

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

MDOT PROJECT MANAGER Charlie Stein	JOB NUMBER (JN) 87110C & 87111C	CONTROL SECTION (CS) 34011 & 59031
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DESCRIPTION IF NO JN/CS

**MDOT PROJECT MANAGER:** Check all items to be included in RFP.

**CONSULTANT:** Provide only checked items below in proposal.

WHITE = REQUIRED  
GRAY SHADING = OPTIONAL

Check the appropriate Tier in the box below

<input type="checkbox"/> <b>TIER I</b> (\$25,000-\$99,999)	<input checked="" type="checkbox"/> <b>TIER II</b> (\$100,000-\$250,000)	<input type="checkbox"/> <b>TIER III</b> (>\$250,000)	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Understanding of Service
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Innovations</i>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<i>Safety Program</i>
N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Organization Chart
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Qualifications of Team
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Past Performance
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 checked="" type="checkbox"/>	<input type="checkbox"/>	<b>Location:</b> The percentage of work performed in Michigan will be used for all selections unless the project is for on-site inspection or survey activities, then location should be scored using the distance from the consultant office to the on-site inspection or survey activity.
N/A	N/A	<input type="checkbox"/>	Presentation
N/A	N/A	<input type="checkbox"/>	Technical Proposal (if Presentation is required)
3 pages (MDOT forms not counted) <b>(No Resumes)</b>	7 pages (MDOT forms not counted)	19 pages (MDOT forms not counted)	<b>Total maximum pages for RFP not including key personnel resumes</b>

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 7/1/09      THROUGH 9/30/09

<input checked="" type="checkbox"/> <b>Prequalified Services</b> – See page <u>1</u> of the attached Scope of Services for required Prequalification Classifications.	<input type="checkbox"/> <b>Non-Prequalified Services</b> - 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. <b>(Form 5100J Required with Proposal)</b>
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**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 4	PROPOSAL/BID DUE DATE 7/13/09	TIME DUE 4:30
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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

Charlie Stein, Cost and Scheduling Engineer  
Howard City TSC  
19153 West Howard City-Edmore Road  
Howard City, Michigan 49329

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

**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.)**

## **Notification**

### **ARRA MONTHLY EMPLOYMENT REPORTS**

**Note: This Notification is only applicable for those projects/contracts funded with ARRA funds. If you have questions, please contact MDOT Contract Services Division at (517) 335-0071.**

The American Recovery and Reinvestment Act of 2009 (ARRA), requires states receiving stimulus funds for highway projects to provide monthly reports to the Federal Highway Administration (FHWA) regarding the number of employees of prime contractors, all-tier subcontractors and consultants on ARRA funded projects.

The cost for complying with this Notification must be borne by the prime contractor, and all-tiers of subcontractors and consultants, as part of their overhead and is deemed to be included in the payments made under this contract.

Within 10 days after the end of each month in which work is performed on this contract, all prime contractors, and all-tier subcontractors and consultants, must provide the Engineer a monthly report, in a format and on forms approved by the Engineer, which shall include, for work performed in that preceding month:

- The total number of employees who performed work on this contract
- The total number of hours worked by employees who performed work on this contract
- The total wages of employees who performed work on this contract

In addition, the prime contractor must provide a total payment amount made to any subcontractor who is a certified DBE in that preceding month.

This Notification shall be included as a part of each subcontract executed by the prime contractor, and all-tiers of subcontractors and consultants.

If necessary to conform to guidance provided by FHWA concerning the ARRA reporting requirements, the prime contractor, and all-tiers of subcontractors and consultants will revise their reporting as directed by the Engineer.

