Michigan Department of Transportation 5100B (07/07)

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

Exhibit B

MDOT PROJECT MANAGER	JOB NUMBER (JN)	CONTROL SECTION (CS)
Marilyn Hansen, P.E.	111366, 111374, 111375	82252, 63041, 63112

DESCRIPTION IF NO JN/CS
Roadway Scoping for Macomb Co

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

WHITE = REQUIRED
GRAY SHADING = OPTIONAL

Check the appropriate Tier in the box below

CONSULTANT: Provide only checked items below in proposal.

☐ **TIER I ($25,000-$99,999)**	☒ **TIER II ($100,000-$250,000)**	☐ **TIER III (>$250,000)**	
☐	☒	☐	Understanding of Service
☐	☐	☐	*Innovations*
☐	☐	☐	*Safety Program*
N/A	☒	☐	Organization 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**

REQUEST FOR PROPOSAL

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

If your firm is interested in providing services, please indicate your interest by submitting a Proposal, Proposal/Bid Sheet or Bid Sheet as indicated below. The documents must be submitted in accordance with the latest "Consultant/Vendor Selection Guidelines for 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 10/1/10 THROUGH 12/31/10

☑ **Prequalified Services** – See page 4 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.

☑ **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
5	2/22/11	1:00 pm

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

Marilyn Hansen, PE
MDOT Metro Region Office
18101 West Nine Mile Rd.
Southfield, MI 48075

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

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

Michigan Department of Transportation

SCOPE OF SERVICES
FOR
DESIGN SERVICES

Roadway Scoping in Metro Region

CONTROL SECTION(S): 82252, 63041, 63112

JOB NUMBER(S): 111366, 111374, 111375

PROJECT LOCATION: The projects are located within Oakland and Wayne Counties, Metro Region.

PROJECT DESCRIPTION: Prepare Preliminary and Final Scoping Packages for the rehabilitation of the roadways as identified in Attachment C.

PRIMARY PREQUALIFICATION CLASSIFICATION:
Roadway Rehabilitation & Rural Freeways

SECONDARY PREQUALIFICATION CLASSIFICATION:
Maintaining Traffic Plans & Provisions
Safety Studies

ANTICIPATED START DATE: March 21, 2011

ANTICIPATED COMPLETION DATE: August 31, 2011

DBE REQUIREMENT: N/A

MDOT PROJECT MANAGER:
Marilyn Hansen, P.E.
Pavement Management Engineer
Metro Region
18101 West Nine Mile Road
Southfield, MI 48075
248-483-5157
hansenm@michigan.gov

CONSULTANT RESPONSIBILITIES:

The CONSULTANT shall prepare Preliminary and Final Scoping Packages for each of the project locations listed in Attachment C. As part of this project, the CONSULTANT shall prepare and evaluate the proposed treatment for each roadway and determine the extent and cost of all work required for its implementation.

The CONSULTANT shall provide staff who demonstrates technical expertise in road design as well as construction/constructability.

For the project, complete the Scoping. This will include, but will not be limited to, the following

A. Verify the project location, the limits and the extents.

B. Conduct field reviews to obtain missing or supplement incomplete information.

C. Establish and detail the proposed scope of road work.

D. Determine Federal requirements, and project conformance.

E. Perform Crash Analysis and recommend countermeasures.

F. Project Area Contamination Survey (PACS)

G. Prepare CPM (Critical Path Method) Schedule.

H. Compute and verify all quantities.

I. Compute and calculate detailed cost estimate using MDOT Pay Items.

J. Complete the Project Concept Statement and the Project Scoping Checklist.

K. Prepare a design hour estimate.

L. Prepare required documents (to include summary, typical cross sections, photographs, base plans, etc) required to answer all questions relating to the project scope of work (See Attachment A).

M. Identify, contact and coordinate with all affected governmental agencies. Also, request Cities to provide public utility information within project limits.

N. Identify, review and coordinate existing and future Transit (SMART and/or DDOT) facilities and issues.

O. Identify and provide solutions to any unique problems that may arise during the design of the project or that may affect the constructability.

P. Prepare estimate and checklist as per MDOT Scoping Manual.

DELIVERABLES:

Obtaining, reviewing, analyzing and incorporating project data and recommendations for all scoping related work. All work shall conform to current applicable MDOT, FHWA, and AASHTO practices, guidelines, policies, and standards (i.e., Roadside Design Guide, AASHTO Road Side Design Guide, AASHTO A Policy on Geometric Design of Highways and Streets, Michigan Manual of Uniform Traffic Control Devices, etc.) This will include, but will not be limited to, the following for the preparation of the Preliminary Scoping and the Final Scoping Packages for EACH of the project locations.

PRELIMINARY SCOPING PACKAGE

Preliminary Scoping Packages shall be submitted on or before June 13, 2011 for MDOT review and comment. The Preliminary Scoping Package shall address all the items listed under Section I. CONSULTANT DUTIES, Attachment A and under Section XI. CONSULTANT RESPONSIBILITIES (GENERAL). If any of the aforementioned items are not included or not sufficiently complete as determined by the MDOT Project Manager, the Preliminary Scoping Package will be rejected. The Consultant will have up to three (3) working days to make the changes, as directed by the MDOT Project Manager and re-submit the Preliminary Scoping Package. No additional compensation will be given to the Consultant for costs associated with making the changes.

The pavement section and geotechnical recommendations are subject to change pending the outcome of the geotechnical investigations and Scope Review Meetings.

In the Preliminary Scoping Package, if there are any items, in the CONSULTANTS opinion, that need further review, discussion and/or additional information is needed from MDOT, those items shall be clearly listed on a cover sheet accompanying the Preliminary Scoping Package.

FINAL SCOPING PACKAGE

Final Scoping Packages shall be submitted on or before August 15, 2011. The Final Scoping Package shall address and document all the items listed under Section I. CONSULTANT DUTIES, Attachment A and under Section XI. CONSULTANT RESPONSIBILITIES (GENERAL) and incorporate the comments and/or changes received from the Preliminary Scoping Package and the Preliminary Scope Review meeting.

The Final Scoping Package shall also include, two CD's. There shall be one single CD for the projects electronic files of the Base Map (.dgn file), cross sections (.dgn files), electronic files of the photos (.jpg files) and location map (file type subject to MDOT approval). The second CD shall be a copy of the entire Final Scoping Package in pdf format. Each CD ROM shall be contained in a separate envelope labeled with the control section, job number, project location and the CD contents. Each envelope shall be included as part of the package and shall be attached and connected through the 3 ring binder. Form of connection shall be approved by the MDOT Project Manager.

MDOT will have a minimum of nine (9) working days to review the Final Scoping Packages and if any of the aforementioned items are not included or are not sufficiently complete, the Final Scoping Package will be rejected. The Consultant will have up to August 31, 2011 to make the changes, as directed by the MDOT Project Manager and re-submit the Final Scoping Package. No additional compensation will be given to the Consultant for costs associated with making the changes.

Before spreadsheets are submitted as part of the Final Scoping Package a preliminary copy (both hard copy and electronic format) shall be sent to the MDOT Project Manager for review and approval as to form and content.

PROJECT CONSTRUCTION COST

For the project location a cost estimate shall be developed. The cost estimate shall include an adjustment for inflation (5% annual rate). The following are the items that shall be considered and shall be broken down by MDOT Pay Items and then rolled up into the categories as identified in the Project Scoping Checklist:

A. The estimated construction cost shall address:
   1. Safety Related Work
   2. Mainline Pavement (Base, Surface and Shoulder)
   3. Non-Motorized
   4. Geometric Improvements
   5. Improve Alignment (Vertical/Horizontal)
   6. Drainage Adjustment and Improvement
   7. Joint Repair and Pavement Patching
   8. Detours and Maintaining Traffic
   9. Permanent Pavement Markings/Signs/Signals
   10. Environmental
   11. Miscellaneous
   12. Aesthetic Opportunities
   13. Incentive/Disincentive Costs
   14. Intelligent Transportation Systems Components

B. The estimated number of real estate parcels and type (grading permit, easement or fee) and the associated cost for each.

PROJECT SCHEDULE:

The scheduled completion date for the Preliminary Scoping Packages is June 13, 2011 and August 15, 2011 for the Final Scoping Packages. 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.

Target Date	Description
June 13, 2011	Submit Preliminary Scoping Package
July 18 & 22, 2011	Preliminary Scope Review Meetings
August 15, 2011	Submittal of Final Scoping Package

MDOT will submit a preliminary pavement design for estimating purposes. However, the pavement design is subject to change.

MONTHLY PROGRESS REPORT

On the first of each month, the Consultant Project Manager shall submit a monthly project progress report to the MDOT Project Manager, Marilyn Hansen, P.E. (248-483-5157). The monthly progress report shall follow the guidelines in Attachment K.

FORMAT

The Preliminary and Final Scoping Packages (See Attachment A for items that will be included) for each project location as identified in Attachment C shall be presented on regular letter size paper (8 ½" x 11") with the exception of the Base Maps, sketches and diagrams which shall be on 11" x 17" paper (and folded to match the 8 ½" x 11" paper). A cover sheet shall be entitled "Preliminary Scoping Package" or "Final Scoping Package", as appropriate, and shall also include control section, job number, route, location description and proposed fix type. An index page shall also be included in each package.

There shall be five (3) copies each of the Preliminary Scoping Package and five (3) copies each of the Final Scoping Package.

