,000; and professional liability insurance with an annual limit of \$500,000.

6.6. Personnel and Facilities. The ENGINEER has, or will secure at his own expense, personnel, equipment and other materials and supplies required to perform the services under this Agreement within the period of service set forth in Section 4. ENGINEER may subcontract a portion of these services, but these Subcontractors shall be subject to written approval by the OWNER. Such personnel shall not be employees of nor have contractual relationship with the OWNER.

6.7. Accounting System. The ENGINEER shall maintain an accounting system which accounts for costs in accordance with generally accepted accounting principles. The OWNER reserves the right to audit the ENGINEER's accounts which relate to services provided under this Agreement.

6.8. **Successors and Assigns.** Neither OWNER nor ENGINEER shall assign any interest in this Agreement without the prior written consent of the other and in no case shall assignment relieve assignor from liability under this Agreement. This Agreement shall bind the successors and legal representatives of both parties. Nothing in this Agreement shall give any rights or benefits to anyone other than OWNER and ENGINEER.

6.9. **Relationship.** The OWNER has retained ENGINEER to provide professional services. These parties have not entered into any joint venture or partnership with the other. The ENGINEER is not to be considered the agent of the OWNER.

6.10. **Standard of Care.** The ENGINEER will strive to perform services under this Agreement in a manner consistent with that level of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions. No other representation, express or implied, and no warranty or guarantee is included or intended in this Agreement, or in any report, opinion, document or otherwise.

6.11. **Indemnification.**

6.11.1. To the fullest extent permitted by law, the ENGINEER agrees to hold harmless and indemnify OWNER from and against liability arising out of

ENGINEER's negligent performance of professional services under this Agreement. To the fullest extent provided by law, the OWNER agrees to hold harmless and indemnify ENGINEER from and against liability arising out of OWNER's negligence.

6.11.2. The OWNER shall not be liable to the ENGINEER and the ENGINEER shall not be liable to the OWNER for any special, incidental or consequential damages, including, but not limited to, loss of use and loss of profit, incurred by either party due to the fault of the other, regardless of the nature of this fault, or whether it was committed by the OWNER, or the ENGINEER or their employees, agents or subcontractors.

6.12. **Recovery of Dispute Resolution Costs.** In the event that legal action is brought by either party against the other, the prevailing party shall be reimbursed by the other for the prevailing party's legal costs, in addition to whatever other judgments or settlement amounts, if any, may be due.

6.13. **Compliance with Codes and Standards.** The ENGINEER's professional services shall incorporate those publicly announced federal, state and local laws, regulations, codes and standards that are applicable at the time the services are rendered. In the event of a change in a law, regulation, et al., the ENGINEER shall assess its impact. If, in the,

impact is such to significantly affect the ENGINEER's compensation or the period of service, then the compensation and/or period of service can be renegotiated.

6.14. **Force Majeure.** Neither OWNER nor ENGINEER shall be liable for faults or delays caused by any contingency beyond his control, including, but not limited to, acts of God, wars, strikes, walkouts, fires, natural calamities, or demands or requirements of governmental agencies.

6.15. **Separate Provisions.** If any provisions of this Agreement are held to be invalid or unenforceable, the remaining provisions shall be valid and binding.

6.16. **Hazardous Materials.**

6.16.1.1. When hazardous materials are known, assumed or suspected to exist at a project site, ENGINEER is required to take appropriate precautions to protect the health and safety of his personnel, to comply with the applicable laws and regulations and to follow procedures deemed prudent to minimize physical risks to employees and the public. OWNER hereby warrants that, if he knows or has any reason to assume or suspect that hazardous materials may exist at the project site, he will inform ENGINEER in writing prior to initiation of services under this Agreement.

6.16.1.2. Hazardous materials may exist at a site where there is no reason to believe they could or should be present. OWNER agrees that the discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work or termination of services. ENGINEER agrees to notify OWNER as soon as practically possible should unanticipated hazardous materials or suspected hazardous materials be encountered.

6.17. **Subsurface Conditions and Utilities.**

6.17.1. The OWNER recognizes that a comprehensive sampling and testing program implemented by trained and experienced personnel of ENGINEER, or ENGINEER's subconsultants, with appropriate equipment may fail to detect certain hidden conditions. The OWNER also recognizes that actual environmental, geological and geotechnical conditions that ENGINEER properly inferred to exist between sampling points may differ significantly from those that actually exist.

6.17.2. ENGINEER will locate utilities which will affect the Project from information provided by the OWNER and utility companies and from ENGINEER's surveys. In that these utility locations are based, at least in part, on information from others, ENGINEER cannot and does not warrant their completeness and accuracy.

6.18. **Anticipated Change Orders.** OWNER recognizes and expects that a certain amount of imprecision and incompleteness is to be expected in Contract Documents; that all details of a completed project are not intended to be covered in the Contract Documents; that a certain amount of errors, omissions, ambiguities and inconsistencies are to be expected in Contract Documents; that contractors are expected to furnish and perform work, materials and equipment that may reasonably be inferred from the Contract Documents or from the prevailing custom or trade usage as being required to produce the intended result whether or not specifically called for; and that a certain amount of Change Orders are to be expected. -In no case will OWNER make claim against ENGINEER for costs incurred if the Change Order work is a necessary part of the Project for which OWNER would have incurred costs if work had been included originally in the Contract Documents unless OWNER can demonstrate that such costs were higher through issuance of the Change Order than they would have been if originally included in the Contract Documents in which case any claim of OWNER against ENGINEER will be limited to the cost increase and not the entire cost of the Change Order.

