Michigan Department
Of Transportation
5100B (12/14)

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

	REQUISITION NUMBER 1923	DUE DATE 2/16/2016	TIME DUE noon EST
MDOT PROJECT MANAGER Andrew Bouvy	JOB NUMBER (JN) 128401	CONTROL SECTION (CS) 09042	

DESCRIPTION
Detailed structural, mechanical, and electrical bascule bridge inspection

MDOT PROJECT MANAGER: Check all items to be included in RFP WHITE = REQUIRED ** = OPTIONAL Check the appropriate Tier in the box below			**CONSULTANT:** Provide only checked items below in proposal
☐ **TIER 1 ($50,000 - $150,000)**	☑ **TIER II ($150,000-$1,000,000)**	☐ **TIER III (>$1,000,000)**	
☐	☑	☐	Understanding of Service **
☐	☑	☐	*Innovations*
☐	☑	☐	Organizational Chart
☐	☑	☐	Qualifications of Team
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) Resumes will only be accepted for Best Value Selections	7 pages (MDOT Forms not counted)	14 pages (MDOT forms not counted)	Total maximum pages for RFP **not including key personnel resumes.** Resumes limited to 2 pages per key staff personnel.

PROPOSAL AND BID SHEET EMAIL ADDRESS – mdot-rfp-response@michigan.gov

GENERAL INFORMATION

Any questions relative to the scope of services must be submitted by e-mail to the MDOT Project Manager. Questions must be received by the Project Manager at least five (5) working days prior to the due date and time specified above. All questions and answers will be placed on the MDOT website as soon as possible after receipt of the questions, and at least three (3) days prior to the RFP due date deadline. The names of vendors submitting questions will not be disclosed.

MDOT is an equal opportunity employer and MDOT DBE firms are encouraged to apply. The participating DBE firm, as currently certified by MDOT's Office of Equal Opportunity, shall be listed in the Proposal.

MDOT FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION

5100D – Request for Proposal Cover Sheet
5100J – Consultant Data and Signature Sheet (Required for all firms performing non-prequalified services on this project.)

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

REQUEST FOR PROPOSAL

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

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

RFP SPECIFIC INFORMATION

☑ ENGINEERING SERVICES ☐ BUREAU OF TRANSPORTATION PLANNING ☐ OTHER

THE SERVICE WAS POSTED ON THE ANTICIPATED QUARTERLY REQUESTS FOR PROPOSALS

☐ NO ☑ YES DATED 1/1/2016 THROUGH 3/30/2016

☐ **Prequalified Services** – See 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, is on file with MDOT's Office of Commission Audits This information must be on file for the prime vendor and all sub vendors so that the contract will not be delayed. **Form 5100J is required with proposal for all firms performing non-prequalified services on this project.**

☑ **Qualification Based Selection** - Use Consultant/Vendor Selection Guidelines.

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

For a cost plus fixed fee contract, the selected vendor must have a cost accounting system to support a cost plus fixed fee contract. This type of system has a job-order cost accounting system for the recording and accumulation of costs incurred under its contracts. Each project is assigned a job number so that costs may be segregated and accumulated in the vendor's job-order accounting system.

☐ **Qualification Based Selection / Low Bid** – Use Consultant/Vendor Selection Guidelines. See Bid Sheet instructions for additional information.

For Qualification Review/Low Bid selections, the selection team will review the proposals submitted. The vendor that has met established qualification threshold and with the lowest bid will be selected.

☐ **Best Value** – Use Consultant/Vendor Selection Guidelines, See Bid Sheet Instructions below for additional information. The bid amount is a component of the total proposal score, not the determining factor of the selection.

☐ **Low Bid** (no qualifications review required – no proposal required.)

BID SHEET INSTRUCTIONS

Bid Sheet(s) are located at the end of the Scope of Services. Submit bid sheet(s) with the proposal, to the email address: mdot-rfp-response@michigan.gov. Failure to comply with this procedure may result in your bid being rejected from consideration.

