

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			
MDOT PROJECT MANAGER: Check all items to be included in RFP WHITE = REQUIRED ** = OPTIONAL Check the appropriate Tier in the box below		CONSULTANT: Provide only checked items below in proposal	
<input type="checkbox"/> TIER I (\$50,000 - \$150,000)	<input type="checkbox"/> TIER II (\$150,000-\$1,000,000)	<input type="checkbox"/> TIER III (>\$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"/>	Location: 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) (No Resumes)	7 pages (MDOT Forms not counted)	14 pages (MDOT forms not counted)	Total maximum pages for RFP not including key personnel resumes. Resumes limited to 2 pages per key staff personnel.

PROPOSAL AND BID SHEET EMAIL ADDRESS – 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.)

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 _____

<input type="checkbox"/> Prequalified Services – See the attached Scope of Services for required Prequalification Classifications.	<input type="checkbox"/> 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
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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. 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
- 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

Michigan Department of Transportation

**SCOPE OF SERVICE
FOR
DESIGN SERVICES**

CONTROL SECTION(S): 09031

JOB NUMBER(S): 116069C

PROJECT LOCATION:

The project is located along M-13 from the Zilwaukee Bridge in Saginaw County northerly to the south city limits of city of Bay City in Bay County. The project length is 6.23 miles.

PROJECT DESCRIPTION:

Work involved in the design of the project consists of the development and preparation of plans, details, specifications and cost estimates (including meeting attendance) for the following:

The project scope includes cold milling with a two course HMA overlay, concrete joint repairs, drainage upgrades and other miscellaneous safety upgrades. Traffic shall be maintained by part width. Construction is anticipated for 2017.

ANTICIPATED SERVICE START DATE: 8/1/2014

ANTICIPATED SERVICE COMPLETION DATE: 2/3/2017

PRIMARY PREQUALIFICATION CLASSIFICATION(S):

Roadway Rehabilitation & Rural Freeways

SECONDARY PREQUALIFICATION CLASSIFICATION(S):

Maintaining Traffic Plans and Provisions
Pavement Marking Plans
Permanent Non-Freeway Traffic Signing Plans
Road Design Surveys
Hydraulic Surveys
Geotechnical Engineering Services

DBE REQUIREMENT: 8%

MDOT PROJECT ENGINEER MANAGER:

Jason Garza
Cost & Scheduling Engineer
MDOT Bay City TSC
2590 E. Wilder Road
Bay City, MI 48706
989-671-1535 Ext 306
Fax: 989-671-1530
garzaj3@michigan.gov

All inquiries about this Request for Proposal should be directed to the MDOT Project Manager by email.

CONSTRUCTION COST:

A. The estimated cost of construction is:

1. Mainline Pavement	\$ 3,500,000
2. Geometric Improvement	\$ 500,000
3. Drainage	\$ 600,000
5. Safety	\$ 440,000
6. Non-Motorized	\$
7. Miscellaneous Bridge Cost	\$
8. Detours and Maintaining Traffic	\$ 500,000
9. Permanent Pavement Markings/Signs/Signals	\$ 150,000
10. Miscellaneous	<u>\$ 450,000</u>
CONSTRUCTION TOTAL	\$6,140,000

The above construction total is the amount of funding programmed for this project. The Consultant is expected to design the project within the programmed amount.

If at any time the estimated cost of construction varies by more than 5% of the current programmed amount, then the Consultant will be required to submit a letter to the MDOT Project Manager justifying the changes in the construction cost estimate.

ADDITIONAL INFORMATION:

Reference files associated with this project are placed on MDOT’s FTP site: <ftp://ftpmdot.state.mi.us/> under the folder “116069”

Work shall conform to current MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Road 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.

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.

CONSULTANT RESPONSIBILITIES:

Complete the design of this project including, but not limited to the following:

- A. 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 design by the project plan completion date. Attention shall be given to critical target dates that may require a large lead time, such as geotechnical requirements, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.
- B. Perform design surveys. See Attachment A for more information.
- C. Prepare required plans, typical cross-sections, details, and specifications required for design and construction to OEC level of completion.
- D. Compute and verify all plan quantities.
- E. All Maintenance of Traffic (MOT) work in the project is a Consultant task. The Consultant shall furnish the special provision for maintaining traffic, all applicable maintaining traffic pay items, quantity estimates and the Transportation Management Plan (TMP). Coordinate, as needed, with the TSC Traffic & Safety Engineer.
- F. Prepare staging plans and special provisions for maintaining traffic during construction.
- G. The Consultant shall complete a drainage study. The Consultant shall prepare MDEQ permits for MDOT submittal, if required.
- H. The Consultant is responsible for the design of the soil erosion and sedimentation control measures. This design is to be provided on the preliminary plans. The Consultant is expected to make revisions in this design according to comments provided at the Plan Review and OEC.
- I. Coordinate, as needed, with the TSC Utility Engineer.