**Failure to comply with the reporting requirements under ARRA would jeopardize the Department's continued receipt of ARRA funding.**

**Accordingly, if a contractor or any-tier of subcontractor or consultant fails to comply with this Notification, the Department may withhold contract payments until compliance is achieved. If the Department is compelled to incur costs because of such a breach, the amount of those costs may be deducted from payments otherwise to be made under this contract. Additional sanctions may include reduction or elimination of prequalification ratings and removal of bidding privileges.**

**NOTIFICATION**  
**REQUIRED CONTRACT PROVISIONS TO IMPLEMENT AMERICAN**  
**RECOVERY AND REINVESTMENT ACT (ARRA) SECTIONS 902 AND 1515**

**Note: This Notification is only applicable for those projects/contracts funded with ARRA funds. If you have questions, please contact MDOT Contract Services Division at (517) 335-0071.**

In accordance with requirements under section 902 of the American Recovery and Reinvestment Act of 2009 (ARRA), the following language is made a part of this contract and is to be made a part of all tier subcontracts or consultant contracts:

The U.S. Comptroller General and his representatives have the authority:

- (1) to examine any records of the contractor or any of its subcontractors, or any State or local agency administering such contract, that directly pertain to, and involve transactions relating to, the contract or subcontract; and
- (2) to interview any officer or employee of the contractor or any of its subcontractors, or of any State or local government agency administering the contract, regarding such transactions.

The Comptroller General and his representatives have the authority and rights provided under Section 902 of the ARRA with respect to this contract. As provided in section 902, nothing in section 902 shall be interpreted to limit or restrict in any way any existing authority of the Comptroller General.

In accordance with the requirements of section 1515(a) of the ARRA any representatives of the Inspector General have the authority:

- (1) to examine any records of the contractor or grantee, any of its subcontractors or subgrantees, or any State or local agency administering such contract, that pertain to, and involve transactions relating to the contract, subcontract, grant, or subgrant; and
- (2) to interview any officer or employee of the contractor, grantee, subgrantee or agency regarding such transactions.

Nothing set forth in section 1515 of the ARRA shall be interpreted to limit or restrict in any way any existing authority of an inspector general.

**Michigan Department of Transportation**

**SCOPE OF SERVICE  
FOR  
DESIGN SERVICES**

**CONTROL SECTION(S):** 34011 & 59031

**JOB NUMBER(S):** 87110C & 87111C

**PROJECT LOCATION:**

**87110** is located on M-91 from approximately 240' north of M-44 north to approximately 1,250' north of Ellis Road in the City of Belding, Otisco Township, and Ionia County.  
1.195 Miles.

**87111** is located on M-91 from approximately 1,250' north of Ellis Road to approximately 310' south of Snow Lake Road in Otisco and Eureka Townships, and Ionia and Montcalm Counties.  
2.163 Miles.

**PROJECT DESCRIPTION:**

Work involved in the design of the project consists of the following per Job Number:

**87110:** Crush and Shape, HMA Overlay, Safety and Drainage Improvements.

**87111:** Cold Milling, Detail 8 Joint Repairs, Two Course HMA Resurfacing, Safety and Drainage Improvements.

One consultant firm will be selected for both design projects.

**ANTICIPATED SERVICE START DATE:**

September 19, 2009

**ANTICIPATED SERVICE COMPLETION DATE:**

April 30, 2010

**PRIMARY PREQUALIFICATION CLASSIFICATION(S):**

Roads & Streets

**SECONDARY PREQUALIFICATION CLASSIFICATION(S):**

Maintaining Traffic Plans and Provisions  
Road Design Surveys (minor)  
Right-of-Way Surveys (minor)  
Hydraulics (minor)  
Pavement Marking Plans

Permanent Non-Freeway Traffic Signing Plans

**DBE REQUIREMENT:** 5%

**MDOT PROJECT ENGINEER MANAGER:**

Charlie Stein, Cost and Scheduling Engineer  
Howard City TSC  
19153 West Howard City-Edmore Road  
Howard City, Michigan 49329  
Phone: 231-937-9661 ext: 245  
Fax: 231-937-2281  
[steinc@michigan.gov](mailto:steinc@michigan.gov)