PARTNERSHIP CHARTER AGREEMENT

MDOT and ACEC created a Partnership Charter Agreement which establishes guidelines to assist MDOT and Consultants in successful partnering. Both the Consultant and MDOT Project Manager are reminded to review the **ACEC-MDOT Partnership Charter Agreement** and are asked to follow all communications, issues resolution and other procedures and guidance's contained therein.

NOTIFICATION
MANDATORY ELECTRONIC SUBMITTAL

Proposals submitted for this project must be submitted electronically.

The following are changes to the Proposal Submittal Requirements:

- Eliminated the Following Requirements:
  - Safety Program
  - Communication Plan
  - Past Performance as *a separate section*
  - Separate section for DBE Statement of goals. Include information in Qualification of Team section

- Implemented the Following Changes:
  - All proposals require an Organization Chart
  - Resumes must be a maximum of two pages
  - Only Key (lead) staff resumes may be submitted
  - Tier III proposal reduced from 19 to 14 pages
  - Forms 5100D, 5100I, and 5100G combined – 5100D
  - Forms 5100B and 5100H combined – 5100B
  - RFP's will be posted on a weekly basis -- on Mondays

The following are Requirements for Electronic Submittals:

- Proposals <u>must</u> be prepared using the most current guidelines
- The proposal <u>must</u> be bookmarked to clearly identify the proposal sections (See Below)
- For any section not required per the RFP, the bookmark must be edited to include "N/A" after the bookmark title.

  Example: Understanding of Service – N/A
- Proposals <u>must</u> be assembled and saved as a single PDF file
- PDF file <u>must</u> be 5 megabytes or smaller
- PDF file <u>must</u> be submitted via e-mail to MDOT-RFP-Response@michigan.gov
- MDOT's requisition number and company name <u>must</u> be included in the subject line of the e-mail. The PDF shall be named using the following format:
  - Requisition#XXX_Company Name.PDF
- MDOT will not accept multiple submittals
- Proposals <u>must</u> be *received* by MDOT on or before the due date and time specified in each RFP

If the submittals do not comply with the requirements, they may be determined unresponsive.

The Consultant's will receive an e-mail reply/notification from MDOT when the proposal is received. Please retain a copy of this e-mail as proof that the proposal was received on time. **Consultants are responsible for ensuring the MDOT receives the proposal on time.**

****Contact Contract Services Division immediately at 517-373-4680 if you do not get an auto response****

Required Bookmarking Format:

I. Request for Proposal Cover Sheet Form 5100D
   A. Consultant Data and Signature Sheet, Form 5100J (if applicable)
II. Understanding of Service
   A. Innovations
III. Qualifications of Team
   A. Structure of Project Team
      1. Role of Firms
      2. Role of Key Personnel
   B. Organization Chart
   C. Location
IV. Quality Assurance / Quality Control Plan
V. Resumes of Key Staff
VI. Pricing Documents/Bid Sheet (if applicable)

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NOTIFICATION
E-VERIFY REQUIREMENTS

E-Verify is an Internet based system that allows an employer, using information reported on an employee's Form I-9, Employment Eligibility Verification, to determine the eligibility of that employee to work in the United States. There is no charge to employers to use E-Verify. The E-Verify system is operated by the Department of Homeland Security (DHS) in partnership with the Social Security Administration. E-Verify is available in Spanish.

The State of Michigan is requiring, under Public Act 200 of 2012, Section 381, that as a condition of each contract or subcontract for construction, maintenance, or engineering services that the pre-qualified contractor or subcontractor agree to use the E-Verify system to verify that all persons hired during the contract term by the contractor or subcontractor are legally present and authorized to work in the United States.

Information on registration for and use of the E-Verify program can be obtained via the Internet at the DHS Web site: http://www.dhs.gov/E-Verify.

The documentation supporting the usage of the E-Verify system must be maintained by each consultant and be made available to MDOT upon request.

It is the responsibility of the prime consultant to include the E-Verify requirement documented in this NOTIFICATION in all tiers of subcontracts.

