

## CHECKLIST TO DESIGNATE AREAS OF EVALUATION FOR REQUESTS FOR PROPOSAL (RFP)

	REQUISITION NUMBER	DUE DATE	TIME DUE
MDOT PROJECT MANAGER	JOB NUMBER (JN)	CONTROL SECTION (CS)	
DESCRIPTION			
<b>MDOT PROJECT MANAGER:</b> Check all items to be included in RFP  WHITE = REQUIRED ** = OPTIONAL  Check the appropriate Tier in the box below		<b>CONSULTANT:</b> Provide only checked items below in proposal	
<input type="checkbox"/> <b>TIER I</b> (\$50,000 - \$150,000)	<input type="checkbox"/> <b>TIER II</b> (\$150,000-\$1,000,000)	<input type="checkbox"/> <b>TIER III</b> (>\$1,000,000)	
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Understanding of Service **
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<i>Innovations</i>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Organizational Chart
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Qualifications of Team
Not required as part of Official RFP	Not required as part of Official RFP	<input type="checkbox"/>	Quality Assurance/Quality Control **
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<b>Location:</b> The percentage of work performed in Michigan will be used for all selections unless the project is for on-site p=inspection or survey activities, then location should be scored using the distance from the consultant office to the on-site inspection or survey activity.
N/A	N/A	<input type="checkbox"/>	Presentation **
N/A	N/A	<input type="checkbox"/>	Technical Proposal (if Presentation is required)
3 pages (MDOT Forms not counted) ( <b>No Resumes</b> )	7 pages (MDOT Forms not counted)	14 pages (MDOT forms not counted)	Total maximum pages for RFP <b>not including key personnel resumes.</b> Resumes limited to 2 pages per key staff personnel.

**PROPOSAL AND BID SHEET EMAIL ADDRESS – [mdot-rfp-response@michigan.gov](mailto:mdot-rfp-response@michigan.gov)**

### GENERAL INFORMATION

Any questions relative to the scope of services must be submitted by e-mail to the MDOT Project Manager. Questions must be received by the Project Manager at least five (5) working days prior to the due date and time specified above. All questions and answers will be placed on the MDOT website as soon as possible after receipt of the questions, and at least three (3) days prior to the RFP due date deadline. The names of vendors submitting questions will not be disclosed.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

### MDOT FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION

**5100D** – Request for Proposal Cover Sheet

**5100J** – Consultant Data and Signature Sheet (Required only for firms not currently prequalified with MDOT)

**(These forms are not included in the proposal maximum page count.)**

**Michigan Department of Transportation**

**SCOPE OF SERVICE  
FOR  
EARLY PRELIMINARY ENGINEERING SERVICES**

Project Development Study

**Revised as of 8.11.14**

**CONTROL SECTION(S):** 25084, 25085, 25132

**JOB NUMBER(S):** 124308

**PROJECT LOCATION:**

The project is located at the I-69 / I-475 interchange in the city of Flint, Genesee County.

**PROJECT DESCRIPTION:**

MDOT is investigating the existing and future operational aspects of the interchange to develop a long-term strategy for work at the I-69 / I-475 interchange. The tasks associated with this project include:

- Performing LiDAR survey as in Attachment 1.
- Analyze traffic data, including crash information, for existing and future capacity.
- Review existing geometrics and perform operational and safety analysis.
- Performing in-depth bridge inspection for scoping purposes.
- Gathering socio-economic data that may have an effect on future interchange operations.
- Prepare recommended improvements and alternatives.
- Prepare cost estimates for recommendations.
- Review and analyze MDOT prepared alternatives.
- Provide cost comparisons of alternatives from a long-term maintenance and future contract work standpoint (including a no-action alternative).
- Identify environmental impacts of alternatives (4F impacts).
- Attend public meeting with MDOT to present study and recommendations.

The information contained in the Bridge Scoping Reports may be used by the Bridge Design Support Area to prepare rehabilitation plans. Therefore, the content of the reports will need to be sufficient to adequately convey the general physical condition of each structure and the specific areas in need of repair (some areas of the deck bottom will not be accessible due to false decking in place). Current design standards and minimum requirement criteria must be taken into account when recommending repairs.

The Consultant will be responsible for any additional minor survey pick up within the existing survey information required to complete this study.

**ANTICIPATED SERVICE START DATE:** 09/01/14

**ANTICIPATED SERVICE COMPLETION DATE:** 09/01/15

**PRIMARY PREQUALIFICATION CLASSIFICATION(S):**

Project Development Studies

**SECONDARY PREQUALIFICATION CLASSIFICATION(S):**

Bridge Project Scoping

Complex Bridges

Traffic Capacity Analysis and Geometric Studies

Complex Urban Freeway Design

Maintaining Traffic Plans and Provisions

Safety Studies

Road Design Surveys

Structure Surveys

Photogrammetric Control Surveys

Photogrammetry

Right of Way Surveys

**DBE REQUIREMENT:** 5%

**MDOT PROJECT ENGINEER MANAGER:**

Erik Tamlyn, P.E.

Davison TSC

9495 E. Potter Road

Davison, MI 48423

(989) 737-9128

tamlyne@michigan.gov

**CONSTRUCTION COST:**

The cost estimates shall consist of all work involved in designing and constructing the interchange alternatives including, but not limited to, right-of-way, drainage, structure replacement or rehabilitation, maintaining traffic, safety work, ramp reconstruction or replacement, bridge approach work, permanent signing, lighting, environmental concerns, and construction engineering.

**REQUIRED MDOT GUIDELINES AND STANDARDS:**

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Road Design Manual, Bridge Design Manual, Standard Plans, Published MDOT Design Advisories, Drainage Manual, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).

The Consultant is required to use the current MDOT1 workspace version of Bentley MicroStation for CADD applications and Bentley GEOPAK for road design. Consultant shall comply with all

MDOT CADD standards and file naming conventions.

**GENERAL INFORMATION:**

The Bay Region anticipates approximately \$75 million to be available for this project in fiscal year 2022.

**CONSULTANT RESPONSIBILITIES:**

Completion of this project includes, but is not limited to, the following:

The Consultant must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job and perform field operations in accordance with the Department's Personal Protective Equipment (PPE) policy as stated in the MDOT Guidance Document #10118.

Meet with the MDOT Project Manager to review project, location of data sources and contact persons, and review relevant MDOT operations. The Consultant shall review and clarify project issues, data needs and availability, and the sequence of events and team meetings that are essential to complete the project by the completion date.

**A. Bridge Scoping**

- a. Perform in-depth bridge inspection on all structural elements and provide bridge scoping documents to inventory existing structure condition at:
  - i. S10-25132-3 (I-69 EB over I-475)
  - ii. S10-25132-4 (I-69 WB over I-475)
  - iii. S10-25132-5 (I-69 EB to I-475 NB Ramp Bridge)
  - iv. S10-25132-6 (I-69 WB to I-475 SB Ramp Bridge)
  - v. S10-25132-7 (I-475 to I-69 Ramp Bridge)
- b. Some areas of deck bottom will not be accessible. It is expected that deficiencies in deck bottom will be detailed where accessible.
- c. Use of infrared equipment as means to determine bridge deck surface deficiencies is acceptable.