**CONSTRUCTION COST:**

A. The estimated cost of construction is:

1.	<b>Mainline Pavement</b>	<b>\$ 1,228,000</b>
2.	<b>Geometric Improvement</b>	<b>\$ 156,000</b>
3.	<b>Environmental</b>	<b>\$ 18,000</b>
4.	<b>Drainage</b>	<b>\$ 86,000</b>
5.	<b>Safety</b>	<b>\$ 60,000</b>
6.	<b>Non Motorized</b>	<b>\$</b>
7.	<b>Maintaining Traffic</b>	<b>\$ 90,000</b>
8.	<b>Miscellaneous Bridge Cost</b>	<b>\$</b>
9.	<b>Detours and Maintaining Traffic</b>	<b>\$</b>
10.	<b>Permanent Pavement Markings/Signs/Signals</b>	<b>\$ 54,000</b>
11.	<b>Miscellaneous</b>	<b><u>\$ 492,000</u></b>
	<b>CONSTRUCTION TOTAL</b>	<b>\$ 2,184,000</b>

B. The estimated cost of real estate is (Grading Permits): \$ 30,000

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 from 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.

**GENERAL INFORMATION:**

**87110** - The crush and shape project from just north of M-44 to north of Ellis Road has fairly level terrain. The existing drainage consists primarily of wide, deep ditches, with little slope and sometimes standing water.

**87111**- The coldmill and two course HMA resurfacing project overall, has a more rolling terrain. There is an area just north of Jenks Road that has existing curb and gutter with catch basins. MDOT would like to explore removing/replacing the curb and gutter and modifying the drainage in this area. There is also a section north of Wabasis Creek on the west side of the road that has existing guardrail protecting steep slopes (leading to a gravel pit) that will need to be taken into consideration when upgrading guardrail. There is also a historic property located on the east side of M-91, just north of Ellis Road.

**Care should be taken to minimize impacts to this property.**

**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, utility conflict resolution, local agency meetings, etc.

- A. MDOT will supply the consultant with the design survey; the consultant will be responsible for any additional survey pick up necessary to complete the design of this project. (see supplemental survey scope **Attachment A**)
- B. Prepare required plans, typical cross-sections, details, and specifications required for design and construction.

- C. Major Right of Way impacts are not expected on this project. Minor consent to grade and consent to grade drive permits may be needed. If these are needed the limits shall be shown on the plan sheets per current MDOT standards as necessary.
- D. Prepare pavement marking plans and special provisions.
- E. Prepare permanent signing plans and special provisions for non-freeway sign upgrading, where signs are impacted.
- F. Perform drainage evaluations on affected culverts and ditches within the project limits to determine any hydraulic impacts or necessary upgrades. This will include design plans, specifications and related hydraulic analysis for design of this project. This may also include any video taping as needed for the analysis.
- G. Compute and verify all plan quantities.
- H. Prepare staging plans and special provisions for maintaining traffic during construction.
- I. Provide solutions to any unique problems that may arise during the design of this project.
- J. Identify all utility conflicts and provide design plans for any municipal utility relocations required as a result of the project (as directed by MDOT), including any permits required by the municipality. This also includes preparing cost sharing comparisons and related costing alternative calculations.
- K. Prepare design exception requests if necessary for this project. The Consultant shall prepare the necessary documentation and reference material needed to complete the requests. A list of possible design exceptions will be required at the Base Plan Review milestone, with final drafts being submitted at the Plan Review Meeting. MDOT will submit any requests for approval.
- L. 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.
- M. 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.
- N. If excavation is required, submit the excavation locations which may contain contamination. Project Manager then can proceed in requesting a Preliminary Project Assessment (PPA). Based on our preliminary site review, potential

contamination sites exist within the project area. MDOT will supply the Consultant with a list of these areas.

- O. The Consultant shall prepare and submit a CPM network for the construction of this project.
- P. 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.
- Q. The Consultant shall provide to MDOT at the scheduled submittal dates, electronic copies of the required specifications and plan set materials for distribution by MDOT for all reviews of this project. The electronic copies of the required specifications shall include the raw format as well as an Adobe .pdf version. Plan set materials shall be in Adobe .pdf format.
- R. 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. Currently, no environmental permits are expected. However, a review by the Region Resource Analyst will be completed prior to the Consultant authorization to identify any possible permit needs. Due to the drainage issues, wetlands may exist within the project limits of JN 87110 and the beginning of JN 87111.
- S. Attend any project-related meetings as directed by the MDOT Project Manager.
- T. 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, etc.
- U. 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.
- V. 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.
- W. 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.

