

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**

Intelligent Transportation Systems and Traffic Signal Systems

CONTROL SECTION(S): 28012, 28013, 28041

JOB NUMBER(S): 129391 C

PROJECT LOCATION:

The project is located in Traverse City and Grand Traverse County along US-31 from South Airport Rd northerly to W Grandview Parkway, and then easterly along US-31 to M-72 in Acme. The project also includes the section of W Grandview Parkway from Division Street westerly to the junction of M-72 (East Traverse Highway) and M-22 (Southwest Bay Shore Drive)

PROJECT DESCRIPTION:

Provide signal modernization design plans for 21 traffic signals per the detailed scope of signal work for each location below.

Assist MDOT to investigate, evaluate, and select an Adaptive Signal Control Technology (ASCT) system for the traffic signals along both corridors in Traverse City (Division Street corridor and West Grandview Parkway/Front Street/Munson Ave corridor): A future contract amendment will be issued to add the selected vendor as a subconsultant.

- A. Develop quality based selection criteria to assist MDOT in selecting a vendor for an ASCT system

The system engineering documents have been completed by MDOT and can be found via the following link <ftp://ftpmidot.state.mi.us/> under folder name "JN 129391 (Traverse City ASCT)"

- a. Concept of Operations outlines the traffic operations issues, and provides guidance on how the ASCT is expected to address these issues
 - b. Traffic data including volume summaries and existing synchro models for many of the locations in this project
 - c. The System Requirements document must be completed by the ASCT vendors
- B. Provide signal operational analysis as required for evaluation, recommendation, and design of the ASCT system.
 - C. Provide signal timing parameters for the ASCT system including backup timing permits to be used if the ASCT system is offline.
 - D. Serve as the MDOT representative and system manger, through construction phase, if an authorization is wrtten to the Consultant to do so.

ANTICIPATED SERVICE START DATE: April 1, 2016

ANTICIPATED SERVICE COMPLETION DATE: March 3, 2019

DBE PARTICIPATION REQUIREMENT: 3%

PRIMARY PREQUALIFICATION CLASSIFICATION(S):

Design-Traffic: ITS-Design & System Manager
Design-Traffic: Signal
Design-Traffic: Signal Operations-Complex

SECONDARY PREQUALIFICATION CLASSIFICATION(S):

Design – Traffic: Work Zone Maintenance of Traffic
Design – Traffic: Pavement Markings
Design – Traffic: Capacity & Geometric Analysis
Design - Utilities: Subsurface Utility Engineering
Design – Geotechnical
Design – Roadway: Intermediate
Surveying: Road Design
Surveying: Right of Way

PREFERRED QUALIFICATIONS AND CRITERIA (FOR NON-CLASSIFIED SERVICES):

1) **UTILITY COORDINATION**

X The Consultant shall be responsible for project Utility Coordination. See attached “Scope of Services for Utility Coordination”.

The consultant to be responsible for all project utility coordination including but not limited to:

- Locate utilities via subsurface utility investigation and show all utilities on the plans
- Initiate correspondence and utility coordination meetings to resolve utility conflicts
- Obtain service request number and coordinate with power company(s) to provide power service to traffic signal equipment.

MDOT PROJECT ENGINEER MANAGER:

Garrett Dawe
North Region
1088 M-32 East,
Gaylord, MI 49735
Cell Phone Number: 989-289-2388
Fax Number: 989-732-3898
E-mail: Daweg@michigan.gov

CONSTRUCTION COST:

- A. The estimated cost of construction is: \$3,753,500
- B. The estimated cost of real estate is: \$20,000

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.

REQUIRED MDOT GUIDELINES AND STANDARDS:

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 MDOT Current Version of Bentley Microstation/GEOPAK or PowerGEOPAK (published at Section 2.2.2 of the Design Submittal Requirements) with the current MDOT workspace (published at Section 2.2.1 of the Design Submittal Requirements). 3D Models are required for all applicable projects. See Chapter 2 of the Design Submittal Requirements for a complete listing of applicable projects. The consultant shall comply with all MDOT CADD standards and file naming conventions.

MDOT RESPONSIBILITIES:

- A. Schedule and/or conduct the following:
 - 1. Project related meetings
 - 2. Base Plan Review
 - 3. The Plan Review
 - 4. Omissions/Errors/Check Meeting
 - 5. Final Transport item cost estimates
- B. Acquire any grading permits, easements, or right-of-way required
- C. Furnish pertinent reference materials.
- D. Furnish prints of an example of a similar project and old plans of the area, if available.
- E. Furnish FTP site for software download and instructions for the MDOT Stand Alone Proposal Estimator's Worksheet (SAPW).

CONSULTANT RESPONSIBILITIES:

Complete the design of this project including, but 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 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, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.

Perform all project utility coordination per attachment B

Assist MDOT to investigate, evaluate, and select an Adaptive Signal Control Technology (ASCT) system for the traffic signals along both corridors in the Traverse City area (Division Street corridor and West Grandview Parkway/Front Street/Munson Ave corridor):

- A. Thoroughly review the Concept of Operations and perform as-needed operational and capacity analyses to gain detailed knowledge of the traffic operations issues in the Traverse City area
- B. Solicit ASCT vendors to complete the System Requirements document
 1. The last column of this document must be completed by each vendor including a detailed explanation if/how each requirement is met by the proposed ASCT system
 2. Assist vendors as required to complete the Systems Requirements document to ensure they understand the traffic engineering issues to be addressed by the ASCT system.
 3. Review the completed System Requirements document from each vendor to verify the accuracy of vendor's responses
- C. Develop quality based criteria to assist MDOT in selecting a vendor for an ASCT system
 1. MDOT anticipates selecting an ASCT system by April 2017
- D. During design plan preparation, provide design parameters required for the selected ASCT system including placement of detection and software and hardware requirements
- E. Provide signal operational analysis as required for evaluation, recommendation, and design of the ASCT system
- F. Provide signal timing parameters for the ASCT system including backup timing permits to be used if the ASCT system is offline.