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MICHIGAN DEPARTMENT OF TRANSPORTATION

SCOPE OF SERVICE
FOR
DESIGN SERVICES
DETAILED BRIDGE INSPECTION

CONTROL SECTION(S): 09042

JOB NUMBER(S): 128401

PROJECT LOCATION:

B01-09042: M-25 over Saginaw River (Veteran's Memorial), Bay Region

PROJECT DESCRIPTION:

To perform a detailed inspection of the movable bridge listed and prepare a report. This report will have several components as noted below and will be reviewed, signed, and sealed by a Professional Engineer registered in the state of Michigan.

ANTICIPATED START DATE: April 18, 2016

ANTICIPATED COMPLETION DATE: April 14, 2017

PRIMARY PREQUALIFICATION CLASSIFICATION:

Design-Bridges: Movable Span

SECONDARY PREQUALIFICATION CLASSIFICATION:

Design-Bridges: Safety Inspection

DBE REQUIREMENT: 0%

MDOT PROJECT MANAGER:

Andrew Bouvy, P.E.
Bridge Inspection Engineer
Bridge Field Services
6333 Lansing Road
Lansing, MI 48917

Cell: (517) 242-1164
Email: Bouvya@michigan.gov

The Consultant shall contact the Project Manager prior to beginning any work on this Project.

WORK & SCHEDULE:

The CONSULTANT must develop a Work Plan that details the process of inspecting the bridges listed. The breakdown of the hours/days of the inspected components or elements will enable MDOT to coordinate the scheduling for use of the under bridge crane, and MDOT forces or contract agencies to open, clean and lubricate the inspected components.

The CONSULTANT is also required to develop a Project Schedule for the project showing major tasks during the fieldwork and report preparation. The schedule shall include a description of the tasks to be accomplished for each discipline. The Project Schedule must be submitted in the form of a Gantt chart showing meeting dates, report submissions, etc. as milestones. Each field inspection will occur during a continuous 5 day period. The inspection at B01-09042 is anticipated during the month of April or May. The MDOT Project Manager may adjust the schedule according to the needs expressed by the Bay Region and/or Bay City TSC. The CONSULTANT shall submit a draft of the inspection reports to MDOT within 30 calendar days of beginning field inspection.

The CONSULTANT shall also include a detailed schedule of test openings which identifies the duration of each opening, anticipated frequency, and total number for each day. Test openings are acceptable between the hours of 9:00 a.m. and 3:00 p.m. It is highly recommended that the CONSULTANT identify additional timeframes which occur during evening hours that may be submitted for review and approval. Evening test openings will be utilized only as a contingency should poor weather or testing equipment failure occur.

The inspection of the mechanical and electrical components will be during normal periods of operation. The normal periods of operation for these structures are as defined in the current edition of the United States Coast Pilot 6. Inspection of the machinery rooms and electrical operations of the lift bridge will be permitted on weekends with minimum disruption to traffic and as approved by MDOT.

The CONSULTANT will be responsible for coordination and permitting with the United States Coast Guard prior to inspection activities. Coast Guard approval must be granted before disassembling any mechanical elements, which would leave the bridge inoperable. The Coast Guard will set the maximum time durations for the bridge to be inoperable. A copy of the permit shall be provided to MDOT prior to performing field activities.

The CONSULTANT must be prepared to begin the field inspection work within one week after receiving Notice to Proceed (NTP). MDOT's project manager may stop and reschedule the field inspection at the request of the Bay Region/Bay City TSC or if there are significant disruptions to traffic.

The Work Plan and Schedule will be submitted as part of the Priced Proposal. Changes to the Work Plan or Schedule will be submitted to MDOT's Project Manager for approval. Coordination of lane closures and temporary bridge closures will be coordinated with the MDOT Project Manager. Lane/Bridge Closures will not be permitted during special local events/holidays without prior approval. A list of acceptable dates will be provided to the CONSULTANT for use during the development of the Work Plan and Schedule.

ADDITIONAL STAFF QUALIFICATION REQUIREMENTS:

This detailed inspection will require an experienced team of structural, mechanical, and electrical personnel. The CONSULTANT must provide personnel with qualifications that meet or exceed the requirements stated below. The CONSULTANT must staff the project with the number of personnel necessary to complete the project in the allotted time. The CONSULTANT must have all these individuals present during the fieldwork to fulfill the requirements of the contract.

