

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

MDOT PROJECT MANAGER			JOB NUMBER (JN)	CONTROL SECTION (CS)
DESCRIPTION				
MDOT PROJECT MANAGER: Check all items to be included in RFP WHITE = REQUIRED GRAY SHADING = OPTIONAL			CONSULTANT: Provide only checked items below in proposal	
Check the appropriate Tier in the box below				
TIER I (\$25,000-\$99,999)	TIER II (\$100,000-\$250,000)	TIER III (>\$250,000)		
			Understanding of Service	
			<i>Innovations</i>	
			<i>Safety Program</i>	
N/A			Organizational Chart	
			Qualifications of Team	
			Past Performance	
Not required As part of Official RFP	Not required As part of Official RFP		Quality Assurance/Quality Control	
			Location: The percentage of work performed in Michigan will be used for all selections unless the project is for on-site 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		Presentation	
N/A	N/A		Technical Proposal (if Presentation is required)	
3 pages (MDOT Forms not counted) (No Resumes)	7 pages (MDOT Forms not counted)	19 pages (MDOT Forms not counted)	Total maximum pages for RFP not including key personnel resumes	

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 Service Contracts" and "Guideline for Completing a Low Bid Sheet(s)", if a low bid is involved as part of the selection process. **Referenced Guidelines are available on MDOT's website under Doing Business > Vendor/Consultant Services > Vendor/Consultant Selections.**

RFP SPECIFIC INFORMATION

BUREAU OF HIGHWAYS

BUREAU OF TRANSPORTATION PLANNING **

OTHER

THE SERVICE WAS POSTED ON THE ANTICIPATED QUARTERLY REQUESTS FOR PROPOSALS

NO

YES

DATED _____

THROUGH _____

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

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

Qualifications Based Selection – Use Consultant/Vendor Selection Guidelines

For all Qualifications Based Selections, the section team will review the information submitted and will select the firm considered most qualified to perform the services based on the proposals. The selected vendor will be contacted to confirm capacity. Upon confirmation, that firm will be asked to prepare a priced proposal. Negotiations will be conducted with the firm selected.

****For RFP's that originate in Bureau of Transportation Planning only**, a priced proposal must be submitted at the same time as, but separate from, the proposal. Submit directly to the Contract Administrator/Selection Specialist, Bureau of Transportation Planning **(see address list, page 2)**. The priced proposal must be submitted in a sealed envelope, clearly marked **"PRICE PROPOSAL."** The vendor's name and return address **MUST** be on the front of the envelope. The priced proposal will only be opened for the highest scoring proposal. Unopened priced proposals will be returned to the unselected vendor(s). Failure to comply with this procedure may result in your priced proposal being opened erroneously by the mail room.

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.

Qualifications Review / 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 and post the date of the bid opening on the MDOT website. The notification will be posted at least two business days prior to the bid opening. Only bids from vendors that meet proposal requirements will be opened. The vendor with the lowest bid will be selected. The selected vendor may be contacted to confirm capacity.

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

A bid sheet(s) must be submitted in accordance with the "Guideline for Completing a Low Bid Sheet(s)" (available on MDOT's website). The Bid Sheet(s) is located at the end of the Scope of Services. Submit bid sheet(s) separate from the proposal, to the address indicated below. The bid sheet(s) must be submitted in a sealed manila envelope, clearly marked **"SEALED BID."** The vendor's name and return address **MUST** be on the front of the envelope. Failure to comply with this procedure may result in your bid being opened erroneously by the mail room and the bid being rejected from consideration.

PROPOSAL SUBMITTAL INFORMATION

REQUIRED NUMBER OF COPIES FOR PROJECT MANAGER	PROPOSAL/BID DUE DATE	TIME DUE
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PROPOSAL AND BID SHEET MAILING ADDRESSES

Mail the multiple proposal bundle to the MDOT Project Manager or Other indicated below.

MDOT Project Manager

MDOT Other

Mail one additional stapled copy of the proposal to the Lansing Office indicated below.

Lansing Regular Mail	OR	Lansing Overnight Mail
Secretary, Contract Services Div - B470 Michigan Department of Transportation PO Box 30050 Lansing, MI 48909		Secretary, Contract Services Div - B470 Michigan Department of Transportation 425 W. Ottawa Lansing, MI 48933
Contract Administrator/Selection Specialist Bureau of Transportation Planning B470 Michigan Department of Transportation PO Box 30050 Lansing, MI 48909		Contract Administrator/Selection Specialist Bureau of Transportation Planning B470 Michigan Department of Transportation 425 W. Ottawa Lansing, MI 48933

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 four (4) 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

The following two American Recovery and Reinvestment Act of 2009 (ARRA) notifications, **ARRA MONTHLY EMPLOYMENT REPORTS** and **REQUIRED CONTRACT PROVISIONS TO IMPLEMENT AMERICAN RECOVERY AND REINVESTMENT ACT (ARRA) SECTIONS 902 AND 1515**, are attached to this Request For Proposal for your understanding. These two notifications are only applicable for those projects/contracts funded with ARRA funds and will be included in contract Exhibits.