6.19. **Value Engineering.** If the OWNER retains the services of a VALUE ENGINEER (VE)

to review the Contract Documents prepared by the ENGINEER, it shall be at the OWNER's sole expense and shall be performed in a timely manner so as not to delay the orderly progress of the ENGINEER's services. The OWNER shall promptly notify the ENGINEER of the identity of the VE and shall define the VE's scope of services and responsibilities for the ENGINEER. All recommendations of the VE shall be given to the ENGINEER for review, and adequate time will be provided to the ENGINEER to respond to these recommendations. If the ENGINEER objects to any recommendations made by the VE, it shall so state in writing to the OWNER, along with the reasons for objecting. If the OWNER requires the incorporation of changes in the Contract Documents to which the ENGINEER has objected, the OWNER agrees, to the fullest extent permitted by law, to waive all claims against the ENGINEER and to indemnify and hold harmless the ENGINEER from any damages, liabilities or costs, including reasonable attorneys' fees and costs of defense, which arise in connection with or as result of the incorporation of such changes required by the OWNER. In addition, the ENGINEER shall be compensated for services necessary to incorporate recommended VE changes into reports, drawings, specifications, bidding or

other documents. The ENGINEER shall be compensated as Additional Services for all time spent to prepare for, review and respond to the recommendations of the VE. The ENGINEER's time for performance of its services shall be equitably adjusted.

6.20. **Affirmative Action.** During the performance of this Agreement, the ENGINEER agrees to take affirmative action to ensure that applicants are employed, and employees are treated during employment, without regard to their race, color, religion, sex or national origin.

6.21. **Conflicts.** In the event of a conflict between the main text of this Agreement and any appendix thereof, provisions of the main text shall govern.

6.22. **Governing Law.** The laws of the State of Mississippi will govern the validity of this Agreement, its interpretations and performance, and remedies for any claims related to this Agreement.

6.23. **Separate Provisions.** If any provisions of this Agreement are held to be invalid or unenforceable, the remaining provisions shall be valid and binding.

6.24. The ENGINEER authorizes Mark J. Beyea, P.E., Registered Professional Engineer No. 12599 and Frank O'Keefe,

P.E., Registered Professional Engineer No. 11097 in the _____ State _____ of Mississippi, to act on his behalf for this Project.

SECTION 7 — DEFINITIONS

As used herein, the following words and phrases have the meanings indicated, unless otherwise specified in various sections of this Agreement:

7.1. **Addenda.** Written or graphic instruments issued prior to the opening of bids which clarify, correct or change the bidding documents or the Contract Documents.

7.2. **Agreement.** This contract including all exhibits and documents included by reference.

7.3. **Application for Payment.** The form accepted by ENGINEER which is to be used by Contractor in requesting progress or final payments and which is to include such supporting documentation as is required by the Contract Documents.

7.4. **Bid.** The offer or proposal of the bidder submitted on the prescribed form setting forth the prices for the construction work to be performed.

7.5. **Change Order.** A document recommended by ENGINEER which is signed by Contractor and OWNER and authorizes an addition, deletion or revision in the construction work, or an adjustment in the contract

price or the contract time, issued on or after the effective date of the construction contract.

7.6. **Contract Documents.** The drawings and specifications, addenda, and other documents required to obtain bids from contractors for construction of the Project.

7.7. **Contractor.** The person, firm or corporation with whom OWNER has entered into a contract for construction of the Project.

7.8. **Construction Cost.** Total cost of entire Project to OWNER not including ENGINEER's compensation and expenses, cost of land and rights-of-way, or compensation for or damages to properties, unless this Agreement so specifies; nor will it include OWNER's legal, accounting, insurance counseling or auditing services, or interest and financing charges incurred in connection with the Project or the cost of services to be provided by others to OWNER pursuant to Section 3 of this Agreement.

7.9. **Direct Labor Costs.** Salaries and wages paid to ENGINEER's personnel engaged directly on the Project, including engineers, draftsmen, technicians, designers, surveyors, resident project representatives and other technical and administrative personnel; but does not include indirect payroll related costs or fringe benefits.

7.10. **Drawings.** The drawings which show the character and scope of the Project and which have been prepared or approved by ENGINEER and are referred to in the Contract Documents.

7.11. **Reimbursable Expenses.** Actual expenses incurred by ENGINEER directly in connection with providing services for the Project. These include, but are not limited to, transportation and subsistence; reproduction and printing; communications; postage and express mail; equipment rental; and expense of computers and other specialized equipment.

7.12. **Resident Project Representative.** The authorized representative of ENGINEER who is assigned to the construction site or any part thereof for the purpose of observing the performance of the work of the Contractor.

7.13. **Shop Drawings.** All drawings, diagrams, illustrations, schedules and other data which are specifically prepared by or for Contractor to illustrate some portion of the work and all illustrations, brochures, standard schedules and other information prepared by a Supplier and submitted by Contractor to illustrate material or equipment for some portion of the Project.

7.14. **Specifications.** Those portions of the Contract Documents consisting of written technical

descriptions of materials, equipment, construction systems, standards and workmanship as applied to the Project and certain administrative details applicable thereto.

7.15. **Subcontractor.** An individual, firm or corporation having a direct contract with Contractor or with any other subcontractor for the performance of a part of the Project at the site.

7.16. **Supplier** A manufacturer, fabricator, supplier, distributor, material man or vendor of products or equipment used in construction of the project.