**B. Survey**

- a. Survey information is to be gathered utilizing LiDAR and, where needed along slopes, conventional survey methods. See Attachment 1.
- b. Complete needed survey information utilizing LiDAR at the following locations:
  - i. I-69 from Grand Traverse Street to CSX RR (West of Dort Hwy)
  - ii. I-475 from approximately 4,000 feet south of I-69 to Second Street
  - iii. All Ramps, including those to and from Chavez Drive and Saginaw Street
- c. Perform structure survey, including location of substructure units, underclearance, and deck elevation information:
  - i. S10-25132-3 I-69 EB over I-475
  - ii. S10-25132-4 I-69 WB over I-475
  - iii. S10-25132-5 I-69 EB to I-475 NB

- iv. S10-25132-6 I-69 WB to I-475 SB
- v. S10-25132-7 I-475 SB to I-69 EB and I-475 NB to I-69 WB
- d. Locate substructure unit offsets and provide underclearance information at:
  - i. R02-25132-7 GTW RR over I-475
  - ii. S52-25132 14<sup>th</sup> Street over I-475
  - iii. S09-25132 12<sup>th</sup> Street over I-475
  - iv. S15-25132 Fifth Street over I-475
  - v. S16-25132 Court Street over I-475
  - vi. S17-25132 Third Street over I-475
  - vii. S18-25132 Second Street over I-475
  - viii. S02-25051 Grand Traverse Street over I-69
  - ix. S03-25051 Church Street over I-69
  - x. S04-25051 Beach Street over I-69
  - xi. S05-25051 Saginaw Street over I-69
  - xii. S01-25074 Lapeer Road over I-69
  - xiii. S11-25132 I-69 On-Ramp from Saginaw & 9<sup>th</sup> over I-69 EB ramp to I-475 Ramp A
  - xiv. S12-25132 8<sup>th</sup> Street I-69 WB Off-Ramp over I-475 SB ramp to I-69 WB Ramp D
  - xv. S13-25132 SB Service Road On-Ramp to I-475 over I-475 SB ramp to I-69 WB
  - xvi. S14-25132 NB Service Road Off-Ramp from I-475 over I-69 WB to I-475 NB

**C. Traffic Analysis**

- a. Perform traffic capacity analysis of current operations as per P/PMS task 2125.
- b. Make the Project Manager aware of any additional traffic information that needs to be gathered to perform proper analysis. Request for additional traffic information is to be made within first two weeks after beginning of work on project.

**D. Safety Analysis**

- a. Obtain crash data and UD-10 police reports within project limits.
- b. Perform safety analysis as per P/PMS task 2155.

**E. Determine and Evaluate Interchange Alternatives**

- a. Review alternative proposed by MDOT for feasibility.
- b. Identify other potential alternatives and provide general illustrations with associated general cost estimates.
- c. After developing illustrative alternatives, a minimum of two alternatives, in addition to the 'do-nothing' option, are to be provided as preferred alternatives.
- d. Prepare plan view and profile view drawings of the horizontal and vertical alignments, respectively, of existing and proposed interchange layouts. Highlight areas that have R.O.W. impacts on proposed plan views. Encompass the limits needed to accommodate maintaining traffic in plan views.

- e. Prepare existing and proposed typical cross section views, including all information needed to adequately detail pavement, slope, and drainage information. Highlight areas that have R.O.W. impacts.
  - f. Prepare other drawings in areas that require increased detail necessary for clarification (not provided by the above drawings).
  - g. Determine need for Interstate Access Change Request (IACR). Prepare required documents in accordance with FHWA policy as found in the *Interchange System Access Informational Guide*.
- F. **Evaluation of Geometric Standards and Future Operations**
- a. Prepare a table of values to compare minimum standard values, existing values, and proposed treatment values of the preferred alternatives.
  - b. If the proposed treatment is not in accordance with the minimum standard values, provide adequate justification and reasoning, including documentation (i.e. information required on the Design Exception Request form FC26).
  - c. Analyze proposed alternatives for future operations including geometrics, level of service, and delay analysis.
  - d. Include underclearance information of all bridges within the influence of the preferred alternatives.
- G. **Cost Estimates**
- a. Prepare cost estimates for each preferred alternative. **Include and break-out Act 51 participation costs for the City of Flint.**
  - b. Provide road and bridge estimates of sufficient detail, utilizing MDOT Pay Items whenever possible. Break out individual structures, ramps, etc.
  - c. Address the following items:
    - i. Mainline Pavement
    - ii. Structural Components
    - iii. Drainage adjustments and/or improvements (including pump stations)
    - iv. Maintaining Traffic Costs
    - v. Permanent pavement markings / signs / signals
    - vi. Environmental mitigation
    - vii. Aesthetic opportunities
    - viii. Freeway lighting
    - ix. Intelligent Transportation System components
    - x. Miscellaneous
- H. **Environmental**
- a. Identify areas of potential environmental concern as per P/PMS task 2160 and include, at a minimum, the following:
  - b. Potential R.O.W. impacts
  - c. Proposed work to mitigate concerns (trees, wetlands, historic properties, etc.)
  - d. Impact on proposed alternative
  - e. Design considerations
- I. **Compare Alternatives**

- a. Compare long-term maintenance and contract work costs, including a deck replacement option, between alternatives.
  - b. Provide long term cost comparisons using life-cycle analysis methods.
- J. **Maintaining Traffic & Transportation Management Plan (TMP)**
- a. Prepare a draft transportation management plan (TMP) for the top two recommended alternatives as per the Work Zone Safety and Mobility Manual.
  - b. Provide advantages and disadvantages for maintaining traffic options for each alternative based on user delay, increased construction staging costs, and potential safety concerns.
  - c. Provide information on project impact of not only interstate traffic, but on local traffic as well.
- K. **Constructability and Construction Schedule**
- a. Comment and perform constructability review and complete MDOT form 1961 for the top two selected alternatives.
  - b. Critical Path
    - i. Provide network with sufficient detail including major work item milestones.
    - ii. Provide overall time frame and suggestions for construction.
- L. Maintain a Design Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.
- M. Maintain any correspondence sent, received, or gathered, that is related to the project, with MDOT, a sub-contractor, or the public.
- N. **Meetings**
- a. Hold project related meetings with MDOT Project Manager and other MDOT personnel including:
    - i. Project Kick-off Meeting
    - ii. Presentation of Preliminary Alternatives Meeting
    - iii. Presentation of Preferred Alternatives Meeting.
    - iv. Attend other meetings, including public meetings, open houses, etc., at the request of the MDOT Project Manager to assist in responding to concerns and questions.
  - b. Prepare a preliminary and final electronic presentation, suitable for a public meeting, in Microsoft Power-Point detailing the interchange alternatives.
  - c. The Consultant will provide to MDOT electronic copies (in Adobe PDF format) of the presentation materials, prior to the above mentioned meetings, for distribution to MDOT staff for review. The Consultant shall contact the Project Manager prior to the meeting dates for the exact number of copies that will be required for each meeting.
  - d. Prepare displays such as maps, plans, and drawings for MDOT meetings and public meetings as needed to clearly show information to MDOT personnel and the public.