## **UTILITIES**

The Consultant shall be responsible for obtaining and showing on the plans the location and names of all existing utilities within the limits of the project. In the course of resolving utility conflicts, the Consultant shall make modifications to the plans or design details and provide assistance as directed by the MDOT Utility Permits Engineer and/or Project Manager. The Consultant shall attend any utility meetings called to ensure that the concerns are addressed on the plans involving utilities. The Consultant shall assist in the review of utility permit requests to ensure compatibility with the project. The Consultant will be responsible for miscellaneous staking of utilities.

## **TRAFFIC CONTROL**

The Consultant shall be responsible for all traffic control required to perform the tasks as outlined in this Scope of Design Services. All proposed maintaining traffic schemes will need to be submitted and approved by the MDOT Project Manager prior implementation.

## **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 and will be coordinated through the MDOT Project Manager.

## **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 Base Plan Meeting
  - 3. The Plan Review
  - 4. Utility Meetings
  - 5. The OEC Meeting
  - 6. Quantity summary sheets and final item cost estimates
  - 7. Packaging of plans and proposal
- B. Furnish Special Details and pertinent reference materials.
- C. Furnish the MDOT completed road survey.
- D. Furnish any Geotechnical information required for design.
- E. Furnish prints of an example of a similar project and old plans of the area, if available.
- F. Obtain all permits for the project as outlined in previous section.

- G. Request and obtain names of utilities and their locations. Coordinate any necessary utility relocation.
- H. 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.
- E. Alignment Sheet(s).
- F. Construction staging and traffic control plans.
- G. Detail grade sheets for critical areas.
- H. Pavement marking plan(s).
- I. Non-Freeway Permanent signing plan(s).
- J. Witness and benchmark sheet(s).
- K. Soil boring log sheet(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.

	<b>MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST</b>	
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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 (mm/dd/yyyy)
YES	NO		
		<b><u>EPE SCOPING ANALYSIS</u></b>	
<input type="checkbox"/>	<input type="checkbox"/>	2120 Prepare Traffic Analysis Report	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2130 Prepare Project Justification	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>213M Concurrence by Regulatory Agencies with the Purpose and Need</u></i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2140 Develop and Review Illustrative Alternatives	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2155 Request/Perform Safety Analysis	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2160 Prepare and Review EIS Scoping Document	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>211M Public Information Meeting</u></i>	__/__/__
		<b><u>EPE DRAFT ANALYSIS</u></b>	
<input type="checkbox"/>	<input type="checkbox"/>	2310 Conduct Technical SEE Studies	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2321 Prepare for Aerial Photography	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2322 Finish/Print Aerial Photography	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2330 Collect EPE Geotechnical Data	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2340 Develop and Review Practical Alternatives	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>233M Aerial Photography Flight</u></i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2360 Prepare and Review EA or DEIS	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>231M Draft Submission to FHWA</u></i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2380 Circulate EA or DEIS	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>232M Public Hearing</u></i>	__/__/__
		<b><u>EPE FINAL ANALYSIS</u></b>	
<input type="checkbox"/>	<input type="checkbox"/>	2510 Determine and Review Recommended Alternative	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>250M Concurrence by Regulatory Agencies with Recommended Alternatives</u></i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2525 Prepare and Review Engineering Report	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2530 Prepare and Review Request for FONSI or FEIS	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	<i><u>252M Final Submission to FHWA</u></i>	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	2550 Obtain FONSI or ROD	__/__/__
		<b><u>CONTAMINATION INVESTIGATION</u></b>	
<input type="checkbox"/>	<input type="checkbox"/>	2810 Project Area Contamination Survey (PCS)	__/__/__

**MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST  
PRELIMINARY ENGINEERING – DESIGN**

YES	NO	P/PMS TASK NUMBER AND DESCRIPTION	DATE TO BE COMPLETED BY (mm/dd/yyyy)
		<b><u>DESIGN SCOPE VERIFICATION AND BASE PLAN PREPARATION</u></b>	
<input type="checkbox"/>	<b>X</b>	3130 Verify Design Scope of Work and Cost	__/__/__
<input type="checkbox"/>	<b>X</b>	3310 Prepare Aerial Topographic Mapping	__/__/__
<input type="checkbox"/>	<b>X</b>	3320 Conduct Photogrammetric Control Survey	__/__/__
<input type="checkbox"/>	<b>X</b>	3321 Set Aerial Photo Targets	__/__/__
<input type="checkbox"/>	<b>X</b>	3330 Conduct Design Survey	__/__/__
<input type="checkbox"/>	<b>X</b>	3340 Conduct Structure Survey	__/__/__
<input type="checkbox"/>	<b>X</b>	3350 Conduct Hydraulics Survey	__/__/__
<b>X</b>	<input type="checkbox"/>	3360 Prepare Base Plans	10/15/2009
<input type="checkbox"/>	<b>X</b>	<i>331M Utility Notification</i>	__/__/__
<b>X</b>	<input type="checkbox"/>	3361 Review and Submit Preliminary ROW Plans	10/15/2009
<input type="checkbox"/>	<b>X</b>	<i>331M Preliminary ROW Plans Distributed</i>	__/__/__
<input type="checkbox"/>	<b>X</b>	3370 Prepare Structure Study	__/__/__
<input type="checkbox"/>	<b>X</b>	3375 Conduct Value Engineering Study	__/__/__
<input type="checkbox"/>	<b>X</b>	3380 Review Base Plans	__/__/__
<input type="checkbox"/>	<b>X</b>	<i>332M Base Plan Review (Pre-GI Inspection)</i>	__/__/__
<b>X</b>	<input type="checkbox"/>	3390 Develop the Maintaining Traffic Concepts	10/15/2009
		<b><u>PRELIMINARY PLANS PREPARATION</u></b>	
<input type="checkbox"/>	<b>X</b>	3510 Perform Roadway Geotechnical Investigation	__/__/__
<input type="checkbox"/>	<b>X</b>	3520 Conduct Hydraulic/Hydrologic and Scour Analysis	__/__/__
<b>X</b>	<input type="checkbox"/>	3522 Conduct Drainage Study, Storm Sewer Design, and use Structural Best Management Practices	1/7/2010
<input type="checkbox"/>	<b>X</b>	3530 Conduct Structure Foundation Investigation	__/__/__
<input type="checkbox"/>	<b>X</b>	3535 Conduct Structure Review for Architectural and Aesthetic Improvements	__/__/__
<b>X</b>	<input type="checkbox"/>	3540 Develop the Maintaining Traffic Plan	1/7/2010
<input type="checkbox"/>	<b>X</b>	3551 Prepare/Review Preliminary Traffic Signal Design Plan	__/__/__
<b>X</b>	<input type="checkbox"/>	3552 Develop Preliminary Pavement Marking Plan	1/7/2010
<b>X</b>	<input type="checkbox"/>	3553 Develop Preliminary Non-Freeway Signing Plan	1/7/2010
<input type="checkbox"/>	<input type="checkbox"/>	3554 Develop Preliminary Freeway Signing Plan	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	3555 Prepare/Review Preliminary Traffic Signal Operations	__/__/__
<input type="checkbox"/>	<input type="checkbox"/>	3570 Prepare Preliminary Structure Plans	__/__/__
<b>X</b>	<input type="checkbox"/>	3580 Develop Preliminary Plans	1/7/2010
<b>X</b>	<input type="checkbox"/>	3581 Review and Submit Final ROW Plans	12/8/2009
<input type="checkbox"/>	<b>X</b>	<i>351M Final ROW Plans Distributed</i>	__/__/__

<input type="checkbox"/>	<b>X</b>	3590 Review Preliminary Plans (Hold Plan Review Meeting)	__/__/__
<b>X</b>	<input type="checkbox"/>	<u>352M THE Plan Review (Grade Inspection)</u>	2/5/2010