MDOT FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION

- 5100D** – Request for Proposal Cover Sheet
- 5100G** – Certification of Availability of Key Personnel
- 5100I** – Conflict of Interest Statement
- 5100J** - Consultant Data and Signature Sheet (Required only for Non-Prequalified Work)

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

Michigan Department of Transportation

**SCOPE OF SERVICE
FOR
DESIGN SERVICES
Revised as of 2.24.11**

CONTROL SECTION(S): 41062

JOB NUMBER(S): 110036C

PROJECT LOCATION:

The project is located on M-11 (28th Street) at the intersection of Clyde Park Avenue in the City Wyoming, Kent County.

The project length is 0.105 miles.

PROJECT DESCRIPTION:

Work involved in the design of the project consists of: Full depth concrete reconstruction of the intersection of M-11 (28th Street) at Clyde Park Avenue. This work shall include but is not limited to: geometric upgrades, safety upgrades, sidewalk, ADA sidewalk ramp upgrades, curb and gutter, drainage upgrades, driveways, permanent pavement markings and signing, traffic signals, municipal utility relocations.

ANTICIPATED SERVICE START DATE: 05/20/2011

ANTICIPATED SERVICE COMPLETION DATE: 04/09/2012

PRIMARY PREQUALIFICATION CLASSIFICATION(S):

Roads and Streets

SECONDARY PREQUALIFICATION CLASSIFICATION(S):

Maintaining Traffic Plans & Provisions

Road Design Surveys

Traffic Signal Design

Simple Traffic Signal Operations

Permanent Non-Freeway Traffic Signing Plans

Permanent Marking Plans

*Municipal Utilities (**Precautionary**)

Geotechnical Engineering Services

Traffic Capacity Analysis and Geometric Studies

Subsurface Utility Engineering

DBE REQUIREMENT: 7%

MDOT PROJECT ENGINEER MANAGER:

Jason Minkus, E.I.T. – Consultant Coordinator
Grand Region/Grand Rapids TSC
2660 Leonard St, NE Grand Rapids MI 49525
616-464-1800
616-464-1189
minkusj@michigan.gov

CONSTRUCTION COST:

A. The estimated cost of construction is:

1.	Mainline Pavement	\$263,000.00
2.	Geometric Improvement	\$12,000.00
3.	Environmental	\$
4.	Drainage	\$12,000.00
5.	Safety	\$2,000.00
6.	Non Motorized	\$
7.	Maintaining Traffic	\$87,000.00
8.	Miscellaneous Bridge Cost	\$
9.	Detours and Maintaining Traffic	\$
10.	Permanent Pavement Markings/Signs/Signals	\$11,000.00
11.	Miscellaneous	\$58,000.00
	CONSTRUCTION TOTAL	\$445,000.00

B. The estimated cost of real estate is: \$0

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, Drainage Manual, Roadside Design Guide, A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.).

NOTE: A process change mandated by federal audit of MDOT’s design process puts the Omissions and Errors Check Meeting after the Plan Completion. Please keep this in mind when preparing your schedule. See MDOT Road Design Manual, Chapter 14 – Procedures –

Section 14.54 for corroboration. See “For Your Information” contacts at the end of this document for more info or questions.

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 CADD standards and file naming conventions.

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, ROW submittal dates, Railroad coordination requirements, utility conflict resolution, local agency meetings, etc.

- A. Perform design surveys as described in Attachment A.
- B. Prepare required plans, typical cross-sections, details, and specifications required for design and construction.
- C. Compute and verify all plan quantities.
- D. The Consultant is notified that this project shall conform to the phase 1 roll out of the MDOT Design Deliverables Enhancement Program.
- E. Prepare staging plans and special provisions for maintaining traffic during construction.
- F. Provide solutions to any unique problems that may arise during the design of this project.
- G. Perform and Prepare roadway pavement and soils investigations. The Consultant will be responsible for compiling and preparing the investigation results into report format for the project pavement design and construction information to be developed.

The Consultant will be responsible for obtaining any necessary permits to perform this work within MDOT ROW and abide by working hour restrictions and use proper signing per TSC traffic engineer. This includes providing all Traffic Control Devices and Flaggers when needed.

The Consultant is notified that these intersections have been identified as having potential and known environmental contamination sites and that the handling and disposal of this material shall be in accordance with all local, state and federal laws.

A total of 6 pavement cores will be required at the intersection all cores will be on M-11. Three pavement cores east of the intersection and three west of the intersection all at different stationing will be required (1 in the WB driving lane, 1 in the EB driving lane, and one in the center turn lane).

A 5 foot hand auger will be required at each pavement core, sample and test for Class II or subbase with the results shown in the remarks on the boring log with the layer tested identified Obtain GPS coordinates and offset distance and stationing of each core. Measure rutting depth in the lane and take a digital picture of the core. Produce Microstation plan sheet showing all this information for plan set. Backfill holes and patch pavement.

If new strain poles are proposed, a 15 foot soil boring (with blow counts) and environmental testing for contamination shall be done at each location.

- 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 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. The Consultant will be responsible for Subsurface Utility Engineering, to identify and locate utilities.
- K. If excavation is required, submit the excavation locations which may contain contamination. Project Manager then can proceed in requesting a Preliminary Project Assessment (PPA).
- L. The Consultant shall be required to prepare and submit a CPM network for the construction of this project.