The Preliminary Scoping Packages (see Attachment A for items that will be included) will be presented in a labeled (cover and side on white paper, to be entitled "Preliminary Scoping Package", listing the control section, job number, route, location description and proposed fix type.) three ring binder, with an index and tabbed sections, containing regular letter size paper (8 ½" x 11") for the majority of the documents. 11" x 17" paper may be used for Base Maps, sketches and diagrams. If there are any items, in the CONSULTANTS opinion, that need further review, discussion and/or additional information from MDOT, those items shall be clearly listed on a cover sheet accompanying the Preliminary Scoping Package. The photographs included in the documents shall be in an electronic .jpg format with printouts at 4" x 6", in color, labeled with the location, direction from which the picture was taken, date, particular feature needing improvement and the approximate mile point. No fewer than 12 and no greater than 24 photos are to be provided.

The Final Scoping Packages (see Attachment A for items that will be included) will be presented in a labeled (cover and side, paper color shall be determined by the MDOT Project Manager, to be entitled "Final Scoping Package" and shall also list the control section, job number, route, location description and proposed fix type.) three ring binder, with an index and tabbed sections, containing regular letter size paper (8 ½" x 11") for the majority of the documents. 11" x 17" paper may be used for Base Maps, sketches and diagrams. The photographs included in the documents shall be in an electronic .jpg format with printouts at 4" x 6", in color, labeled with the location, direction from which the picture was taken, date, particular feature needing improvement and the approximate mile point in the Packages. No fewer than 12 and no greater than 24 photos are to be provided.

The Base Map as identified in Attachment A is to be created electronically, using the MicroStation design software, and following all MDOT drafting standards and guidelines. The entire Base Map is to be created in English units and is to be placed within a single approved MDOT printed sheet. The full size of the MDOT printed sheet is (24" x 36"), however, only an (11" x 17"), a reduced size copy, needs be provided.

An English alignment shall be created. The alignment shall describe stations as 100 ft and carry the decimal place out to 2 decimal places (ie: 10+00.00). The alignment shall draw the station ticks at every 100 ft, and annotate the station ticks at every station (ie: 1+00.00, 2+00.00, 3+00.00). The stationing of the alignment shall match that of the old plans. If old plans are not available, then the alignment shall start at 10+00.00 and shall increase in station from either south to north, or west to east. The location of the alignment will match that of the old plans. If old plans are not available, then the alignment shall be located down the center of the roadway.

The CPM Schedule shall be created electronically as stated in Attachment I and shall be plotted on 1 sheet of (11" x 17") paper. The critical path shall be clearly identified on the plot. Accompanying the plot shall be Work Day / Completion Date Determination Worksheet and a List of any other assumptions or controlling factors used in creating the network all of which shall be printed on (8 ½" x 11 ½") paper .

All spreadsheets shall be created using Excel (.xls files). Before the final spreadsheets are submitted, a preliminary copy (both hard copy and electronic format) shall be sent to the MDOT Project Manager for review and approval as to form and content.

All 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 MDOT Project Manager.

All project related items are subject to review and approval by the MDOT Project Manager.

TRAFFIC CONTROL AND MDOT PERMITS

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

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 Kathy Fulton, Utilities/Permits Section, Real Estate Division at (517) 373-7680.

PRE-QUALIFICATION AND SUBCONTRACTING OF CONTRACT WORK

The Department's pre-qualification is not a guarantee or warranty of the SUBCONTRACTOR'S ability to perform or complete the work subcontracted. The CONSULTANT remains fully responsible to the Department for completion of the work according to the authorization as if no portion of it had been subcontracted.

All SUBCONTRACTOR communications with the Department shall be through the CONSULTANT to the MDOT Project Manager. This requirement may be waived if a written communication plan is approved by the MDOT Project Manager.

The Department may direct the immediate removal of any SUBCONTRACTOR working in violation of this subsection. Any costs or damages incurred are assumed by the CONSULTANT by acceptance of authorization. It is further understood that the CONSULTANT'S responsibilities in the performance of the contract, in case of an approved subcontract, are the same as if the CONSULTANT had handled the work with the CONSULTANT'S own organization.

CONSULTANT RESPONSIBILITIES (GENERAL)

1. The MDOT Project Manager shall be the official MDOT contact person for the CONSULTANT. 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. The MDOT Project Manager shall be made aware of all communications regarding this project.

2. The CONSULTANT shall meet with the MDOT Project Manager to review the project, location of data sources, contact persons and relevant MDOT operations. This Kick-off Meeting will include project location field visits. The CONSULTANT shall review and clarify project issues, data needs and availability, the sequence of events and team meetings that are essential to complete the project scoping by the project completion date. Attention shall be given to critical target dates that may require a large lead time, such as scope review meetings, etc.

3. Maintain a Scoping Project Record which includes a history of significant events (changes, comments, etc.) which influenced the development of the scopes, dates of submittals and receipt of information.

4. The CONSULTANT shall contact, in writing, the MDOT Project Manager whenever discoveries or design alternatives have the potential to require significant changes in the limits, quantities, costs, or right-of-way of the project.

5. Attend any project-related meetings as directed by the MDOT Project Manager.

6. 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 bring an additional person to all meetings who's sole responsibility will be to take notes/minutes. The CONSULTANT shall also distribute the minutes to all meeting attendees.

7. The CONSULTANT will conduct field reviews to obtain missing or supplement incomplete information.

8. The CONSULTANT will be responsible for providing elevation view sketches at both sides of each and every bridge in the project area. The sketch must show the elevation of the roadway at 2 feet inside of the inside edge of metal and 2 feet outside of the outside edge of metal, as well as the interior lane lines, crown point and shoulder edges. The corresponding elevation of the structure under clearance immediately overhead must also be shown. The CONSULTANT shall field measure all elevations. All under clearance sketches must be shown looking up station and clearly depict the clear roadway width.

9. Determine impacts of the proposed pavement treatment on the existing horizontal and vertical alignments, pavements, curb and gutter, drainage, transit stops, right of way (ROW), etc. Every effort shall be made to minimize ROW impacts within the limits of the project. In areas of potential ROW impacts, the CONSULTANT shall request, in writing, copies of ROW maps from the MDOT Project Manager (requests may take up to two weeks from the date the request is received to fill) and document and identify the potential need for additional ROW, by station or address, type of ROW required (grading permit,

easement or fee), and roadside improvements proposed (i.e. fencing, turf establishment, landscaping, non motorized, etc.)

10. Generate a Base Map, created electronically using the MicroStation design software and formatted as described in Section VIII FORMAT, of the existing roadway using information from old plans, and/or, on site field reviews. The Base Map is to visually describe the existing roadway within the limits of the project. The project limits shall be defined for this task as either be the greater of 250 feet beyond the Point of Beginning (POB) and the Point of Ending (POE) or the limits needed to fully accommodate the maintaining traffic limits as determined in Attachment G. The detail of the Base Map is to include the location of existing roadways, bridges, ramps, cross roads, interchanges and/or intersections. The Base Map is to show existing features; i.e. edge of pavements, edge of shoulders, curb lines, drainage courses, etc.. The Base Map is to represent existing conditions and no proposed work is to be shown.

11. Prepare existing and proposed typical cross sections.

12. WATER MAINS, SANITARY SEWERS, PUBLIC AND PRIVATE UTILITIES. The CONSULTANT shall contact in writing any and all utility owners within the project limits and request utility information. The request shall be made using the form provided by the MDOT Project Manager, as seen in Attachment E. Requested information shall include existing utilities and any future plans regarding the utilities. If water mains and/or sanitary sewers are present within the project limits, the CONSULTANT shall evaluate the necessity for the relocation of water mains and sanitary sewers, in accordance with Design Division's Informational Memorandum #441B and #402R dated April 13, 1992. Send a letter to the MDOT Project Manager and outline where water main and/or sanitary sewer relocation is needed/ recommended. Provide the limits, an explanation for the relocation and a cost estimate for each location.

13. Perform storm water design calculations, including appropriate outlets and energy dissipation as necessary, as outlined in the MDOT Drainage Manual. Detention may be required. Detention pond design must meet, but is not limited to, local agency storm water regulations and Michigan Department of Environmental Quality water quality permit requirements. All design calculations, drainage maps and proposed profiles shall be included in the Preliminary and Final Scoping Reports under Attachment A Section #23.

14. Review and document final scope conformance to design elements as listed in Attachment F and 3R/4R Guidelines for non freeway jobs and 4R, AASHTO and Interstate Standards for freeway jobs. Documentation shall be broken down into the following sections for each element: Existing condition, Treatment As Per Design Standards, and Proposed Treatment. If the Proposed Treatment is not in accordance with the Treatment Per Standard, an additional section shall be added entitled "Reason for not Meeting Standard" which shall contain documentation for reason and justification (if cost is given as the reason, the cost for doing the Treatment per Standard shall be given along with the cost for the Proposed Treatment. Normally cost alone is not a proper justification for not meeting standards.) .

15. Prepare a table of the values used for the evaluation of the elements as listed in Attachment D and 3R/4R Guidelines for non freeway jobs and 4R, AASHTO and Interstate Standards for freeway jobs. The table shall at a minimum contain the following; all the minimum values as per standard for the associated design element, where the minimum value as per design standard were derived from, all values used to determine conformance, where

values used for conformance were derived from and all formulas used for the calculation of values.