Provide signal modernization design plans for 21 traffic signals per the following scope of signal work at each location:

1. US-31/M-37 at South Airport Rd (28012-01-012)

- a. Full modernization including advanced detection and controller upgrade as required for ASCT system
2. US-31/M-37 at Market Place (28012-01-006)
 - a. Broad band radio interconnect
 - b. Advanced detection as needed for ASCT
 - c. Controller upgrade as needed for ASCT
3. US-31/M-37 at Meijer driveway (28012-01-014)
 - a. Broad band radio interconnect
 - b. Advanced detection as needed for ASCT
 - c. Controller upgrade as needed for ASCT
4. Division at 14th, Silver Lake (28012-01-005)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
5. Division at 7th Street (28012-01-007)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
6. Division at Front (28012-01-001)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
7. M-22, M-72 at M-72 E Jct (45071-01-005)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
8. Division at Grandview (28013-01-007)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
9. Grandview at Union (28013-01-012)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
10. Grandview at Park (28013-01-025)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
11. Front at Grandview (28013-01-004)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
12. Front at Barlow St (28013-01-020)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
13. Front at Garfield (28013-01-018)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
14. Front at Fair St (28013-01-021)
 - a. Full modernization including left-turn phasing for eastbound Front St and advanced detection and controller upgrade for ASCT
15. Munson at Eighth (28013-01-009)
 - a. Full modernization including advanced detection and controller upgrade for ASCT
16. Munson at Airport Access (28013-01-019)

- a. Full modernization including advanced detection and controller upgrade for ASCT
- 17. Munson at 3 Mile (28013-01-006)
 - a. Broad band radio interconnect as needed for ASCT
 - b. Advanced detection as needed for ASCT
- 18. US-31/M-72 at 4 Mile (28013-01-026)
 - a. Advanced detection as needed for ASCT
- 19. Munson at Holiday (28013-01-023)
 - a. Broad band radio interconnect
 - b. Advanced detection as needed for ASCT
- 20. US-31/M-72 at Bunker Hill (28013-01-024)
 - a. Broad band radio interconnect
 - b. Advanced detection as needed for ASCT
 - c. Controller upgrade as needed for ASCT
- 21. US-31, M-72 at M-72, N JCT (28013-01-005)
 - a. Broad band radio interconnect
 - b. Advanced detection as needed for ASCT
 - c. Controller upgrade as needed for ASCT

General work involved in the design of this project includes:

- A. Prepare required plans, details, and specifications required for design and construction.
- B. Perform soil borings for signal structures as required
- C. Perform special foundation designs if needed as a result of existing soil conditions
- D. Perform subsurface utility engineering tasks including identifying all underground (and overhead) utilities and initiating utility coordination meetings as required to resolve utility conflicts
- E. Compute and verify all plan quantities.
- F. Prepare details and special provisions for maintaining traffic during construction.
- G. Provide solutions to any unique problems that may arise during the design of this project.
- H. 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.
- I. Maintain a Design Project Record in ProjectWise, which includes a history of significant events (changes, comments, etc.) which influenced the development of the plans, dates of submittals and receipt of information.

- J. If excavation is required, submit the excavation locations which may contain contamination. Project Manager then can proceed in requesting a Project Area Contamination Survey (PACS).
- K. The Consultant shall prepare and submit in ProjectWise (in PDF format) a CPM network for the construction of this project.
- L. The Consultant representative shall record the minutes and submit in ProjectWise (in PDF format), 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. MDOT will provide and distribute official meeting minutes for The Plan Review Meeting.
- M. The Consultant will provide to MDOT, by entering into MDOT ProjectWise at the scheduled submittal dates, electronic documents (in PDF format) of the required specifications and plan set materials for distribution by MDOT for all reviews for this project.
- N. Prepare and submit electronically (native format or PDF) into MDOT ProjectWise, 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.
- O. Attend any project-related meetings as directed by the MDOT Project Manager.
- P. 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.
- Q. 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.
- R. 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 using sub-surface utility engineering. 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 Coordinator 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.
- S. The Consultant shall be responsible for all traffic control required to perform the tasks as outlined in this Scope of Design Services.

- T. 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 Joe Rios, Utilities/Permits Section, Development Services Division at (517) 241-2103.
- U. On the first of each month, the Consultant Project Manager shall submit in ProjectWise a monthly project progress report to the Project Manager.

DELIVERABLES:

Documentation of quality based criteria used to assist MDOT in selecting a vendor for an ASCT system including the completed system requirements documents.

Documentation of all project meetings including utility coordination

The Consultant shall enter in MDOT ProjectWise, in the appropriate folders all electronic files associated with the project in their native format (spreadsheets, CADD files, GEOPAK files, Roadway Designer Templates etc.) 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, to MDOT ProjectWise, in the appropriate folders, in their native format with standard naming conventions as well as combined into one 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 submitted to MDOT ProjectWise in the appropriate folders in a set in PDF 11" x 17" format. For final Plan Turn-In, a title sheet shall be printed, signed, sealed, and then scanned for inclusion with the PDF set. The original title sheet shall be sent to the MDOT Project Manager.

Reference Information Documents (RID) shall be entered into MDOT ProjectWise in the appropriate folder with standard naming conventions and content at milestone submittals as defined by Chapter 4 of the Design Submittal Requirements. The RID files included will depend on the design survey deliverables and project template (See Chapter 2 of the Design Submittal Requirements). 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 xml files necessary for import into the Trns*port bid letting software. The SAPW files shall be entered into MDOT ProjectWise in the appropriate folder.

The project removal and construction sheets will require a scale of **1"=30'** 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.

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
P/PMS Form Only

**MDOT PRECONSTRUCTION
TASKS
CONSULTANT CHECKLIST**

Version 13
Updated
03-02-2015

For questions on specific tasks, refer to the P/PMS Task Manual located on the MDOT Website.

For assistance in accessing this manual, please contact:

Dennis Kelley: (517) 373-4614

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. Scheduling assistance may be accomplished with estimated completion dates. While not part of P/PMS, an Authorization Milestone and Post-Design Tasks have been included for your reference.