- M. Prepare Design Exception Requests if necessary for road and/or bridge issues (ie: superelevation transition rates, SSD, shoulder widths, under clearance, etc.) a list of possible design exceptions will be required at the Base Plan Review, with final drafts being submitted at the Plan Review Meeting.
- N. The Consultant shall analyze crash data and prepare a crash analysis for the project as a whole as well as for any Design Exceptions for the project and submit them for review by the MDOT GRTSC Traffic and Safety Engineer.
- O. Prepare pavement marking plans and special provisions.
- P. Prepare signal plans and signal staging plans.
- Q. Prepare permanent signing plans and special provisions for non-freeway sign upgrading.
- R. The Consultant shall review all sidewalk ramps within project limits to determine if any upgrades will be necessary, and design ramps to comply with current A.D.A./FHWA/MDOT standards.
- S. The consultant shall prepare staging plans and special provisions for Maintaining Traffic. As part of the Maintaining Traffic, conduct a comprehensive mobility analysis and investigate alternative maintenance of traffic schemes. If the threshold criteria contained in MDOT's Work Zone Safety and Mobility Policy are exceeded, mitigation measures shall be analyzed and recommended. The consultant shall prepare a Transportation Management Plan per the Work Zone Safety and Mobility Manual which shall include a Temporary Traffic Control Plan, a Transportation Operations Plan and a Public Information Plan. The Consultant shall submit these items prior to the OEC submittal.
- T. The Consultant representative shall record and submit type-written minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees. MDOT will provide and distribute official meeting minutes for the Plan Review Meeting.
- U. The Consultant will be required to submit in-progress plans for the Plan Review and OEC to the Grand Rapids TSC office for QA review. These plans will be submitted two weeks prior to the scheduled submittal dates, one week for review and one week to allow for changes.
- V. The Consultant will provide to MDOT at the scheduled submittal dates, copies of the required specifications and plan set materials for

distribution by MDOT for all reviews for this project with the exception of The Plan Review. The Consultant shall contact the project manager prior to the submittal dates for the exact number of copies that will be required for submittal. The following is an estimate of the number of copies that will be needed; 5 sets – Pre-OEC, 5 sets - OEC Review.

- W. The Consultant will be required to submit final OEC plans to the Region Office for a two week QA review with one week for corrections prior to the scheduling of the OEC. The consultant will be required to perform all changes required from the Region's QA review and then re-submit the package to the Project Manager for distribution to the final OEC attendees for their 2 week review prior to the OEC meeting. The Consultant shall incorporate this time into their design schedule.
- X. 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.
- Y. Attend any project-related meetings as directed by the MDOT Project Manager.
- Z. Attend information meetings (i.e., public hearings, open houses, etc.) with the public and public officials to assist in responding to concerns and questions. May require the preparation of displays such as maps, marked-up plans, meeting presentations, etc.
- AA. 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.
- BB. 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.
- CC. 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.
- DD. The Consultant will be responsible for holding regular status meetings with the project team (schedule to be determined by MDOT).

UTILITIES

The Consultant shall be responsible for obtaining existing utility plans from MDOT and showing on the proposed design 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 and 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 and provide minutes and action item lists from those meetings. 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

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

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, Real Estate Division at (517) 241-2103.

MONTHLY PROGRESS REPORT

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

MDOT RESPONSIBILITIES:

- A. Schedule and/or conduct the following:
 - 1. Project related meetings.
 - 2. The Plan Review
 - 3. Utility Meetings.
 - 4. Quantity summary sheets and final item cost estimates.
 - 5. Packaging of plans and proposal.
 - 6. OEC Meeting

- B. Furnish Special Details and pertinent reference materials.

- C. Furnish prints of an example of a similar project and old plans of the area, if available.
- D. Furnish necessary Crash and Traffic Data.
- E. Obtain all permits for the project as outlined in previous section.
- F. Coordinate any necessary utility relocation.
- G. Furnish FTP site for software download and instructions for the MDOT Stand Alone Proposal Estimator's Worksheet (SAPW).

DELIVERABLES:

The Consultant shall deliver all computer files associated with the project in their native format (spreadsheets, CADD files, GEOPAK files, etc.) on DVD, CD or uploaded to ProjectWise, as directed by the MDOT Project Manager. All CADD/GEOPAK files shall be created and identified with standard MDOT file names as shown in Appendix A of the Road Design Manual. 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 posted to the bulletin board system. When the use of GEOPAK road design software is necessary to develop plans all pay items shall be placed into the CADD file using GEOPAK's Design and Computation Manager so that Quantity Manager can be used to transfer pay item information to SAPW/Trns*port. 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 capturing a legally signed document or a hard copy version of a document is all that exists.

Plan files shall be submitted in their native dgn format with standard naming conventions as well as plotted into a combined Adobe PDF file. Plan sheets shall be plotted to Adobe PDF with full text search and level on/off capabilities in half size (11" x 17") formats. A full size title sheet shall be plotted stamped and signed then scanned for inclusion with the Adobe PDF set. The original title sheet will be sent to the MDOT Project Manager.