- J. Provide solutions to any unique problems that may arise during the design of this project.
- K. The Consultant may be required to provide Design Services during the construction phase of this project. If Construction Assistance is required, then a separate authorization for those services will be issued.
- 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. Submit the excavation locations which may contain contamination. Project Manager then can proceed in requesting a Project Area Contamination Survey (PACS).
- N. The Consultant shall be required to prepare and submit a CPM network for the construction of this project.
- O. 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. MDOT will distribute official meeting minutes for all meetings.
- P. The Consultant will provide to MDOT at the scheduled submittal dates, electronic copies (in Adobe PDF format) of the required specifications and plan set materials for distribution by MDOT for all reviews for this project.
- Q. Prepare and submit electronically (native format or Adobe PDF) any information, calculations, hydraulic studies, or drawings required by MDOT for acquiring any permit (ie. NPDES, DEQ, etc), approvals (i.e. county drain commission) and related mitigation. MDOT will submit permit requests.
- R. Attend any project-related meetings as directed by the MDOT Project Manager.
- S. Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. This will require the preparation of displays such as maps, marked-up plans, etc.
- T. The Consultant shall assist in the review of utility permit requests, incorporate the information in the design plans, and respond within 2 weeks from receipt of the permit.
- U. 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.

- V. 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.

PROJECT SCHEDULE

Refer to the MDOT PPMS Task List for this project. The Consultant shall use the tasks 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.

For questions on specific tasks, refer to the PPMS Task Manual on the MDOT Bulletin Board System. For assistance in accessing this manual, please contact:

Dennis Kelley
(517) 373-4614
KelleyD2@michigan.gov

MONTHLY PROGRESS REPORT

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

TRAFFIC CONTROL

The Consultant shall be responsible for all traffic control required to perform the tasks as outlined in this Scope of Design Services.

MDOT PERMITS & UTILITIES

The Consultant shall be responsible for obtaining up to date access permits and pertinent information for tasks in MDOT Right of Way (ROW).

The Consultant shall be responsible for obtaining and showing on the plans the location and names of all existing utilities within the limits of the project. In the course of resolving utility conflicts, the Consultant shall make modifications to the plans or design details and provide assistance as directed by the MDOT Utility Permits Engineer and/or Project Manager. The Consultant shall attend any utility meetings called to ensure that the concerns are addressed on the plans involving utilities. The Consultant shall assist in the review of utility permit requests to ensure compatibility with the project. The Consultant shall provide for the survey staking of various proposed facilities, and existing ROW so as to locate potential utility conflicts and aid in the completion of utility relocation plans for all municipal and private utility companies. The Consultant shall verify any utility information (location, size, type, etc.) through researching historical as-built information for the project area.

Any questions regarding MDOT permits and/or utilities should be directed to:

Joe Uhelski
Utilities Engineer
MDOT Bay City TSC
2590 E. Wilder Road
Bay City, MI 48706
(989) 671-1535 Ext 316
UhelskiJ@michigan.gov

DELIVERABLES:

The Consultant is required to use MDOT's current version of Bentley MicroStation for CADD applications and Bentley GEOPAK for road design. Consultant shall comply with all MDOT drafting standards and file naming conventions.

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 a FTP site, 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.

Proposal documents shall be submitted in their native format with standard naming conventions as well as combined into one Adobe PDF file in the sequence specified by MDOT. To provide text search capabilities the combined proposal shall be created by converting native electronic files to PDF. Scanning to PDF is discouraged except in instances where it is necessary to capture a legally signed document or a hard copy version of a document is all that exists.

Plan sheets shall be printed to an Adobe PDF set in 11" x 17" format. For final Plan Turn-In, a title sheet shall be printed, signed, sealed, and then scanned for inclusion with the Adobe PDF set. The original title sheet shall be sent to the MDOT Project Manager.