- e. The Consultant representative shall record and submit type-written minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees.
- O. **Communication**
  - a. The MDOT Project Manager shall be the official MDOT contact person for the Consultant **and shall be made aware of all communications regarding this project**. The Consultant must either address or send a copy of all correspondence to the MDOT Project Manager. This includes all Subcontractor correspondence and verbal contact records.
  - b. The Consultant shall contact the MDOT Project Manager whenever discoveries or design alternatives have the potential to require changes in the scope, limits, quantities, costs, or right-of-way of the project.

## **TRAFFIC CONTROL**

The Consultant shall be responsible for all traffic control and equipment required to perform the tasks as outlined in this Scope of Early Preliminary Engineering Services. The MDOT snooper truck, or reach-all, may be available to perform in-depth bridge inspections tasks, but project delays as a result of scheduling MDOT equipment will not be acceptable.

## **MDOT PERMITS**

The Consultant shall be responsible for obtaining up to date access permits and pertinent information for tasks in MDOT Right of Way (ROW). This information can be obtained through Steve Gasser, Davison TSC Permits at (810) 653-7470. Traffic control shall be in accordance with the Michigan Manual of Uniform Traffic Control Devices (MMUTCD). Approval from the Davison TSC is required for any lane closures.

## **MONTHLY PROGRESS REPORT**

On the first of each month, the Consultant Project Manager shall submit a monthly project progress report to the Project Manager.

## **MDOT RESPONSIBILITIES:**

- A. Schedule and/or conduct any project related meetings.
- B. Furnish prints of old plans of the area, if available.
- C. Furnish interchange alternative information completed by MDOT.
- D. Furnish routine and detailed inspection information already performed at the existing structures.

- E. Provide known environmental issues that could impact design alternatives.
- F. Provide planning level traffic data and Traffic Analysis Report (TAR).
- G. Provide existing survey information.
- H. Portions of the above information posted to FTP site at:  
<ftp://ftpmidot.state.mi.us/124308/>

## **DELIVERABLES:**

The Consultant shall deliver all computer files associated with the project in their native format (spreadsheets, CADD files, GEOPAK files, Roadway Designer Templates etc.) on DVD, CD or uploaded to ProjectWise, as directed by the MDOT Project Manager. All CADD/GEOPAK files shall be created and identified with standard MDOT file names. It is the Consultant's responsibility to obtain up to date MicroStation and GEOPAK seed/configuration files necessary to comply with MDOT's CADD standards which are published monthly to the MDOT website. Any CADD/GEOPAK files that do not conform to MDOT standards will be returned to the Consultant for correction at the Consultant's expense.

All cost estimates shall be done in a spreadsheet format utilizing Microsoft Excel listed by pay item code. All drawings shall be done using Bentley Microstation format. Electronic files shall be submitted to the Project Manager containing the cost estimates, drawings, PowerPoint presentations, Adobe documents, and Microsoft Word formats of the report.

Provide traffic capacity calculations clearly labeling all variables used in determining level of service. Clearly reference or label the origin of all variables. List or highlight assumptions used in any capacity calculations.

Provide detailed structural information used in determining width and/or span of proposed structures. Analyze different superstructure types and supply calculations to validate findings.

Summarize all findings in a final report, with an executive summary that references an appendices section that details the findings. Provide an overview of the findings in the executive summary that is supported by the appendices. The executive summary is to contain, at a minimum:

- Existing traffic and geometric conditions
- Summary of alternatives that were developed and analyzed
- Summary of existing and proposed traffic operations
- Highlights of significant project impacts including, but not limited to, R.O.W. impacts, Design Exceptions, and environmental impacts
- Cost comparison of alternatives

Final report shall be on 8-1/2" x 11" paper and all plans and drawings in the report shall be on 11" x 17" paper. Supply electronic copy of report in Adobe PDF format. Five (5) color copies of the final report are to be bound with plan drawings folded as to allow for filing.

All plan drawings and other project related items shall meet all MDOT requirements and detailing practices (i.e., format, materials, symbols, patterns, and layout) or as otherwise directed by the Project Manager. All deliverables are subject to review and approval by MDOT.

**PROJECT SCHEDULE:**

The Consultant shall use the following events to prepare the proposed implementation schedule as required in the Guidelines for the Preparation of Responses on Assigned Design Services Contracts. These dates shall be used in preparing the Consultant's Monthly Progress Reports.

<b>Target Date</b>	<b>P/PMS Task No.</b>	<b>Description</b>
8/4/2014		
	2125	Traffic Capacity Analysis for EPE/Design
	3330	Conduct Survey (LiDAR)
	2140	Develop and Review Illustrative Alternatives
	2155	Request/Perform Safety Analysis for Studies
	2340	Develop and Review Practical Alternatives
	2510	Determine and Review Recommended Alternative
	2525	Prepare and Review Engineering Report
8/4/2015		Final Deliverables to MDOT

**FOR YOUR INFORMATION**

For questions on specific tasks, refer to the P/PMS Task Manual located MDOT website at [http://www.michigan.gov/documents/mdot/mdot\\_task\\_manual\\_297105\\_7.pdf](http://www.michigan.gov/documents/mdot/mdot_task_manual_297105_7.pdf).

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

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.

MDOT will reimburse the consultant for vehicle expenses and the costs of travel to and from project sites in accordance with MDOT's Travel and Vehicle Expense Reimbursement Guidelines, dated May 1, 2013. The guidelines can be found at [http://www.michigan.gov/documents/mdot/Final\\_Travel\\_Guidelines\\_05-01-13\\_420289\\_7.pdf?20130509082418](http://www.michigan.gov/documents/mdot/Final_Travel_Guidelines_05-01-13_420289_7.pdf?20130509082418). MDOT's travel and vehicle expense reimbursement policies are intended primarily for construction engineering work. Reimbursement for travel to and from project sites and for vehicle expenses for all other types of work will be approved on a case by case basis.

MDOT will pay overtime in accordance with MDOT's Overtime Reimbursement Guidelines, dated May 1, 2013. The guidelines can be found at [http://www.michigan.gov/documents/mdot/Final\\_Overtime\\_Guidelines\\_05-01-13\\_420286\\_7.pdf?20130509081848](http://www.michigan.gov/documents/mdot/Final_Overtime_Guidelines_05-01-13_420286_7.pdf?20130509081848). MDOT's overtime reimbursement policies are intended primarily for construction engineering work. Overtime reimbursement for all other types of work will be approved on a case by case basis.

## Attachment 1

### SURVEY METHODS AND TECHNOLOGIES FOR LiDAR and MOBILE MAPPING

JOB NUMBER: 124308      CONTROL SECTIONS: 25084, 25085, 25132

ROUTE: I-69 at I-475

The selected consultant surveyor shall contact MDOT Lansing Survey Support, Bay Region Surveyor and the MDOT Bay Region Project Manager to discuss this survey, the limits and deliverables in detail prior to preparing a work plan and price proposal.