SECTION 8 — SPECIAL PROVISIONS AND EXHIBITS

8.1. This Agreement is subject to the following Special Provisions.

8.2. The following Exhibits are attached to and made a part of this Agreement.

8.2.1. Exhibit A, "Project Description."

8.2.2. Exhibit B, "Scope of Design Phase Services."

8.2.3. Exhibit C, "Project Schedule."

8.2.4. Exhibit D, "Payments to Engineer."

8.3. This Agreement, consisting of Pages 1 to 16, inclusive, together with the Exhibits identified above, constitute the entire agreement between OWNER and ENGINEER and supersede all prior written and oral understandings. This Agreement and said Exhibits may only be amended, supplemented, modified or canceled through a duly executed written instrument.

EXHIBIT A
PROJECT DESCRIPTION

Madison County intends to improve Bozeman Road starting in the vicinity of its intersection with MS 463 and terminating in the vicinity of its intersection with Gluckstadt Road. The project will include roadway capacity improvements at or near the intersections of MS 463, Reunion Parkway, and Gluckstadt Road. The widening to a divided median section will be constructed to a distance along Bozeman Road within available funding. A multi-use trail will be constructed from MS 463 to Gluckstadt Road.

The project is funded, in part, with federal Surface Transportation Program funds. The project will be administered by MDOT through its LPA process and in accordance with the policies and procedures of the Mississippi Department of Transportation (MDOT), the Federal Highway Administration (FHWA), and the National Environmental Policy Act (NEPA).

EXHIBIT B

SCOPE OF SERVICES

**Bozeman Road Widening
Madison County
Project No. STP-6985-00(001)LPA/106993-7011000**

The following engineering services shall be performed by the CONSULTANT on behalf of the Local Public Agency (LPA) in accordance with this CONTRACT at the direction of the LPA, unless otherwise modified by the Mississippi Department of Transportation (MDOT).

A project schedule is attached. Work progression is to proceed in accordance with the attached agreed project schedule. The following engineering services shall be performed by the CONSULTANT in accordance with this CONTRACT and the latest Project Development Manual (PDM) for the LPA at the time of the execution of this contract. Where this CONTRACT and the PDM differ, the PDM shall govern.

A monthly status report along with an updated project schedule is required. This report is to be submitted by the 7th of each month to the LPA for their signature and then submitted to the District LPA Coordinator. This monthly report is to be submitted by the CONSULTANT and will update the LPA on the status of the project. Recent milestones in plan development, such as the submittal of plans for review, shall be documented. Also, the target dates for the future milestones should be included.

Maps and Deeds are not included in this contract. An amendment will be required once Field Review Plans are complete and the number of parcels needed for Right of Way acquisition has been determined.

TYPICAL ITEMS/MATERIALS PROVIDED BY THE LPA:

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

1. Maps, aerial photographs, and other cartographic items as may be available;
2. Available old construction plans, drawings, and maps pertinent to the project;
3. Copies of previous studies/analyses, environmental assessments, conceptual plan, and other information pertaining to the project;
4. Names, addresses, and telephone numbers of points of contact which may prove useful to the CONSULTANT in conducting this analysis;
5. A single point of contact within the LPA for day-to-day coordination of each CONTRACT;

-
6. 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 LPA;

GENERAL REQUIREMENTS:

As directed, the CONSULTANT shall provide engineering/technical assistance to perform specific assignments requiring needed expertise or staff resources unavailable to the LPA.

Manuals, guides, and specifications applicable to this CONTRACT shall be those approved and adopted by the MDOT and in effect on the effective date this CONTRACT unless otherwise specified in the CONTRACT or subsequently directed by the MDOT during the course of this CONTRACT.

The design of roadways shall be in compliance with the MDOT Roadway Design Manual, and supplemented with updated design policies as described in design memos, American Association of State Highway and Transportation Officials (AASHTO)'s Policy on Geometric Design Of Highways and Streets; AASHTO Guide for the Development of Bicycle Facilities; Draft ADA Public Right of Way Accessibility Guidelines (PROWAG); MDOT Standard Drawings (roadway and bridge), MDOT Roadway CADD Manual; MDOT Standard Specifications for Road and Bridge Construction; Manual on Uniform Traffic Control Devices (MUTCD); MDOT Access Management Policy; and MDOT Survey Manual. The latest edition of the aforementioned documents shall be used.

Hydraulic design shall conform to the MDOT's Roadway Design Manual, 23 CFR 625, 630 AND 650, 44 CFR Part 60.3(d)(3), the Floodplain Management Regulations for the State of Mississippi (Chapter 5, General laws of 1979, 1st Extraordinary session of the State, as amended) and Federal Emergency Management Agency (FEMA) regulations and any other State or Federal regulations as appropriate.

This project shall be performed using English units.

The CONSULTANT shall not begin work in any phase of this CONTRACT until a written NOTICE TO PROCEED (NTP) for that individual phase has been issued. The LPA reserves the right to not issue a NTP until work in the previous phase has been completed.

All preliminary plans shall be marked "PRELIMINARY, NOT FOR CONSTRUCTION" on each sheet. Once plans are complete, the "PRELIMINARY" markings shall be removed, and the Roadway Title sheet shall be signed and sealed/stamped by the CONSULTANT's engineer. If the scope of the CONSULTANT's work is limited to certain aspects of the plans, the scope shall be briefly noted near the seal/stamp (e.g., "ROADWAY AND LIGHTING ONLY" or "BRIDGE AND RETAINING WALL ONLY"). If multiple CONSULTANTS develop the plans, each firm shall sign and seal/stamp the title sheet.

It is the responsibility of the CONSULTANT to request and receive approval from the LPA's Project Manager prior to making any changes to plans developed under this contract. This requirement includes plans developed by any subconsultants.

Other provisions herein notwithstanding, in emergencies due to bridge damage, verbal NTP with a follow-up letter of authorization may be given to the CONSULTANT by the LPA, or designee, to assess the damage, make recommendations for remedial safety measures and obtain essential information for preparing an estimate of time and cost.

