

Michigan Department of Transportation

**SCOPE OF SERVICE
FOR
CONSTRUCTION SERVICES**
Full Construction Engineering
REVISED as of 9.29.10

CONTROL SECTION(S): 63043

JOB NUMBER(S): 55658A, 103568A

PROJECT LOCATION: M-59 from Opdyke Road to Crooks Road

PROJECT DESCRIPTION:

The project consists of but is not limited to the following work items:

- Pavement patching and HMA overlay
- Minor geometric improvements
- Guardrail and signing upgrades
- Landscaping
- Rehabilitation of the I-75 and M-59 interchange ramps
- Bridge rehabilitation of R02 and R03 of 63043:
 - Deep overlay, paint, substructure repair, pin and hanger replacement

The Consultant Construction Engineering Services for oversight are as follows: project administration; inspection; staking; quality assurance testing and reporting; measurement, computation, and documentation of quantities; reporting and record keeping; and finalizing all project documentation.

ANTICIPATED START DATE: February 2011

ANTICIPATED COMPLETION DATE: October 2013
Including water and cultivating

PRIMARY PREQUALIFICATION CLASSIFICATION:

Bridge Construction Engineering
Road Construction Engineering

SECONDARY PREQUALIFICATION CLASSIFICATION:

Bituminous Pavement Inspection
Construction Staking
Density Inspection & Testing
Portland Cement Concrete Inspection & Testing
Bridge Painting Inspection

DBE REQUIREMENT: 10%

ESTIMATED CONSTRUCTION COST: \$15,900,000

MDOT PROJECT MANAGER:

Dennis Cooper – Resident Engineer
Region/TSC/Office: Metro/Oakland
Address: 800 Vanguard Drive, Pontiac MI 48341
Phone: 248-451-2426
Fax: 248-451-0050
E-mail: cooperd@michigan.gov

The Consultant shall contact the Project Manager prior to beginning any work on this Project.

GENERAL INFORMATION:

The Consultant shall provide, to the satisfaction of the Department, Construction Engineering Services as generally described herein: project for construction work to be performed by the Construction Contractor until completion of work by the Construction Contractor and acceptance of the Project and construction engineering services by the Department.

The Consultant shall furnish all services and labor necessary to conduct and complete the Construction Engineering Services described herein. The Consultant shall also furnish all materials, equipment, supplies, and incidentals necessary to perform the Services (other than those designated in writing to be furnished by the Department), and check and/or test the materials, equipment, supplies, and incidentals as necessary in carrying out this work. The Services shall be performed to the satisfaction of the Department consistent with applicable professional standards.

- A. The Consultant's principal contact with the Department shall be through the designated Project Manager.
- B. The Services described herein are financed with public funds. The Consultant shall comply with all applicable Federal and State laws, rules, and regulations
- C. The Consultant agrees to demonstrate knowledge of, and performance in compliance with, the standard construction practices of the Department; the Project construction contract, proposal, and plans; the Standard Specifications for Construction and all applicable publications referenced within; the Michigan Construction Manual; the Materials Sampling Guide; the Materials Quality Assurance Procedures Manual; the Density Control Handbook; and any and all other references, guidelines, and procedures manuals needed to carry out the work described herein in an appropriate manner.

CONSULTANT RESPONSIBILITIES:

- A. **Safety:** The Consultant shall perform field operations in accordance with the Department's Personal Protective Equipment (PPE) Policy as stated in the MDOT Guidance Document #10118. A current copy of MDOT's PPE Policy is available on the Bulletin Board System. The Consultant shall perform field operations in accordance with MIOSHA regulations and accepted safety practices.
- B. **Project Engineer:** Perform as the Project Engineer for the Project consistent with the Department's practice and in accordance with the Specifications, Plans, Proposal, the Michigan Construction Manual, the Materials Sampling Guide, and any and all other applicable references, guidelines, and/or procedures manuals. Assign the Project Engineer as liaison between the Consultant and Department-designated Project Manager.
- C. **Inspectors:** Perform as the Inspector for the Project consistent with the Department's practice and in accordance with the Specifications, Plans, Proposal, the Michigan Construction Manual, the Materials Sampling Guide, and any and all other applicable references, guidelines, and/or procedures manuals. The consultant shall assign a sufficient number of qualified and experienced technicians to this Project to perform the services in a quality manner to avoid any delay to the Construction Contractor. Personnel performing inspection and testing on bituminous, Portland cement, aggregate or for density must have the appropriate certification and level for the inspection and testing that is being performed.
- D. **Office Support and Equipment:** Provide an experienced technical assistance knowledgeable about all aspects of the Field Manager system, and procedures regarding project record documentation. Provide administrative support. Provide all computer equipment necessary to run Field Manager system.