Changes made to the Project Manager/Team Leader or Lead Inspectors that occur after the authorization will be submitted in writing for MDOT's project manager's approval. Failure to comply with this request may result in termination of the contract.

The Project Manager will be responsible for writing the Inspection Report and will be the primary contact with MDOT's project manager.

A. Project Manager

Professional registration as an engineer, licensed to practice in the State of Michigan.

Five (5) years of recent documented experience in the in-service detailed inspections of movable bridges.

The Project Manager may serve as the Structural Team Leader provided they meet the recurrent training requirements specified below.

Only one manager level position will be allowed and paid for on this project.

B. Lead Inspectors for Structural, Mechanical, Hydraulic, and Electrical

Professional registration as an engineer to practice engineering in their area of expertise.

Three (3) years of recent documented experience in inspection, design, or construction of movable bridges in their area of expertise.

The Structural Lead Inspector shall serve as team leader for the NBI safety inspection. The Structural Lead Inspector must have completed the National Highway Institute (NHI) two week class "Safety Inspection of In- Service Bridges" within the last five years. If the team leader(s) has attended this class more than five years ago, he/she must have taken the refresher course within the preceding five years.

The above listed classes for the Mechanical, Hydraulic, and Electrical Lead Inspector(s) are encouraged but not required.

C. Field Staff assisting the Lead Inspectors and Team Leader

A technical staff person with two (2) years of experience in inspection, design, or construction of movable bridges, or a recent graduate engineer working at the staff engineer or entry level position.

GENERAL DESCRIPTION OF THE WORK:

The work associated with this project is separated into two phases; (I) Site Inspection and (II) Inspection Reports. Both phases must be completed for successful completion of the project.

The CONSULTANT will provide a thorough inspection of the structural, mechanical, hydraulic, and electrical components of the movable bridge and provide a report. The inspection of each movable bridge will also include the approach spans and approach pavement. The report will identify current conditions of the structure and the significance of the findings and make recommendations.

The following provisions are the minimum for this contract. The CONSULTANT may elect to suggest activities in the proposal that will improve the inspection or reduce costs:

A. Phase I – SITE INSPECTION

The CONSULTANT will investigate the condition of the bridges and identify areas of deterioration, with the inspection focusing on the bridge operation, span balance determination, mechanical, electrical, hydraulic, and structural components. Any condition requiring immediate corrective actions will be reported promptly to MDOT's Project Manager by telephone and then in writing.

1. **Structural Inspection**:
   The structural inspection will be performed in accordance with the National Bridge Inspections Standards (NBIS), AASHTO's Manual for Bridge Inspection (MBE), FHWA Bridge Inspector's Reference Manual (BIRM), AASHTO's Movable Bridge Inspection, Evaluation, and Maintenance Manual (1998), Michigan Structure Inspection Manual (MiSIM), and Michigan Bridge Element Inspection Manual (MiBEIM). The previous inspection reports and inventory data will be accessible in the Michigan Bridge Management and Inspection System (MiBRIDGE). In addition, a detailed inspection of the superstructure and substructure elements will be performed as listed below.

   a. **Superstructure:** Inspection of members/elements will include investigating for cracks, corrosion, spalls, unusual movement, settlement, changes in alignment, and loose connections.

      The concrete deck surface will be sounded with a hammer or chain drag, and delaminated, spalled, and cracked areas on the deck surface will be marked with chalk or chalk paint to be visible in photographs. The use of permanent surveyors paint will not be allowed.

      The percent of deck surface and soffit deficiencies will be noted in the report. Cracks in steel members will be marked in the field for easy location, using dye penetrant.

Thickness measurements of primary steel members shall be measured with an ultrasonic thickness gauge where observed areas of section loss are suspected to be greater than or equal to 10% member thickness. The limits of loss shall be measured and referenced from the beam end (or other known location which may be referenced on as-built drawings). This applies to locations with losses in high and low stress zones. The readings shall be recorded on MDOT Form 0267 or a spreadsheet format that is approved by MDOT. Fracture critical and fatigue sensitive elements shall be inspected at arms-length for cracking, corrosion, distortion, and connection failures. Fracture critical elements shall be identified prior to field work for accessibility considerations.