As a minimum, the Scope of Work shall be divided into two phases as follows:

FIELD REVIEW PLANS

Part 1 -- Pre-Design Conference

Part 2 -- Centerline Soil Profile and Preliminary Geotechnical Design Report

Part 3 -- Highway Hydraulic Design

Part 4 -- Field Inspection Plans

OFFICE REVIEW PLANS

Part 1 -- Office Review Plans

Part 2 -- Final Contract Plans

FIELD SURVEY:

The CONSULTANT shall survey the project utilizing standard surveying practices as required to prepare preliminary and final contract plans in accordance with the current MDOT Design Manual. The work shall be drafted in accordance with the current MDOT Survey Manual, unless specifically accepted, and with any additional instructions or requests as specified by the LPA, including the following:

No field staking is included in the CONTRACT.

FIELD REVIEW PLANS:

Roadway plans shall conform to the MDOT Roadway Design Division's CADD specifications as described in the MDOT Roadway Design Division's CADD User's Manual. Field review plans will include the extension of existing cross drains. If calculations show that structures are insufficient to meet regulations and AASHTO standards, the consultant shall provide recommendations. Unless stated otherwise in the CONTRACT, the following specific requirements are typical for this phase:

Part 1 - PRE-DESIGN CONFERENCE

The purpose of the conference is to discuss LPA procedures, contract administration, data required by this CONTRACT, the design criteria, and other matters as the parties deem necessary. After the

Pre-Design Conference, the Project Director shall authorize the CONSULTANT to proceed with the preparation of the conceptual design plans.

Part 2 - CENTERLINE SOIL PROFILE AND PAVEMENT DESIGN REPORT

The CONSULTANT will investigate sub-surface soil and geological conditions along the project route as required to provide the necessary design criteria for water and wastewater infrastructure (utility structures), storm drainage structures, pavement support criteria, and other as required by the LPA.

Design Criteria for pavement support shall be determined from a Centerline Soil Profile. The specific objective of this study is to determine the quality and type of soils located along the project. The centerline soil profile shall be completed prior to the submittal of the Preliminary Right-of-Way plans so that the plans reflect slope requirements in areas that contain high-volume-change soils. Specific work requirements include the following:

For this CONTRACT, the CONSULTANT shall perform necessary field and laboratory work to develop and provide the complete soil profile along the centerline of survey. The soil survey shall be performed by the CONSULTANT in such a manner as necessary to produce a report similar in content and format commonly developed by the LPA's District Materials laboratories, and in accordance with MDOT Standard Operating Procedures *TMD-20-14-00-000 – Standard Design Procedures for Construction of Roadways Through High Volume Change Soils*.

The CONSULTANT shall identify the types of soils along the proposed alignment, evaluate their potential use as fill materials, and locate any undesirable low strength surface soils which may require undercutting or other remedial measures for construction. From the original soil profile, a tentative base design will be formed by the LPA and any undesirable strata shall be noted for special consideration by the Project Engineer in charge of the actual construction. It is of distinct value in determining soil strata placement during grading operations where better soils should be placed at grade and poor soils below. The CONSULTANT will provide a pavement design based on project traffic conditions for this project and provide recommendations related to the construction of the utility and storm drainage structures.

Prior to the beginning of the field exploration, the CONSULTANT shall submit the proposed plan of work to the LPA, or designee, for review and approval. As a general rule, soil borings should be spaced a maximum of 200 feet (60 m) apart along the centerline and drilled to a depth of 15 feet (5 m) below the proposed subgrade line in cut sections or natural ground in fill sections. The spacing and depth of soil borings should vary if unusual conditions are encountered such as rock layers, water strata, or weak deposits (muck or unstable material). The auger method of drilling for disturbed samples is generally suitable for identification of the materials obtained.

Additional laboratory tests and analyses, which are not specified in TMD-20-14-00-000, shall be performed by the CONSULTANT. These include:

1. Estimated CBR, from charts supplied by the LPA;
2. Volume Change, AASHTO T 92;
3. pH, Mississippi Test Method MT-30;

-
4. Soil Resistivity, Mississippi Test Method MT-47;
 5. Soluble Sulfates, Mississippi Test Method MT-58.

The CONSULTANT shall prepare a report of the findings of the soil survey. This report shall include recommendations for handling unsuitable or undesirable soils, copies of the laboratory test results on MDOT form TMD-683, or equivalent, and the centerline soil profile. The centerline soil profile shall show the limits of each soil type identified, with each type labeled with:

1. an identification number to reference it to the laboratory test results,
2. AASHTO classification,
3. Unified Soils classification,
4. estimated CBR.
5. % Volume Change (if applicable)

The CONSULTANT shall provide 10 copies of the report to the LPA, or designee.

Design Criteria for potable water, sewer and storm drainage structures shall be determined from subsurface investigation and laboratory testing. The same geotechnical borings and testing performed for the centerline soil profile shall be used in preparation of the Geotechnical Design Report. The Geotechnical Design Report shall contain reproductions of the field boring logs and test results and contain recommendations for construction of the utility and storm drainage structures. Specific work requirements include the following:

The necessary field investigation, laboratory testing, and engineering services shall be conducted by the CONSULTANT on behalf of the LPA in accordance with this Contract at the direction of the LPA'S Geotechnical Engineer, unless otherwise modified by the LPA. The Geotechnical Investigation shall consist of the following:

- * Subsurface investigations, consisting of borings on land;
- * Auger Sampling;
- * Laboratory testing of disturbed samples;
- * Preliminary Geotechnical Design Report containing results of Subsurface Investigation and Laboratory Testing along with construction recommendations;
- * Engineering analyses of subsurface conditions;
- * Preparation of necessary plan sheets and special provisions for inclusion in plans with only minor modifications; and
- * Final Geotechnical Investigation Report containing conclusions and recommendations as well as all supporting data.