At final Plan Turn-In, Reference Information Documents (RID) shall be delivered to MDOT with standard naming conventions and content. The RID files included will depend on the design survey and work type of the project. These files range from CADD, existing terrain, proposed cross sections, 3D models and files generated for Automated Machine Guidance (AMG) and automated inspection/stakeout activities.

Stand Alone Proposal Estimator's Worksheet (SAPW) shall be used to generate the txt and csv files necessary for import into the Trns*port bid letting software. The SAPW files shall be transmitted electronically by the method specified by the MDOT Project Manager.

The project removal, construction, and profile sheets will require a scale of **1"=80'** or as **approved by the Project Manager.**

All plans, special provisions, estimates, 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 plans, specifications, and other project related items are subject to review and approval by MDOT.

MDOT RESPONSIBILITIES:

- A. Schedule and/or conduct the following:
 - 1. Scope Verification Meeting
 - 2. Base Plan Review/Geometrics
 - 3. The Plan Review
 - 4. Utility Coordination Meetings
 - 5. Omissions/Errors/Check (OEC)

- B. Furnish pertinent reference materials.
 - 1. Quantity summary sheets and final item cost estimates
 - 2. Packaging of plans and proposal
 - 3. Special Details and pertinent reference materials
 - 4. As-built plans
 - 5. Pavement design
 - 6. Traffic analysis
 - 7. Crash analysis

- C. Obtain all permits for the project as outlined in previous section.

- D. MDOT will be contacting the utilities and coordinating all utility meetings to verify if any relocating will be necessary with this project.

- E. Coordinate any necessary utility relocation.

- F. MDOT Bay Region Real Estate Division will be responsible for obtaining all ROW acquisitions.

- G. MDOT will provide coordination assistance with the following:
 - 1. Utility Company
 - 2. Railroad Company
 - 3. Project Stakeholders
 - 4. FHWA
 - 5. Other MDOT Divisions

- H. Perform the hydraulic analysis at any culvert removal locations.

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.

**MDOT PRECONSTRUCTION TASKS
CONSULTANT CHECKLIST**

Please indicate with a check in the box next to each task number whether you believe that task will require consultant involvement on the job. Milestones (a specific event at a point in time) are italicized and underlined. See the [P/PMS Task Manual](#) for more details.

STUDY (EARLY PRELIMINARY ENGINEERING)

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY
YES	NO		(mm/dd/yyyy)
		<u>EPE SCOPING ANALYSIS</u>	
<input type="checkbox"/>	<input type="checkbox"/>	2120 Prepare Traffic Analysis Report	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2130 Prepare Project Justification	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>213M Concurrence by Regulatory Agencies with the Purpose and Need</u></i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2140 Develop and Review Illustrative Alternatives	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2155 Request/Perform Safety Analysis	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2160 Prepare and Review EIS Scoping Document	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>211M Public Information Meeting</u></i>	__/__/__
		<u>EPE DRAFT ANALYSIS</u>	
<input type="checkbox"/>	<input type="checkbox"/>	2310 Conduct Technical SEE Studies	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2321 Prepare for Aerial Photography	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2322 Finish/Print Aerial Photography	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2330 Collect EPE Geotechnical Data	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2340 Develop and Review Practical Alternatives	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>233M Aerial Photography Flight</u></i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2360 Prepare and Review EA or DEIS	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>231M Draft Submission to FHWA</u></i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2380 Circulate EA or DEIS	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>232M Public Hearing</u></i>	__/__/__
		<u>EPE FINAL ANALYSIS</u>	
<input type="checkbox"/>	<input type="checkbox"/>	2510 Determine and Review Recommended Alternative	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>250M Concurrence by Regulatory Agencies with Recommended Alternatives</u></i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2525 Prepare and Review Engineering Report	__/__/__

<input type="checkbox"/>	<input type="checkbox"/>	2530 Prepare and Review Request for FONSI or FEIS	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i>252M Final Submission to FHWA</i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2550 Obtain FONSI or ROD	__/__/__
		<u>CONTAMINATION INVESTIGATION</u>	
<input type="checkbox"/>	<input type="checkbox"/>	2810 Project Area Contamination Survey (PCS)	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2820 Preliminary Site Investigation (PSI) Contamination	__/__/__