**MDOT PRECONSTRUCTION TASKS CONSULTANT CHECKLIST**

**PRELIMINARY ENGINEERING - DESIGN (cont'd)**

		<b>P/PMS TASK NUMBER AND DESCRIPTION</b>	<b>DATE TO BE COMPLETED BY</b>
<b>YES</b>	<b>NO</b>		(mm/dd/yyyy)
		<b><u>UTILITIES</u></b>	
<input type="checkbox"/>	<b>X</b>	3610 Compile Utility Information	__/__/__
<input type="checkbox"/>	<b>X</b>	3650 Coordinate RR Involvement for Grade Separations	__/__/__
<input type="checkbox"/>	<b>X</b>	3655 Coordinate RR Involvement for At-Grade Crossings	__/__/__
<input type="checkbox"/>	<b>X</b>	3660 Resolve Utility Issues	__/__/__
<input type="checkbox"/>	<b>X</b>	<u>360M Utility Conflict Resolution Plan Distribution</u>	__/__/__
<input type="checkbox"/>	<b>X</b>	<u>361M Utility Meeting</u>	__/__/__
<input type="checkbox"/>	<b>X</b>	3670 Develop Municipal Utility Plans	__/__/__
<input type="checkbox"/>	<b>X</b>	3672 Develop Special Drainage Structures Plans	__/__/__
<input type="checkbox"/>	<b>X</b>	3675 Develop Electrical Plans	__/__/__
		<b><u>MITIGATION/PERMITS</u></b>	
<input type="checkbox"/>	<b>X</b>	3710 Develop Required Mitigation	__/__/__
<b>X</b>	<input type="checkbox"/>	3720 Assemble Environmental Permit Applications	3/18/2009
<input type="checkbox"/>	<b>X</b>	3730 Obtain Environmental Permit	__/__/__
		<b><u>FINAL PLAN PREPARATION</u></b>	
<input type="checkbox"/>	<b>X</b>	3821 Prepare/Review Final Traffic Signal Design Plan	__/__/__
<b>X</b>	<input type="checkbox"/>	3822 Complete Permanent Pavement Marking Plan	3/18/2009
<b>X</b>	<input type="checkbox"/>	3823 Complete Non-Freeway Signing Plan	3/18/2009
<input type="checkbox"/>	<b>X</b>	3824 Complete Freeway Signing Plan	__/__/__
<input type="checkbox"/>	<b>X</b>	3825 Prepare/Review Final Traffic Signal Operations	__/__/__
<b>X</b>	<input type="checkbox"/>	3830 Complete the Maintaining Traffic Plan	3/18/2009
<b>X</b>	<input type="checkbox"/>	3840 Develop Final Plans and Specifications	3/18/2009
<b>X</b>	<input type="checkbox"/>	<u>380M Plan Completion</u>	4/2/2010
<input type="checkbox"/>	<b>X</b>	3850 Develop Structure Final Plans and Specifications	__/__/__
<b>X</b>	<input type="checkbox"/>	3870 Hold Omissions/Errors Check (OEC) Meeting	4/13/2010
<b>X</b>	<input type="checkbox"/>	<u>387M Omissions/Errors Checks Meeting</u>	4/13/2010
<b>X</b>	<input type="checkbox"/>	<u>389M Plan Turn-In</u>	10/6/2010
<input type="checkbox"/>	<b>X</b>	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)
		<b><u>EARLY RIGHT OF WAY WORK</u></b>	
<input type="checkbox"/>	<b>X</b>	4120 Obtain Preliminary Title Commitments	_/_/____
<input type="checkbox"/>	<b>X</b>	4130 Prepare Marked Final Right Of Way Plans	_/_/____
<input type="checkbox"/>	<b>X</b>	<i>413M Approved Marked Final ROW</i>	_/_/____
<input type="checkbox"/>	<b>X</b>	4140 Prepare Property Legal Instruments	_/_/____
		<b><u>ROW ACQUISITION</u></b>	
<input type="checkbox"/>	<b>X</b>	4411 Preliminary Interviews	_/_/____
<input type="checkbox"/>	<b>X</b>	<i>441M Post-Decision Meeting</i>	_/_/____
<input type="checkbox"/>	<b>X</b>	4412 Real Estate Services Assignment Proposal and Fee Estimate (Form 633s) for Appraisal Work Authorization	_/_/____
<input type="checkbox"/>	<b>X</b>	4413 Appraisal Reports	_/_/____
<input type="checkbox"/>	<b>X</b>	4420 Appraisal Review Reports	_/_/____
<input type="checkbox"/>	<b>X</b>	4430 Acquire Right Of Way Parcels	_/_/____
<input type="checkbox"/>	<b>X</b>	4510 Conduct Right Of Way Survey & Staking	_/_/____
		<b><u>ROW RELOCATION</u></b>	
<input type="checkbox"/>	<b>X</b>	4710 Relocation Assistance	_/_/____
<input type="checkbox"/>	<b>X</b>	4720 Prepare Improvement Removal Plan	_/_/____
<input type="checkbox"/>	<b>X</b>	<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**