The inspection of the superstructure will include, but not be limited to the following elements:

- Bridge deck systems, such as concrete slab, steel grid and overlay. The steel grid decks will be examined for section loss due to corrosion, cracking of the bars, cracking of welds, and loose bolts/rivets.
- Structural steel trusses, girders, stringers, floor beams, including connection and supporting members such as stiffeners, diaphragms, cross frame laterals, brackets, pins, bearings, and shear transfer devices.
- Live load bearings and span locks.
- Bridge railing, sidewalks, safety walks, median barriers and hand rails.
- Expansion joints and other joints.
- Supports for the bridge lighting.
- Paint or other protective systems.
- Drainage inlets, troughs, downspouts, and supports.
- Bridge lighting and supports or other protective systems.
- Forty feet of approach pavement, sidewalks, and slopes.
- Evaluate MIOSHA General Industry Standards for access requirements of maintenance personnel (fixed ladders, gear guards, confined space, etc.).
- Evaluate potential Design Exceptions that may need to be proposed for recommended repairs (Review MDOT Bridge Design Manual Section 12).

b. **Substructure (above water surface)**: The substructure elements including abutments, piers, fender systems, pile clusters or dolphins will be inspected for damage, distortion, delamination, cracks, corrosion, spalls, and movement/settlements. In addition, wood elements will be inspected for defects such as checks, splits, and decay. Concrete members will be sounded with a hammer to determine any delamination, check for spalling, exposure of reinforcing steel and cracking. These deteriorated areas will be marked with chalk to be visible in photographs, and quantities will be measured for repair estimates. Steel members will be inspected for corrosion, distortion, and section loss. The CONSULTANT will provide sketches of cracks measured in linear feet and spalls/delaminations measured in square feet, with the depth of spall given in inches.

2. **Mechanical Inspection:**
Every component of the mechanical system will be inspected. Components will be inspected for leakage, cracks, unusual noise, corrosion and wear. The inspection of the drive system and auxiliary drive system will be inspected for, but not limited to, counterweight sheaves, shafts, bearings, counterweight ropes, brakes, gear sets, speed reducers, couplings, mounted bolts, span machinery supports and anchorages. Components will be opened, and cleaned by MDOT or an authorized contract agency personnel for inspection as directed by the CONSULTANT to enable the CONSULTANT to measure the thickness of the gear teeth, gear set backlash, gear set clearance, bearing clearances (including trunnions), and observe the conditions of the wearing surfaces. The CONSULTANT will note any lubrication needed for the open gear sets.

a. **Bridge Operation**: The operation of the bridge will be observed in all modes to investigate the condition of the drives, the functionality of the traffic signals, bells and gates, interferences between movable and stationary parts of the bridge, controllability of the moving span, the effectiveness of the stabilizing machinery, and the span balance determination. During operation, the machinery will be monitored for abnormal noises and vibration.

b. **Span Balance Determination**: The balance test of the bascule span will be part of the inspection. Span balance determination will be completed using Strain Gauge balancing techniques. If determined that the structure is out of balance, the CONSULTANT will provide technical support during the balancing operation to resolve the imbalances. MDOT will supply forces to add/remove counterweights blocks as needed.

c. **Testing:** The CONSULTANT may determine that other non-destructive testing beyond what is mentioned in the Scope of Work is needed to make a better judgment. However, such testing (ultrasonic, magnetic particle testing, acoustic emission, etc.) must be approved by MDOT’s Project Manager. If the project manager approves the test, the CONSULTANT must submit a testing proposal. The testing proposal will show what tests are to be performed, what specific information is to be gained from testing, and how the information is to be used. Proposals submitted with insufficient information will be denied.

The mechanical components that stabilize the movable span when it is in motion and at rest will be inspected. The components to be inspected include, but are not limited to, span guides, counterweight guides, counterweights, balancing chains, centering devices, span locks and drives, buffers, bump blocks and live load supports or wedges. In addition, the traffic barriers and gates will be inspected.