STUDY (EARLY PRELIMINARY ENGINEERING)

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY (mm/dd/yyyy)
		CONSULTANT CONTRACT AUTHORIZATION/EXECUTION	/ /
YES	NO		
<u>INFORMATION GATHERING/STUDIES</u>			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	1115 Traffic Data Collection for Studies	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1120 Prepare Traffic Analysis Report for Studies	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1125 Traffic Capacity Analysis for Studies	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1155 Request/Perform Safety Analysis for Studies	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1300 Traffic Impact Study	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1350 Determine Need for Interstate Access Change Request	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1400 Feasibility Study	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1500 Corridor Study	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1555 Interstate Access Change Request	/ /
<input type="checkbox"/>	<input type="checkbox"/>	<u>155M FHWA Approval of Interstate Access Change Request</u>	/ /
<input type="checkbox"/>	<input type="checkbox"/>	1600 Access Management Study Plan	/ /

<input type="checkbox"/>	<input type="checkbox"/>	1700 Other Miscellaneous Studies	/	/
<u>EPE SCOPING ANALYSIS</u>				
<input type="checkbox"/>	<input type="checkbox"/>	2100 Scope Verification and Initiation of EPE Activities	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2115 Prepare Traffic Analysis Report for EPE/Design	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2120 Traffic Data Collection for EPE/Design	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2125 Traffic Capacity Analysis for EPE/Design	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2130 Prepare Project Purpose and Need	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<u>213M Concurrence by Regulatory Agencies with the Purpose and Need</u>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2140 Develop and Review Illustrative Alternatives	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2155 Request/Perform Safety Analysis for EPE/Design	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2160 Prepare and Review EIS Scoping Document	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<u>216M Public Information Meeting</u>	/	/

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

STUDY (EARLY PRELIMINARY ENGINEERING) (cont'd)

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY (mm/dd/yyyy)	
YES	NO			
<u>EPE DRAFT ANALYSIS</u>				
<input type="checkbox"/>	<input type="checkbox"/>	2310 Conduct Technical SEE Studies	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2311 Cultural Resources Survey	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2312 Recreational Survey – Section 4(f)/6(f)	/	/
<u>EPE DRAFT ANALYSIS (cont'd)</u>				
<input type="checkbox"/>	<input type="checkbox"/>	2313 Endangered Species Survey	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2314 Wetland Assessment	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2315 Wetland Mitigation	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2316 Other Technical Reports	/	/
<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"/>	<u>233M Aerial Photography Flight</u>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2360 Prepare and Review EA	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<u>236M Approval of EA by FHWA</u>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2370 Prepare and Review Draft EIS	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<u>237M Approval of Draft EIS by FHWA</u>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2380 Distribute EA	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<u>238M Public Hearing for EA</u>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2390 Distribute DEIS	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<u>239M Public Hearing for DEIS</u>	/	/

EPE FINAL ANALYSIS

<input type="checkbox"/>	<input type="checkbox"/>	2510	Determine and Review Recommended Alternative	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<u>250M</u>	<u>Concurrence by Reg Agencies with Recom Alternatives</u>	/	/
<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	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<u>252M</u>	<u>Approval of FONSI by FHWA</u>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2540	Prepare and Review FEIS	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<u>254M</u>	<u>Approval of FEIS by FHWA</u>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2550	Obtain ROD	/	/
<input type="checkbox"/>	<input type="checkbox"/>	<u>255M</u>	<u>ROD Issued by FHWA</u>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2570	ITS Concept of Operations	/	/

CONTAMINATION INVESTIGATION

<input type="checkbox"/>	<input type="checkbox"/>	2810	Project Area Contamination Survey (PCS)	/	/
<input type="checkbox"/>	<input type="checkbox"/>	2820	Preliminary Site Investigation (PSI) for Contamination	/	/

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

PRELIMINARY ENGINEERING - DESIGN

		P/PMS TASK NUMBER AND DESCRIPTION		DATE TO BE COMPLETED BY (mm/dd/yyyy)	
YES	NO				
<u>DESIGN SCOPE VERIFICATION AND BASE PLAN PREPARATION</u>					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3130	Verify Design Scope of Work and Cost	/	/
<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	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3325	Geotechnical Structure Site Characterization	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3330	Conduct Design Survey	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3340	Conduct Structure Survey	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3350	Conduct Hydraulics Survey	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3360	Prepare Base Plans	9/30/2016	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>311M</u>	<u>Utility Notification</u>	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3365	Pre-Conceptual ITS Design and Meeting	/	/
<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"/>	3385	Preliminary Load Rating	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>332M</u>	<u>Base Plan Review (Pre-GI Inspection)</u>	3/24/2017	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3390	Develop the Maintaining Traffic Concepts	/	/
<u>PRELIMINARY PLANS PREPARATION</u>					
<input type="checkbox"/>	<input type="checkbox"/>	3500	Develop Transportation Management Plan	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3510	Perform Roadway Geotechnical Investigation	/	/

<input type="checkbox"/>	<input type="checkbox"/>	3520	Conduct Hydraulic/Hydrologic and Scour Analysis	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3522	Conduct Drainage Study, Storm Sewer Design, and use Structural Best Management Practices	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3530	Geotechnical Foundation Engineering Report	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3535	Conduct Str. Review for Arch. & Aesthetic Improvements	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3540	Develop the Maintaining Traffic Plan	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3551	Prepare/Review Preliminary Traffic Signal Design Plan	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3552	Develop Preliminary Pavement Marking Plan	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3553	Develop Preliminary Non-Freeway Signing Plan	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3554	Develop Preliminary Freeway Signing Plan	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3555	Prepare/Review Preliminary Traffic Signal Operations	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3570	Prepare Preliminary Structure Plans	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3580	Develop Preliminary Plans	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3585	Final ITS Concept Design and Meeting	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3590	Review The Plans	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>352M</u>	<u>THE Plan Review Meeting</u>		1/29/2018
<input type="checkbox"/>	<input type="checkbox"/>	3595	Conduct ITS Structure Foundation Investigation	/	/