**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. **The billings shall reflect the amount of time associated with the individual projects. Separate billings for hours and direct expenses will be required for each of the Job Numbers.**

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

Date: 6/25/09

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 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.

### DESIGN SURVEY SCOPE WHEN USED AS AN ATTACHMENT

This design survey is an attachment to the original design scope of work but serves and will be submitted as a stand alone MDOT Professional Design Survey, as outlined in the Design Survey *Standards of Practice* dated March 2009. Design survey man and task hours for this project must be reviewed and/or discussed with the Region Surveyor through the MDOT Project Manager prior to finalizing the cost proposal. A copy of the design survey portfolio, in digital and hard copy format, must be submitted to the Region Surveyor when the survey is complete according to the project timelines set forth in the original design scope of work. Early submittals of the project control, horizontal and vertical least squares adjustments are encouraged as soon as the consultant surveyor finishes the task.

It is the responsibility of the survey Consultant to review the design plans for their prime Consultant for QA and to verify that the alignment, ROW, horizontal & vertical control (standard plan note G-28 with the project combined scale factor), and government section corners, as well as, other pertinent survey information is accurately shown & labeled on the plans. This must happen at each of the three standard plan submittals (base/GI plans, plan review, and OEC) before the prime Consultant submits plans to MDOT for review. Six (6) man hours of professional surveyor time designated as “plan review” should be included in the cost proposal to complete this task.

## **GENERAL DESCRIPTION OF WORK**

Provide professional surveying services to check, verify, and supplement, where necessary, the MDOT provided survey data, as needed, to facilitate the proposed design. A road design survey was completed by MDOT in February 2009 for this project. The survey will be submitted to the prime Consultant for their use on this project once they are under contract. Once a Consultant is selected it is recommended that they make arrangements to review this survey with the MDOT Region Land Surveyor, before submitting their cost proposal, to help define their scope of survey work for this project.

The MDOT survey contains intermediate project control (horizontal and vertical), mapping of the hard surface roadway (lane lines & centerlines), edge of shoulder, ditches, topography, drainage structures, and utilities (invert measurements and pipe inventories were taken on drainage structures) from M-44 north to Snows Lake Road from approximately 60 feet either side of the centerline of M-91. The survey includes government section corners and property controlling corners and the legal alignment for M-91 through the project limits. The existing MDOT ROW was not computed in this survey and may be requested from the Consultant if the MDOT project manager deems it necessary for this project. Man hours should be provided in the cost proposal to fulfill this requirement.

This project may require additional survey pickup and utility/right-of-way staking to supplement the original design survey if the MDOT Project Manager deems necessary. This miscellaneous survey pickup may or may not be needed and is contingent on the design needs for this project. Miscellaneous staking of utilities and right-of-ways may be needed to resolve conflicts or otherwise bring to light a potential conflict. The intent of this miscellaneous survey pickup and staking is to supplement the original design survey as needed to clarify questionable areas during the design process. Appropriate man hours shall be included in the cost proposal and designated as miscellaneous survey pickup/staking.

A survey check shot report is to be supplied in the mapping portion of the final project portfolio detailing the type of equipment (TS, GPS), date, time, coordinates, and differences between the check shot and the adjusted control coordinates for each day survey mapping took place. These points should be coded as CHK (checkshot) and left in the final Caice deliverable file as to serve as a record check on that days survey measurements. MDOT will provide an excel spreadsheet to the Consultant for their use on this project, if they wish. Requests should be made to the MDOT Region Land Surveyor.