- E. Meetings:** Arrange and conduct conferences and meetings required carrying out the services or as may be required by the Project Manager. Prepare and distribute minutes of all meetings except the Preconstruction meeting.
- F. Coordination:** Provide appropriate coordination and contact, public relations, and cooperation with all affected local, state, and/or federal agencies including the Federal Highway Administration; other Consultants and other Contractors; the general public; utilities and railroad companies; and local police, fire, and emergency services which may be affected by the Project and which are deemed to be the responsibility of the Consultant by the Department.
- G. Staking:** Perform all staking in accordance with Department standards, including, but not limited to, all staking to be performed by the Engineer as indicated in the 2003 Standard of Specifications for Construction, including Preliminary and Mitigation. Perform all staking to be performed by the Engineer, to ensure accuracy and compliance with the contract documents. Resolve any plan errors, discrepancies or omissions identified by the Contractor and/or Vendor and notify the Project Manager.
- H. Progress:** Keep daily diaries, sketches, logs, and records consistent with Department practice as may be needed to record the Contractor's progress. Notify the Project Manager of any anticipated Contractor's requests for extensions of time. Notify the Project Manager upon receipt of any Contractor's requests for extensions of time.
- I. Changes/Extras/Adjustments:** Notify the Project Manager immediately of any unanticipated Project conditions and any changes, extras, or adjustments to the contract before processing a Work Order and/or Recommendation.
- J. Contentious Issues:** Resolve any problems, issues, discrepancies, or other items brought to the attention of the Consultant by the Contractor. Provide written documentation of the resolution of such issues. Keep the Project Manager informed of all such issues.
- K. Contractor Claims:** Represent the Department as the Project Engineer on any and all claims for extra compensation and denied extensions of time requests filed on behalf of the Construction Contractor and/or Subcontractor on the Project against the Department. These claims shall be represented by the Consultant in accordance with Section 104.09 of the most current Standard Specification for Construction and/or the Department's Written Claim Procedures in effect at the time the Construction Contractor files the claim.

- L. **Staff Reductions:** Withdraw any personnel or halt any services no longer required, at the request of the Department, or within a reasonable time after the lack of need becomes apparent to the Consultant or the Project Manager. The consultant will not be reimbursed for the cost of personnel charged to a project that the Project Manager has determined was unnecessary.
- M. **Consultant Deliverables:** Collect, properly label or identify, and deliver to the Department all original diaries, logs, notebooks, accounts, records, reports, other documents, and Project files prepared by the Consultant in the performance of the Agreement, upon completion or termination of the Agreement. Return, upon completion or termination of the Agreement, all Specifications, Manuals, guides, written instructions, construction contracts and plans, unused forms, and all other documents and materials furnished by the Department. The Consultant may be responsible for replacing lost documents or materials at a fair and reasonable price.
- N. **Design Changes:** Due to the complexity of this project, the consultant shall be responsible for all necessary design changes with approval from the Project Engineer Manager.
- O. The Consultant shall furnish all Project-specific construction contracts, proposals, and plans as deemed necessary for the services required.

For Environmental Issues the Consultant Shall:

1. Soil Erosion and Sedimentation Control: Have a thorough working knowledge of the Department's SESC Manual and other contract documents regarding soil erosion and sedimentation control. Assign personnel that possess a current SESC training certificate and NPDES construction stormwater operator certification to perform inspection on areas where soil erosion and sedimentation controls are needed. Ensure that a person in possession of a current SESC training certificate is onsite at all times during normal working hours and available to meet with MDEQ personnel who may visit the site. Request that the MDEQ personnel provide a copy of any inspection report that may be generated as a result of the visit to the Project Manager.