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 construction, removal and profile sheets will require a ratio (scale) of **1:40 (English Units)**.

Other plan sheets that are required for this project shall be completed by the Consultant. These include, but are not limited to the following plan sheets:

- A. The title sheet. MDOT will provide a map of the area on a disk in our workstation format. If the map is not available, MDOT will provide a map that could be used. The Consultant shall be responsible for any revisions to the title sheet and the title sheet and map shall meet MDOT format and layout guidelines.
- B. Note Sheet.
- C. Typical Cross-Sections.
- D. Project specific Special Details and Miscellaneous Details.
- E. Construction staging and traffic control plans.
- F. Detail grade sheets and Sidewalk ramp grade sheets.
- G. Pavement marking plan(s).
- H. Witness and benchmark sheet(s).
- I. Soil boring log sheet(s).
- I. Signal Plan(s), Signing Plan(s) and Signal Staging Plan(s).
- J. Municipal Utility Plan(s).

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	
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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 checked="" type="checkbox"/>	2120 Prepare Traffic Analysis Report	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2130 Prepare Project Justification	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i><u>213M Concurrence by Regulatory Agencies with the Purpose and Need</u></i>	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2140 Develop and Review Illustrative Alternatives	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2155 Request/Perform Safety Analysis	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2160 Prepare and Review EIS Scoping Document	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i><u>211M Public Information Meeting</u></i>	_/_/____
		<u>EPE DRAFT ANALYSIS</u>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2310 Conduct Technical SEE Studies	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2321 Prepare for Aerial Photography	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2322 Finish/Print Aerial Photography	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2330 Collect EPE Geotechnical Data	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2340 Develop and Review Practical Alternatives	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i><u>233M Aerial Photography Flight</u></i>	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2360 Prepare and Review EA or DEIS	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i><u>231M Draft Submission to FHWA</u></i>	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2380 Circulate EA or DEIS	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i><u>232M Public Hearing</u></i>	_/_/____
		<u>EPE FINAL ANALYSIS</u>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2510 Determine and Review Recommended Alternative	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i><u>250M Concurrence by Regulatory Agencies with Recommended Alternatives</u></i>	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2525 Prepare and Review Engineering Report	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2530 Prepare and Review Request for FONSI or FEIS	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i><u>252M Final Submission to FHWA</u></i>	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2550 Obtain FONSI or ROD	_/_/____
		<u>CONTAMINATION INVESTIGATION</u>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2810 Project Area Contamination Survey (PCS)	_/_/____
<input type="checkbox"/>	<input checked="" 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
YES	NO		(mm/dd/yyyy)
		<u>DESIGN SCOPE VERIFICATION AND BASE PLAN PREPARATION</u>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3130 Verify Design Scope of Work and Cost	/ /
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3310 Prepare Aerial Topographic Mapping	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3320 Conduct Photogrammetric Control Survey	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3321 Set Aerial Photo Targets	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3330 Conduct Design Survey	06/20/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3340 Conduct Structure Survey	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3350 Conduct Hydraulics Survey	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3360 Prepare Base Plans	07/13/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>331M Utility Notification</i>	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3361 Review and Submit Preliminary ROW Plans	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>331M Preliminary ROW Plans Distributed</i>	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3370 Prepare Structure Study	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3375 Conduct Value Engineering Study	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3380 Review Base Plans	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>332M Base Plan Review (Pre-GI Inspection)</i>	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3390 Develop the Maintaining Traffic Concepts	07/18/2011
		<u>PRELIMINARY PLANS PREPARATION</u>	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3510 Perform Roadway Geotechnical Investigation	06/20/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3520 Conduct Hydraulic/Hydrologic and Scour Analysis	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3522 Conduct Drainage Study, Storm Sewer Design, and use Structural Best Management Practices	08/15/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3530 Conduct Structure Foundation Investigation	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3535 Conduct Structure Review for Architectural and Aesthetic Improvements	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3540 Develop the Maintaining Traffic Plan	08/15/2011
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3551 Prepare/Review Preliminary Traffic Signal Design Plan	08/11/2011
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3552 Develop Preliminary Pavement Marking Plan	08/11/2011
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3553 Develop Preliminary Non-Freeway Signing Plan	08/11/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3554 Develop Preliminary Freeway Signing Plan	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3555 Prepare/Review Preliminary Traffic Signal Operations	08/18/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3570 Prepare Preliminary Structure Plans	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3580 Develop Preliminary Plans	08/25/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3581 Review and Submit Final ROW Plans	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>351M Final ROW Plans Distributed</i>	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3590 Review Preliminary Plans (Hold Plan Review Meeting)	08/25/2011
<input type="checkbox"/>	<input type="checkbox"/>	<i>352M THE Plan Review (Grade Inspection)</i>	09/21/2011

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

PRELIMINARY ENGINEERING - DESIGN (cont'd)