#### TYPE OF SURVEY:

Road Design Survey (PPMS Task 3330)  
Structure Survey(PPMS Task 3340)  
Photogrammetric Control Survey (PPMS Task 3320) Mobile Mapping  
Photogrammetry (PPMS Task 3310) Precautionary for Mobile/Aerial LiDAR  
Right-Of-Way Survey(PPMS Task 4510)

#### PROJECT LIMITS & DESCRIPTION:

I-69 from Grand Traverse Street easterly to the CSX Railroad bridge just west of M-54(Dort Highway) and associated ramps at I-475, located in Genesee County.

I-475 from approximately 4,000 feet south of I-69 northerly to Second Street.

Project is for evaluating interchange alternatives, including possible reconfiguration.

**Traffic & Safety:** It is the Consultant's responsibility to contact the Davison TSC Traffic & Safety Engineer, Steve Pethers at (810) 653-7470 to discuss traffic and safety requirements prior to submitting a work plan and priced proposal and prior to beginning work activities in the project area. All costs for traffic control must be included in the priced proposal.

**Administration:** Progress reports shall include updates on the completion of survey tasks. A comprehensive Surveyor's Report is required to be submitted and shall explain each survey task and address any problems encountered during the course of the survey. It is recommended that the Consultant contact Greg Guikema of the Lansing Design Surveys Support Services at 517-373-0060 or by email at [guikemag@michigan.gov](mailto:guikemag@michigan.gov) to assist with the research of MDOT as-built plans and/or historical survey information.

**Control:** Primary and intermediate horizontal and vertical control shall be established for use

during construction and for future surveys. The FREEWAY scenario for setting control will apply as described in the Standards of Practice. Existing primary control monuments shall be utilized as best as possible. All control shall be described on the MDOT Survey Information Sheet to be included in the plans.

**Alignment:** The legal alignment of I-69 was developed and established in a 2003 survey JN59206/PN850. This information will be provided. Legal Alignment is required to be retraced for the limits of this project. Any alignment points recovered and/or set shall be described on the MDOT Survey Information Sheet to be included in the plans. As-constructed alignments will need to be developed if the legal alignment does not follow the as-built centerline of the road within the expected tolerances suitable for design and construction.

As-constructed alignments will be required for the ramps.

**Right-Of-Way:** Determine the existing Legal Right of Way lines for the length of the project including the entire interchanges and show them on the mapping.

**Property:** Government corners used for the retracement of the legal alignment and/or within the proposed construction limits shall be described on the MDOT Survey Information Sheet to be included in the plans. If necessary, a current L.C.R.C. shall be recorded under P.A. 74 of 1970.

**Mapping:**

Mapping limits:

- I-69 from Grand Traverse Street to CSX RR (West of Dort Hwy)
- I-475 from approximately 4,000 feet south of I-69 to Second Street
- All Ramps, including those to and from Chavez Drive and Saginaw Street
- Locate all utility surface manifestations within the mapping limits.
- Locate all other features within the mapping limits as necessary (e.g. signs, guardrails, tree lines, etc.)
- Underclearance measurements at each fascia and a general outline of the structure
- Requested Map Scale: 1" = 50'

Compare and merge ground survey surface from JN74379 project with data from this survey.

Structure Surveys of the following bridges will be required:

- S10-25132-3 I-69 EB over I-475
- S10-25132-4 I-69 WB over I-475
- S10-25132-5 I-69 EB to I-475 NB
- S10-25132-6 I-69 WB to I-475 SB
- S10-25132-7 I-475 SB to I-69 EB and I-475 NB to I-69 WB

The structure surveys shall provide the following for each structure and shall organize the information for each structure in separate electronic sub-folders under the mapping section of the deliverables:

- Bridge schematic(Plan and Elevation Views)
- Bridge Seat elevations
- Reference Point elevations
- Top of footing elevations
- Underclearance elevations- Low beam and roadway under beam shot
- Dimensions of existing substructure elements (including sketch)
- Sketch of dimensions of existing superstructure elements
- Face to Face existing substructure measurements
- Reference Point stationing and coordinates
- Angle of crossing of existing substructure units
- Photographs of structure
- 3D LiDAR point cloud of structure

Locate & dimension substructure unit offsets and provide underclearance information at:

- R02-25132-7 GTW RR over I-475
- S52-25132 14<sup>th</sup> Street over I-475
- S09-25132 12<sup>th</sup> Street over I-475
- S15-25132 Fifth Street over I-475
- S16-25132 Court Street over I-475
- S17-25132 Third Street over I-475
- S18-25132 Second Street over I-475
- S02-25051 Grand Traverse Street over I-69
- S03-25051 Church Street over I-69
- S04-25051 Beach Street over I-69
- S05-25051 Saginaw Street over I-69
- S01-25074 Lapeer Road over I-69
- S11-25132 I-69 On-Ramp from Saginaw & 9<sup>th</sup> over I-69 EB ramp to I-475 Ramp A
- S12-25132 8<sup>th</sup> Street I-69 WB Off-Ramp over I-475 SB ramp to I-69 WB Ramp D
- S13-25132 SB Service Road On-Ramp to I-475 over I-475 SB ramp to I-69 WB
- S14-25132 NB Service Road Off-Ramp from I-475 over I-69 WB to I-475 NB

**Mobile LiDAR Control:** Contact the MDOT Survey Project Manager to discuss the approach for control for this project and how the coordinate system shall be implemented. The Davison CORS (MIDS), Swartz Creek CORS (MISC), Birch Run CORS (BRCH) and Parshallville CORS (MIPV) surround the project and are within 8 to 25 miles of the project.

NAD83(2011) coordinates shall be established and used for the project.

Previous project work in the area indicates Primary control monuments set in 2003 (I-

69 Project) and 2005 (I-475 Project) may be usable for this project. Note that the coordinate basis and values for any monumentation used from the previous projects must be converted to NAD 83(2011) and/or re-observed to establish coordinates matching the coordinate system for this project.

In addition, it is anticipated that on site control for Mobile LiDAR acquisition will require setting 1 or 2 new Primary concrete monuments in the I-69/I-475 Interchange.

The Primary Monuments (concrete) will be the basis for control for local base stations for the mobile mapping as well as any subsequent RTK or total station survey work. It is anticipated that the proposed Primary Monuments will be used as local base stations for GPS observations during the mobile mapping acquisition. Targets for mobile mapping should be established based on these Primary Control points. Additional intermediate control will be required to be able to obtain requested mapping and information using conventional survey equipment throughout the project.

The horizontal coordinates are to be established via several hour static GPS observation sessions on the Primary Control that are post-processed holding the surrounding MDOT CORS fixed. Processing using OPUS with output to NAD83(2011) may also be used for comparison.

NGS Benchmarks and benchmarks from the previous projects are relatively close to the project. Vertical control should be transferred to the Primary Control monuments by using digital leveling from NGS 1<sup>st</sup> or 2<sup>nd</sup> order Benchmarks adjacent to and near the ends of the project.