3. **Hydraulics Inspection**
Depending on the type of hydraulic machinery present the in-depth inspection will include but not be limited to hydraulic actuators, tail locks, hydraulic cylinders, and hydraulic motors, pumps, filters, hoses, piping and interconnecting pipes, hydraulic fluid, accumulators, and associated supports, couplings and fittings. All major components will be visually inspected for leaks, overheating, seal condition, misalignment, unusual noise or vibration. Oil samples, if necessary, will be taken to

determine the level of contamination and wear, additive and other applicable tests.

4. Electrical Inspection

This includes the visual inspection and testing of electrical components of the drive, stabilizing, control system, bridge lighting, auxiliary generator, submarine cable and flexible cables, closed-circuit television (CCTV) and bridge safety features. The bridge safety features include the navigational lights, horns/bells, traffic lights, gates, and safety interlocks. The electrical equipment inspection will include, but not be limited to the following: a detailed examination for smooth operation, uniform and regular movement, proper mounting, applied tension, vibration, overheating, wear, rust, carbon deposits, loose terminations, noise, lubrication, alignment, clearances, spring tension, arching, insulating fluid levels, insulating fluid contamination, dirt contamination, insulation conditions, system grounding, enclosure grounding, equipment grounding, bonding, current/ voltage/ kilowatt readings, weather tightness, safety, and signs of distress or pending distress. In addition, the inspection will also include insulation tests of all major electrical components and lead current tests on the electrical drives.

For constant voltage drive systems (DC or Sinusoidal AC), the power consumed by the normal drive motors will be measured and recorded on a strip chart during the test opening/closing of the movable span. The results of the test will be reviewed for any defects or inconsistencies.

B. Phase II - INSPECTION REPORTS

The deliverables for this Scope of Work will be the inspection reports. The inspection reports phase will include fulfilling NBIS and Michigan Bridge Inspection Program reporting requirements and preparing a well-written comprehensive detailed inspection report.

1. NBIS Reporting Requirements:

The CONSULTANT will complete several inspection reports using MiBRIDGE that are required for compliance with the NBIS. The electronic reports in MiBRIDGE shall be entered within 30 days of starting field activities, and may be edited afterward to modify condition ratings or improve the quality of comments. The reports that must be completed in MiBRIDGE include:

- Bridge Safety Inspection Report
- AASHTO Element Inspection Report
- Fracture Critical Inspection Report
- Work Recommendations Report
- Structure Inventory and Appraisal
- Request for Action Report (as-needed)

Copies of the electronic documents shall be provided in the Appendix Section of the detailed inspection report.

2. **Comprehensive Detailed Inspection Report**:
The comprehensive detailed inspection report must include descriptions and observations of the inspection procedures, conditions found during inspection and operation, span balance determination, and testing for the members of the mechanical, hydraulic, electrical, and structural systems. The report will also describe the significance of the findings, serve as a scope of work for rehabilitation, and include costs for corrective actions. All units of measurement in the report are to be presented in English units. Typical forms that have been developed and used in the inspection will be included in the report. The CONSULTANT shall submit a draft of the inspection reports to MDOT within 30 calendar days of beginning field inspection.

Organize the report according to the following manner:

a. Cover Sheet: Include the MDOT Bridge ID, facility, feature, unique name (if applicable), description, date of field activities, and elevation photo.

b. Table of Contents: Provide titles and page numbers for significant sections, subsections, and appendices.

c. Executive Summary: Briefly describe the structural, mechanical, hydraulic, and electrical characteristics. Include a summarized total project cost estimate of the repair recommendations for structural, mechanical, hydraulic, electrical, and other work.

d. Complex Bridge Inspection Procedures: State the procedures utilized for the detailed inspection. In a brief manner, describe the qualifications of the on-site inspection team, list complex features, identify specialized equipment needs, and state any risk factors that jeopardize safe functioning of the structure.

e. Detailed Inspection Observations: Organize in a logical manner the detailed structural, mechanical, electrical, and hydraulic inspection findings. Describe in detail the current condition of components, elements, or systems and factors affecting continued performance. Document changes in condition from previous inspections.