Before the final tables are submitted, an advance copy (both hard copy and electronic format) shall be sent to the MDOT Project Manager for review and approval as to form and content.

16. Review and document the roadside safety related items (i.e. guardrail, barriers, attenuators, etc.) which need to be modified or included in the project. Documentation is to include location, existing type and condition, and the recommended treatment. This information shall be included in the appropriate area of the Attachment A.

17. CRASH ANALYSIS AND RECOMMEND COUNTERMEASURES. Perform crash analysis and recommend countermeasures, see Attachment H for details. This shall include but shall not be limited to, the following. Perform crash analysis which shall include the last 5 years of reliable data for the analysis period. The CONSULTANT will be furnished 5 years of data.

    Determine countermeasures based on the crash analysis and provide a detail drawing explaining each recommendation. Determine ROW impacts for each countermeasure identified. Determine the construction cost estimate for each countermeasure using MDOT Pay Items. Summarize the countermeasures for each crash pattern individually. Include the corresponding countermeasure, along with the associated ROW impacts and construction cost estimate. The construction cost estimate for each countermeasure recommendation shall be presented in the Preliminary Scoping Package(s) and shall be reviewed and approved by MDOT before inclusion into the Final Scoping Package. Develop a Time of Return (TOR) analysis for each countermeasure using the MDOT TOR format as provided by the MDOT Region Traffic Safety Engineer.

18. PROJECT AREA CONTAMINATION SURVEY. Perform a Project Area Contamination Survey, see Attachment F for details.

19. Document and identify locations of possible environmental issues (historical, archeological, LUST Sites, wetlands, tree removals, etc.) which may impact the project, and estimate the cost of treatment. For every estimated tree removed, two shall be replaced. This information shall be included in the appropriate area of the Attachment A.

20. If excavation is required, submit the excavation locations (list them by station) which may contain contamination. This information shall be included in the appropriate area of the Attachment A.

21. Document and identify (location and who has responsibility for) any existing lighting and/or MITS work that may be impacted, or should be included, in the projects. Incorporate work into the estimate. (Lighting on Non-Freeway roads is the responsibility of the local jurisdiction.) Include any additional MITS work (to be provided by MDOT).

22. Identify, document, coordinate, review and provide appropriate transit access designs as per SMART and DDOT standards. Additionally, identify and estimate the type and amount of ROW that would be necessary for implementation.

23. CARPOOL LOTS. Identify areas within the project limits that have potential for becoming carpool lots ("park and ride" lots). If an area is identified as having potential to become a carpool lot, estimate the construction cost, including any amount of ROW that would be necessary for implementation.

24. MAINTAINING TRAFFIC. Develop the Maintaining Traffic Plan, as per Attachment G.

25. CPM SCHEDULE. The CPM (Critical Path Method) Schedule shall be developed as per Attachment I.

26. Compute and verify all quantities necessary to complete the Project Concept Statement and Project Scoping Checklist for each of the projects. See Attachment J for the blank forms and for an example of the data types required.

27. Specifically identify any local participation that is required and/or requested for the project location. Examples where local participation is required are: Act 51, water, sanitary, storm sewer upgrades, work beyond the spring points on local streets, and/or drainage. For each agency (there may be more than one), individually identify the type of work/improvement, itemize the costs and then separately estimate the amount of the respective agencies participation.

28. Identify, contact and coordinate with all affected governmental agencies (County, SEMCOG, and/or city, township) within the project limits (and directly abutting if any part of the construction influence area will be within another agencies area). Coordination will involve, at a minimum, an initial letter stating the project and its scope and requesting local input, within 30 days, in the development of the detailed scope. A follow-up letter, if no response is given, and a final letter stating the process that occurred and what the final scope will be to all affected governmental agencies. A copy of all letters sent to cities, townships and counties shall be sent to SEMCOG. There may be the need to attend meetings and receive and return telephone calls from the affected agencies. All local requests shall be forwarded to, and reviewed, with the MDOT Project Manager. The CONSULTANT shall not, and cannot, make any commitment to a local agency for the inclusion of work into a project. Only MDOT can make such a commitment. Any commitment from MDOT shall be in written form from the MDOT Project Manager.

    MDOT shall be informed of any meeting with the affected agencies a minimum of 72 hours in advance of the meeting. All discussions with agencies shall be documented and submitted with the monthly progress reports.

29. Incorporate any MDOT identified and/or approved (if approved, include copy of MDOT approval) local needs/requests into project scope.

30. Provide photographs and digital files (.jpg files) of the existing roadway and roadside conditions to document the needs as identified in the project scope.

31. Prepare a spreadsheet summary of the local coordination that occurred. The summary shall document the planning/coordination process that occurred with each of the affected local agencies. The summary shall include at a minimum specifically what was sent to who and when, what was received from who and when and what responses were made (and why) to who and when.

32. Intelligent Transportation Systems (ITS) Plan: Coordinate with the MDOT ITS Development Engineer to determine if any ITS devices are currently located in the area. Review Region ITS plans (including the MDOT ITS Pre-Deployment Plan, Region Communications Plan and other documents), as provided by the MDOT ITS Development Engineer, and meet with MTIS Center staff to determine if any ITS components are proposed or required for the area.

    Prepare a layout of proposed ITS devices in the area. Include all costs and quantities in the overall project quantities and costs.

MDOT RESPONSIBILITIES (GENERAL):

A. Schedule and/or conduct the following:
    1. Project related meetings.
    2. Coordinate all scoping activities that require MDOT personnel.

B. Furnish CD of old plans within the control section for the area, if available.

C. Perform preliminary pavement designs.

D. Furnish hard data for Crash Analysis.

E. Provide Geotechnical Recommendations

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"

The Preliminary and Final Scoping Packages

The Preliminary and Final Scoping Packages shall be prepared for each project location. The packages shall contain the following, and shall be assembled in the order as listed.

1. List of Invitees and Sign in Sheet for Scope Review Meeting.
The list of people invited to the Scope Review Meeting (to be supplied by MDOT Project Manager) and the actual sign-in sheet from the Scope Review Meeting.

2. Location Map
A location map shall show a map of the project area showing the roadway name, roadway number, project beginning, project ending, project length, major cross streets, interchanges and local municipalities affected. The Location Map shall be presented on regular letter size paper (8 ½" x 11").

3. Sign off sheet
A sheet listing the members of the Consultant's Scoping Team (the members name, members signature and area of contribution). Also on this sheet, the Consultant is to list all the sources used in establishing existing information (old plans used, limits of coverage of old plans, date of on site visits, etc).

4. Summary
A project specific Summary (see Attachment B).

5. Minutes from Scope Review Meeting
Project specific notes from the Scope Review Meeting.

6. Photographs - Road Only
Provide actual photographs and digital files (.jpg files on attached CD ROM) of the existing roadway and roadside conditions to document the needs as identified in the project scope. The photographs included in the documents shall be 4" x 6", in color, labeled with the location, direction from which the picture was taken, date, particular feature needing improvement and the approximate mile point. No fewer than 12 and no greater than 24 photos per project location are to be provided.

7. Base Map
Generate a single Base Map, created electronically using the MicroStation design software and formatted as described in Section VIII FORMAT, of the existing roadway using information from old plans, and/or, on site field reviews. The Base Map is to visually describe the existing roadway within the limits of the project on one page. The project limits shall be defined for this task as either be the greater of 250 feet beyond the Point of Beginning (POB) and the Point of Ending (POE) or the limits needed to fully accommodate the maintaining traffic limits as determined in Attachment G. The detail of the Base Map is to include the location of existing roadways, bridges, ramps and cross roads. The Base Map is to completely show all interchanges and/or intersections. The Base Map is to show all existing features; i.e. edge of pavements, edge of shoulders, curb lines, drainage courses etc. and label all roads, railroads and drainage features. The Base Map is to represent existing conditions and no proposed work is to be shown.

An 11" x 17", a reduced size copy, of the electronically created base map, showing the entire project limits, on 1 page, without using match lines, is to be provided.

8. Existing and Proposed Typical Cross Sections

Prepare existing typical cross sections and proposed typical cross sections - generally one per standard cross section area (i.e. normal section, super elevation section, roadway with ramp taper section).

The typical cross sections, for each standard cross section area, are to be created on 8 ½" x 11" sheets, with the existing typical cross section for the standard cross section area, drawn above the proposed typical cross section for the same standard cross section area.

The existing and proposed typicals shall, for each standard cross section area, detail the existing conditions (pavement type, lane width, curb and gutter, catch basins, storm sewer location, side slopes, ditch location, setback to existing right of way line, lighting, etc) and the proposed pavement treatments (cold mill / resurface / reconstruct / etc, new lane widths, curb and gutter, catch basins (new or adjusts), storm sewers (new or tap into existing), ditches, etc). If retaining walls, or sound walls, are recommended, this should be reflected within the typicals.

The MDOT reviewer, by viewing the typical cross sections, should be able to understand the existing pavement section, the proposed pavement section, and the work required to construct the project. For example, if additional right of way will be required, the typicals should provide a visual explanation as to why so that the MDOT reviewers can evaluate options.

9. MDOT Maintaining Traffic Recommendation

The written recommendations for maintaining traffic and the maintaining traffic typicals as outlined in Attachment G. Please include the original requirements provided by MDOT.