Vertical Control and elevations for the remaining project control points should be established via digital leveling to all control points based on the elevations established on the Primary Control and benchmarks established from the NGS control.

New project benchmarks shall be established and spaced along the entire project per MDOT standards. Benchmarks should be spaced at approximately 1200 feet apart.

Control targets placed for Mobile LiDAR shall be tied to the project coordinates. Horizontal coordinates may be established using multiple occupation RTK GPS per MDOT Standards. Elevations of the control targets shall be established using digital leveling meeting MDOT standards.

**PROJECT DELIVERABLES:**

The current MDOT Survey Standards of Practice and the current MDOT QA/QC Checklist shall be utilized as **guidelines** for preparing the deliverables and project submittal.

Mobile LiDAR deliverables shall comply with 2014 MDOT Survey Standards of Practice including Appendix D.

Mobile LiDAR deliverables shall include the items listed in the attached “SURVEY METHODS

AND TECHNOLOGIES – LiDAR and Mobile Mapping”, **including multiple copies** of the electronic files containing the point clouds, images, reports, etc. and supporting files.

## **SURVEY METHODS AND TECHNOLOGIES – LiDAR and Mobile Mapping**

Use of static terrestrial laser scanning and mobile mapping (mobile terrestrial laser scanning or LiDAR) methods will be considered for completion of portions of this project providing a savings in schedule, time and costs, improved safety and reduced traffic control and costs, among other benefits can be shown while providing the required data accuracy.

Any use of these technologies shall conform to and utilize the **2014 or later MDOT Standards of Practice for Design Surveys, APPENDIX D (INTERIM Mobile Terrestrial LiDAR (MTL) Standards and Guidelines)** and the existing terrestrial scanning standards in **Appendix C (MDOT Static Terrestrial Laser Scanning (STLS) Standards and Guidelines)** and the Specifications / Guidelines based on the **Caltrans Survey Manual Chapter 15 Terrestrial Laser Scanning Specifications**. **Project deliverables and reports shall include the information, electronic files and reports referred to in the Caltrans Specifications under MTL Documentation.**

**Mobile Mapping is approved to be used on this MDOT project and the following shall apply:**

A Mobile Mapping trajectory plan and a ground control target layout plan (including the locations of any CORS GPS Stations and/or any local GPS base stations and how they are/were established) shall be submitted with the work plan and priced proposal and prior to start of work for review by Kelvin J. Wixtrom, P.S. and Lansing Design Surveys.

LiDAR acquisition shall be done when pavement is dry.

LiDAR acquisition should be obtained at traffic speeds to avoid impeding traffic but also ensuring adequate spacing from surrounding traffic so LiDAR collection is not obscured by traffic.

Multiple passes may be needed to eliminate as much obscured areas as possible.

LiDAR acquisition settings and operating speed shall be done in a manner to maintain accurate data and consistent data spacing throughout the project. Data extracted from LiDAR shall be delivered with a consistent spacing used by all operators. No significant spacing differences should be detectable in the extracted mapping throughout the project.

LiDAR acquisition shall include collecting images along the trajectory routes to colorize the point cloud. Images will also be required for supplemental viewing by designers. These images shall be rotated to an upright view, if needed, indexed, geo-referenced and delivered with associated trajectory and with the LiDAR data.

The trajectories, as driven, shall be processed/refined and, combined with the LiDAR data that has been acquired, shall be registered to the ground control targets. A portion of the ground control targets (typically about 1/3 to 2/3 of the total targets) shall be withheld from the

registration process and used as independent points solely for validation of the point cloud and derived project data.

### **Interim Early Deliverables**

Upon completion of the raw LiDAR processing and registration and **prior to mapping** extraction, copies of the following shall be provided to Lansing Design Surveys and the Survey Project Manager for review:

- Project report describing in detail how the mobile mapping project was done, number and general location of passes to acquire data, equipment used, datum surveyed on, and results of the processing.
- The trajectory plan and a ground control target layout plan (including the locations of any CORS GPS Stations and/or any local GPS base stations) use to complete the LiDAR data acquisition. Provide a copy of manufacturer's trajectory plot, a set of TopoDOT TopoMission project files and set of .kml/.kmz files.
- Reports and printouts from the processing software showing the results of the registration process.
- Target to cloud registration – Statistics and comparison of the point cloud to the targets
- Cloud to cloud registration – Statistics and comparison of adjoining overlapping point clouds.
- Separation of forward and reverse solution (difference between forward and reverse post-process roll, pitch, yaw and XYZ positions solution).
- Areas of the project that the data collected exceeded the maximum elapsed time or distance traveled of uncorrected IMU drift due to GNSS signal loss or obstruction.
- Comparison of elevation data from overlapping (side lap) runs
- Comparison of points at the area of overlap (end lap) if more than one GNSS base is used.
- Primary control list and least squares adjustment reports (i.e. LGO, Starnet, etc.) for the control.
- Intermediate control list and least squares adjustment reports (i.e. LGO, Starnet, etc.) for the control.
- Point listing of the Targets used for the Mobile mapping and the least squares adjustment reports (i.e. LGO, Starnet, etc.) for these points.
- Point listing of the Validation points used for the Mobile mapping and the least squares adjustment reports (i.e. LGO, Starnet, etc.) for these points.
- Project Accuracy reports of IMU data.
- Project Accuracy reports of GNSS data as well as PDOP and SV visibility.
- Project Trajectory reports showing forward/reverse comparison and amount of difference between runs, final results of combined forward/reverse adjusted trajectory and report of accuracies to the project control.
- Comparison spreadsheet showing the differences (fit) of the point cloud to the validation points. This spreadsheet shall include a resultant summary in NSSDA format showing the 95% difference in horizontal X and Y, and Vertical Z for the project.
- 3D Microstation DGN file and a .kmz file providing the graphical representation of the resulting differences between the project Point Cloud dataset and the targets and validation points.

## Final Deliverables

Copies of the final deliverables shall be provided to the Survey Project Manager and to Lansing Design Surveys and shall include the following:

- Project report describing in detail how the mobile mapping project was done, number and general location of passes to acquire data, equipment used, datum surveyed on, and results.
- Complete listing of the Registration processing reports listed above.
- Comparison spreadsheet showing the fit of the control points/targets to the point cloud. (The TopoDOT Control points to point cloud analysis tool that outputs a spreadsheet and chart diagram is one accepted option.)
- Comparison spreadsheet showing the fit of the validation points/targets to the processed point cloud.
- Comparison spreadsheet showing the differences (fit) of the final project DTM surface to the validation points. This spreadsheet shall include a resultant summary in NSSDA format showing the 95% difference in horizontal X and Y, and Vertical Z for the project.
- 3D Microstation DGN file and a .kmz file providing the graphical representation of the resulting differences between the final project DTM surface and the targets and validation points.
- 3D Microstation DGN file containing all mapping extracted from LiDAR point cloud.
- 3D Microstation DGN triangle file containing the terrain surface triangles created from the point cloud data.
- Terrain surface saved as a Geopak .TIN file generated from the point cloud data.
- LiDAR data tiled and saved in scanner native file format (such as Riegl .3dd, Cyclone .pts/.imp, etc.)
- LiDAR data with RGB and Intensity values tiled and saved as colorized .POD (Point Tools/Microstation point cloud file) files.
- DGN file showing the tile layout and naming of the .POD files. (If possible, use the same tile layout for both .POD and .LAS files.)
- LiDAR data collected shall be submitted in .LAS format with RGB values and intensity values.
- DGN file showing the tile layout and naming of the .LAS files. (If possible, use the same tile layout for both .POD and .LAS files.)
- Photo mosaic/Images along route that support the LiDAR .LAS point cloud. Provide a kml/kmz file, dgn index or direct folder naming that describes the organization of the images for easy access.