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

PRELIMINARY ENGINEERING - DESIGN (cont'd)

		P/PMS TASK NUMBER AND DESCRIPTION		DATE TO BE COMPLETED BY (mm/dd/yyyy)	
YES	NO				
<u>UTILITIES</u>					
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3610	Compile Utility Information	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3615	Compile ITS Utility Information	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3650	Coordinate RR Involvement for Grade Separations	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3655	Coordinate RR Involvement for At-Grade Crossings	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3660	Resolve Utility Issues	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>360M</u>	<u>Utility Conflict Resolution Plan Distribution</u>	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>361M</u>	<u>Utility Meeting</u>	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3670	Develop Municipal Utility Plans	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3672	Develop Special Drainage Structures Plans	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3675	Develop Electrical Plans	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3680	Preliminary ITS Communication Analysis	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3690	Power Design (Power Drop in Field)	/	/
<u>MITIGATION/PERMITS</u>					
<input type="checkbox"/>	<input type="checkbox"/>	3710	Develop Required Mitigation	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3720	Assemble Environmental Permit Applications	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3730	Obtain Environmental Permit	/	/
<u>FINAL PLAN PREPARATION</u>					
<input type="checkbox"/>	<input type="checkbox"/>	3815	Geotechnical Structure Design Review	/	/

<input checked="" type="checkbox"/>	<input type="checkbox"/>	3821	Prepare/Review Final Traffic Signal Design Plan	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3822	Complete Permanent Pavement Marking Plan	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3823	Complete Non-Freeway Signing Plan	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3824	Complete Freeway Signing Plan	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3825	Prepare/Review Final Traffic Signal Operations	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3830	Complete the Maintaining Traffic Plan	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3840	Develop Final Plans and Specifications	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>380M</u>	<u>Plan Completion</u>	3/2/2018	
<input type="checkbox"/>	<input type="checkbox"/>	3850	Develop Structure Final Plans and Specifications	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3870	Hold Omissions/Errors Check (OEC) Meeting	/	/
<input type="checkbox"/>	<input type="checkbox"/>	3875	Final Load Rating	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>387M</u>	<u>Omissions/Errors Checks Meeting</u>	4/4/2018	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>389M</u>	<u>Plan Turn-In</u>	2/15/2019	
<input type="checkbox"/>	<input type="checkbox"/>	3880	CPM Quality Assurance Review	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3890	Final ITS Communication Analysis	/	/

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

PRELIMINARY ENGINEERING – RIGHT OF WAY

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY (mm/dd/yyyy)
YES	NO		
<u>EARLY RIGHT OF WAY WORK</u>			
<input type="checkbox"/>	<input type="checkbox"/>	4100 Real Estate Pre-Technical Work (combines 411M, 4120)	/ /
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4150 Real Estate Technical Work (combines 4130, 4140)	/ /
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>413M</u> <u>Approved Marked Final ROW</u>	12/11/2017
<u>ROW APPRAISAL</u>			
<input type="checkbox"/>	<input type="checkbox"/>	4350 Real Estate Appraisals (combines 4411, 4412, 4413, 4420)	/ /
<u>ROW ACQUISITION</u>			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4450 Real Estate Acquisitions (combines 4430, 4710, 4720)	/ /
<input checked="" type="checkbox"/>	<input type="checkbox"/>	4510 Conduct Right Of Way Survey & Staking	/ /
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<u>442M</u> <u>ROW Certification</u>	12/11/2018

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

POST LETTING/AWARD TASKS (for reference only)

		P/PMS TASK NUMBER AND DESCRIPTION		DATE TO BE COMPLETED BY (mm/dd/yyyy)	
YES	NO				
<input type="checkbox"/>	<input type="checkbox"/>	4810	Complete Acquisition Process	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4820	Manage Excess Real Estate	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4830	Provide Post-Certification Relocation Assistance	/	/
<input type="checkbox"/>	<input type="checkbox"/>	4910	Conduct ROW Monumentation	/	/
<input checked="" type="checkbox"/>	<input type="checkbox"/>	5010	Construction Phase Engineering and Assistance	/	/
<input type="checkbox"/>	<input type="checkbox"/>	5020	Prepare As-Built Drawings	/	/

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. 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

October 2015

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.
3. Work in any of the following Survey Services Categories: Surveying: Hydraulics, Surveying: Right of Way, Surveying: Road Design, Surveying: Structure and Surveying: Geodetic Control and Leveling 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 May 2014, except for naming conventions. 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. The Horizontal and Vertical datums and coordinate system must be clearly stated in the Survey Work Plan and subsequent submittal. For acceptable datums and coordinate systems refer to the MDOT Design Surveys *Standards of Practice*, which can be found on the MDOT Design Survey ftp site.
12. **Electronic submittal only.** Each structure must be submitted separately.
13. Each Survey Project Folder is divided into six sections. These sections are as follows: **Admin, Align & ROW, Control, Mapping, Misc, and RID** (Reference Information Documents).
14. To be included in the **Admin** section shall be a copy of the **Survey Project Portfolio QA/QC Check-off list**, May 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.**
15. All submitted files must be scanned and/or converted to one PDF format file. A Table of Contents in PDF format is required that has all PDF files 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 GEOPAK must have separate access in native format outside of the PDF file.
16. 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. Please include MDOT's Form 222(5/01) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL" for all transmittals. A copy of this transmittal form must be sent to the MDOT Project Manager for Design and the MDOT Supervising Land Surveyor.

Acceptance of this survey by the MDOT Project Manager and/or the MDOT Supervising Land Surveyor 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 TSC Traffic and Safety Engineer NAME at PHONE or [EMAIL](#) prior to submitting a priced proposal. Traffic Control costs not included in the priced proposal will not be paid by MDOT.

The Consultant must submit a five (5) day advanced notice through the permit system prior to work.

No work shall be performed or lane closures allowed during the Memorial Day, Independence Day, Thanksgiving, Christmas, New Year or Labor Day holiday periods. The holiday periods will be defined by the local Traffic and Safety Engineer which has jurisdiction over the project area.