Perform inspection of the construction site to assure that specified soil erosion and sedimentation controls are installed correctly, performing as intended, and maintained daily. Provide recommendations to the Project Manager for modification of the control measures shown on the plans as may be required to improve their effectiveness. Immediately report to the Project Manager any deficiencies in the soil erosion and sedimentation control measures or non-compliance by the Contractor with the specifications governing soil erosion and sedimentation control. If corrective action is necessary, document the action and the required timeframe for completion. Follow up to document that the action is completed within the statutory and/or MDOT-specified timeframes. Report the Contractor's failure to complete the corrective actions within the required timeframe to the Project Manager.

2. Storm Water Management: Have a thorough working knowledge of the Department's Storm Water Management Plan. Perform inspection of the construction site to ensure that the Contractor's operation is following pollution prevention and good housekeeping best management practices conforming to the Department's Storm Water Management Plan. Notify the Project Manager immediately of the occurrence of, or potential for, release of polluting material to the ground, groundwater, surface water, or storm water drainage system including open ditches, culverts, and enclosed storm sewers.

3. Environmental Permits: Have a thorough working knowledge of the construction requirements of all project specific environmental permits issued to MDOT by the MDEQ Land & Water Management Division, US Corp of Engineers, or other permitting agency. Inspect project areas covered by these permits and assure that the Contractor complies with the permit requirements. Report to the Project Manager any potential for or occurrence of violation of these permits. Fully document all site conditions and actions taken regarding potential or actual violations of the permit requirements.

4. Other Environmental Issues: Have a thorough working knowledge of the Department's specifications regarding bridge painting, diamond grinding, hydrodemolition, and hazardous materials. Ensure that the Contractor complies with these specifications, and maintain proper documentation.

5. Inspection Reports: Complete inspection reports, including but not limited to, Inspector's Daily Report (Form 1122) and NPDES/SESC Inspection Report (Form 1126), as necessary to fully document all site conditions and any corrective action required and completed related to environmental issues. Provide digital photos as necessary to document conditions and all corrective actions.

PROJECT INSPECTION

- A. Ongoing Inspection:** Provide inspection of all Contractor field construction work, provide quality control, and confirm substantial conformance with the Specifications, Plans, and Proposal. Arrange for non-compliance work to be made whole by the Contractor or to find the non-compliance work acceptable to the Consultant and, where necessary, to the MDOT Design Project Manager. Inform the above Project Manager of non-compliance work and trends toward borderline compliance.
- B. Final Inspection:** Complete a final inspection of all work included in the Project, or such portions thereof eligible for acceptance, after notification by the Contractor that the work is completed or after the Consultant's records show the work is completed. The final inspection shall include notifying the Contractor in writing of particular defects to be remedied if work is not acceptable to the Consultant.

- C. **Final Acceptance:** Ascertain that each and every part of the Project has been performed in accordance with the plans and specifications, or such modifications thereof as may have been approved, and accept the Project. Invite the Project Manager and other Department personnel, as directed by current Department policy, to participate in the final acceptance.

TESTING AND REPORTING

- A. **Material Quality Assurance Sampling and/or Testing and Density Control:** Conduct quality assurance sampling and/or testing of materials including but not limited to, Portland cement concrete, bituminous mixtures, aggregates, and density testing and reporting in accordance with MDOT's Materials Source Guide, Materials Quality Assurance Procedures Manual, Density Control Handbook, and any or all other applicable referenced or included Contract Documents. Determine the acceptability of materials based on their respective specification requirements. Immediately inform the Project Manager of non-compliance work and trends toward borderline compliance. Reject Contractor's work and materials not in compliance with the Contract Documents or as directed by MDOT. **The Prime Consultant will be held accountable for all quality assurance activities and will be reimbursed for these activities unless otherwise indicated in writing by the MDOT project manager that the Prime Consultant is not responsible for these services.**
- B. **Material Certification:** Make certain that acceptable test reports and/or material certifications from the supplier have been received, prior to the incorporation of materials in the work, for materials tested off the Project site.
- C. **Material Reports:** Submit Material test reports, including but not limited, the Inspector's Report of Concrete Placed 1174A, Aggregate Inspection Reports 1900 & 1901, Bituminous QA reports, Concrete QA reports, and the "Moisture and Density Determination, Nuclear Method", Form 582B, etc. to the distribution list within one day of the testing. The efficiency of the consultant in getting the "Moisture and Density Determination, Nuclear Method", Form 582B, copy to the Lansing, Density Technology Unit, 8885 Ricks Road, Lansing, MI 48909 will be measured by that unit and reflected on the consultant's evaluation.