The CONSULTANT shall be responsible for obtaining permits, licenses, and/or authority from public agencies required for the conduct of his operations under this CONTRACT, including payment of any charges for the same, and shall not work or use public property without such authority, licenses, or permits. This also applies to permits required to transport equipment over or across public

thoroughfares. The CONSULTANT will also be required to notify private landowners and to obtain access and permission to enter or work on their property. The LPA shall be notified in writing within 5 working days of any landowner's refusal to grant access to their property.

All geotechnical investigation work – drilling, soils classification, laboratory testing – and all other work in connection therewith, shall follow procedures outlined in AASHTO publication, *Manual on Subsurface Investigation, 1988*.

CADD Drawings:

The Generalized Soil Profile(s) and special design sheets that are included in the Final Geotechnical Investigation shall be submitted in the agreed format with the Final Contract Plans. The Generalized Soil Profiles shall contain standard notes and disclaimers. These notes will be furnished by the LPA. In addition, the Generalized Soil Profiles shall contain a geologic description of the individual soil zones.

Final Geotechnical Investigation Report:

The Final Geotechnical Investigation Report shall be prepared and signed by an engineer licensed in the State of Mississippi with a minimum of 10 years of experience in the practice of geotechnical engineering. The report should contain the following:

1. A cover letter containing Project Number, County, and a general description of the project;
2. A Project Layout Sheet containing the project termini and a map encompassing the entire project area;
3. A copy of the boring logs;
4. Results of the laboratory tests;
5. Any design sheets and draft special provisions required for the plans; and
6. Generalized soil profiles suitable for inclusion in the plans.

In addition, the Geotechnical Investigation Report shall be organized according to the following outline.

- I. Cover Letter
- II. Layout Sheet
- III. General
- IV. Geology
- V. Conclusions and Recommendations
 - A. Pavement Design
- VI. Reference Section

-
- A. Generalized Soil Profile
 - B. Laboratory Test Results
 - C. Boring Logs

The CONSULTANT shall furnish the LPA, or his or her designee, with 10 copies of the geotechnical report.

Part 3 – HIGHWAY HYDRAULIC DESIGN

Highway hydraulic design including hydrology, channels, culverts, energy dissipators, storm drainage systems, and storage facilities shall be in conformance with the MDOT Roadway Design Manual, AASHTO Drainage Manual, FHWA Hydraulic Engineering Circulars and Publications, 23 CFR 625, 630 and 650, 44 CFR Part 59-78, the Floodplain Management Regulations for the State of Mississippi (Chapter 5, General Laws of 1979, 1st Extraordinary Session of the State, as amended and supplemented from time to time), National Flood Insurance Program (NFIP) regulations, and Federal Emergency Management Agency (FEMA) regulations and any other applicable Laws.

Drainage design shall achieve the most effective and economical methods by which runoff waters can be passed through and removed from the roadway. Drainage installations shall not create hazardous conditions for traffic operations nor shall they adversely affect conditions of adjoining properties.

Major reference publications (latest editions and interim revisions) for hydraulic design of highways are as follows (in addition to any other publications that are applicable to engineering industry standards):

1. FHWA Publication *Hydraulic Design of Highway Culverts*, Hydraulic Design Series Number 5 (HDS-5)
2. FHWA Publication *Hydraulic Design of Energy Dissipators for Culverts and Channels*, Hydraulic Engineering Circular No. 14 (HEC-14).
3. FHWA Publication *Design of Roadside Channels with Flexible Linings*, Hydraulic Engineering Circular No. 15 (HEC-15).
4. FHWA Publication *Urban Drainage Design Manual*, Hydraulic Engineering Circular No. 22 (HEC-22).

The hydraulic analysis shall be performed using a nationally recognized and readily available computer program for determination of design requirements. Acceptable software for drainage design applications may include HY-8 Culvert Hydraulic Analysis Program, FHWA Hydraulic Toolbox, HEC-RAS, PondPack, StormCAD, StreamStats, HEC-HMS, WMS, and SMS.

If the project is located in or across a FEMA Regulatory Floodway or base flood elevations have been determined as shown on the National Flood Insurance Program (NFIP) maps, the CONSULTANT shall obtain the step-backwater hydraulic model for the specified stream and community from FEMA. Modification of this input data will be required to demonstrate that the proposed development will not impact the pre-project base flood elevations, regulatory floodway elevations, or regulatory floodway widths.

For structures with drainage areas less than 1000 acres, the design flood for encroachments by through lanes of Interstate highways shall not be less than the flood with a 2 percent chance of being exceeded in any given year per 23 CFR 650.115. Further design flood classifications and standards are specified in the Roadway Design Manual.

The hydraulic studies shall include a preliminary submittal for incorporation into the Field Inspection Plans as well as a final submittal. The preliminary submittal shall be completed prior to the Field Inspection, and the final submittal shall be completed after the Field Inspection. The CONSULTANT shall provide the preliminary and final submittal in accordance with the LPA'S format. The final submittal shall include as a minimum one hard copy of reports spiral bound, all pertinent digital files on a CD placed in the back of the report, including a color PDF of the hydraulic report.

The CONSULTANT shall prepare and submit Highway Hydraulic Design and Recommendations in accordance with the MDOT's format to the MDOT for review and comment.