PRELIMINARY ENGINEERING - DESIGN

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY
YES	NO		(mm/dd/yyyy)
		<u>DESIGN SCOPE VERIFICATION AND BASE PLAN PREPARATION</u>	
X	<input type="checkbox"/>	3130 Verify Design Scope of Work and Cost	6/5/2014
<input type="checkbox"/>	<input type="checkbox"/>	3310 Prepare Aerial Topographic Mapping	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	3320 Conduct Photogrammetric Control Survey	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	3321 Set Aerial Photo Targets	__/__/__
X	<input type="checkbox"/>	3330 Conduct Design Survey	10/5/2014
<input type="checkbox"/>	<input type="checkbox"/>	3340 Conduct Structure Survey	__/__/__
X	<input type="checkbox"/>	3350 Conduct Hydraulics Survey	10/5/2014
X	<input type="checkbox"/>	3360 Prepare Base Plans	10/5/2014
X	<input type="checkbox"/>	<i>331M Utility Notification</i>	8/13/2014
<input type="checkbox"/>	<input type="checkbox"/>	3361 Review and Submit Preliminary ROW Plans	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i>331M Preliminary ROW Plans Distributed</i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	3370 Prepare Structure Study	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	3375 Conduct Value Engineering Study	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	3380 Review Base Plans	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i>332M Base Plan Review (Pre-GI Inspection)</i>	__/__/__
X	<input type="checkbox"/>	3390 Develop the Maintaining Traffic Concepts	10/5/2014
		<u>PRELIMINARY PLANS PREPARATION</u>	
X	<input type="checkbox"/>	3510 Perform Roadway Geotechnical Investigation	4/12/2015
<input type="checkbox"/>	<input type="checkbox"/>	3520 Conduct Hydraulic/Hydrologic and Scour Analysis	__/__/__
X	<input type="checkbox"/>	3522 Conduct Drainage Study, Storm Sewer Design, and use Structural Best Management Practices	4/12/2015
X	<input type="checkbox"/>	3500 Develop Transportation Management Plan	8/3/2015
<input type="checkbox"/>	<input type="checkbox"/>	3535 Conduct Structure Review for Architectural and Aesthetic Improvements	__/__/__
X	<input type="checkbox"/>	3540 Develop the Maintaining Traffic Plan	4/12/2015
<input type="checkbox"/>	<input type="checkbox"/>	3551 Prepare/Review Preliminary Traffic Signal Design Plan	__/__/__
X	<input type="checkbox"/>	3552 Develop Preliminary Pavement Marking Plan	4/12/2015
X	<input type="checkbox"/>	3553 Develop Preliminary Non-Freeway Signing Plan	4/12/2015
<input type="checkbox"/>	<input type="checkbox"/>	3554 Develop Preliminary Freeway Signing Plan	__/__/__