		P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY
YES	NO		(mm/dd/yyyy)
		UTILITIES	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3610 Compile Utility Information	07/13/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3650 Coordinate RR Involvement for Grade Separations	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3655 Coordinate RR Involvement for At-Grade Crossings	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3660 Resolve Utility Issues	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>360M Utility Conflict Resolution Plan Distribution</i>	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>361M Utility Meeting</i>	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3670 Develop Municipal Utility Plans	10/03/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3672 Develop Special Drainage Structures Plans	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3675 Develop Electrical Plans	__/__/__
		MITIGATION/PERMITS	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3710 Develop Required Mitigation	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3720 Assemble Environmental Permit Applications	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3730 Obtain Environmental Permit	__/__/__
		FINAL PLAN PREPARATION	
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3821 Prepare/Review Final Traffic Signal Design Plan	11/02/2011
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3822 Complete Permanent Pavement Marking Plan	11/02/2011
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3823 Complete Non-Freeway Signing Plan	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3824 Complete Freeway Signing Plan	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3825 Prepare/Review Final Traffic Signal Operations	11/02/2011
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3830 Complete the Maintaining Traffic Plan	11/02/2011
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3840 Develop Final Plans and Specifications	11/02/2011
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>380M Plan Completion</i>	11/02/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3850 Develop Structure Final Plans and Specifications	__/__/__
<input checked="" type="checkbox"/>	<input type="checkbox"/>	3870 Hold Omissions/Errors Check (OEC) Meeting	11/02/2011
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>387M Omissions/Errors Checks Meeting</i>	12/14/2011
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>389M Plan Turn-In</i>	__/__/__
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3880 CPM Quality Assurance Review	__/__/__

MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST

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 checked="" type="checkbox"/>	4120 Obtain Preliminary Title Commitments	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4130 Prepare Marked Final Right Of Way Plans	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>413M Approved Marked Final ROW</i>	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4140 Prepare Property Legal Instruments	_/_/____
		<u>ROW ACQUISITION</u>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4411 Preliminary Interviews	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>441M Post-Decision Meeting</i>	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4412 Real Estate Services Assignment Proposal and Fee Estimate (Form 633s) for Appraisal Work Authorization	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4413 Appraisal Reports	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4420 Appraisal Review Reports	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4430 Acquire Right Of Way Parcels	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4510 Conduct Right Of Way Survey & Staking	_/_/____
		<u>ROW RELOCATION</u>	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4710 Relocation Assistance	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4720 Prepare Improvement Removal Plan	_/_/____
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<i>442M ROW Certification</i>	_/_/____

FOR YOUR INFORMATION

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

For assistance in accessing this manual, please contact one of following:

Dennis Kelley: (517) 373-4614

~~Tonya Nobach: (517) 335-1927~~

PAYMENT SCHEDULE

CONSULTANT PAYMENT – Actual Cost Plus Fixed Fee:

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

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

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

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

The use of overtime hours is not acceptable unless prior written approval is granted by the MDOT Region Engineer/Bureau Director and the MDOT Project Manager. Reimbursement for overtime hours that are allowed will be limited to time spent on this project in excess of forty hours per person per week. Any variations to this rule should be included in the priced proposal submitted by the Consultant and must have prior written approval by the MDOT Region Engineer/Bureau Director and the MDOT Project Manager.

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

ATTACHMENT A

SURVEY SCOPE OF WORK

Survey Limits: The survey is to include full topographic mapping from 15 feet outside of the existing ROW in all quadrants. Full mapping will be required to a point 250 feet north and south of the intersection along Clyde Park Avenue, as well as 450 feet east and west along M-11 (28th St.). An additional 1000 feet of topographic mapping will be required from gutter pan to back of sidewalk along both sides of M-11 in the east and west direction for MOT signing purposes. Cross-sections are required to be taken at 50-foot intervals or closer where significant terrain, drainage, slopes or other survey related items exist.

Locate all driveways, curb and gutter, ADA ramps (label material type – ie brick), sidewalk (all corners for every slab for first 30' in all directions from existing and/or proposed ADA ramps), pedestrian signals including push button heights, traffic signal poles and cabinets, power and light poles including guy wires, decorative lighting, permanent signs, mailboxes, landscape beds and trees (include size & species) within the project limits. Locate all existing utilities. Culvert information must include pipe sizes, types and inlet/outlet elevations as well as condition. Invert elevations, pipe size, pipe material, casting type, and pipe condition will be required for all storm and sanitary sewer within the project limits. Private irrigation (sprinkler heads) shall be included in the survey. Locate buildings (including parcels and addresses) and parking lots with curb lines and paint striping denoting lot spacing.

Locate section corners (estimated at 5), alignment points and property controlling corners needed to establish the existing M-11 legal and construction alignments per the existing old plans and Right of Way sheets throughout the project limits. It is the responsibility of the Survey Consultant to obtain any and all copies of the old plans either through their Prime Consultant or the MDOT Project Manager. It is recommended that this process be started early in the project. All government section corners within the project limits must be conspicuously described on the survey drawing and in the surveyor's report. A section corner coordinate, station & offset (legal alignment) and witness list must be provided in the property folder.

This project will require the existing legal MDOT ROW to be computed throughout the project limits.