10. CPM.

An 11" x 17" plot of the network. The critical path shall be clearly identified on the plot. A larger plot may be required for complex networks. The Work Day / Completion Date Determination Worksheet. A list of any other assumptions or controlling factors used in creating the network. Also the electronic format of the CPM as outlined in Attachment I shall be included.

11. Scope Conformance

Review and document scope conformance to the 3R/4R Guidelines, AASHTO and Interstate Standards AND for each Design Element listed in Attachment D. Documentation shall be broken down into the following sections for each: Existing condition, Treatment As Per Design Standards, and Proposed Treatment. If the Proposed Treatment is not in accordance with the Treatment Per Standard, an additional section shall be added entitled "Reason for not Meeting Standard" which shall contain documentation for reason and justification (if cost is given as the reason, the cost for doing the Treatment per Standard shall be given along with the cost for the Proposed Treatment. Normally cost alone is not a proper justification for not meeting standards.).

12. Table of Values for Determination of Scope Conformance

Prepare a table of the values used for the evaluation of 3R/4R Guidelines, AASHTO and Interstate Standards AND for each Design Element listed in Attachment D. The table shall at a minimum contain the following; all the minimum values as per standard for the associated design element, where the minimum value as per design standard were derived from, all values used to

determine conformance, where values used for conformance were derived from and all formulas used for the calculation of values.

13. MDOT Pavement Recommendation

The actual MDOT Pavement Recommendation (ie: memo, letter, e-mail, etc.).

14. Crash Analysis Report.

The Crash Analysis and countermeasures recommendation, which shall include each locations crash pattern, listed individually, with the associated countermeasure recommendation, including a detail, along with the associated ROW impacts, construction cost estimate and TOR. See Attachment H.

If there are no recommended countermeasures, then state the different crash types, the total number of crashes, and then state that "no correctable crash patters were identified".

15. Vertical Underclearance Information and Clear Roadway Width

The Vertical Underclearance Information, as outlined within item 8 under Section XI. CONSULTANT RESPONSIBILITIES (GENERAL).

16. Project Area Contamination Survey Information

The Project Area Contamination Survey Information, as outlined within Attachment F.

17. ITS Layout

On the base map, lay out the ITS components as identified through meetings with MDOT MITS Center personnel and from a review of documented ITS plans for the area. Include all quantities and costs in the detailed cost estimate.

18. Detailed Cost Estimate

Estimates are to be as detailed as possible. They shall be developed using the most recent MDOT Pay Items and are to be provided in spread sheet format. Individual Pay Item costs shall be rolled up into a Construction Cost

The cost will be calculated in both to 2009 dollars, and the anticipated year of construction, 2016 (inflation at 5% / year compounded).

19. Detailed Design Hour Estimate

Estimates are to be as detailed as possible, attempt to breakdown hours per PPMS tasks.

20. Project Concept Statement and Project Scoping Checklist

Compute and verify all quantities necessary to complete the Project Concept Statement and Project Scoping Checklist for each of the projects. (See Attachment J).

21. Correspondence (Local, and MDOT)

Actual correspondence sent and received, organized by correspondent, in order of increasing date. Include correspondence regarding public utility information.

Place the prepared spreadsheet summary, see item 30 under Section XI. CONSULTANT RESPONSIBILITIES (GENERAL), of the local coordination that occurred, at the front of the section.

22. Quantity Calculations

23. Storm Sewer Design Calculations and supporting documentation

24. Transit Documentation

25. Field Notes

26. Scoping Project Record

27. Miscellaneous information

Information which is available, but does not fit into any of the previously mentioned sections.

ATTACHMENT " B "

Scope of Work Summary

The Summary is the complete written description, and explanation, of the entire project scope.

The project shall be scoped prior to writing the summary. Items and issues encountered impact more than one section of the summary, and it is required that the summary reflect this.

The Summary is to be written using complete sentences and sentence structure. Simple, clear and concise language is required to ensure that the Summary is both readable and understandable.

It must be understood that this summary will be read by people who are not designers. Vague statements, such as "build to standard", are unacceptable. This is because many of the readers may be unfamiliar with what standard is. In all cases, the standard shall be called out, with references stated.

In addition, it is not the intent of the summary to contain only statements about the existing conditions and the proposed recommendations. The summary shall also provide direction to the designer regarding how the proposed recommendations are to be implemented.

Also, the following format contains many sections which may, or may not, apply to the project. Sections which do not apply may be omitted from the Summary. Information which has no apparent section, may either be placed within a related section, or within a newly created section. Keep the addition of new sections to a minimum.

Furthermore, all information contained within the scoping package shall be mentioned within the summary. It is not necessary for the summary to go into the detail contained within the later sections, but the issues, impacts and recommendations shall be called out.

There shall be no surprises when reviewing later sections.

Scope of Work Summary Date:

Control Section: Job Number: Route Number:

Brief Project Description:
List the primary pavement treatment for the project (ie: a mill and resurface, an overlay, a reconstruction, a concrete patching, etc) and generally list additional work that will be needed for the project (drainage, curb and gutter, ramps, etc). Section should average no more than 3-6 sentences.

Limits of Project
Establish the project limits (roadway name, roadway number, project beginning, project ending, mile points, project length, major cross streets, local municipalities affected, etc). List also if this roadway is an NHS route, a non-NHS route, list the level of Corridor of Highest Significance, list if it is registered as a National Historic Highway.

In addition, list the percentage of work to be completed within each local municipality.

Summary of Detailed Cost
A summary of the estimated direct construction cost. Also, list the number of lane miles within the project limits, and a price per lane mile. Also, include the estimated design hours for the project.

ADT
Provide the ADT within the project limits as obtained from the most recent version of the MDOT Sufficiency Rating Manual. If ADT significantly changes within the project limits, the various ADTs shall be noted along with their corresponding sections of roadway.

Design Speed Signed Speed (mph) = _____
Design Speed (mph) = _____

List this information for each of the major roadways, cross roads and ramps within the project limits.

Existing Cross Section
A brief description of the existing cross section (pavement type, lane width, curb and gutter, catch basins, storm sewer location, side slopes, ditch location, setback to existing right of way line, lighting, etc). Are there on street parking issues and/or transit stops? Public utilities?

Proposed Cross Section
A brief description of the proposed cross section (cold mill / resurface /reconstruct / etc, new lane widths, curb and gutter, catch basins (new or adjusts), storm sewers (new or tap into existing), ditches, etc). Will there be a Grade Raise? Will MITSC sensors be impacted (or do they need to be included)? Will existing lighting or public utilities be impacted? Will a retaining wall or sound wall, be affected, required or proposed?

Are there on street parking issues and/or transit stops? Where is parking and/or transit stops located? Will it be retained? What impact will this project have upon the existing parking agreement? What impact will this project have upon transit operations?

Compliance with ADA regulations?

Crown Correction and Super Elevation
A brief statement addressing the existing pavement crown and super elevation, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments).

Curb and Gutter
A brief statement regarding the impact the proposed pavement treatment will have upon existing, or proposed, curb and gutter.

Slopes (FS, Ditches and BS)
A brief statement addressing the existing slopes and ditches, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments).

Are there any clear zone or sight distance issues? Are retaining walls or sound walls affected and/or required? Tree removals?

Sidewalk
A brief statement to establish the presence and location of existing pedestrian sidewalk, and existing sidewalk ramp terminals at sidewalk street intersections. Note: At locations of sidewalk street intersections, if not already present, ramp terminals will be installed.

Don't forget to evaluate the sidewalk needs at the bridge structures.

Compliance with ADA regulations?

Vertical Alignment Corrections
A brief statement addressing the existing vertical alignment of the roadway, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments).

How many crest / sag curves are there? Of them, how many of the curves are non-conforming? Recommended treatment?

Horizontal Alignment Corrections
A brief statement addressing the existing horizontal alignment of the roadway, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments).

How many horizontal curves are there? Of them, how many are non-conforming? Recommended treatment?

Fencing
A brief statement addressing the existing fencing, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments).

Drainage System
A brief statement addressing the existing drainage, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments). Please note that the existing drainage structures cross leads, within the limits of this project, will be cleaned out.

How will the proposed system drain? Where are the outlets? Who owns the outlets and are there any issues to be resolved in using them? Will on site detention become an issue? Provide storm water findings as outlines in Consultant Responsibilities item #13.

(When listing structures for this section, list in order of appearance, from POB to POE.)

Roadway over Structures
List all existing structures, within the limits of this project, in which the roadway crosses over the structure. A brief statement explaining, for each structure, how the pavement transition into the deck will be addressed. Provide lane and clear shoulder widths over the structures. Are bridge struts present?

IN GENERAL, how will the proposed roadway treatment, and maintaining traffic concept, impact the existing the structures, and what is the proposed treatment?

Roadway under Structures
List all existing structures, within the limits of this project, in which the roadway passes under the structure. A brief statement, listing the existing under clearance for each structure, explaining how the pavement will be treated below the bridge, and how the issue of under clearance will be addressed. Provide lane and clear shoulder widths under structures.

IN GENERAL, how will the proposed roadway treatment, and maintaining traffic concept, impact the existing the structures, and what is the proposed treatment?

(When listing interchanges for this section, list in order of appearance, from POB to POE.)
(Break each interchange out separately and include the interchange ramps, listed individually).

Interchanges
For each interchange, a brief statement addressing the existing interchange, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments)

Ramps
What is the existing and proposed cross section? For each ramp within each interchange, a brief statement addressing the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments). May impact acceleration and deceleration lane distances, lane widths, terminal configuration, etc. If the information to complete this section cannot be found using old plans, then the CONSULTANT will be required to obtain the missing information by field measurement during their field reviews.