<input type="checkbox"/>	<input type="checkbox"/>	3555 Prepare/Review Preliminary Traffic Signal Operations	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	3570 Prepare Preliminary Structure Plans	__/__/__
X	<input type="checkbox"/>	3580 Develop Preliminary Plans	4/12/2015
<input type="checkbox"/>	<input type="checkbox"/>	3581 Review and Submit Final ROW Plans	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>351M Final ROW Plans Distributed</u>	__/__/__
X	<input type="checkbox"/>	3590 Review Preliminary Plans (Hold Plan Review Meeting)	5/24/2015
X	<input type="checkbox"/>	<u>352M THE Plan Review (Grade Inspection)</u>	5/10/2015
		UTILITIES	
<input type="checkbox"/>	<input type="checkbox"/>	<u>3610 Compile Utility Information</u>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>3650 Coordinate RR Involvement for Grade Separations</u>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>3655 Coordinate RR Involvement for At-Grade Crossings</u>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>3660 Resolve Utility Issues</u>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>360M Utility Conflict Resolution Plan Distribution</u>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>361M Utility Meeting</u>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>3670 Develop Municipal Utility Plans</u>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>3672 Develop Special Drainage Structures Plans</u>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>3675 Develop Electrical Plans</u>	__/__/__
		MITIGATION/PERMITS	
<input type="checkbox"/>	<input type="checkbox"/>	<u>3710 Develop Required Mitigation</u>	__/__/__
X	<input type="checkbox"/>	<u>3720 Assemble Environmental Permit Applications</u>	7/19/2015
X	<input type="checkbox"/>	<u>3730 Obtain Environmental Permit</u>	7/19/2015
		FINAL PLAN PREPARATION	
<input type="checkbox"/>	<input type="checkbox"/>	<u>3821 Prepare/Review Final Traffic Signal Design Plan</u>	__/__/__
X	<input type="checkbox"/>	<u>3822 Complete Permanent Pavement Marking Plan</u>	7/19/2015
<input type="checkbox"/>	<input type="checkbox"/>	<u>3823 Complete Non-Freeway Signing Plan</u>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>3824 Complete Freeway Signing Plan</u>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<u>3825 Prepare/Review Final Traffic Signal Operations</u>	__/__/__
X	<input type="checkbox"/>	<u>3830 Complete the Maintaining Traffic Plan</u>	7/19/2015
X	<input type="checkbox"/>	<u>3840 Develop Final Plans and Specifications</u>	7/19/2015
X	<input type="checkbox"/>	<u>380M Plan Completion</u>	8/3/2015
<input type="checkbox"/>	<input type="checkbox"/>	<u>3850 Develop Structure Final Plans and Specifications</u>	__/__/__
X	<input type="checkbox"/>	<u>3870 Hold Omissions/Errors Check (OEC) Meeting</u>	8/24/2015
X	<input type="checkbox"/>	<u>387M Omissions/Errors Checks Meeting</u>	8/17/2015
X	<input type="checkbox"/>	<u>389M Plan Turn-In</u>	12/6/2016
<input type="checkbox"/>	<input type="checkbox"/>	<u>3880 CPM Quality Assurance Review</u>	__/__/__

PRELIMINARY ENGINEERING – RIGHT OF WAY

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE
--	--	--	-------------------

			COMPLETED BY
YES	NO		(mm/dd/yyyy)
		<u>EARLY RIGHT OF WAY WORK</u>	
<input type="checkbox"/>	<input type="checkbox"/>	4120 Obtain Preliminary Title Commitments	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	4130 Prepare Marked Final Right Of Way Plans	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i>413M Approved Marked Final ROW</i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	4140 Prepare Property Legal Instruments	__/__/__
		<u>ROW ACQUISITION</u>	
<input type="checkbox"/>	<input type="checkbox"/>	4411 Preliminary Interviews	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i>441M Post-Decision Meeting</i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	4412 Real Estate Services Assignment Proposal and Fee Estimate (Form 633s) for Appraisal Work Authorization	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	4413 Appraisal Reports	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	4420 Appraisal Review Reports	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	4430 Acquire Right Of Way Parcels	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	4510 Conduct Right Of Way Survey & Staking	__/__/__
		<u>ROW RELOCATION</u>	
<input type="checkbox"/>	<input type="checkbox"/>	4710 Relocation Assistance	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	4720 Prepare Improvement Removal Plan	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i>442M ROW Certification</i>	__/__/__

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. 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. 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 A
SCOPE OF SERVICE
FOR
DESIGN SURVEYS

January 2014

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

NOTES: The Selected Consultant must discuss the scope of this survey with the MDOT Region Surveyor before submitting a priced proposal.

The Selected Consultant surveyor must contact the closest MDOT Transportation Service Center Traffic and Safety Engineer that has jurisdiction prior to submitting a priced proposal.

A detailed Survey Work Plan must be included in the project proposal. A spreadsheet estimate of man hours for specific survey tasks 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 laws** relative to land surveying and must be done under the **direct supervision** of a Professional Surveyor license to practice in the State of Michigan.
2. Work in any of the following categories: Road Design Surveys, Structure Surveys, Hydraulic Surveys, and/or Right-of-way Surveys must be completed by a firm which is pre-qualified by MDOT.
3. Surveys must meet all requirements of the current versions of the Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice*, MDOT QA/QC Check List, MDOT Design Survey Manual on-line, and MDOT RTK guidelines.
4. Consultants must obtain all necessary permits required to perform this survey on any public and/or private property. **The Consultant shall be responsible for obtaining an up-to-date access permits** and pertinent information from the MDOT Utilities Coordination and Permits Section for any tasks involving work with the MDOT Right of Way (ROW).