NOTES: The selected Consultant shall discuss the scope of this survey with the Grand Region Survey Department 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 traversing, leveling, mapping, 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 categories of survey: Road Design, Structure, Hydraulic, Right-of-Way, and/or Ground Control (Photogrammetric) 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 March 2009, the MDOT Design Survey Manual on-line, and the MDOT RTK guidelines. Please contact the 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 designee).
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 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 comprehensive and conscientious research of all records,

“survcons.” The consultant Password is “\$urvcon\$.” 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 shall result in the immediate return of the project portfolio for completion.**

- b. The **Alignment** section will contain a MicroStation drawing of the alignment; coordinates and stationing of alignment points set or found; curve data with P.I. coordinates; a designation of alignment type such as as-constructed (best fit), legal, for survey; an explanation of how the alignment was determined; and all supporting documentation.
 - c. The **Control** section must contain the data collected and copies of all research documents used to establish the **horizontal and vertical** reference systems for the project, and must include a thorough written explanation describing how the systems were established. This section should also contain control traverse and GPS raw data (electronic only), least squares analysis for both traverse and benchmarks, and a list of control point coordinates and witnesses. A complete benchmark list with datum, description, station and offset, and elevation shall also be included. This information must be submitted in hardcopy as well as ASCII and MicroStation electronic file format on Compact Discs (CD's). Also, a sketch of the control traverse, showing any ties (government corners, property, alignment, etc.) shall be included in this section. It is recommended that the project's survey control be submitted for review as soon as it is available.
 - d. The **Property** section contains all information that is utilized regarding the real property affected by the project, and all necessary property ties. This may include copies of all recorded Land Corner Recordation Certificates for the government corners used or reestablished, recorded plats, recorded certified surveys, tax maps, tax descriptions, and adjacent/riparian owners.
 - e. The **Mapping** section contains all survey notes, research documents, and collected data used to produce the maps necessary for this project. All topographic plots, as well as utilities and drainage information, are to be placed in this section. Raw data in electronic form only, but not on the .PDF file.
 - f. The **Miscellaneous** section contains any information not included in the previous sections. The project Surveyor's Report should specify any items included in this section.
15. **All data**, whether electronic or paper, **must be recorded on non-rewritable Compact Discs (CD's) or DVD's**. All paper files, including MicroStation files, must be scanned and/or converted to Adobe Acrobat .PDF format. It is not necessary to include raw survey data files in the Adobe file. CD's must be organized in the same manner as the portfolio, such as by Administrative section, Control section, etc. A Table of Contents in

Adobe Acrobat format is required that has all .PDF pages of the CD bookmarked/linked so each place in the .PDF archive can be accessed with a single click of the computer mouse. Specified format files such as ASCII text, CAiCE and MicroStation must have separate access in native format outside of the .PDF file. CD's must be labeled with the control section, job number, data type and file names.

16. It is not necessary to label each individual paper page in the portfolio.
17. Each category of survey must be packaged separately (i.e. Structure surveys separate from Road surveys and Hydraulic surveys). CD's must be labeled with the Control Section, Job Number, data type and file names.
18. The Consultant representative shall record and submit typewritten minutes for all project related meetings to the MDOT Project Manager within two weeks of the meeting. The Consultant shall also distribute the minutes to all meeting attendees.
19. 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 a Survey Consultant Project Manager or MDOT Region Surveyor.

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

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

WORK RESTRICTIONS

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

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

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

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

Traffic shall be maintained by the Consultant throughout the project in accordance with Sections 812, 922, 103.05 and 103.06 of the *Standard Specifications for Construction*, 2003 edition, www.mdot.state.mi.us/specbook/, and Supplemental Specification 03SS001(2) Errata to the 2003 Standard Specifications and all other supplemental specifications currently in effect against the Standard Specifications for Construction. All traffic control devices shall conform to the current edition, as revised, of the *Michigan Manual of Uniform Traffic Control Devices* (MMUTCD). All warning signs for maintenance of traffic used on this project shall be fabricated with prismatic retro-reflective sheeting, and shall be set up five feet above ground.

The Consultant shall use MDOT standard “maintaining traffic” typicals for any and all closures.

Typical MDOT traffic control diagrams are available on line at www.mdot.state.mi.us/tands/plans.cfm

COORDINATION WITH OTHER CONTRACTS IN THE VICINITY

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

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

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

The Consultant’s attention is called to the requirements of cooperation with others as covered in Article 104.07 of the 2003 Standard Specifications for Construction. Other contracts or maintenance operations may occur during the life of the project.

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

FIELD SURVEY

The purpose of the field survey is to obtain all information and data required by the project design engineer, to leave control in the field for future construction staking, and to provide a sufficient history of the area to enable the MDOT Design Survey Unit to perform dependable surveys in the future. The Consultant surveyor must discuss the scope of this survey with the MDOT Project Manager and/or Grand Region Survey Department before initiating any work on this project. Notes of this meeting and a detailed **Survey Work Plan** with an estimate of hours

broken down by specific survey task must be submitted to the MDOT Project Manager and Grand Region Survey Department/Survey Consultant Project Manager within two weeks of this meeting.