All work on the road shall be conducted during daylight hours Monday through Saturday only. Lane closures may only occur between the hours of 9:00 am and 2:00 pm, shoulder closures may only occur between the hours of 9:00 am and 3:00 pm. Weekend work is permitted on Saturdays between the hours of 7:00 am and 5:00 pm. Double lane closures are only permitted on Saturdays. *Example; NOT Typical – to be discussed with Traffic & Safety Engineer*

All traffic control devices shall conform to the current edition, as revised, of the *Michigan Manual of Uniform Traffic Control Devices* (MMUTCD) available on line at http://mdotcf.state.mi.us/public/tands/Details_Web/mmutedcompleteinteractive.pdf. 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 shall use MDOT standard "maintaining traffic" typicals for any and all closures. Typical MDOT traffic control diagrams are available on line at <http://mdotcf.state.mi.us/public/tands/plans.cfm>

The Consultant may also use MDOT Maintenance Work Zone Traffic Control Guidelines, found

on line at http://www.michigan.gov/documents/zonecontrol_112912_7.pdf.

The Consultant must have a vehicle with markings/logo that identifies the company within sight distance of survey activity and must have a 360 degree flashing strobe light on the top of the vehicle whenever they are working on or near the road.

Traffic control on city streets and county roads is under the jurisdiction of the local authorities where the project is located.

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 Operations Engineer at the MDOT Location 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 <http://mdotcf.state.mi.us/public/specbook/2012/>. 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 scheduled work.

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 SUBMITTAL

The final report for this project shall include:

1. In the **Admin** subfolder, the following will appear:

- **XXXXXXX_Survey_Notes_Receipt_and_transmittal-20YY-MM**
- **XXXXXXX_Survey_20YY-MM-DD.pdf**
 - An Adobe PDF with all of the contents of the portfolio scanned into it and bookmarked for ease of location within the PDF file. Table of Contents – should

appear bookmarked on the left side of the Adobe screen. Note: Upon completion, use Adobe's "Reduce File Size" command.

- **XXXXXX_Surveyors_Report_20YY-MM-DD.pdf**
 - Surveyor's Project Report, divided into subsections, containing a complete synopsis of project survey including, but not limited to:
 - Explanation of any deviation from the Scope and/or the Standards
 - Basis of horizontal and vertical control, with specific emphasis on datum sources used (list CORS and NAVD benchmarks tied), equipment, software, methods used to establish the coordinates and methods used to detect errors and eliminate them. If RTK is used, explain the methodology, equipment and procedure used. Include a detailed explanation relating to CORS usage or site calibration (Base Station) (for level loops, Primary and Intermediate Control networks)
 - Provide a complete discussion of all Alignments relative to the project. Include all information and methods used to determine the location and designation of each.
 - Property boundary issues addressed, with specific information that may be useful for a surveyor to retrace or an engineer during design. If necessary, include a summary of conversations with property owners and their concerns.
 - Any mapping issues encountered, with specific information that may be useful for an engineer during design.
 - Any information obtained regarding drainage issues observed or reported by local authorities or residents should be discussed.
 - Discuss the contents of anything that appears in the miscellaneous section.
 - The signed, sealed, and dated "PROFESSIONAL SURVEYOR'S CERTIFICATION FOR MDOT PROJECTS" as detailed in the MDOT Design Survey Standards of Practice.
 - Alignment information must be certified, signed and sealed by the Professional Surveyor as described in the Alignment section of the Standards of Practice.
 - Mapping information for the project should be summarized per the Standards of Practice.
 - Explanation of how the Reference Point locations were determined.
- **XXXXXX_Vicinity_Map.pdf**
 - Screen capture from Street Atlas, Google Maps, or some other resource, with the POB and POE labeled.
- **XXXXXX_QA/QC_Certification_20YY-MM-DD.pdf**
 - QA/QC Certification, signed and sealed by the lead QA/QC person (See the Standards of Practice Quality Assurance/Quality Control section – Page 24).

- **XXXXXX_MDOT_QA/QC_Checklist_20YY-MM-DD.pdf**
 - MDOT QA/QC Checklist and Certification Statement is filled out, signed and sealed by the Survey QA/QC Manager

A. **Correspondence** (subfolder):

- **XXXXXX_emails.pdf**
 - Copy of all correspondence pertaining to the project saved as a .pdf file.
- **XXXXXX_Phone_Log.pdf**
 - Transcript of all phone conversations pertaining to the project in a .pdf file format.
- **XXXXXX_Meeting_Minutes.pdf**
 - Copy of all Meeting Minutes pertaining to the project in a .pdf file format.

B. **Scopes** (subfolder):

- **Work_Permit_Permit_Name.pdf**
 - Copy of all work permits required for the project.
- **XXXXXX_Advanced_Notice_XXXXX_20YY-MM-DD.pdf**
 - Notice to proceed with work on the project.
- **XXXXXX_Form5102_Change_of_Scope_20YY-MM-DD.pdf**
 - Change of scope form.
 - This forms only needs to be filled out if the scope actually changes
- **XXXXXX_Notice_to_Proceed.pdf**
 - MDOT Form 5180 filled out and added to Scopes Folder
- **XXXXXX_Price_Proposal.pdf**
 - MDOT Price Proposal Package saved as a .pdf, wages and costs redacted
- **XXXXXX_Traffic_Control_Quotes.pdf**
 - Copies of the quotes obtained for traffic control in .pdf format.
- **XXXXXX_Work_Plan.pdf**
 - Detailed Description of the work that will be performed on the project.

2. In the **Align & ROW** subfolder, the following will appear:

- **XXXXXX_132_Survey_Owner_Name.pdf**
 - Final Certificate of Survey saved as a .pdf file.