The Highway Hydraulic Design submittal shall include Structure recommendations, all hydraulic computations, supporting data and documentation, including but not limited to:

- A. STRUCTURE RECOMMENDATIONS: The Hydraulic Structure Recommendations shall be completed in accordance with MDOT Roadway Design Manual, MDOT Design Memos, and other guidance as applicable. Recommendations shall be provided in the appropriate format as required.
 - a. Design data for culverts and cross drains shall be recorded and provided on the Culvert Hydraulic Design Summary Table as stated in the MDOT Roadway Design Manual, Drainage Chapter. The table shall be included with the plans.
 - b. Drainage details shall be provided in a Microstation file including hydraulic structure recommendations placed accordingly on the roadway Plan & Profile sheets for reference into the plans and any additional items indicated in the Work Assignment. The following shall be provided as a minimum:
 - i. Plan view shall show all structures in the proper location, and include corresponding labels as to size and type.
 - ii. Profile view shall show the structures in the proper location.
 - iii. Drainage Details Note box including information to be placed by Roadway Design or the CONSULTANT in the profile for each structure (pipe or box culvert).
 1. Structure information shall include location including station, type, size, length, drainage area, flow lines, skew, and any other accompanying structures (end sections, junction boxes, collars, etc). The accompanying structures shall also include flowlines and dimensions where applicable.
 2. Details of flat bottom ditches including grades, bottom widths, side slopes, location, and any additional items indicated in the Work Assignment.
 - c. All structures shall be drawn to proper flowlines, dimensions and labeled in the cross section file provided by Roadway Design

-
- B. **STORM SEWER DESIGN:** Storm sewer design shall be prepared according to the MDOT Roadway Design Manual and FHWA Publication *Urban Drainage Design Manual*, Hydraulic Engineering Circular No. 22 (HEC-22). Recommendations shall be provided in the appropriate format as required.
- a. Design data for structures shall be recorded and provided in a separate network flow diagram or chart showing every structure with drainage area and flow rate into each inlet and pipe.
 - b. Drainage details shall be provided in a CAD file including hydraulic structure recommendations placed accordingly on the roadway 1"=20' Plan & Profile sheets (left and right) for reference into the plans and any additional items indicated. The following shall be provided as a minimum:
 - i. Plan view shall show all structures in the proper location, and include corresponding labels as to size and type. Pipes shall also be labeled including a direction of flow.
 - ii. Profile view shall show the structures in the proper location, and drawn to proper flow lines and dimensions. Pipe slopes shall be labeled. Profile view shall also include the existing and proposed roadway profile provided by Roadway Design.
 - iii. Drainage Details Note box including information to be placed by Roadway Design or the CONSULTANT in the profile for each structure (pipe or box culvert).
 1. Structure information shall include location including station, type, size, length, top, height, width, drainage area, flowlines, skew, inverts, openings with pipe size and any other accompanying structures (end sections, junction boxes, collars, etc), and any additional items indicated in the Work Assignment. The accompanying structures shall also include flowlines and dimensions where applicable.
 - c. All structures shall be drawn to proper flowlines, dimensions and labeled in the cross section file provided by Roadway Design
- C. **TEMPORARY DRAINAGE DESIGN:** The temporary hydraulic design recommendations shall be completed in accordance with MDOT Roadway Design Manual, MDOT Design Memos, and any other guidance as applicable. Temporary recommendations shall be in the appropriate format as required.
- D. **SEDIMENT BASIN DESIGN:** The sediment basin design recommendations shall be completed in accordance with MDOT Roadway Design Manual, MDOT Design Memos, and any other guidance as applicable. Sediment basin recommendations shall be in the appropriate format as required. Sediment basin design shall include all items as applicable as stated for Final Structure Recommendations.
- E. **HYDRAULIC MODELS AND CALCULATIONS:** Hydraulic models shall be provided when required. Input and output from software and any other calculations used in hydraulic design shall be provided.
- F. **HYDRAULIC REPORT:** Hydraulic reports shall be provided when required, and shall be signed and sealed by the CONSULTANT's engineer.

The CONSULTANT shall submit the hydraulic studies and recommendations to the Department for review.

The CONSULTANT will allow approximately three (3) weeks for review by the MDOT in their progress schedule unless indicated otherwise. Upon completion of the review by the MDOT, comments shall be provided to the CONSULTANT. The CONSULTANT shall address the comments and provide updated studies and recommendations for subsequent review. Any changes or revisions required as a result of the above reviews shall be considered as part of the covered work.

If changes result from the field inspection or the MDOT'S review, the CONSULTANT shall provide revised hydraulic studies and recommendations, amended hydraulic analysis and revised drawings as appropriate.

The CONSULTANT shall prepare and submit Final Hydraulic Studies and Recommendations in accordance with the MDOT's format and shall account for any changes from the field inspection to the MDOT for review and approval. **Documentation from the field inspection shall be added to the report including to statements for any revisions and any additional items indicated.**

One (1) complete set of the Final Hydraulic studies, design/analysis computations, supporting data and reports shall be submitted to the MDOT after all changes from the field inspection and COMMISSION's review have been made. This submittal shall include: 1) Computer input and output (electronic); 2) Computations; 3); 4) Supporting drawings; 5) All correspondence with governmental and regulatory agencies regarding levees and water crossings; and 6) any additional items indicated in the Work Assignment. In the event a FEMA regulatory floodway is involved, the CONSULTANT shall also submit a copy of the following as appropriate: 1)FEMA flood study data; 2) Topographic maps showing revised floodway and floodplain boundaries (when directed by the COMMISSION); 3) No-Rise/No-Impact certification; 4) CLOMR application (when directed by the MDOT); 5) LOMR (when directed by the MDOT); and 6) All correspondence with FEMA and the Community Floodplain Administrator.