CONTROL

A three dimensional control system must be established throughout the project area. This control shall be based on the Michigan State Plane Coordinate System NAD1983 (CORS) horizontal datum and NAVD 1988 vertical datum. All subsequent control must be based on the established control. Any traverse/control points or bench marks established must adhere to the Michigan Department of Transportation (MDOT) Design Surveys *Standards of Practice* dated March 2009 and be listed in the Control pocket of the portfolio. Contact the MDOT Survey Consultant Coordinator or Region Surveyor for existing control in the area.

OPUS positioning may be used as a check, and for determining Primary Control as defined in the MDOT *Standards of Practice* for Design Survey dated March 2009. For any and all OPUS solutions, a RINEX format file with a minimum of two hours of GPS data must be included, as well as the OPUS solution (extended version) from NGS. All OPUS solutions must be verified within 0.20 foot, either by a separate OPUS solution from an independent occupation, or by a least squares adjustment based on NGS/CORS positions.

If GPS-derived elevations are used, the Surveyor's Report and the Witness List and Witness Sheet for the project must clearly state that the vertical datum is "NAVD 1988 GPS-derived from Geoid XX." Geoid09 is the recommended Geoid at this time.

A mapping control point that is a rebar in the ground should not be considered a benchmark. The elevation of a rebar that is a control point should be verified or re-established prior to use as a benchmark.

A Witness list sheet for this project must be provided that has a formula for grid to ground conversion, with a statement that a mapping control point that is a rebar in the ground should not be considered a benchmark, and its elevation should be verified or re-established prior to use.

All Witness lists, for horizontal control, benchmarks, government corners, and alignment points, must use all capital letters exclusively.

The Consultant must provide a **MicroStation file** that contains the benchmark list and horizontal control point list, government corner list, and alignment point list. The type of alignment must be described. This file must also provide a formula for a grid to ground conversion. This file must be named **JNxxxxwit.dgn** and formatted as an MDOT plan sheet. An example MicroStation file will be provided on the MDOT Design Survey ftp site. **Upper case letters must be used exclusively**, as they are easier to read on half size plan sheet.

PROPERTY/GOVERNMENT CORNERS

Any PLSS corners within the project limits must be recovered or established and tied to the project coordinate system. Any PLSS corners necessary for legal alignment determination and/or property ties for Right of Way issues must be recovered or established and tied to the project coordinate system.

All PLSS corners must be recorded in accordance with PA 74 of 1970, as amended, and all applicable administrative rules. A copy of each **recorded** Land Corner Recordation Certificate must be submitted to the MDOT Design Survey Office as part of the final report. All PLSS corners located in hard surface roads must be protected by a monument box, regardless of impending construction. The Consultant shall provide to the Survey Consultant Project Manager a list of any affected Government or Property Controlling Corners in the detailed work plan for discussion or approval.

The Consultant surveyor must contact the County Remonumentation Representative prior to beginning work on the project to inform him of proposed corner perpetuation activities, and to obtain information pertinent to PLSS corners and/or property controlling corners affected by project construction.

All **monument boxes** through the project area must be accounted for by the Consultant surveyor, shown on the project mapping, and have a recorded LCRC submitted in the survey portfolio.

ALIGNMENT

Since most existing alignment points locate and define the boundary between the public Right of Way and private ownership, legal alignment points are considered Property Controlling Corners and must be recovered and recorded in accordance with PA 74 of 1970, as amended, and all applicable administrative rules. A copy of each recorded Land Corner Recordation Certificate must be submitted in the Property Section of the final portfolio.

The Consultant must clearly define in the **Survey Work Plan** what type of alignment(s) is proposed, Legal, Survey or As Constructed, how the stationing will be established, and whether or not the alignment(s) will be staked in the field.

An **alignment sheet** must be prepared and submitted that shows the alignment(s) with stationing and coordinates, and the source of stationing, curve data, and the alignment definition. All alignments must be **annotated** as in the following examples: As Constructed alignment for CS 45011 as surveyed in 2006, or Legal Alignment of 1952 for CS 38016 as surveyed in 2008. Showing government corners with distances along government lines to the alignment are also appropriate for this CADD drawing. MDOT MicroStation format is required. Some tangents may be graphically shortened to “shrink” the drawing to fit paper size.

The Consultant must provide an **alignment control point list with witnesses** for all alignment points found or set. This list must include datum, point designations, descriptions, coordinates, combined Scale Factor, and witnesses. This list may be appended to the witness list for horizontal and vertical control points. Witness lists must use only uppercase letters.

All **monument boxes** through the project area must be accounted for by the Consultant surveyor, shown on the project mapping, and have a recorded LCRC submitted with the survey portfolio.

MAPPING

The Consultant must submit a **CAiCE software file, named MDOTjob#.zip**, utilizing CAiCE's built-in archive feature, of all survey mapping points and data files for the mapping area. If a Digital Terrain Model is needed for the project, it must be created in CAiCE and named EXRD. **The CAiCE software used must be Version 10.6 or newer.**

The Consultant is responsible for using the latest MDOT CAiCE Feature Codes, files and Plans Production tugboat (macro), available on the MDOT Design Survey File Transfer Protocol (FTP) site at <ftp://ftp.michtrans.net/>. The consultant Username is "survcons." The consultant Password is "\$urvcon\$." The tugboat can also be used to convert CAiCE files into Geopak and MicroStation formats.