- If multiple surveys are required for a project they should each have a unique name.
- **Deed_C-123.pdf**
 - Copy of each deed used for the project.
 - Each deed saved as a separate file.
- **LCRC_J-10_TXXN_RXXE.pdf**
 - Copy of all LCRC Documents used for the project.
 - Each LCRC saved as a separate document.
- **Plat_Westgate_Park.pdf**
 - Copy of all Plats used for the project.
 - Each Plat saved as a separate document.
- **Tax_Desc_07-26-100-001.pdf**
 - Copy of all Tax Descriptions used for the project.
 - Each Tax Description saved as a separate Document.
- **Tax_Map_10-13H.pdf**
 - Copy of all Tax Maps used for the project.
 - Each Tax Map saved as a separate Document.
- **XXXXXX_Prop_20YY-MM-DD.doc**
 - Document containing all found property monumentation.
- **XXXXXX_Prop_20YY-MM-DD.txt**
 - Text document containing all found property monumentation.
 - Data saved in a comma separated format (csv).
 - Point Number, Northing, Easting, Elevation, Description.

3. In the **Control** subfolder, the following will appear:

- **XXXXXX_GPS_EDM_Control_Comparison.xls**
 - Table comparing GPS grid and EDM ground observations for primary control as described in the Standards of Practice – Item 7 Control
- **XXXXXX_NGS_Mark_Recovery_Form.pdf**
 - Form detailing the NGS marks recovered during the project.
- **XXXXXX_MDOT Monument Establishment**
 - MDOT Monument Establishment Data Sheets of all Primary Control Points established and or used as part of this project (Contact Lansing Survey Office for template).

A. **Horizontal** (subfolder);

- **XXXXXX_Intermediate_Control_Plot.pdf**
 - Plot(s) of the GPS network(s) from GPS software and sketch(s) or plot(s) of network or traverse with legible point numbers.
- **XXXXXX_Primary_Control_Plot.pdf**
 - Plot(s) of the GPS network(s) from GPS software and sketch(s) or plot(s) of network or traverse with legible point numbers.
- **XXXXXX_Primary_Minimally_Constrained_Adjustment_Report.pdf**
 - Input parameters: a-priori, centering error, etc.
 - Raw unadjusted closures,
 - Final coordinates with standard deviations (2 sigma)
 - Vector input data and analysis.
 - Histograms.
 - Error ellipses.
 - Traverse closures.
 - Statistical test results.
 - Horizontal and vertical datums, ellipsoid, SPC zone, and units (International Feet)
 - Name of the adjustment program used with version or release.
 - Only Non-trivial vectors used
- **XXXXXX_Primary_Fully_Constrained_Adjustment_Report.pdf**
 - Input parameters: a-priori, centering error, etc.
 - Raw unadjusted closures,
 - Final coordinates with standard deviations (2 sigma)
 - Vector input data and analysis.
 - Histograms.
 - Error ellipses.
 - Traverse closures.
 - Statistical test results.
 - Horizontal and vertical datums, ellipsoid, SPC zone, and units (International Feet)
 - Name of the adjustment program used with version or release.
 - Only Non-trivial vectors used
- **XXXXXX_Intermediate_Minimally_Constrained_Adjustment_Report.pdf**
 - Input parameters: a-priori, centering error, etc.
 - Raw unadjusted closures,
 - Final coordinates with standard deviations (2 sigma)
 - Vector input data and analysis.
 - Histograms.
 - Error ellipses.
 - Traverse closures.

- Statistical test results.
 - Horizontal and vertical datums, ellipsoid, SPC zone, and units (International Feet)
 - Name of the adjustment program used with version or release.
 - Only Non-trivial vectors used
- **XXXXXX_Intermediate_Fully_Constrained_Adjustment_Report.pdf**
 - Input parameters: a-priori, centering error, etc.
 - Raw unadjusted closures,
 - Final coordinates with standard deviations (2 sigma)
 - Vector input data and analysis.
 - Histograms.
 - Error ellipses.
 - Traverse closures.
 - Statistical test results.
 - Horizontal and vertical datums, ellipsoid, SPC zone, and units (International Feet)
 - Name of the adjustment program used with version or release.
 - Only Non-trivial vectors used
- **XXXXXX_OPUS_Observation_Logs.pdf**
 - All OPUS log sheets combined together into one .pdf file
- **XXXXXX_OPUS_Manual_Conversion.pdf**
 - Manual conversion of OPUS Solution from Meters to International Feet.
- **XXXXXX_OPUS_Extended.pdf**
 - Extended output solution from OPUS for all Control Points that have been submitted to OPUS.
- NOTE: The Consultant is responsible to archive raw data for a period of five (5) years.

B. Vertical (subfolder):

- **XXXXXX_Data_Sheets.pdf**
 - A copy of all NGS Data Sheets used for the project
- **XXXXXX_V_Minimally_Constrained_Adjustment_Report.pdf**
 - input parameters
 - raw unadjusted closures,
 - final elevations with standard deviations
 - loop closures.
 - Statistical test results.
 - Horizontal and vertical datums, ellipsoid, SPC zone, and units (International Feet)
 - Name of the adjustment program used with version or release.

- OR supply all written calculations to support the final results.
 - Provide separate subfolders for each adjustment which contain the files used in the processing and analysis software. e.g.: Levproc, StarLev, MicroSurvey's StarNet only.
- **XXXXXX_V_Fully_Constrained_Adjustment_Report.pdf**
 - input parameters,
 - raw unadjusted closures
 - final elevations with standard deviations
 - loop closures.
 - Statistical test results.
 - Horizontal and vertical datums, ellipsoid, SPC zone, and units (International Feet)
 - Name of the adjustment program used with version or release.
 - OR supply all written calculations to support the final results.
 - Provide separate subfolders for each adjustment which contain the files used in the processing and analysis software. e.g.: Levproc, StarLev, MicroSurvey's StarNet only.
- NOTE: The Consultant is responsible to archive raw data for a period of five (5) years.