Point cloud files shall be provided on electronic media of an appropriate size to contain all project information. **Two (2) copies** shall be provided to MDOT Lansing Survey Support Unit. **A third (3<sup>rd</sup>) copy** shall be provided for use by the MDOT Region Surveyor. See also the MDOT standards for Design Surveys **Appendix F** for additional information on Media Standards.

LiDAR and Mobile Mapping information should be prepared and placed in a separate sub-folder named “LiDAR/Mobile Mapping” under the Project Mapping Folder and shall contain all information and LiDAR/Mobile Mapping deliverables relative to the project.

When other methods of survey and mapping are also employed for the project, the data shall be combined and merged with the mobile mapping data and the merged information provided in the appropriate electronic files per the project’s scope and requested deliverables.

**ATTACHMENT A**

**SCOPE OF SERVICE  
FOR  
DESIGN SURVEYS**

Survey Limits: As needed for Design, Right of Way, and Construction. A description of survey limits detailing length, width and cross roads must be included in the Survey Work Plan.

**NOTES:** The Selected Consultant shall discuss the scope of this survey with an MDOT Region Surveyor or an MDOT Lansing Design Surveyor before submitting a priced proposal.

The Selected Consultant surveyor must contact the Region or TSC Traffic and Safety Engineer for work restrictions in the project area prior to submitting a priced proposal.

A **detailed Survey Work Plan must** be included in the project proposal. A **spreadsheet estimate** of hours by specific survey task such as horizontal control, leveling, mapping, alignment determination, etc., **must** be included in the **priced proposal**.

It is the responsibility of the Professional Surveyor to safeguard all corners of the United States Public Land Survey System, published Geodetic Control and any other Property Controlling corners that may be in danger of being destroyed by the proposed construction project.

**GENERAL REQUIREMENTS:**

1. Surveys must comply with **all Michigan law** relative to land surveying.
2. Surveys must be done under the **direct supervision** of a Professional Surveyor licensed to practice in the State of Michigan, according to Public Act 299 of 1980.
3. Work in any of the following categories of survey: Road Design, Structure, Hydraulic, Right-of-Way, Photogrammetric Ground Control, and/or Geodetic Control must be completed by a survey firm which is pre-qualified by MDOT for that category.
4. Surveys must meet all requirements of the Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated 2014. Please contact the MDOT Design Survey office to clarify any specific questions regarding these standards.
5. Consultants must obtain all necessary permits required to perform this survey on any public and/or private property, including an up-to-date permit from the MDOT Utilities Coordination and Permits Section.
6. Prior to performing the survey, the Consultant must contact all landowners upon whose

lands they will enter. The contact may be personal, phone or letter, but must be documented. This notice must include the reasons for the survey on private land, the approximate time the survey is to take place, the extent of the survey including potential brush cutting (which must be minimized), and an MDOT contact person (the MDOT Project Manager or designate).

7. The Consultant must contact any and all Railroads prior to commencing field survey on railroad property. The cost for any permit, flaggers and/or training that is required by the Railroad will be considered as a direct cost, but only if included in the Consultant's priced proposal.
8. The Consultant must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job.
9. Consultants are responsible for a comprehensive and conscientious research of all records, including MDOT records, essential for the completion of this project.
10. Measurements, stationing, recorded data, and computations must be in **International Feet**, unless specified otherwise by the MDOT Project Manager.
11. Coordinate values shall be based upon the Michigan State Plane coordinate system NAD83. All elevations must be based upon the North American Vertical Datum of 1988 (NAVD88). The datums must be clearly stated in the Survey Work Plan and subsequent submittal.
12. **If paper copies are required**, the survey notes must be submitted to the Design Survey Unit in 10" by 12" divided portfolios with flap covers. As many portfolios should be used as are needed to contain all of the required documents and Compact Discs (CD's) or DVD's. Duplicate CD's must be included in the portfolio, with one set labeled "Region Surveyor". **Electronic submittal only unless specified otherwise.**
13. Each portfolio and CD must be labeled on the outside as in the following example:  
Survey Notes for:  
Route, Location and Project Limits [I-94 under Beaubien Street ]  
Control Section [S06 of 82024] Job Number [45197D] Date [ *of submittal* ]  
By [ *Name of Firm* ]  
Michigan Professional Surveyor [     ] License # [     ]
14. Each submittal is to be divided into six sections. These sections are to be labeled as follows: **Administrative, Alignment, Control, Property, Mapping, and Miscellaneous.**
15. To be included in the Administrative section shall be a copy of the **Survey Project Portfolio QA/QC Check-off list**, 2014 revision, available from the MDOT Survey Support Unit. This document shall be signed and certified by the Professional Surveyor responsible for the project QA/QC. It is highly recommended that the consultant become

familiar with this document prior to preparing the proposal and again prior to assembling the final portfolio. **Failure to use and include this document may result in the immediate return of the project portfolio for completion.**

16. **All data**, whether electronic or paper, **must be recorded on non-rewritable Compact Discs (CD's) or DVD's**. All paper files, including MicroStation files, must be scanned and/or converted to Adobe Acrobat .PDF format. It is not necessary to include raw survey data files in the Adobe file. CD's must be organized in the same manner as the portfolio, such as by Administrative section, Control section, etc. A Table of Contents in Adobe Acrobat format is required that has all .PDF pages of the CD bookmarked/linked so each place in the .PDF archive can be accessed with a single click of the computer mouse. Specified format files such as Microsoft Word and MicroStation must have separate access in native format outside of the .PDF file.
17. The MDOT Project Manager is the official contact for the Consultant. The Consultant must send a copy of all project correspondence to the MDOT Project Manager. The MDOT Project Manager shall be made aware of all communications regarding this project. Any survey related questions regarding this project should be directed to an MDOT Survey Consultant Project Manager or MDOT Region Surveyor. **The MDOT Project Manager must be copied on any and all correspondence.**

At the completion of this survey for this project, legible copies of all field survey notes, all electronic data, and all research records obtained for this project will be considered the property of MDOT and **must be sent to** the MDOT, Design Division, Supervising Land Surveyor, P.O. Box 30050, Lansing, MI 48909. Please use MDOT's Form 222(5/01) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL" for all transmittals. A copy of this transmittal form must also be sent to the MDOT Project Manager for Design.