The Consultant must provide an electronic **MicroStation Intergraph Version 8 format file** of the mapping area. This file must be named MDOTjob#pl.dgn, for example **79023Cpl.dgn**, and must be submitted **in a sub-directory outside of the CAiCE archive file** named "MicroStation." The MicroStation file will be a 2-D file of the planimetric features including contours. This file must be sized appropriately, utilize the seed file **seedrd_c.dgn** with working units of 1000, 1, and be compiled in standard MDOT format. The Consultant is responsible for using the latest MDOT Resource files, color table, and cell files, available on the MDOT File Library site under CAD_V8. Go to <http://mdotwas1.mdot.state.mi.us/public/bbs/>

For a comprehensive list of MicroStation level designations, contents and line attributes, refer to the "MDOT V8 Level Feature Code List_08.pdf" table located on the MDOT Design Survey File Transfer Protocol web site. This table replaces the former Attachments AA, C & D. Also in the ftp site, the Consultant should refer to the V8GROUP&ALPHA LIST_08.pdf file for Data Collection Codes.

The Consultant must submit **files created from CAiCE that are formatted for design in Geopak** software. This can be accomplished by using the MDOT Plans Production CAiCE Tugboat (macro), which is available on the MDOT Design Survey File Transfer Protocol (FTP) site. The Consultant must submit a 3D MicroStation Triangle file and the same Triangle file in Geopak DAT format. **This DAT file is generated through the new (August 2008) MDOT tugboat.** The Consultant must also submit a Survey Chain (TIN Boundary) around the edited Triangle file with the name and Feature "CLIP." A Job#.XML file must be included for each separate alignment. Each alignment must be computed separately, and uniquely named to include the JN and a description, such as 79585_AsC_Wbd.XML. These files must be submitted electronically **in a subdirectory outside of the CAiCE archive file** named "Geopak."

POST SURVEY CLEAN-UP

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

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

FINAL REPORT: DELIVERABLES

The final report for this project shall include:

1. In the first pocket of the portfolio, labeled **ADMINISTRATIVE**, the following will appear:
 - a. MDOT's Form 222(5/01) entitled "SURVEY NOTES: RECEIPT AND TRANSMITTAL"
 - b. The project's Professional Surveyor's Report on company letterhead consisting of:
 - i) A comprehensive synopsis of the work performed on this project, signed **and sealed** by the project's Professional Surveyor.
 - ii) The source and methods used to establish the project horizontal and vertical control and alignment(s) for this project.
 - iii) A detailed explanation of anything discovered during the survey of this project that may create a problem for the designer or another surveyor.
 - c. CD or DVD with all documents scanned or converted into PDF files. Each page must be inserted in a master PDF file and bookmarked for easy retrieval. An example can be provided upon request.
 - d. MDOT QA/QC Portfolio Checklist (revised March 2009).
2. In the second pocket of the portfolio, 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, as constructed, or survey**
 - ii) Stationing, source of stationing, and station equation to existing stationing
 - iii) Horizontal coordinates of P.I.'s, at a minimum
 - iv) Curve data
 - v) Alignment points found or set
 - vi) Control points
 - vii) Reference lines and angles of crossing (if appropriate)
 - viii) Government corners and ties to 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 uppercase letters.
 - c. LCRC's for alignment points found.
3. In the third pocket of the portfolio, labeled **CONTROL**, the following will appear:
 - a. Documentation of horizontal and vertical datum sources.
 - b. OPUS documentation.
 - c. Least squares adjustments for the horizontal and vertical control.
 - d. It is not necessary to submit electronic raw survey data in hardcopy form, or in the .PDF file.
 - e. Text files, hardcopy and on CD, which contain the witness lists for the horizontal alignment ties, 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. A MicroStation V8 file showing the data in d. above, using only upper case letters.
4. In the fourth pocket of the portfolio, 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 pocket of the portfolio, labeled **MAPPING**, the following will appear:
 - a. Mapping file in MicroStation V8 format, and also converted to .PDF format. Hardcopy signed and sealed. All point and line descriptions must use only upper case letters.
 - b. An archived CAiCE software file.
 - c. Geopak files produced from CAiCE.
 - d. All field survey notes and electronic mapping data used for the project. It is not necessary to submit electronic raw survey data in hardcopy form, or in the .PDF file.
 - e. All supporting and supplemental information or data, such as drainage and utilities, electronically only if possible.
6. In the sixth pocket of the portfolio, 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

General Notes

- a. It is the responsibility of the Consultant to ensure that all electronic files submitted to MDOT conform to the required format and that all documents are legible.
- b. The Consultant must organize and label the various sections of the portfolio as required by the *Standards of Practice* for MDOT Design Surveys dated March 2009.
- c. All research documents are required to be scanned and placed on the CD.
- d. It is desirable to limit paper and to include as much electronic data as possible on Compact Disc or DVD, including scanned items, to facilitate future electronic storage and transmission of survey data. **Duplicate CD's must be included in the portfolio, with one set labeled "Region Surveyor".**