(List the ramps with their corresponding interchanges together. Separate ramps by interchange)

Service Roads
A brief statement addressing the service roads, and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments).

Lighting
A brief statement addressing the lighting, listing the existing condition and the impact that the proposed project will have upon it (to include any potential corrections or recommended adjustments). Who has jurisdiction over the lighting? (Freeway lighting is under MDOT jurisdiction. Non-freeway lighting non-MDOT.)

Major Intersections (signalized)
List all Major (signalized) Intersections within the limits of this project. A brief description of the existing intersections, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments). Limits of work down cross roads?

Minor Intersections
List the number of Minor intersections present within the limits of this project. A brief description of the type of intersections, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments). Limits of work down cross roads?

Cross Overs (both Median and Maintenance)
List the number of Cross Overs present within the limits of this project. A brief description of the type of Cross Overs, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments).

Other Geometric Improvements
A brief statement addressing any additional recommended geometric improvements. A brief description of the type improvement, and the impact that they will have upon the proposed project.

Crash Analysis Recommended Countermeasures
A summary of the recommended countermeasures as identified through the Crash Analysis, and the impact that these improvement will have upon the proposed project

When recommending a counter measure, a detail needs to be provided. The detail is to include a graphic drawing of the existing condition, the proposed treatment and the impacts that this improvement will have upon the proposed project. All countermeasures must include a Time of Return analysis in the MDOT TOR format as provided by the MDOT Region Traffic Safety Engineer.

Traffic Signals
A brief statement addressing the existing traffic signals, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments).

For traffic signals being upgraded in a corridor, identify the means by which those signals will be interconnected after project completion.

Don't forget the signals at the ramp terminals!

Traffic Signs (to include ground mounts, trusses, cantilevers and mounted on structures)
A brief statement addressing the existing traffic signs, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments).

Rail Road Crossings
A brief statement addressing existing rail road crossings, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments).

Commercial Driveways
List the number of commercial driveways present within the limits of this project. A brief description of the type of driveways, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments).

Residential Driveways
List the number of residential driveways present within the limits of this project. A brief description of the type of driveways, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments).

Right of Way
For each the roadway in general, each intersection and/or interchange, geometric improvement, recommended Crash Analysis countermeasure, commercial and/or residential driveway, signal or sign. A brief statement addressing the existing right of way, and the impact that the proposed

project will have upon it (to include any potential corrections or recommended adjustments). If additional right of way is required, note type (fee take, grading permit, permit to grade drive, etc).

Public and Private Utilities (water, sanitary, storm, street lighting, phone, gas, etc)
A brief statement addressing the existing utilities present within the roadway, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments). If you foresee an impact, list cause of impact.

Include a list of the Agencies contacted (with addresses and contacts)

Guardrail and Attenuators
A brief statement addressing the existing guardrail and attenuators, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments). See item 16 under Section XI. CONSULTANT RESPONSIBILITIES (GENERAL).

Intelligent Transportation Systems
A statement describing the ITS components to be added to the system as well as those that are being replaced (or upgraded) as a result of construction. For new infrastructure, a statement describing which plan recommended the new infrastructure.

Project Area Contamination Survey
A brief statement summarizing the findings from the Project Area Contamination Survey, and the potential impact that the proposed project will have upon them (to include any potential corrections or recommendations).

Environmental Issues (impacts to wetlands? tree removal/replacement? possible permits?)
A brief statement addressing any existing environmental issues, and the impact that the proposed project will have upon them (to include any potential corrections or recommended adjustments). If trees will be impacted by the project, the number by type and size of each tree impacted shall be listed along with the cost for replacement, replacements shall be 2 for 1. See items 18 and 19 under Section XI. CONSULTANT RESPONSIBILITIES (GENERAL).

Local Concerns
A brief statement addressing the local concerns or issues, and the impact that these issues may have on the proposed project.

This section shall summarize the requests and comments contained within the correspondence and communications with the local governments. It is not necessary to go into the detail contained within the actual correspondence, but the issues, impacts and recommendations shall be called out.

Miscellaneous/ Aesthetic Opportunities
Identify possible aesthetic opportunities. Include a cost of 1% of the estimated construction cost for the project.

Design Exceptions
Of the 13 Design Elements Subject to Formal Exceptions, provide a brief statement addressing which of the Design Elements, for this project, will require a Design Exception (please list each

of the Design Elements only once). Explain where they are needed, why they are needed and the impact to the project if they are not obtained.

Provide a justification for each Design Exception noting the existing condition, treatment as per Design Standards, the proposed treatment and the reason for not meeting the standard.

This section should summarize the needs for Design Exceptions. All the needs, shall have been mentioned in previous sections of this summary. This should be a recap of previously mentioned problems and Design Exception needs.

Constructability Issues

A statement addressing areas where the scoping team feels needs to be reviewed from a constructability standpoint.

Maintaining Traffic Issues

A statement addressing how traffic will be maintained during construction. An abbreviated version of Attachment G's written recommendation for maintaining traffic.

CPM Schedule

The outcome from the CPM Schedule. List the anticipated start date, finish date and duration of construction.

ATTACHMENT "C"

PROJECT LOCATIONS

JN	TSC	Route	Location Description	Length (mi)
111366	Detroit	I-75	M-102 to Piquette	5.8
111374	Oakland	M-59	Oakland W. County Line to Milford Rd.	3.2
111375	Oakland	M-24	Harriet to Davison Lake Rd.	4.1

ATTACHMENT " D "

13 Design Elements Subject to Formal Exceptions

1. Design Speed
2. Lane Width
3. Shoulder Width
4. Bridge Width
5. Structural Capacity
6. Horizontal Alignment
7. Vertical Alignment
8. Grade
9. Stopping Sight Distance
10. Cross Slope
11. Super elevation
12. Vertical Clearance
13. Horizontal Clearance (not including clear zone)

For the 3R/4R Guidelines, refer to Chapter 3, “Geometrics”, of the Michigan Department of Transportation Road Design Manual.

ATTACHMENT "E"

Use the Tab Key to move between the fields, except where noted otherwise.

Clear Form

JENNIFER M. GRANHOLM
GOVERNOR

STATE OF MICHIGAN
DEPARTMENT OF TRANSPORTATION
TSC Office

KIRK T. STEUDLE
DIRECTOR

Date

Utility Contact *(Use the Enter Key)*
Department or Title
Utility Company
Utility Address
Utility Address
Utility Address

Dear Utility Contact:

Subject: Request for Utility Information for Preliminary Planning/Scoping Purposes

Control Section(s): Control Section(s)

Anticipated Project Location: Route, City or Township, County

The Michigan Department of Transportation (MDOT) is requesting information from utility companies and municipal agencies to determine if there are any facilities that would be of concern when designing the project. These would include facilities that could have **significant** project impact(s) such as; major transmission facilities, facilities requiring long relocation lead times, or private utility relocations that may be eligible for reimbursement.

This request for information is solely to assist MDOT in their preliminary planning/scoping evaluation. Improvements to this location are only in the conceptual phase and may or may not develop into an MDOT project. MDOT is NOT requesting plans/maps at this time.

Does your agency have facilities within this vicinity that could have significant project impact? ☐ No ☐ Yes

If yes, please provide the following information:

Type of facility:_____ ☐ Underground ☐ Overhead

Does your agency have facilities attached to a bridge structure? ☐ No ☐ Yes

Size:_____

Approximate location(s):_____

Are facilities located in: ☐ Private Easement ☐ Right-of-Way

Other concerns (attach additional sheets if necessary):_____

_____

Please answer the above questions and return this letter to the following address by Return Date

Vendor Contact *(Use the Enter Key)*
Department or Title
Vender Name
Vender Address

(CONTACT THE MDOT PROJECT MANAGER TO OBTAIN FILLABLE FORM)

ATTACHMENT "F"

PROJECT AREA CONTAMINATION SURVEY (PACS)

TASK DESCRIPTION:

The purpose of this task is to investigate parcels of property for the presence of environmental contamination. The primary objective in conducting the Project Area Contamination Survey (PACS) is to determine if further investigation and/or any remediation activities may be necessary regarding hazardous waste or environmental contamination issues in areas conflicting with project construction activities.

The PACS shall be performed by the selected CONSULTANT utilizing ASTM Standard E 1527-00. Information obtained by the CONSULTANT on any Recognized Environmental Conditions (RECs) or sites of environmental concern found in the project area is then provided to MDOT in a designated MDOT format.

REPORT FORMAT

DESCRIPTION

When a PACS is performed for MDOT projects a written report is to be provided to the MDOT Project Manager. This report should follow research methods as defined in ASTM standard 1527. However, the written report will be modified from the ASTM 1527 standard to accommodate MDOT's need for specific information. The following report format provides specific information related to road or bridge construction projects.

REPORT FORMAT

The report will include two parts: 1. Written copy. 2. Electronic copy in an acceptable processing software, including electronic drawings, scanned pictures, or maps (as described in Section VIII FORMAT).