5. Prior to performing any ground survey work, the Consultant must contact all landowners upon whose land they will enter. The contact may be personal, phone, or letter, but must be documented. This notice must include the reasons for the survey upon 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 a MDOT contact person (the MDOT Project Manager).
6. The Consultant must contact any and all Railroads prior to commencing field survey on railroad property. This 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.
7. The Consultant must adhere to all applicable OSHA and MIOSHA safety standards, including appropriate traffic signs for the activities and conditions for this project.
8. Consultants are responsible for a comprehensive and conscientious research for all records, including MDOT records, essential for the completion of this project.
9. Measurements, stationing, recorded data and computations must be in International Feet.
10. Coordinate values must be based on the Michigan Coordinate System of 1983, appropriate zone. All elevations must be based on the North American Vertical Datum of 1988 (NAVD88) if control is available within four miles. Use of other datums must be approved by the MDOT Region Surveyor. The datums must be clearly stated in the Survey Work Plan and subsequent submittal.
11. For projects over 5 miles in length contact the MDOT Region Surveyor to discuss scale factor issues. Ground coordinates may be required. The Consultant Surveyor should contact the MDOT Region Surveyor for specific reporting format and conversion process from State Plane Grid Coordinates.
12. The current MDOT *Standards of Practice* for Design Surveys and the current MDOT QA/QC Check List and shall be utilized in preparing the deliverables.
13. To be included in the Administrative section shall be a copy of the MDOT QA/QC Check List and Certification Statement. This document shall be signed and certified by the Professional Surveyor responsible for the project QA/QC. Failure to use and include this document may result in the immediate return of the project portfolio for completion.
14. NOTE: It is not necessary to submit mapping folder for a consultant survey/consultant design in the same authorization. In its place, submit a 2D planimetric map with legal alignments and legal rights of way.
15. It is the responsibility of the consultant to insure that all electronic files submitted to MDOT conform to the required formats in the current Michigan Department of

Transportation (MDOT) Design Surveys *Standards of Practice*, MDOT QA/QC Certification Checklist, and MDOT CADD standards, and that all documents are legible.

16. All paper files must be scanned and/or converted to Adobe Acrobat .PDF format. Specific format files such as text (.txt), MicroStation drawing (.dgn), and documents (.doc) must have separate access in native format outside of the Project.pdf file.

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 the MDOT Region Surveyor. **The MDOT Project Manager must be copied on any and all correspondence.**

At the completion of this survey, three identical digital copies must be submitted with one labeled "MDOT Region Surveyor". All electronic data, and all research records obtained for this project will be considered the property of MDOT and must be sent to MDOT Bay Region Surveyor, 55 East Morley Drive, Saginaw, MI 48601. 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.

Acceptance of the survey by the MDOT Project Manager and/or MDOT Region Surveyor does not in any way relieve the Consultant of any responsibility and liability for the content of the survey.

TRAFFIC CONTROL/WORK RESTRICTIONS

The Selected Consultant shall be responsible for all traffic control required to perform the tasks as outlined in this Scope of Services.

The Selected Consultant must notify the TSC Traffic and Safety Engineer having jurisdiction prior to submitting a price proposal and prior to beginning surveying activity in the area, to obtain any potential work restrictions and to discuss Traffic Control scenarios for the project.

The TSC Traffic & Safety Engineer must be notified at least two weeks prior to shoulder or lane closures so advance notice, and related traffic issues, can be posted on the MDOT Road Construction Web Site.

No work shall be performed or lane closures allowed during holiday periods, as defined by the local Traffic and Safety Engineer who has jurisdiction over the project area. Week-end work and lane closure exceptions may be permitted but only with the approval in advance from TSC Traffic & Safety Engineer.

Traffic must be maintained by the Consultant throughout the project in accordance with the appropriate sections of the current *Standard Specifications for Construction*, and other supplemental specifications currently in effect.

All traffic control devices shall conform to the current revision, 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. Sign covers shall be placed over existing regulatory signs that are not applicable during survey work

The consultant must have a vehicle with markings/logo that identifies the company within sight distance of the survey activity whenever they are working on or near the road.

Traffic control on city streets is under the jurisdiction of the city where the project is located.

COORDINATION WITH OTHER CONTRACTS IN THE VICINITY

The Consultant shall coordinate their 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 MDOT TSC Traffic & Safety Engineer and Development Engineer for information regarding project coordination.