f. Detailed Inspection Recommendations: Establish work items that are recommended to be performed for structural, mechanical, electrical, and hydraulic components. The recommendations should include changes, if any, in the operating and maintenance, inspection, and testing procedures necessary to improve the overall safety and life expectancy of the equipment. Prioritize recommendations which should be completed in timeframes consisting of 12 months, 60 months, and those which require monitoring during subsequent inspections. For each item, provide reference to the element, location, and describe the extent of rehabilitative measures required. Provide brief justification for recommendations relating to mechanical, electrical, hydraulic systems, and non-standard structural repairs.

g. Cost Estimate: Develop scope of work and cost estimate for rehabilitation. Include proposed method, quantities, unit prices, and total costs for the repair of each component/element. Utilize data available on the MDOT Bridge Management and Scoping web page, previous regional bid unit pricing, and consult additional resources for accurate cost information when necessary. Include an estimate for mobilization, maintaining traffic, roadway approach work (40' beyond each end of the bridge), erosion control, bridge deck repair, steel superstructure repair, steel cleaning and coating, adjusting vertical alignment, span balancing, maintaining navigation, heating and housing, electrical work, mechanical work, operator house work, miscellaneous items, and contingency.

h. Appendices: Utilize the appendices to organize CAD drawings, field sketches, notes, forms, recorded readings, testing reports, sampling results, and photographs.

All photographs will be in color and captioned. Photographs which appear in the report body will be formatted for consistent size, uniform location within the text, and have blue labels. Photos in the report will also have an arrow, circle, or other shape to highlight deficiencies that are noted. Photographs, at a minimum, will include the general arrangement of the drive and stabilizing machinery, hydraulic and electrical components. The structural element photographs will include the elevation view of the sides, views of the typical condition of the bridge deck surface and underside, deck joints, typical superstructure elements, abutments, piers, slope protection, waterway, approach, and fender system. In addition, the photograph will show major components and deteriorated areas and defects.

An electronic copy of the draft report will be provided to the MDOT Project Manager in MS Word format. Comments will be returned to the CONSULTANT for review. A progress meeting may be held with the MDOT representatives and the CONSULTANT to review and discuss comments. The CONSULTANT will then incorporate revisions into the final report. MDOT reserves the right to request additional drafts for review if, in the opinion of MDOT's Project Manager, the changes required are extensive. The contract will be unsatisfactory if the CONSULTANT fails to make changes to the report as required by MDOT's Project Manager.

The CONSULTANT will submit five (5) 3-ring bound copies of the final report. The final report will also contain one Compact Disk (CD) with electronic copies of the final report and all photos taken.

MEETINGS:

The CONSULTANT is required to attend a Project Initiation Meeting and two Progress Meetings. The expected time frame for these meetings are shown below, however, these may be adjusted as mutually agreed to by MDOT's Project Manager and the CONSULTANT.

A mandatory project initiation meeting will be held with the CONSULTANT **before** the start of the site inspection work. The project manager will be required to attend the meeting that will be held at the MDOT Operations Field Services, 6333 Lansing Road, Lansing, Michigan 48917 or at a location that is mutually agreed to.

This meeting is intended to exchange information regarding the general procedures for communication, review the schedule, discuss emergency procedures and communication, and discuss any open questions that remain. The meeting will be attended by MDOT Region and Statewide staff.

Two progress meetings will be held; one to review the data collected during the field evaluation work and one to review draft inspection report.

The CONSULTANT will keep notes of these meetings and provide minutes to the MDOT Project Manager within one week after the meeting.

Meeting Dates

Project Initiation Meeting: One week after NTP (before beginning any field work.)

Progress Meetings: (1) At the completion of field work
(2) At the completion of the "draft" Report

EQUIPMENT:

MDOT will provide one under bridge crane for the CONSULTANT's use for the inspection and will be responsible for maintaining and setting up traffic control, except on weekends and state holidays. The under bridge crane is part of the Department's emergency response team and may be called away unexpectedly. The CONSULTANT will plan for this contingency and should this occur, will re-direct the field staff to maintain efficiency and the schedule.