The following format is to be utilized in preparation of a written report. All research materials and references are to be listed in the Bibliography/Reference Section. Only sources of information need to be listed rather than any specific records. Sufficient information is to be included so that the research conducted in the report could be duplicated by another qualified professional. Specific information requests will accompany any request for a PACS (ISA, Phase I). The written report should be set up as follows:

1. Title Page or MDOT memo format

2. Project Identification
   Control Section
   Job Number, (Parcel number if applicable)
   Roadway; project description
   Type of activity (PACS, Phase I, indicate Parcel)

3. Executive Summary (maximum one page, preferably one half page)

a. Include number of Recognized Environmental Conditions (RECs), known sites, potential sites. Include only those RECs that will intersect project or are located adjacent to proposed work areas.

b. Indicate if any specific site will affect project (monitor wells in right of way, gasoline in groundwater, underground tanks in proposed right of way, etc.)

c. Include recommendations for additional testing, records review, interviews, or additional information.

d. Identify project location (rural, suburban, urban, city or village)

4. Site Identification and Information Section
Identify RECs by address, location, and/or Station number.
Provide site information on status and site specific information.
Provide recommendations relative to MDOT's need (soil characterization when excavation occurs, groundwater treatment, monitor wells in ROW).
Provide information on location of RECs on MDOT highway plans.

5. Bibliography/References Section (list only sources from which research could be duplicated in the future).

6. Provide a list of references and databases checked, list date of publication. Do not include individual information

7. Sources of information such as aerial photograph, include year of photos reviewed.

8. Directories and maps. Include year of information reviewed

9. Interviews. Include name and title of person interviewed.

10. Site Documentation Reviewed. Include name and year published.

11. Digital photos of all RECs.

This information shall be included in the appropriate area of the Attachment A.

ATTACHMENT "G"

DEVELOP MAINTAINING TRAFFIC

1. SCOPE

This procedure covers the initial development of a plan to maintain and control traffic during construction.

2. WORK STEPS

A. Review the type of construction task(s) included in the project.

B. Contact the MDOT Project Manager and request a meeting with the Region and/or TSC Traffic & Safety Engineer (allow a minimum of 2 weeks for a meeting date to be determined). Review the traffic data and the project site to determine project specific construction zone traffic requirements. Requirements shall be consistent with the constraints identified at the meeting with the Region Traffic & Safety Engineer. Any necessary or recommended exceptions shall be clearly identified and justification provided.

C. Prepare preliminary written recommendations for maintaining traffic. Items that SHALL be included in the recommendations at a minimum are:

i. Constraints as identified by the Region and/or TSC Traffic and Safety Engineer
ii. Method for maintaining traffic.(Typical and non-typical areas shall be addressed. All areas where pavement widths are narrower than typical shall be clearly noted and the recommendations for maintaining traffic shall address these areas.)
iii. Exceptions to Constraints as identified by the Region and/or TSC Traffic and Safety Engineer. Justification shall be required for any exceptions.
iv. Need for detour, staging and/or flagging operation.
v. Need for temporary widenings and/or shoulder upgrading.
vi. Time constraints and laneage requirements (number and width).
vii. Method for maintaining traffic at cross street, cross overs and/or interchanges/ramps.
viii. Local considerations (school buses, emergency vehicles, large traffic generators, etc.).
ix. Need for temporary traffic signals (a minimum of two signal heads in view at all times).
x. Construction zone speed limits.

xi. Special events (parades, festivals, etc.).
xii. Recommendations for expedited construction.

D. Based on the preliminary written recommendation (developed above), prepare maintaining traffic typicals. Typicals shall be prepared using the existing typical

cross sections developed in Section XI CONSULTANT RESPONSIBILITIES (GENERAL) item #11 as a base. Each of the stages developed in 2. WORK STEPS C shall be superimposed onto those typicals.

E. Submit the written recommendations for maintaining traffic to the MDOT Project Manager for review and approval

F. Receive any items returned by the MDOT Project Manager as incomplete or deficient.

G. Make necessary changes and resubmit the incomplete items, including a written response to all comments.

This information shall be included in the appropriate area of the Attachment A.

ATTACHMENT "H"

Draft and Final Crash Analysis Reports

The Consultant shall provide MDOT with a Crash Analysis Report which shall detail the safety performance of the project location (includes not only the mainline but all ramps, major and minor intersections and crossovers within the project limits) and provide detailed graphic depiction of countermeasures and cost/benefit analysis for crash concentration locations. The Crash Analysis Report shall at a minimum compare the project location features (mainline, ramps, major intersections, minor intersections and cross overs) to regional averages, identify crash concentration locations, examine crash concentration locations for crash patterns and provide countermeasures for correctable crash patterns. The Consultant shall combine a thorough review of computer-based crash records with field reviews of the roadways characteristics (geometric and operational features shall be specifically noted) to identify crash concentration locations. Crash diagrams shall be provided for the crash concentration locations. The Consultant shall provide a Draft Crash Analysis Report and upon review and comment by MDOT, the Consultant shall make any changes identified and submit a Final Crash Analysis Report.

The Consultant shall review and analyze the most recent five years of MDOT crash data. For the analysis, the Consultant shall stratify the data by location and the crash data shall also be aggregated by similar roadway segment characteristics. The Consultant shall quarry SEMCOG to determine regional crash averages which will provide a normative measure of comparison to aid in the identification of crash concentration locations.

The Consultant shall identify crash concentration locations and determine crash patterns. Based on the crash patterns identified for each crash concentration location the Consultant shall develop proposed crash countermeasures. The countermeasures shall be graphically depicted, to scale, with sufficient detail to determine the countermeasures impact to the existing roadway and the proposed roadway improvement.

The countermeasures may range from simple sign / marking / signal modifications up through substantial reconstruction. The Consultant shall present countermeasures stratified into short and long-term solutions. The Consultant shall provide a construction cost estimate for each countermeasure using MDOT Pay Items and shall clearly identify any right-of-way impacts a countermeasure may have. The Consultant shall provide a full cost/benefit analysis for each countermeasure. The Consultant shall also evaluate the crash impacts on design exceptions sought.

Develop a Time of Return (TOR) analysis for each countermeasure using the MDOT TOR format as provided by the MDOT Region Traffic Safety Engineer.

This information shall be included in the appropriate area of the Attachment A.

ATTACHMENT "I"

CONSTRUCTION CRITICAL PATH NETWORKS

I. INTRODUCTION

The Consultant is required to submit a Construction Critical Path Network as part of the Preliminary Scoping Package and for the Final Scoping Package.

Construction Critical Path Networks are often needed to develop the progress schedule for a project. They are required on any project designated to include an Incentive/Disincentive or Special Liquidated Damages clause.

As noted in MDOT's Construction and Technology Instructional Memorandum 1997-7, Progress Schedule Determinations/Critical Path Rates,

> *preparation of a Critical Path is a requirement on all Consultant-designed projects, regardless of the project type or complexity*

MDOT requires the precedence diagramming method. The Consultant will submit this network in MPX version 4.

II. NETWORK DEVELOPMENT

The network will be defined using the following steps.

1. Activity definition.
2. Activity sequencing.
3. Duration estimation.
4. Schedule development.

1. ACTIVITY DEFINITION

The Consultant will define the specific activities in enough detail so that the proper objectives will be met. The Consultant must identify assumptions (those factors considered true, real or certain). Supporting detail for the activities should be documented and organized as needed to simplify the review of the activities by MDOT personnel.

The Construction Critical Path Network must start with the **Letting Date** as the first activity and terminate with the **End of Project** as the finish activity.

A sufficient number of activities will be required with sufficient detail so that the controlling construction operation(s) may be identified. Notation on each activity shall include a brief work description and activity time duration.

2. ACTIVITY SEQUENCING

Activity sequencing involves identifying and documenting interactivity dependencies. The Consultant must sequence activities accurately to support later development of a realistic and achievable construction schedule. Two types of dependencies should be considered. Mandatory dependencies are inherent in the nature of the work being done, such as construction sequencing. Discretionary dependencies are based on a knowledge of the work to be done. Constraints are used to show how the activities relate to each. The Consultant must include documentation supporting all discretionary dependencies used in the project. All activities must lead to another activity. Only Start to Start, Finish to Finish and Finish to Start relationships will be allowed. All logic shall show how the given activity is dependent on its preceding activities.

3. DURATION ESTIMATION

After the Consultant has sequenced the activities, the Consultant should determine the activity duration. Activity duration estimating involves assessing the number of work periods likely to be needed to accomplish each activity. Duration (working days): No activity will have a duration greater than 20 working days unless approved by the Engineer. Activities that will be allowed to exceed 20 working days include, but are not limited to, working drawing approvals or other activities not under the control of the Contractor. If requested by the Engineer, the Consultant shall explain the reasonableness of activity time durations. The approved MDOT production rates will be used in estimating activity duration. These are available in the Supplemental Information section of this attachment. The Consultant must document and submit all assumptions made during the duration estimation to MDOT.

4. SCHEDULE DEVELOPMENT

The activity sequencing, duration estimations and the calendars are combined to create the construction schedule. During the development of the schedule the Consultant will verify:

1. The required schedule to build the project.
2. The constructability of the project.
3. If the maintaining traffic scheme will work.
4. If seasonal limitations will affect the construction.
5. Any other project specific considerations.

The MDOT Calendars will be used by the Consultant in developing the network. The calendars are based on a 4, 5 or 6 day work week. The MDOT Calendars are included in the Supplemental Information section of this attachment.

At this point there should be no negative float in the network. If there is, there is an error in the network and the error must be corrected before network submittal.