The consultant and any sub-consultants contracted by the Michigan Department of Transportation (MDOT) to perform density testing services that use equipment regulated by the Nuclear Regulatory Commission (NRC) shall:

1. **Possess a valid license issued by the NRC, or recognized Agreement State, for ownership and use of sealed sources contained within portable nuclear density gauges.**

2. Provide the Radiation Safety Office (RSO) of MDOT with a copy of the aforementioned license.
3. Comply with all rules and regulations set forth by Title 10 (Energy) and 49 (Transportation).

Failure of any of the above will be found in noncompliance with the contract.

MEASUREMENT, COMPUTATION AND DOCUMENTATION OF QUANTITIES

- A. **Documentation:** Measure and compute quantities, and provide appropriate documentation of all materials incorporated in the work and items of work completed, and maintain an item record account using Field Manager software.

The Consultant must obtain and be able to use the FieldManager Suite of Software for this project. Contact Info Tech, Inc. at (352) 381-4400 or fax (352) 381-4444 or (www.fieldmanager.com) to obtain software and information on training. Since this software will be used on all MDOT projects in the future, the cost of this software cannot be charged as a direct expense for this project. Consultants must keep their version of the FieldManager Suite of software current with the version being used by MDOT.

- B. Insufficient Tested Materials: Track insufficient tested materials and notify the Contractor on a weekly basis.

REPORTING AND RECORD KEEPING

- A. **Consultant Reports:** Prepare such periodic, intermediate and final reports and records as may be required by the Department and as are applicable to the Project, which may include, but are not limited to:
- a. **Inspector's Daily Reports,**
 - b. **Work Orders,**
 - c. **Change Orders**
 - d. **Construction Item and Tested Material Records using FieldManager,**
 - e. **Transfer of Tested Materials,**
 - f. **Monthly Report on Material Inspection,**
 - g. **Moisture and Density Determination Reports (Form 582BM)**
 - h. **Inspector's Report of Concrete Placed (Form 1174A-M)**
 - i. **NPDES Storm water Operator Reports,**
 - j. **Labor Compliance, such as the Weekly Employment and OJT Report (Form 1199),**
 - k. **Construction Estimate Bi-Weekly Report,**
 - l. **Bi-Weekly Construction Progress Report and Weekly Statement of Working Days Charged**

- m. **Force Accounts**
 - n. **Contract Modifications (Recommendations and Authorizations)**
 - o. **Extension of Time and Liquidated Damages**
 - p. **Contractor Evaluation (Form 1182)**
 - q. **Reduction in Reserve**
 - r. **Complete Post Construction Review including form 285-2, if required by the Project Manager.**
 - s. **Other records and/or reports as required for the individual Project by the Project Manager and/or as required by Specifications, Plans, Proposal, the Michigan Construction Manual, the Materials Sampling Guide, and any and all other applicable references, guidelines, and/or procedures manuals.**
- B. Reports-Contractor Generated:** Review, process, and/or approve Construction Contractor submittal of records and reports required by the Department as applicable to the Project which may include, but not limited to:
- a. Working Drawings,
 - b. Weekly Employment Reports, Certified Payrolls
 - c. Contractor's claims for additional compensation and extension(s) of time, and
 - d. Other reports and records as required for the individual Project by the Project Manager.
- C. Project Files:** Maintain project files in accordance with the MDOT Office Manual and Departmental procedures. Send copies of select correspondence and documentation to the Project Manager.