4. In the **Mapping** subfolder, the following will appear:

- **XXXXXX_Struc_Inventory_20YY-MM-DD.xls**
 - Drainage structure inventory report compatible with MDOT software and correlated to the connectivity drawing in Excel spreadsheet format
- **XXXXXX_Connectivity_20YY-MM-DD.dgn**
 - Map of the project area generated from PowerGEOPAK that shows all the drainage structures collected for the project, with lines connecting each structure.
- **XXXXXX_Images_20YY-MM-DD.zip**
 - Digital photos of the structure(s) and end sections or headwalls with names or tags correlating the photo with the information in Drainage Structure Inventory Report. (**Note: If deliverables are generated with SS3 the image should be integrated into the 3D.dgn**)
- **XXXXXX_Utility_List.doc**
 - Word document containing a utility company listing to include company name, address, phone number, and contact person, if required.
- **XXXXXX_Feature_Code.txt**
 - Individual utility / drainage station and offset reports generated by Feature Code in .dgn format drawing.

- e.g.: Catch Basin.txt, if required.

5. In the **RID** (Reference Information Documents) subfolder, the following will appear:

- **S-XXXXXXX_Align_ROW_20YY-MM-DD.dgn**
- **S-XXXXXXX_Align_LandXML_20YY-MM-DD.xml**
- **S-XXXXXXX_Survey_Info_Sheet_20YY-MM-DD.doc**
- **S-XXXXXXX_ControlPts_20YY-MM-DD.txt**
- **S-XXXXXXX_ExTriangle_20MM-YY-DD.dgn**
- **S-XXXXXXX_ExTriangle_LandXML_20YY-MM-DD.xml**
- **S-XXXXXXX_Survey_2D_20YY-MM-DD.dgn**
- **S-XXXXXXX_Survey_3D_20YY-MM-DD.dgn**

6. In the **Misc** subfolder, the following will appear:

- Data not assignable to one of the other sections may be placed here and must be discussed in the survey report. Examples of appropriate site specific information might be: newspaper articles, photos of the project site looking up and down the roadway, various aspects of a structure, up and down stream and side to side at Hydro chains, etc. Photos shall be submitted in native format and annotated. All items must be included in the master PDF.
- **Images** (subfolder)
 - This folder contains all pictures taken for the project.
 - All pictures should be sorted into separate sub folders and labeled according to their content for example:
 - XXXXXXX_Hydro_Photos
 - XXXXXXX_Drainage_Structures

ATTACHMENT B
SCOPE OF SERVICE
FOR
UTILITY COORDINATION

The Consultant is directly responsible for all aspects of the project's utility coordination. The Consultant is expected to provide technical assistance to MDOT, utilities and other stakeholders regarding utility identification, project utility coordination and utility conflict resolution.

A utility is defined as any privately, publicly, municipal or cooperatively owned line, facility, or system for producing, transmitting, or distributing communication, cable television, power, electricity, light, heat, gas, oil, crude products, water, steam, waste, or any other similar commodity, including any fire or police signal system or street lighting system.

MDOT shall -

- Provide a preliminary list of utilities, with contact information, that may have facilities located within the project limits. This list may not be 100% accurate and/or complete.
- Provide assistance, if necessary, in contacting utilities to obtain facility records.
- Provide Consultant with utility responses and facility records if utility information solicitation has been performed.
- Organize and host a kick-off meeting with Consultant and MDOT prior to Consultant beginning utility coordination services.

Consultant shall -

- Maintain a Utility Conflict Matrix* spreadsheet and deliver as part of the monthly status report.
- Distribute form letters, plans, etc. as outlined in 14.16 (Request for Utility Information) and 14.26 (Distribution of Preliminary Plans to Utilities and Utility Coordination Meeting) of the MDOT Road Design Manual.
 - Identify existing/proposed utility owners and facilities.
 - Collect and compile utility responses.
 - Follow up with non-responsive utilities.
- Schedule and conduct utility meetings for the resolution of conflicts between utility facilities and proposed construction.
 - Identify conflicts, discuss possible design modifications, develop utility relocation schemes, discuss reimbursable relocations, and discuss project scope and schedule.
 - Identify the utility's design and construction contacts and ensure the plan's note sheet utility contact information is accurate.
 - Record meeting minutes and distribute to all attendees.
- Schedule and conduct field meetings with individual utilities to resolve conflicts.
- Schedule and conduct meetings convened for the purpose of utility betterments.
- Ensure municipal utility relocations, betterments and reimbursements follow Chapter 9 of the MDOT Road Design Manual.

- Identify eligible reimbursable utility relocations, for public/private utilities, as outlined in 23 Code of Federal Regulations (CFR) Part 645 Subparts A and B – Utilities and ensure 23 CFR Part 635.410 - Buy America Requirements are met.
 - Collect documentation to evaluate reimbursable utility relocations.
- Evaluate utility relocation plans for compatibility with the proposed project.
- Ensure utility relocation schedules do not impact the project schedule.
- Confirm utility relocation permit applications are submitted to the TSC.
- Prepare the “Utilities Status Report” (MDOT Form 2286) and “Notice to Bidders - Utility Coordination” documents.
- Track and monitor utility relocation progress.

Deliverables (Provided to the TSC Utility Coordinator and Project Manager):

- Courtesy copies of all correspondence with the utilities
- Utility Conflict Matrix
- Utility coordination meeting minutes
- Reimbursable utility relocation documentation
- Utilities Status Report and Notice to Bidders - Utility Coordination

* The Utility Conflict Matrix (UCM) is located on the <http://www.trb.org/Main/Blurbs/166731.aspx> website under Training materials > Prototype 1 – Stand-alone UCM. The UCM was developed as part of the Transportation Research Board’s (TRB) second Strategic Highway Research Program (SHRP 2) Report S2-R15B-RW-1: Identification of Utility Conflicts and Solutions which provides concepts and procedures to identify and resolve utility conflicts. Tools described in the report include utility conflict matrices that enable users to organize, track, and manage conflicts that frequently arise.