The Consultant's attention is called to the requirement of cooperation with others as covered in the current Standard Specifications for Construction. Other contracts or maintenance operations may occur during the life of the project.

No claims for extra compensation or adjustment in authorization costs will be allowed on account of delay or failure of others to complete their work unit as scheduled.

FIELD SURVEY

The purpose of a field survey is to obtain information and/or data required by/for a project design engineer, to provide a survey basis for the preparation of legal descriptions and documents to acquire rights of way, easements, and permits, to leave horizontal and vertical control in the field for future construction staking, and to provide a sufficient history of the area to enable a MDOT Design Survey Unit to perform dependable surveys in the future.

For preferred methods, refer to the current MDOT Design Surveys *Standards of Practice*, or contact the Region Surveyor. Any discrepancy or contradiction will be resolved by applying the following list in order of priority:

1. Written instructions from the MDOT Survey Project Manager or the Region Surveyor
2. The current MDOT Design Surveys *Standards of Practice*
3. Current MDOT Design Survey Manual
4. Accepted survey practice, documented in books from disinterested third parties or papers from state or federal agencies.

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: ELECTRONIC PORTFOLIO DELIVERABLES

All paper files must be scanned and/or converted to Adobe Acrobat .PDF format. Specific format files such as text (.txt), MicroStation drawing (.dgn), and documents (.doc) must have separate access.

Organization of the deliverables shall follow the format of the current MDOT QA/QC Checklist and shall include:

1. In the first folder 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. 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 March 2013). **Failure to complete and include this list with the final project portfolio will result in the immediate return of the portfolio for completion.**
2. In the second folder 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.
3. In the third folder 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, 2013 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) Reference lines and angles of crossing (if appropriate)
 - vi) 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.
 4. In the fourth folder 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 labeled **MAPPING**, the following will appear:
 - a. Mapping files in MDOT MicroStation V8i/Power GEOPAK format in the current MDOT workspace, and also converted to .PDF format. ALL POINT AND LINE DESCRIPTIONS MUST USE ONLY UPPER CASE LETTERS. See the current QA/QC Check list for naming convention.
 - b. GEOPAK design files produced by survey in a subfolder titled GEOPAK.
 - c. All field survey notes and electronic mapping data used for the project. It is not necessary to submit electronic raw survey data in the .PDF file.
 - d. It is not necessary to submit complete mapping folder for a consultant survey/consultant design in the same authorization. In its place, submit a 2D planimetric map with legal alignments and legal rights of way.

- e. 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.

ATTACHMENT B

SCOPE OF SERVICE
FOR
Hydraulic Survey

**M-13 from Zilawaukee Bridge to South City Limits of Bay City
Bay County and Saginaw County**

The Consultant shall perform a hydraulic survey, which provides geometric data on the stream channel upstream and downstream of the structure. **Two weeks** prior to starting the hydraulic survey, the Consultant surveyor shall schedule a site visit with an MDOT Hydraulics engineer by contacting the Design Engineer-Hydraulics/Hydrology Chris Potvin at 517-335-1919 or Assistant Design Engineer-Hydraulics/Hydrology Larry Wiggins at 517-373-1713. The purpose of the site visit is to discuss details of the survey and to clarify the intent of the survey. The Consultant must take notes at the site visit and submit them promptly to the MDOT Survey Coordinator and MDOT Hydraulics engineer.

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, and an MDOT contact person (the MDOT Project Manager or Consultant Survey Coordinator or Region Surveyor).

The Consultant must make every effort to minimize brush cutting on private property. The use of paint on private property is prohibited.

Cross-sections shall be taken at the limits and intervals specified by the MDOT Hydraulics Engineer as shown in Attachment E. Channel cross-sections shall be taken normal to the direction of *flood* flow and tied to the project coordinate system so they can be accurately plotted. The sections shall be extended to the edge of the floodplain, to the elevation of the top of the road at the structure, or to a distance beyond the river bank agreed upon with the MDOT Hydraulics engineer at the site visit. Shots must be taken at approximately six foot intervals through the stream, and at significant break points. Any high water marks and date of occurrence (if available) shall be noted.