CLOSING ALL PROJECT DOCUMENTATION

- A. Final Measure and Summarize:** Final field measure applicable items of work. Prepare final summaries for applicable items of work.
- B. Project Review/Certification:** Participate in and resolve items determined to be insufficient during the Department's review(s) of project records and/or during the Project Engineer Certification Process prior to submitting the Final Estimate. Within 45 calendar days of the actual project completion date, the project records shall be ready for the Final Records Review.

Final Documents: Prepare and submit the Final Estimate, Final Quantity Sheets, Review the Final Marked As-Constructed Plans, and the Design/Construction Package Evaluation (Form 285-2). The Final Estimate Package shall be submitted to the Project Manager within 30 days of the Final Records Review.

MDOT RESPONSIBILITIES:

- A.** The Project Manager shall furnish to the Consultant all Project-specific construction contracts, proposals, plans, plan revisions, written instructions, and other information and/or data as deemed necessary by the Project Manager for the Services required herein. Unless such information is available to be downloaded on the MDOT web site.
- B.** The Department shall furnish off-site inspections and tests of steel, cement, bituminous mixture designs, sewer and drainage pipe, structural steel, prestressed girders and beams, traffic signs, and any other materials customarily tested in the Department laboratories with its own forces or by statewide contracts except concrete aggregates, aggregates, and concrete cylinders. The customary testing is described in the Materials Quality Assurance Manual with exceptions noted within the Specifications, Plans, and Proposal. The Consultant shall be responsible for the sampling and transportation of all the materials to be tested by Department personnel.
- C.** The Project Manager shall provide general monitoring and quality auditing inspection of the Project to assure that the Project has been completed in reasonable conformance with the plans and specifications for Project Acceptance and to determine that the work performed to date by the Consultant for Services rendered is reasonable and appropriate before approving the Consultant's requests for progress payments.
- D.** The Department shall provide the bituminous plant inspection required for Quality Assurance and will submit the QA reports to the Consultant Project Engineer for analysis and action. The Consultant shall still be responsible for all on-site bituminous inspection required, including, but not limited to, locating the required Quality Assurance cores, and coordinating with the contractor regarding this sampling.
- E.** The Department shall perform soil borings and subsurface investigation as necessary throughout the contract.
- F.** The Project Engineer/Manager will arrange and conduct the Preconstruction meeting. The Consultant will assist in preparing and distributing the meeting minutes.

CONSULTANT PAYMENT – Actual Cost Plus Fixed Fee:

Compensation for this project shall be on an **actual cost plus fixed fee** basis. This basis of payment typically includes an estimate of labor hours by classification or employee, hourly labor rates, applied overhead, other direct costs, subconsultant costs, and applied fixed fee.

All billings for services must be directed to the Department and follow the current guidelines. The latest copy of the "Professional Engineering Service Reimbursement Guidelines for Bureau of Highways" is available on MDOT's website. This document contains instructions and forms that must be followed and used for billing. Payment may be delayed or decreased if the instructions are not followed.

Payment to the Consultant for services rendered shall not exceed the maximum amount unless an increase is approved in accordance with the contract with the Consultant. Typically, billings must be submitted within 60 days after the completion of services for the current billing. The final billing must be received within 60 days of the completion of services. Refer to your contract for your specific contract terms.

Direct expenses, if applicable, will not be paid in excess of that allowed by the Department for its own employees in accordance with the State of Michigan's Standardized Travel Regulations. Supporting documentation must be submitted with the billing for all eligible expenses on the project in accordance with the Reimbursement Guidelines. The only hours that will be considered allowable charges for this contract are those that are directly attributable to the activities of this project.

~~**Project Staffing must be scheduled to eliminate overtime. Proposed scheduling to accomplish this must be included in the innovation portion of the RFP.**~~

Project Staffing must be scheduled to provide the service without overtime to the maximum extent possible. Proposed scheduling to accomplish this must be included in the innovation portion of the RFP.

The fixed fee for profit allowed for this project is 11.0% of the cost of direct labor and overhead.

The hours billed for inspectors will not begin until the inspectors report to the project site or to the project office.