All summary tasks shall be removed prior to submittal to MDOT Project Manager

III. DELIVERABLES

After this final step the design Consultant will submit the finished CPM schedule to MDOT

1. Documents

A. 11" x 17" plot of the network. The critical path shall be clearly identified on the plot. A larger plot may be required for complex networks.

B. Work Day / Completion Date Determination Worksheet.

C. List of any other assumptions or controlling factors used in creating the network. For example, permit or maintaining traffic restrictions.

2. Electronic Format

This section sets the requirements for the eletronic submittal of the Consultant's Construction Network. All networks shall be submitted on a 3.5 inch floppy disk (or via E-mail) using one of the following formats:

A. **Standard Electronic Media Format:** This is a standard ASCII text file containing the data elements below, in the order specified. This file can be created using any text editor or word processing application (i.e., MS-Word, WordPerfect, Notepad, Write) but must be saved as an ASCII file.

The **first line** will provide a descriptive header describing the submittal and containing:

Control Section
Job Number
Route
Consultant name
Date of Submittal

The next line will be **blank**, followed by multiple data lines.

Each **data line** will contain one record pertaining to one task of the job. Separate data fields by a comma. Fields within each task line are as follows:

(Note that the term "task" is synonymous with "activity." Leave fields that are not required blank)

(1) Task # (Job # followed by a hyphen followed by this task's unique 4 digit task number. This is the Preceding Event Activity Code)

(2) Description of Task, Milestone or Hammock, blank if this record is a constraint
(3) Calendar (see attached list)
(4) Duration of task, blank for constraints
(5) Task # of the next task (Succeeding Event) - leave blank if this record is not a constraint or hammock
(6) Type of constraint (FS, SS, FF) - leave blank if this record is not a constraint.
(7) Delay, if required
(8) Original "Baseline" Start Date
(9) Original "Baseline" Finish Date
(10) Current (forecast) Start Date (early start)
(11) Current (forecast) Finish Date (early finish)
(12) Estimated completion date (if different from early start + current duration)
(13) Late Start Date
(14) Late Finish Date
(15) Actual Start Date
(16) Actual Finish Date

Example - each line contains the following:

Task # (preceding event), Description, Calendar, Duration, Next Task # (succeeding event), Constraint Type, Delay, Baseline Start, Baseline Finish, Early Start, Early Finish, Estimated Completion Date, Late Start, Late Finish, Actual Start, Actual Finish, Total Float.

B. **Primavera Project Planner(P3) 2.0 Export Procedure:** Users who have Primavera Project Planner(P3) version 2.0 can automatically create a export file by following the export procedure below. **Users having an older version of Primavera may use the applications export feature only if they are able to include all the data elements listed in the version 2.0 format.**

1. Choose Tools, Project Utilities, **EXPORT**
2. Click **ADD**, then click **OK** to accept the next sequential ID number, or type a unique number to identify the specifications and click **OK**
3. Enter a description for the specification in the Title field
4. Specify data items to export

Activities
- Select **Contents of List**
- Use the Description column to specify which data items to export
- To add items, click the right mouse button in the Description column and choose from the list. Suggested Items include: **Activity ID, Activity Description, Actual Start, Actual Finish, Calendar ID, Early Start, Early Finish, Late Start, Late Finish, Original Duration.**
- Select **All Current, All Target**, or **All Target2**

- Set Description Length to 48

OR

Constraints
- Select **<u>Successor relationships</u>** - Choose this option to export Activity IDs and their corresponding successors only. Lags and relationship types will also be displayed in this output file.

5. Click **FORMAT** in Export Dialog Box
6. In the Output file section, enter a new name and path (ex. A:\actexp or A:\conexp). Do not include a file extension.
7. In the type field, click the minimize button and choose the **[.PRN] - ASCII** file format for the output file.
8. Select **CALENDAR** for Date Format
9. Set ASCII Output Field Separation to **1** and Blank column width to **0**
10. Click **RUN**
11. In the Output Options dialog box, click on **OK**

NOTE: A COMPLETED FILE EXPORT WILL CONSIST OF 2 EXPORT FILES (ACTIVITIES & CONSTRAINTS)

C. **<u>Microsoft Project Export Procedure:</u>** Users of Microsoft Project Version 4.0 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.

1. Choose File, Save As from the main menu
2. In the Save File as Type box Select **MPX 4.0**
3. On the drive box select a: or whichever drive is the 3.5" Floppy drive
4. Click on **OK**
This saves the file in MPX format.

D. **<u>Primavera Sure Track:</u>** Users of Sure Track Version 2.0 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.

1. Choose File, Save As from the main menu
2. In the filename box input a filename
3. In the Save File as Type box Select **MPX**
4. On the drive box select a: or whichever drive is the 3.5" Floppy drive
5. Click on **OK**
This saves the file in MPX format

E. **<u>Scitor Project Scheduler 7 Export Procedure:</u>** Users of Scitor Project Scheduler Version 7 and above can create a Microsoft Project Exchange (MPX) file by following the procedure below.

1. Choose File, Save As from the main menu
2. In filename box select a filename
3. In the Save File as Type box Select MPX
4. On the drive box select a: or whichever drive is the 3.5" Floppy drive
5. Click on **OK**

This saves the file in MPX format

F. **Export Files with Other Scheduling Applications:** Most scheduling packages have export functions similar to those described above. If the Consultant chooses to use packages with export capabilities, they shall include all items listed in the Standard Media Format in a text or ASCII type file.

IV. SUPPLEMENTAL INFORMATION

A. MDOT CRITICAL PATH-CONSTRUCTION TIME ESTIMATES

Drainage		
Cross Culverts		
	Rural Highways	44 yd./day
	Expressways	55 yd./day
	Large Headwalls	5 days/unit
	Slab or Box Culverts	5 days/pour
	Plowed in Edge Drain (production type project)	4921 yd./day
	Open Graded Underdrain (production type project)	1312 yd./day
Sewers		
	0m-5m(up to 60 in. (1500mm))	44 yd./day
	0m-5m(over 60 in. (1500mm))	27 yd./day
	5m-over(up to 60 in. (1500mm))	27 yd./day
	5m-over(over 60 in. (1500mm))	22 yd./day
	Jacked-in-place	14 yd./day
	including excavation pit & set up	min. 5 days
	Tunnels	
	hand mining	9 yd./day
	machine mining	22 yd./day
	including excavation pit & set up	min. 5 days
Manholes		3 units/day
Catch Basin		4 units/day

Utilities		
Water Main(up to 16 in. (400mm))	109 yd./day	
Flushing, Testing & Chlorination	4 days	
Water Main(20 in. (500mm) – 40 in. (1050mm))	27 yd./day	
Flushing, Testing & Chlorination	5 days	
Order & Deliver 24 in. (600 mm) HP Water Main	50 days/order	
Gas Lines	109 yd./day	
Earthwork and Grading	**Metro Exp**	**Rural**
Embankment(CIP)	1962 yd.^{3}/day	6932 yd.^{3}/day
Excavation and/or Embankment(Freeway)	1962 yd.^{3}/day	12033 yd.^{3}/day
Excavation and/or Embankment(Reconstruction)	981 yd.^{3}/day	4970 yd.^{3}/day
Embankment(Lightweight Fill)	392 yd.^{3}/day	785 yd.^{3}/day
Muck(Excavated Waste & Backfill)	1962 yd.^{3}/day	
Excavation(Widening)	656 yd./day	
Grading(G & DS)	820 yd./day	
Subbase and Selected Subbase(up to 8 yd. (7.4m))	656 yd./day	
Subbase and Selected Subbase(8 yd. (7.4 m) & over)	492 yd./day	
Subgrade Undercut & Backfill	1962 yd.^{3}/day	
Subbase & Open-Graded Drainage Course	492 yd./day	
Surfacing		
Concrete Pavement (8 ft. (7.3m))	492 yd./day	
Including Forming & Curing	min. 7 days	
Bituminous Pavement (8 ft. (7.3m))	1312 yd./day/course	
Concrete Ramps(5.6 yd. (4.9m))	328 yd./day	
Including Forming & Curing	min. 7 days	
Curb(1 side)	820 yd./day	
Concrete Shoulder-Median	1435 yd.^{2}/day	
Bituminous Shoulders(1 side per course)	820 yd./day	
Sidewalk	215 yd.^{2}/day	
Sidewalk(Patching)	78 yd.^{2}/day	
Structures		
Sheeting(Shallow)	33 yd./day	

General Excavation at Bridge Site	981 yd.^{3}/day
Excavation for Substructure(Footings)	1 unit/day
Piles(12m)	15 piles/day
Substructure(Piers & Abutments)	5 days/unit
Order and Delivery of Beams	
Plate Girders	100-120 days/order
Rolled Beams	90-120 days/order
Concrete Beams	50 days/order
Erection of Structural Steel	3 days/span
Bridge Decks	
Form & Place Reinforcement(66 yd. (60m) Structure)	15 days
Pour Deck Slab(1 1/5 days/pour)	2 days/span
Cure	14 days
2 Course Bridge Decks	
Add 9 days for Second Course Latex	
Add 12 days for Second Course Low Slump	
Sidewalks and Railings	
Sidewalks and Parapets	5 days/span
Slip Formed Barriers	2 days/span
Clean Up	10 days
Pedestrian Fencing	
Shop Plan Approval & Fabrication	1-2 months
Erection	1 week/bridge
Rip Rap Placement	
Bucket Dumped	504 yd.^{3}/day
Bucket Dumped and Hand Finished	171 - 684 yd.^{3}/day
Retaining Walls	1 Panel/day min. 10 days
Railroad Structures	
Grade Temporary Runaround	981 yd.^{3}/day
Ballast, Ties & Track	55 yd./day