ATTACHMENT C
SCOPE OF SERVICE
FOR
SUBSURFACE UTILITY ENGINEERING (SUE)

DEFINITIONS:

SUE - A branch of engineering practice that involves managing certain risks associated with utility mapping at appropriate quality levels, utility coordination, utility relocation design and coordination, utility condition assessment, communication of utility data to concerned parties, utility relocation cost estimates, implementation of utility accommodation policies, and utility design. (ASCE Standard 38-02)

Utility Quality Level - A professional opinion of the quality and reliability of utility information. Such reliability is determined by the means and methods of the professional. Each of the four existing utility data quality levels is established by different methods of data collection and interpretation. (ASCE Standard 38-02)

ASCE Standard 38-02, “Standard Guideline for the Collection and Depiction of Existing Subsurface Utility Data” has been used as a guideline for the development of this Scope of Services. Depending on the project, the Consultant may be asked to provide some or all the work identified in utility quality levels A through D.

UTILITY QUALITY LEVEL D - Information derived from existing records or oral recollections.

MDOT shall -

- Provide a preliminary list of utilities, with contact information, that may have facilities located within the project limits. This list may not be 100% accurate and/or complete.
- Provide assistance, if necessary, in contacting utilities to obtain facility records.
- Provide Consultant with utility responses and facility records if utility information solicitation has been performed.
- Organize and host a kick-off meeting including Consultant, MDOT and utilities prior to Consultant beginning SUE services.

Consultant shall –

- Take appropriate steps to identify all known and unknown utility facilities within the project limits. Some sources of information may include utility owners, visual site inspection, internet search, Public Service Commission, County Clerk’s office, Miss Dig Design Ticket, etc.

- Solicit utility information as outlined in Chapter 14 of the MDOT Road Design Manual, section 14.16 (Request for Utility Information), if not already completed by MDOT.
- Attend and participate in kick-off meeting with MDOT and utilities. Consultant is expected to provide an explanation of SUE services and what each participant's role is in the SUE process.

UTILITY QUALITY LEVEL C - Information obtained by surveying and plotting visible above-ground utility features and by using professional judgment in correlating this information to utility quality level D information.

Consultant shall -

- Complete utility quality level D, as necessary, in order to complete utility quality level C.
- Obtain all necessary permission or permits from MDOT, county, municipality, or other entity, which allow the Consultant to work within the project limits.
- Survey visible above-ground utility facilities and correlate this information with existing utility records.

UTILITY QUALITY LEVEL B - Information obtained through the application of appropriate surface geophysical methods to determine the existence and approximate horizontal position of subsurface utilities. Utility quality level B data should be reproducible by surface geophysics at any point of their depiction. This underground information is surveyed to plus or minus one foot accuracy and reproduced onto plan documents.

MDOT shall –

- Provide survey control for the purposes of tying the designated utilities to the State Plane Coordinate System, and vertical system being North American Vertical Datum of 1988 (NAVD88).
- MDOT will also furnish existing highway plans showing topography, horizontal alignments, etc. and/or design mapping using current MDOT Workspace, if available.

Consultant shall –

- Complete utility quality levels C and D, as necessary, in order to complete utility quality level B.
- Provide materials, equipment and personnel necessary for traffic control as directed by the appropriate MDOT Transportation Service Center (TSC) and the MDOT Workzone Mobility Policy. Consultant may be required to work off peak hours. Consultant shall not work on weekends, national holidays, state holidays, or days proceeding said holidays without written permission from the TSC.
- Provide materials, equipment and personnel, including surveying capability, to designate, mark, and record, the horizontal location of all existing underground utilities and major laterals. Storm sewers are not to be designated unless specifically required by MDOT. Typically, horizontal designating of underground utilities shall be accurate to plus or minus one foot.

- Prepare CADD files containing horizontal utility depictions using the conventions indicated in the MDOT Road Design Manual.

UTILITY QUALITY LEVEL A - Precise horizontal and vertical location of utilities obtained by the actual exposure (or verification of previously exposed and surveyed utilities) and subsequent measurement of subsurface utilities, usually at a specific point. Minimally intrusive excavation equipment is used to reduce the potential for utility damage. Precise horizontal and vertical locations, as well as other utility attributes, are shown on plan documents. Accuracy is typically set to 0.05 decimal feet (approximately 5/8") vertical and to applicable horizontal survey and mapping accuracy as defined or expected by the Project Manager.

MDOT shall –

- Furnish preliminary highway plans showing areas requiring test holes.

Consultant shall –

- Complete utility quality levels B, C, and D, as necessary, in order to complete utility quality level A.
- Comply with State law requirements prior to performing excavation activities.
- Coordinate with the utilities as required.
- Excavate test holes in a manner such as vacuum excavation, hand digging, etc. that prevents damage to utility wrappings, coatings, or other protective coverings.
- Neatly cut and remove existing pavement, with cut area not to exceed 225 square inches, using a method enabling vertical and horizontal utility exploration.
- Be responsible for any damage to the utility during excavation.
- Backfill and compact test holes with approved material.
- Provide a permanent pavement restoration for test holes performed through the roadway pavement. If the test hole is performed in an area other than the roadway pavement, the area disturbed shall be restored to equal or better than the condition before excavation.
- Tie all vertical elevations to a minimum of two checked benchmarks. The accuracy of these benchmark checks shall be in accordance with surveying practices that ensure vertical surveying of underground utilities is accurate to 0.05 decimal feet.

DELIVERABLES - The final deliverables shall be sealed by a licensed professional civil engineer registered in the State of Michigan. The Consultant is responsible for the accuracy of all information presented to MDOT. Deliverables shall be sent to the MDOT Project Manager.

- CADD files containing horizontal utility depictions shall be submitted to MDOT on CD/DVD in CADD format utilizing MDOT's current version of MicroStation and MDOT Workspace.
- For all test holes performed, the following information shall be submitted to MDOT on CD/DVD in CADD format utilizing MDOT's current version of MicroStation and MDOT Workspace:

- Elevation of top of utility tied to project vertical datum
- Elevation of existing grade over utility at the test hole
- Horizontal location referenced to project coordinate datum
- Outside diameter of pipe or width of duct banks and configuration of non-encased multi-conduit systems
- Size, type and owner of utility facility
- Utility structure material composition and condition, when possible