## **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 designate).
7. The Consultant must contact any and all Railroads prior to commencing field survey on railroad property. The cost for any permit, flaggers and/or training that is required by the Railroad will be considered as a direct cost, but only if included in the Consultant's priced proposal.
8. The Consultant must adhere to all applicable OSHA and MIOSHA safety standards, including the appropriate traffic signs for the activities and conditions for this job.
9. Consultants are responsible for a comprehensive and conscientious research of all records, including MDOT records, essential for the completion of this project.
10. Measurements, stationing, recorded data, and computations must be in **International Feet**, unless specified otherwise by the MDOT Project Manager.
11. Coordinate values shall be based upon the Michigan State Plane coordinate system NAD83 (CORS). All elevations must be based upon the North American Vertical Datum of 1988 (NAVD88). The datums must be clearly stated in the Survey Work Plan. A preliminary submittal of the adjusted Horizontal and Vertical control for the project may be submitted to the MDOT Survey Consultant Coordinator or Region Surveyor for review and acceptance as soon as it is available.

12. The survey notes must be submitted to the Design Survey Unit in 10" by 12" divided portfolios with flap covers. As many portfolios should be used as are needed to contain all of the required documents and Compact Discs (CD's) or DVD's. **Duplicate CD's must be included in the portfolio, with one set labeled "Region Surveyor"**.
13. Each portfolio must be labeled on the outside as in the following example:  
  
Survey Notes for:  
Route, Location and Project Limits [*I-94 under Beaubien Street* ]  
Control Section [*S06 of 82024*] Job Number [*45197D*] Date [*of submittal* ]  
By [*Name of Firm* ]  
Michigan Professional Surveyor [ *Name,*            *License #* ]
14. Each submittal is to be divided into six sections. These sections are to be labeled as follows: **Administrative, Alignment, Control, Property, Mapping, and Miscellaneous.**
15. **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. 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. It is not necessary to label each individual paper page in the portfolio.
16. 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.
17. 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.
18. 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, Grand Region Survey Unit, Region Land Surveyor, 1420 Front Ave. NW, Grand Rapids, MI 49504. Please use MDOT's Form 222(5/01) entitled

“SURVEY NOTES: RECEIPT AND TRANSMITTAL” for all transmittals. A copy of this transmittal form must also be sent to the MDOT Project Manager for Design.

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

### **WORK RESTRICTIONS**

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

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

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

Traffic shall be maintained by the Consultant throughout the project in accordance with Sections 812, 922, 103.05 and 103.06 of the *Standard Specifications for Construction*, 2003 edition, [www.mdot.state.mi.us/specbook/](http://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](http://www.mdot.state.mi.us/tands/plans.cfm)

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

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

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 project design engineer 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 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 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 for existing control in the area.

OPUS positioning may be used as a check, and for positioning Primary Control as defined in the MDOT *Standards of Practice* for Design Survey 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 NGS/CORS adjustment.

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 03."

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.

The Witness list sheet for this project must have a formula for grid to ground conversion, and 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.** Capital letters are easier to read on half-size plan sheets.

## **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 Work Plan what type of alignment(s) is proposed, Legal 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 (As Constructed or Legal). 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 2007. Showing government corners with distances along government lines to the alignment are also appropriate for this CADD drawing. MicroStation is the recommended format. 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** in ASCII format for all alignment points found or set. This list must include 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 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 "MDOTV8LEVEL.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.pdf file for Data Collection Codes.

The Consultant must also 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 available on the MDOT Design Survey FTP site. The Consultant must submit a 3D MicroStation Triangle file, a Survey Chain (TIN Boundary) around the edited Triangle file with the name and Feature "CLIP", a Job#.DAT file, a Job#.XML file- 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 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 Checklist.
  
2. In the second pocket of the portfolio, labeled **ALIGNMENT**, the following will appear:
  - a. An annotated CADD drawing of the alignment(s), showing:
    - i) A statement defining the alignment(s) as **legal or as constructed**
    - 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. Text files in ASCII format, hard copy 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.
  - e. A MicroStation V8 file showing the data in d. above.
  
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.
  - 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.
  - 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.
  - 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 insure 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".**