The CONSULTANT must provide all of the necessary inspection tools/specialized equipment for completion of the inspection.

The CONSULTANT must provide all of the necessary personal safety equipment for each employee at the work site. All equipment must be in sound working order, meeting applicable inspections for safe operation. Lost time due to equipment failures will not be paid for.

SAFETY:

MDOT requires safe working operations. The CONSULTANT shall perform field operations in accordance with MIOSHA regulations and accepted safety practices.

It is not the responsibility of MDOT to verify the CONSULTANT's safety practices; however, the MDOT PM has the authority to have any individual who is found working unsafely removed from MDOT right of way. If the CONSULTANT is found to be working unsafely, the MDOT PM can stop all operations and terminate the contract.

The CONSULTANT shall designate a specific individual within their field staff who will be responsible for communicating when scheduled and unscheduled bridge openings will occur. The designated individual will ensure that all staff on, below, inside, or near the bridge are aware of the bridge opening and machinery guards, equipment, and tools are secure.

EXISTING RECORDS AND DATA:

MDOT will furnish the CONSULTANT access to any available pertinent information related to the structure(s) being inspected.

Information furnished to the CONSULTANT will not be released or distributed to any outside agency without written permission from MDOT's Project Manager.

Release of information: The CONSULTANT may not release any information about the bridge or the inspection to anyone outside of MDOT. The CONSULTANT is not allowed to make copies of the information in the bridge files unless given written approval from the MDOT Project Manager.

References and Guidelines: Below is a list of reference documents that the CONSULTANT is expected to be familiar with and use to complete the inspection and report:

- AASHTO, Standard Specifications for Highway Bridges and for Movable Highway Bridges
- AASHTO The Manual For Bridge Evaluation
- AASHTO Movable Bridge Inspection, Evaluation, and Maintenance Manual
- Federal Highway Administration (FHWA)
  Publications: Inspection of Fracture Critical Bridge Members, Bridge Inspectors Reference Manual (BIRM), Underwater Inspection of Bridges
- Michigan Structure Inspection Manual (MiSIM)
- Michigan Bridge Element Inspection Manual (MiBEIM)
- Manual on Uniform Traffic Control Devices for Streets and Highways
- National Electrical Code
- National Fluid Power Association
- American Society for Testing and Materials (ASTM)
- National Electrical and Electronics Engineers, Inc
- National Bridge Inspection Standards (NBIS)
- American Welding society
- And other references pertaining to Design and Inspection of Bridges. Such as American Society of Mechanical Engineers (ASME), Anti Friction Bearing Manufacturers Association (AFBMA) etc.

CONSULTANT PAYMENT – Actual Cost Plus Fixed Fee:

Compensation for this project shall be on an **actual cost plus fixed fee** basis. This basis of payment typically includes an estimate of labor hours by classification or employee, hourly labor rates, applied overhead, other direct costs, subconsultant costs, and applied fixed fee. The fixed fee for profit allowed for this project is 11.0% of the cost of direct labor and overhead.

All billings for services must be directed to the Department and follow the current guidelines. Payment may be delayed or decreased if the instructions are not followed.

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

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

MDOT will reimburse the consultant for vehicle expenses and the costs of travel to and from project sites in accordance with MDOT's Travel and Vehicle Expense Reimbursement Guidelines, dated May 1, 2013. The guidelines can be found at http://www.michigan.gov/documents/mdot/Final_Travel_Guidelines_05-01-13_420289_7.pdf?20130509082418. MDOT's travel and vehicle expense reimbursement policies are intended primarily for construction engineering work. Reimbursement for travel to and from project sites and for vehicle expenses for all other types of work will be approved on a case by case basis.

MDOT will pay overtime in accordance with MDOT's Overtime Reimbursement Guidelines, dated May 1, 2013. The guidelines can be found at http://www.michigan.gov/documents/mdot/Final_Overtime_Guidelines_05-01-13_420286_7.pdf?20130509081848. MDOT's overtime reimbursement policies are intended primarily for construction engineering work. Overtime reimbursement for all other types of work will be approved on a case by case basis.