The CONSULTANT shall submit one (1) FINAL hard copy, bound hydraulic report when required including a CD/DVD of all pertinent digital files including a color PDF of the report. The CD/DVD shall be located in the back of the report.

All structures shall be drawn to proper flowlines, dimensions and labeled in the cross section file.

Part 4 - FIELD INSPECTION PLANS

After the field survey has been completed, the CONSULTANT will participate in a meeting in order to make a recommendation on which improvements will be included in plan development.

The CONSULTANT shall then prepare and submit field inspection plans in accordance with the LPA'S format. The field inspection plans shall contain, as a minimum:

- A. ROADWAY PLANS: Title sheet, typical sections, preliminary listing of pay items, plan and profile sheets showing all geometrics, profile grades, construction limits, cross-sections, preliminary earthwork quantities, preliminary pavement marking sheets, size and location of all

drainage structures, as well as any traffic control that will be required during construction. Cross drain structures shall be plotted on the cross sections.

The field review plans will include Professional Engineering and Technical Services in connection with the design of Water and Sewer Line Replacement. The project consists of the replacement of the water and sanitary sewer utilities that are affected by the roadway project. Preliminary Design Phase Services include preliminary design and layout of the water and sewer utilities. Specific items include, but are not limited to:

- 1.1 Preliminary Design Engineering Phase – The work in the Preliminary Design Engineering Phase will be initiated upon receipt of the Authorization to Proceed and shall be completed in the following steps.
 - 1.1.1 Consult with the OWNER and CLIENT to clarify and define the requirements for the Project and review available data.
 - 1.1.2 Assemble and review available data which may be pertinent to the design of the project.
 - 1.1.3 Review topographic survey and subsurface investigation information provided by the Client.
 - 1.1.4 Internal television (TV) inspection of sewers and clean sewer lines as necessary for design purposes.
 - 1.1.5 Prepare preliminary design of water and sewer line improvements to include replacement or renovation as needed. Consult with OWNER to confirm preferences to water and sewer utility improvements following preliminary design.

After the field review is conducted, the CONSULTANT shall provide the LPA with written updated construction cost estimate. These estimates shall be based on historical cost data from similar MDOT projects.

The CONSULTANT will provide plans for and participate in up to two public meeting which will be facilitated by the LPA.

Any other incidental drawings needed to show pertinent topographical features or special treatments shall be included with these field inspection plans. Any remedial measures required by the LPA's S.O.P. TMD-20-14-00-000, Standard Procedures for Construction of Roadways Through High Volume Change Soils, must be identified and incorporated into the design of right-of-way plans. The CONSULTANT shall submit four (4) sets of plans for review by the LPA prior to requesting the Field Inspection. The LPA shall mark on these copies of the plans all revisions or changes required and return same to the CONSULTANT. Allow approximately three (3) weeks for review by the LPA. After completing any revisions, the CONSULTANT shall submit to the LPA one (1) set of Field Inspection plans for a Field Inspection with representatives of the LPA and the CONSULTANT at a date mutually agreed upon by both parties. Allow approximately three (3) weeks from the submittal date of the reproducibles for scheduling and completing the Field Inspection.

OFFICE REVIEW PLANS:

Work shall consist of all services required for the production of final contract plans.

Unless stated otherwise in the CONTRACT, the following specific requirements are typical for this phase:

Part 1 - OFFICE REVIEW PLANS

After the Office Review plans (100% plan development, pending final review) are complete, the CONSULTANT shall submit one (1) set of reproducible plans and quantity calculations in 8.5"x11" format for review by the LPA. A pdf file of the quantity calculations shall also be submitted. A final Office Review will be required and the CONSULTANT shall be required to attend. Allow approximately three (3) weeks from the submittal date of the reproducibles for scheduling and completing the Office Review. In the office review, the LPA shall review and mark the plans with all required revisions.

The office review plans will include Professional Engineering and Technical Services in connection with the design of Water and Sewer Line Replacement. The project consists of the replacement of water and sanitary sewer utilities that are affected by the roadway project. Preliminary Design Phase Services include preliminary design and layout of the water and sewer utilities. Specific items in the scope of work include, but are not limited to:

- 1.2 Perform detailed design and prepare construction drawings for improvements.
 - 1.2.1 Prepare set of contract documents and specifications for bidding.
 - 1.2.2 Prepare recap of quantities and Opinion of Probable Construction Cost estimate.
 - 1.2.3 Submit one set of the above 100% design documents to the OWNER for review and approval. Submit one set of the above 100% design documents to the Mississippi Department of Environmental Quality (MDEQ) and Mississippi State Department of Health (MSDH) for review and approval.

After the Office Review is conducted, the CONSULTANT shall provide the LPA with a written updated construction cost estimate. This estimate shall be based on the plan quantities and historical cost data for the pay items.

Part 2 - FINAL CONTRACT PLANS

The final contract plans shall include information such as, but not limited to:

-
- A. ROADWAY PLANS: Title sheet; detailed index; general notes; typical sections; summary of quantities; estimated quantities; plan-profile sheets; special design sheets; traffic control plan; complete form grades for and channelized intersections (in accordance with current Design Manual, at 25 feet intervals); and estimated quantities; detailed pavement marking sheets, final cross-sections; water/sewer replacement plans, and all notes and data used to develop the plans.
- B. Submittal: Unless otherwise specified in the CONTRACT, after all revisions have been made, the CONSULTANT shall submit the final contract plans including all survey notes, design, special provisions, estimates of cost and revised quantity computations (2 sets), Two (2) complete sets of structural design computations, and all notes or other data used in development of the plans including Raw Data and ASCII coordinate files. The design computations shall be legible, neat and orderly, and properly identified and referenced. All analysis computations and pertinent sketches are understood to be part of the design computations.