**Acceptance of this survey by the MDOT Supervising Land Surveyor and/or the MDOT Project Manager does not relieve the Consultant of any liability for the content of the survey.**

## **WORK RESTRICTIONS**

The Selected Consultant, and the Selected Consultant only, is advised to discuss Traffic Control scenarios with the MDOT Traffic and Safety Engineer at the closest MDOT TSC prior to submitting a priced proposal.

No work shall be performed or lane closures allowed during the Memorial Day, July 4<sup>th</sup>, or Labor Day holiday periods, as defined by the MDOT Project Manager or representative specifically designated by the Project Manager (the Traffic & Safety Engineer at the MDOT TSC).

Work on weekends, if approved, shall be as directed by the MDOT Project Manager or Designate.

The Consultant must call the MDOT Region or TSC Traffic and Safety Engineer before beginning work to inform him or her of surveying activity in the area. The MDOT Region or TSC must be notified at least two weeks prior to lane closures so advance notice can be posted on the Web site.

Traffic shall be maintained by the Consultant throughout the project in accordance with Sections 812, 922, 103.05 and 103.06 of the *Standard Specifications for Construction*, 2012 edition, <http://mdotwas1.mdot.state.mi.us/public/specbook/2012/> and any Supplemental Specifications currently in effect clarifying the Standard Specifications for Construction. All traffic control devices shall conform to the current edition, as revised, of the *Michigan Manual of Uniform Traffic Control Devices* (MMUTCD). All warning signs for maintenance of traffic used on this project shall be fabricated with prismatic retro-reflective sheeting, and shall be set up five feet above ground.

The Consultant shall use MDOT standard “maintaining traffic” typicals for any and all closures. Typical MDOT traffic control diagrams are available on line at <http://mdotwas1.mdot.state.mi.us/public/tands/plans.cfm>

## **COORDINATION WITH OTHER CONTRACTS IN THE VICINITY**

The Consultant shall coordinate operations with contractors performing work on other projects within or adjacent to the Construction Influence Area (CIA).

MDOT maintenance crews and/or Contract Maintenance Agencies may perform maintenance work within or adjacent to the CIA. The Maintenance Division of MDOT and/or Contract Maintenance Agency will coordinate their operations with the MDOT Project Manager or Designate to minimize the interference to the Consultant.

The Consultant must contact the Development Engineer at the nearest MDOT TSC for information regarding project coordination.

The Consultant’s attention is called to the requirements of cooperation with others as covered in Article 104.08 of the 2012 Standard Specifications for Construction. Other contracts or maintenance operations may occur during the life of the project.

No claim for extra compensation or adjustment in contract unit prices will be allowed on account of delay or failure of others to complete work unit scheduled.

## **POST SURVEY CLEAN-UP**

Once the survey is complete, all stakes must be removed from the MDOT median and ROW to

aid the maintenance crews and adjacent property owners. All benchmarks and control points and their witnesses must remain in place.

## **FINAL REPORT: DELIVERABLES**

The final report for this project shall include:

1. In the first directory on the CD, and first pocket of the portfolio if requested, labeled **ADMINISTRATIVE**, the following will appear:
  - a. MDOT's Form 222(5/01) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL"
  - b. The project's Professional Surveyor's Report on company letterhead, consisting of:
    - i) A comprehensive synopsis of the work performed on this project, signed and sealed by the project's Professional Surveyor.
    - ii) The source and methods used to establish the project horizontal and vertical control and alignment(s) for this project.
    - iii) A detailed explanation of anything discovered during the survey of this project that may create a problem for the designer or another surveyor.
  - c. CD or DVD with all documents scanned or converted into a Master PDF file, named (JN)123456C\_TaskXXXX. Each Section and sub-section of this PDF file must be bookmarked for easy retrieval. An example can be provided upon request.
  - d. MDOT QA/QC Portfolio Checklist (revised 2014).
2. In the second directory on the CD, and second pocket of the portfolio if requested, labeled **ALIGNMENT**, the following will appear:
  - a. An annotated MicroStation drawing of the alignment(s), showing:
    - i) A statement defining the alignment(s) as **legal or non-legal**, and a key box with description of type and origin of all alignments, such as 1958 Survey Alignment, 1966 Construction Alignment or, 2014 As Constructed Alignment
    - ii) Stationing, source of stationing, and station equation to existing stationing
    - iii) Curve data, including coordinates of P.I.s, P.C.s, and P.T.s.

- iv) Physical alignment points found or set
  - v) Control points
  - vi) Reference lines and angles of crossing (if appropriate)
  - vii) Government corners with bearing and distance ties to alignment along the government lines.
- b. Witness list for the alignment points found or set, which shows coordinates, stationing and four witnesses for each alignment point. **WITNESS LISTS MUST USE ONLY UPPER CASE LETTERS.**
  - c. LCRC's for legal alignment points with physical monumentation, found or set.
3. In the third directory on the CD, and third pocket of the portfolio if requested, labeled **CONTROL**, the following will appear:
- a. Documentation of horizontal and vertical datum sources.
  - b. OPUS documentation, long version.
  - c. Least squares adjustments for the horizontal and vertical control.
  - d. It is not necessary to submit electronic raw survey data in hardcopy form, nor in the .PDF file.
  - e. Text files which contain the witness lists for the horizontal alignment points, horizontal control points, benchmarks and government corners. All witness lists must note the datum(s), a combined scale factor for state plane grid-to-ground conversion, and an example thereof. **WITNESS LISTS MUST USE ONLY UPPERCASE LETTERS.**
  - f. An MDOT-formatted Microsoft Word file, **SurveyInfoSheet.doc**, showing the data in e. above, using **ONLY UPPER CASE LETTERS.**
4. In the fourth directory on the CD, and fourth pocket of the portfolio if requested, labeled **PROPERTY**, the following will appear:
- a. Tax maps and descriptions with owner names, addresses and phone numbers, if Right of Way is to be acquired, or if riparian ownerships are required.
  - b. Maps, plats, and recorded surveys.

- c. Documents such as plats, Act 132 Certificates and/or tax maps marked with point numbers as property ties, if Right of Way is to be acquired.
  - d. Legible **recorded** copies of all Land Corner Recordation Certificates (LCRC) filed for the government corners (PLSS corners and Property Controlling Corners) used for computations and/or in danger of obliteration by impending construction.
5. In the fifth directory on the CD, and fifth pocket of the portfolio if requested, labeled **MAPPING**, the following will appear:
- a. Mapping files in MDOT MicroStation V8i format in the current MDOT workspace, and also converted to .PDF format. ALL POINT AND LINE DESCRIPTIONS MUST USE ONLY UPPER CASE LETTERS. Naming convention: 123456C\_PL\_3D.dgn and 123456C\_PL\_2D.
  - b. All Geopak design files produced by survey, including: .xml alignment files, triangle.dgn file, .dtm, .tin, and .gpk files.
  - c. All field survey notes and electronic mapping data used for the project. It is not necessary to submit electronic raw survey data in hardcopy form, nor in the .PDF file.
  - d. All supporting and supplemental information or data, such as drainage and utilities, electronically only if possible.
6. In the sixth directory on the CD, and sixth pocket of the portfolio if requested, labeled **MISCELLANEOUS**, the following will appear:
- a. Any photographs taken for clarity of an area
  - b. Any newspaper clippings related to the project
  - c. Any information not covered in this scope that will be of benefit to the designer or another surveyor

**REQUEST FOR PROPOSAL**

The Michigan Department of Transportation (MDOT) is seeking professional services for the project contained in the attached scope of services.