Since the hydraulic analysis is to be performed by MDOT staff, the Consultant shall meet the following requirements for hydraulic cross-sections:

1. Cross-sections shall be submitted electronically in a CAiCE software file, or in a format acceptable to the Design Engineer-Hydraulics/Hydrology.
2. Each cross-section shall be a separate chain in CAiCE named "HYDRO9, HYDRO2", etc. These **HYDRO** chain numbers need not be in sequence, but each HYDRO chain must have a description of 10, 20, 30, etc., in sequence, starting with 10 at the downstream end. Each

individual point should have its own particular identifying MDOT Feature Code and the same alpha prefix, such as RBOT, VEGE, TB.

3. A profile of the **highpoints of all berms** such as roads, railroads, or driveways that cross the stream must be included as a separate chain in CAiCE, with a Feature Code of “**HIPT**” and named “HIPT3, HIPT1”, etc. These HIPT chain numbers need not be in sequence, but each HIPT chain must have a description of 10, 20, 30, etc., in sequence, starting with 10 at the downstream end. Each HIPT chain must also have a description that identifies the type of centerline, such as “railroad berm” or “farm drive.” **HIPT chains must be sequenced separately from the HYDRO Chains.** Each individual point should have its own particular identifying MDOT Feature Code and the same alpha prefix, such as CL, SW, WALLB.

4. Each HYDRO and HIPT cross-section shall be submitted with the points in the chain running all left to right, looking downstream.

5. The cross-sections generally must extend a minimum of 100 feet into the flood plain from the stream top of bank.

6. For each cross-section, the vegetation break point (the “friction point” between the natural channel and the surrounding vegetation) shall be shot with an alpha prefix and Feature Code of “**RBK**” or “**LBK**” on the right or left side of the waterway, looking downstream. It should have a description of “break point.”

7. Subsequent vegetation break points, if applicable, shall be shot with an alpha prefix and Feature Code of “**VEGE**” with a description such as “friction point – grass to shrub,” or “friction point – shrub to trees” as appropriate.

8. The water surface elevations at each cross section shall have a Feature Code and alpha prefix and of “**LWS**” and “**RWS**”, taken at the left edge of water and right edge of water looking downstream. The Consultant must note if any stream bed cross sections were dry, and LWS/RWS shots were unavailable. The note should be shown on the MicroStation drawing.

The project surveyor must ensure that all required information is legible and in a form which is easily accessible to the Hydraulics/Hydrology Unit. A CAiCE software file (Version 10.6 or newer) or a HEC-RAS file in MDOT format is acceptable. Other formats must be discussed in advance with the MDOT Survey Project Manager or Region Surveyor. Only one CAiCE file per project is desired. The Consultant should not submit separate CAiCE files for Hydraulics and Road/Structure, unless the Hydraulics Survey is required to be delivered first, in which case the Road/Structure Survey CAiCE file would be continued/appended to the Hydraulics Survey CAiCE file.

All elevations shall be referenced to the North American Vertical Datum of 1988 (NAVD88), or project datum, if established and different. If a project datum is used, the MDOT Hydraulics Engineer may require a reference to the North American Vertical Datum of 1988 (NAVD88) or the National Geodetic Vertical Datum of 1929 (NGVD29). Two benchmarks must be established at the stream crossing, one on each side of the stream. All benchmarks must be accurately described. Benchmark leveling shall be a closed loop of at least third-order

accuracy, which requires an error of closure between known benchmarks of not more than 0.06 feet times the square root of the distance in Miles.

Note: It is not necessary to provide least squares analyses for horizontal and vertical control for a Hydraulics Survey upstream and downstream from the structure. Electronic evidence of horizontal and vertical closure is required. The surveyor must use professional judgment to determine whether the closures are acceptable for use on a Hydraulics Survey. It is necessary to provide accurate elevations for underclearances, road and berm profiles, weirs, and anything that controls flow. It is not necessary to provide extremely accurate closures for vertical and horizontal control used for hydraulics cross-sections.

It is not necessary to provide a witness list of horizontal control points set for hydraulics cross-sections.

A list containing at least two benchmarks, one on either side of the bridge, with descriptions, elevations and datum, must be provided. Since these benchmarks will be used for road/bridge design and construction, least squares analysis is required.

THE NOTES FOR THE HYDRAULIC SURVEY MUST BE PACKAGED IN A SEPARATE PORTFOLIO. All field measurements, notes, sketches, and calculations must be included in the final transmission. Two separate, identical, and complete portfolios must be provided.