The final contract plans shall be accompanied by a written certification and completed checklist from the CONSULTANT that a detailed check of the plans, including quantity computations, has been made prior to submission. This review is to include a detailed check of the earthwork quantities for any amount of earthwork, unless otherwise approved by the LPA. The CONSULTANT shall submit a list of all comments, the resolution to the comments, and one (1) PDF scan of the marked-up plans used to complete the CONSULTANT's internal quality control review to confirm that a detailed review has been performed by the CONSULTANT prior to final contract plans submittal. The plans may not be accepted without this written certification and completed checklist.

Final contract plans shall be submitted as original drawings.

All related electronic files shall be submitted with original drawings on CD/DVD with a project description (including Project Number, Route, and County) and the words "Final Plans," and the date written on the exterior of the disk. In lieu of CD/DVD, the CONSULTANT may transmit the files by FTP or e-mail. The electronic CADD files may be in a compressed (zipped) format.

The CONSULTANT shall prepare all special provisions pertinent to the intent of the plans unless the LPA has on hand suitable special provisions that will be used.

The CONSULTANT will be responsible for updating the PS&E for routine changes and updates to policies and standards one time after the final PS&E is submitted, at the direction of the LPA.

TRAFFIC ENGINEERING:

A. TRAFFIC SIGNAL DESIGN:

1. Traffic Signal Plans:

Design of traffic signal plans will include layout of traffic signal poles and controllers, type of poles to be used, geometric roadway changes if necessary, surveys, equipment and

component design and recapitulation of quantities, and design of interconnected traffic signal systems and design/ method of interconnection.

2. Signal Timing Plans:

Signal system phase times, cycle lengths and intersection offsets will be developed using approved timing analyses software at the direction of the Roadway Design Division Engineer, while in consultation with the Traffic Engineering Division. Timing information will be reduced to spreadsheet format to facilitate data entry by, or under the direction of, the Traffic Engineering Division.

B. PERMANENT SIGNING PLANS AND DETAILS:

Permanent signing plans and details for new construction projects shall be developed in accordance with the requirements of the MUTCD, MDOT signing policies and practices and at the direction of the Roadway Design Division Engineer, while in consultation with the Traffic Engineering Division.

C. OTHER RELATED TRAFFIC/DESIGN SERVICES:

Examples of other related traffic engineering services may include the following:

1. Preparation of Special Provisions to the 2004 Standard Specifications for Road and Bridge Construction and Supplemental Specifications (or later version); accident collision diagrams; attendance at MDOT meetings to consult on traffic engineering matters; preparation of construction estimates and opinions of probable costs; review plans and contract documents prepared by other departments/districts or CONSULTANTS.
2. ITS projects as directed by the Roadway Design Division Engineer, while in consultation with the ITS Engineer which may include: CCTV traffic surveillance cameras, video detection cameras or other forms of vehicle detection, CMS and DMS, TMC modifications and additions, and fiber optic cable or other communication devices.
3. As directed, conduct maintenance inspections and/or field inventories of traffic signals, signal systems and signage.

UTILITIES:

The Consultant will locate approximate locations of telephone, electricity, gas, water, cable, sewer and other utilities which will affect the PROJECT from information provided by the LPA and private utility companies and from CONSULTANT'S surveys.

The CONSULTANT will coordinate with the LPA and representatives of utility companies to mitigate the relocation or adjustment of utility conflicts.

The CONSULTANT will schedule progress meetings as required to effectively coordinate with the LPA. The CONSULTANT will be responsible for preparing the minutes of these progress meetings.

PS&E ASSEMBLY:

Submittal and authorization of the PS&E Assembly is the final stage of project development. The LPA must obtain authorization of the PS&E Assembly prior to advertising the project.

The CONSULTANT shall submit to MDOT all necessary documentation as set forth in the latest edition of the Project Development Manual for Local Public Agencies.

BID DOCUMENT PREPARATION:

The CONSULTANT shall prepare all special provisions pertinent to the intent of the plans. Once the PS&E Assembly has been approved by MDOT and the authorization to advertise for bids has been obtained, the CONSULTANT shall be notified to advise the LPA that the legal notice for advertising for bids can be submitted for publication. The CONSULTANT shall issue plans and proposals to prospective bidders during the advertising period and shall attend the letting and assist in tabulation and evaluation of bids.

EXHIBIT D

PAYMENTS TO ENGINEER

1.1 **Payments to Engineer**

Owner will pay **ENGINEER** for Services rendered under Section 1, as supplemented by Exhibit B, "Scope of Services", the following amounts:

1.1.1 OWNER shall pay ENGINEER on the basis of ENGINEER's Direct Labor Cost times a factor of 2.57 times a fixed fee of 12%. Reimbursable Expenses shall be billed to the OWNER at direct cost to the ENGINEER. The total cost for Engineering Services under this contract shall not exceed \$748,625.00 unless Additional Services are requested by and authorized in writing by the OWNER.

1.1.2 For Additional Services, OWNER shall pay ENGINEER for Additional Services rendered under Section 2 of this Agreement on the basis of ENGINEER's Direct Labor Costs times a factor of 2.57 times a fee equal to 12% plus Reimbursable Expenses. Payments to ENGINEER for Additional Services shall be made in accordance with paragraph 5.2 of this Agreement.

1.1.3 Payments to ENGINEER by OWNER are not contingent on any factor except ENGINEER's ability to provide services in a manner consistent with that standard of care and skill ordinarily exercised by members of the profession currently practicing in the same locality under similar conditions.

Payments to ENGINEER by OWNER specifically are not contingent on OWNER's receipt of grants for the Project or OWNER's decision to suspend or cancel the Project.