If your firm is interested in providing services, please indicate your interest by submitting a Proposal, Proposal/Bid Sheet or Bid Sheet as indicated below. The documents must be submitted in accordance with the latest (Consultant/Vendor Selection Guidelines for Services Contracts" and "Guideline for Completing a Low Bid Sheet(S)\*, if a low bid is involved as part of the selection process. **Reference Guidelines are available on MDOT's website under Doing Business > Vendor/Consultant Services > Vendor/Consultant Selections.**

**RFP SPECIFIC INFORMATION**

ENGINEERING SERVICES       BUREAU OF TRANSPORTATION PLANNING       OTHER

THE SERVICE WAS POSTED ON THE ANTICIPATED QUARTERLY REQUESTS FOR PROPOSALS

NO       YES      DATED \_\_\_\_\_ THROUGH \_\_\_\_\_

**Prequalified Services** – See the attached Scope of Services for required Prequalification Classifications.

**Non-Prequalified Services** – If selected, the vendor must make sure that current financial information, including labor rates, overhead computations, and financial statements, if overhead is not audited, is on file with MDOT's Office of Commission Audits. This information must be on file for the prime vendor and all sub vendors so that the contract will not be delayed. **Form 5100J is required with Proposal for firms not currently prequalified with MDOT**

**Qualifications Based Selection** – Use Consultant/Vendor Selection Guidelines

**For all Qualifications Based Selections**, the selection team will review the information submitted and will select the firm considered most qualified to perform the services based on the proposals. The selected firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

**For a cost plus fixed fee contract**, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

**Qualification Based Selection / Low Bid** – Use Consultant/Vendor Selection Guidelines. See Bid Sheet instructions for additional information.

For Qualification Review/Low Bid selections, the selection team will review the proposals submitted. The vendor that has met established qualification threshold and with the lowest bid will be selected.

**Best Value** – Use Consultant/Vendor Selection Guidelines, See Bid Sheet Instructions below for additional information. The bid amount is a component of the total proposal score, not the determining factor of the selection.

**Low Bid** (no qualifications review required – no proposal required.) See Bid Sheet Instructions below for additional instructions.

**BID SHEET INSTRUCTIONS**

Bid Sheet(s) must be submitted in accordance with the "Guidelines for Completing a Low Bid Sheet(s)\* (available on MDOT's website). Bid Sheet(s) are located at the end of the Scope of Services. Submit bid sheet(s) with the proposal, to the email address: [mdot-rfp-response@michigan.gov](mailto:mdot-rfp-response@michigan.gov). Failure to comply with this procedure may result in your bid being rejected from consideration.

**PARTNERSHIP CHARTER AGREEMENT**

MDOT and ACEC created a Partnership Charter Agreement which establishes guidelines to assist MDOT and Consultants in successful partnering. Both the Consultant and MDOT Project Manager are reminded to review the [ACEC-MDOT Partnership Charter Agreement](#) and are asked to follow all communications, issues resolution and other procedures and guidance's contained therein.

**NOTIFICATION  
MANDATORY ELECTRONIC SUBMITTAL**

**Proposals submitted for this project must be submitted electronically.**

**The following are changes to the Proposal Submittal Requirements:**

- Eliminated the Following Requirements:
  - Safety Program
  - Communication Plan
  - Past Performance as *a separate section*
  - Separate section for DBE Statement of goals. Include information in Qualification of Team section
  
- Implemented the Following Changes:
  - All proposals require an Organization Chart
  - Resumes must be a maximum of two pages
  - Only Key (lead) staff resumes may be submitted
  - Tier III proposal reduced from 19 to 14 pages
  - Forms 5100D, 5100I, and 5100G combined – 5100D
  - Forms 5100B and 5100H combined – 5100B
  - RFP's will be posted on a weekly basis -- on Mondays

**The following are Requirements for Electronic Submittals:**

- Proposals must be prepared using the most current guidelines
- The proposal must be bookmarked to clearly identify the proposal sections (See Below)
- For any section not required per the RFP, the bookmark must be edited to include “N/A” after the bookmark title.  
**Example:** Understanding of Service – N/A
- Proposals must be assembled and saved as a single PDF file
- PDF file must be 5 megabytes or smaller
- PDF file must be submitted via e-mail to [MDOT-RFP-Response@michigan.gov](mailto:MDOT-RFP-Response@michigan.gov)
- MDOT's requisition number and company name must be included in the subject line of the e-mail. The PDF shall be named using the following format:
  - Requisition#XXX\_Company Name.PDF
- MDOT will not accept multiple submittals
- Proposals must be *received* by MDOT on or before the due date and time specified in each RFP

**If the submittals do not comply with the requirements, they may be determined unresponsive.**

The Consultant's will receive an e-mail reply/notification from MDOT when the proposal is received. Please retain a copy of this e-mail as proof that the proposal was received on time. **Consultants are responsible for ensuring the MDOT receives the proposal on time.**

**\*\*Contact Contract Services Division immediately at 517-373-4680 if you do not get an auto response\*\***

**Required Bookmarking Format:**

- I. Request for Proposal Cover Sheet Form 5100D
  - A. Consultant Data and Signature Sheet, Form 5100J (if applicable)
- II. Understanding of Service
  - A. Innovations
- III. Qualifications of Team
  - A. Structure of Project Team
    - 1. Role of Firms
    - 2. Role of Key Personnel
  - B. Organization Chart
  - C. Location
- IV. Quality Assurance / Quality Control Plan
- V. Resumes of Key Staff
- VI. Pricing Documents/Bid Sheet (if applicable)

**2/14/12**

**NOTIFICATION  
E-VERIFY REQUIREMENTS**

E-Verify is an Internet based system that allows an employer, using information reported on an employee's Form I-9, Employment Eligibility Verification, to determine the eligibility of that employee to work in the United States. There is no charge to employers to use E-Verify. The E-Verify system is operated by the Department of Homeland Security (DHS) in partnership with the Social Security Administration. E-Verify is available in Spanish.

The State of Michigan is requiring, under Public Act 200 of 2012, Section 381, that as a condition of each contract or subcontract for construction, maintenance, or engineering services that the pre-qualified contractor or subcontractor agree to use the E-Verify system to verify that all persons hired during the contract term by the contractor or subcontractor are legally present and authorized to work in the United States.

Information on registration for and use of the E-Verify program can be obtained via the Internet at the DHS Web site: <http://www.dhs.gov/E-Verify>.

The documentation supporting the usage of the E-Verify system must be maintained by each consultant and be made available to MDOT upon request.

It is the responsibility of the prime consultant to include the E-Verify requirement documented in this NOTIFICATION in all tiers of subcontracts.

9/13/12