Place Deck Plates	5 days/span
Waterproof, Shotcrete & Mastic	5 days/span
Railroad Crossing Reconstruction	10-15 work days
(depends on whether concrete base is involved)	
Temporary Railroad Structures	
Order & Deliver Steel	55 days/order
Erect Steel	1 day/span
Ties and Track	3 days/span
Pumphouse	
Structure	30 days/structure
Order & Deliver Electrical & Mechanical Equipment	90 days
Install Electrical & Mechanical Equipment	30 days
Miscellaneous	
Removing Old Pavement	66 yd./day
Removing Old Pavement for Recycling(8 yd. (7.3m))	492 yd./day
Crushing Old Concrete for 6A or OGDC	1488 tons/day
Removing Trees(Urban)	15 units/day
Removing Trees(Rural)	30 units/day
Removing Concrete Pavement	538 $yd.^2$/day
Removing Sidewalk	299 $yd.^2$/day
Removing Curb & Gutter	492 yd./day
Removing Bituminous Surface	1914 $yd.^2$/day
Conditioning Aggregate	984 yd./day
Bituminous Base Stablizing	2990 $yd.^2$/day
Ditching	656 yd./day
Trenching for Shoulders	820 yd./day
Station Grading	667 yd./day
Clearing	9568 $yd.^2$/day
Restoration(Topsoil, Seeding, Fertilizer & Mulch)	1973 $yd.^2$/day
Sodding	2512 $yd.^2$/day
Seeding	47840 $yd.^2$/day
Guard Rail	252 yd./day

Fence(Woven Wire)	394 yd./day
Fence(Chain Link)	164 yd./day
Clean Up	656 yd./day
Concrete Median Barrier	328 yd./day
Cure	min. 7 days
Reroute Traffic(Add 4 days if 1st item)	1 day/move
Concrete Glare Screen	492 yd./day
Light Foundations	6 units/day
Order & Delivery	6-8 week/order
Remove Railing & Replace with Barrier(1 or 2 decks at a time)	4 days/side
Longitudinal Joint Repair	1750 yd./day
Crack Sealing	5249 yd./day
Joint and Crack Sealing	547 yd./day
Repairing Pavement Joints - Detail 7 or 8	219 yd./day
Seal Coat	6999 lane yd./day
Diamond Grinding/Profile Texturing Concrete	3947 yd.^{2}/day
Rest Area Building	
Order Material	3 months
Construct Building	9 months
Tower Lights	
Order and Deliver Towers	100 days
Weigh-In-Motion	
Order and Deliver Materials	1 month-6weeks
O & D with Installation	3 months
Raised Pavment Markers	300 each/day
Attenuators	2 each/day
Shoulder Corrugations, Ground or Cut	5 - 6 mi./side/day
Aggregate Base	3468 yd.^{2}/day
Aggregate Shoulders	458 yd.^{3}/day
Freeway Signing - 3# Post Type	50 signs/day
Concrete Joint Repair (High Production-Projects with > 1000 patches)	
Average(2 yd. (1.8m))	50 patches/day
Large(>2 yd. (1.8m))	598 yd.^{2}/day

Bridge Painting	108 yd.^{2}/day
Pin and Hanger Replacement	3 beams/day
Order Pin & Hanger	60 days
Bridge Repair	
Scarifying(Including Clean up)	11960 yd.^{2}/day
Joint Removal(Including Clean up)	4 yd./day
Forming & Placement	3.8 yd./day
Hydro-Demolishing	328 yd./day
Barrier Removal	16 yd./day
Placement	49 yd./day
Hand Chipping (Other than Deck)	0.31 yd.$^{3/}$person/day
Shoulder Corrugations, Ground or Cut	5 - 6 mi./side/day
Casting Latex Overlay	273 yd./day
Curing Overlay	
Regular	4 days
High Early	1 day
Thrie Beam Retrofit	33 yd./day
Beam End Repairs	
Welded Repairs	.75 days/repair
Bolted Repairs	.50 days/repair
Bolted Stiffeners (Pair)	.25 days/repair
Grind Beam Ends	.25 days/repair
Welded Stiffeners (Pair)	.25 days/repair
H-Pedestal Repairs:	
Welded Repair	.50 days/each
Replacement	1 day/each
Deck Removal	281 yd.^{2}/day
Surfacing-Bituminous	
Metro-Primary(<(19800 tons (18000mtons))	
Paving	594 tons/day
Joints	164 yd./day
Cold Milling	4066 yd.^{2}/day
Aggregate Shoulders	990 tons/day
Metro Primary(>(19800 tons (18000mtons))	

Paving	594 tons/day
Joints	219 yd./day
Cold Milling	8970 yd.^{2}/day
Metro Interstate(>(19800 tons (18000mtons))	
Paving	1210 tons/day
Joints	394 yd./day
Aggregate Shoulders	990 tons/day
Urban Primary(<(19800 tons (18000mtons))	
Paving	704 tons/day
Joints	109 yd./day
Cold Milling	2033 yd.^{2}/day
Rubblizing	2033 yd.^{2}/day
Aggregate Shoulders	495 tons/day
Urban Primary(>(19800 tons (18000mtons))	
Paving	1100 tons/day
Joints	131 yd./day
Cold Milling	2033 yd.^{2}/day
Aggregate Shoulders	550 tons/day
Urban Interstate(>(19800 tons (18000mtons))	
Paving	1320 tons/day
Joints	241 yd./day
Cold Milling	2033 yd.^{2}/day
Rubblizing	6937 yd.^{2}/day
Aggregate Shoulders	704 tons/day
Rural Primary(<(19800 tons (18000mtons))	
Paving	704 tons/day
Joints	131 yd./day
Cold Milling	649 tons/day
Crush & Shape	11960 yd.^{2}/day
Aggregate Shoulders	704 tons/day
Rural Primary(>(19800 tons (18000mtons))	
Paving	1210 tons/day
Joints	164 yd./day
Cold Milling	880 tons/day
Crush & Shape	11960 yd.^{2}/day
Rural Interstate(>(19800 tons (18000mtons))	
Paving	1411 tons/day
Joints	240 yd./day

B. WORKSHEET

WORK DAY/COMPLETION DATE DETERMINATION

CS: _____ JN: _____

DESCRIPTION OF WORK: _____

MAJOR WORK ITEM	PRODUCTION QUANTITY	RATE	ESTIMATED TIME

TOTAL ESTIMATED TIME:

COMPLETION DATE: _____ (Calendar Days or Work Days)

COMMENTS:

_____

_____

_____

_____

_____

C. MDOT CALENDARS

The following are the MDOT 4, 5 and 6 day calendars:

CALENDAR	DESCRIPTION	START	FINISH
1	Std - Apr 16 - Nov 15 - 4 day	APR 16	N0V 15
2	LP - Bit Stab - 4 day	MAY 15	OCT 15
3	UP - Bit Stab - 4 day	JUN 01	OCT 01
4	LP S of M-46 - Bit Pave - 4 day	MAY 05	NOV 15
5	LP N of M-46 - Bit Pave - 4 day	MAY 15	NOV 01
6	UP - Bit Pave - 4 day	JUN 01	OCT 15
7	LP - Bit Seal Coat - 4 day	JUN 01	SEP 15
8	UP - Bit Seal Coat - 4 day	JUN 15	SEP 01
9	Tree Planting - Deciduous - 4 day	MAR 01 OCT 01	MAY 15 NOV 15
10	Tree Planting - Evergreen - 4 day	MAR 01	JUN 01
11	South LP - Restoration - 4 day	MAY 01	OCT 10
12	North LP - Restoration - 4 day	MAY 01	OCT 01
13	UP - Restoration - 4 day	MAY 01	SEP 20
14	Full Year - Winter Work - 4 day	JAN 01	DEC 31
21	Std - Apr 16 - Nov 15 - 5 day	APR 16	NOV 15
22	LP - Bit Stab - 5 day	MAY 15	OCT 15
23	UP - Bit Stab - 5 day	JUN 01	OCT 01
24	LP S of M-46 - Bit Pave - 5 day	MAY 05	NOV 15
25	LP N of M-46 - Bit Pave - 5 day	MAY 15	NOV 01
26	UP - Bit Pave - 5 day	JUN 01	OCT 15
27	LP - Bit Seal Coat - 5 day	JUN 01	SEP 15
28	UP - Bit Seal Coat - 5 day	JUN 15	SEP 01
29	Tree Planting - Deciduous - 5 day	MAR 01 OCT 01	MAY 01 NOV 15
30	Tree Planting - Evergreen - 5 day	MAR 01	JUN 01
31	South LP - Restoration - 5 day	MAY 01	OCT 10

32	North LP - Restoration - 5 day	MAY 01	OCT 01
33	UP - Restoration - 5 day	MAY 01	SEP 20
34	Full Year - Winter Work - 5 day	JAN 01	DEC 31
35	Full Year - Expedited - 6 day	JAN 01	DEC 31

ATTACHMENT "J"
Project Concept Statement and Project Scoping Checklist Forms

(contact the MDOT Project Manager to obtain the form)