Michigan Department
Of Transportation
5100B (03/10)

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

Exhibit B

MDOT PROJECT MANAGER	JOB NUMBER (JN)	CONTROL SECTION (CS)
Olukayode Adefeso, P.E.	111466 - 111469, 111601	84917

DESCRIPTION
Metro Region - Bridge Scoping

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 1 ($25,000-$99,999)**	☐ **TIER II ($100,000-$250,000)**	☑ **TIER III (>$250,000)**	
☐	☐	☑	Understanding of Service
☐	☐	☑	*Innovations*
☐	☐	☐	*Safety Program*
N/A	☐	☑	Organizational Chart
☐	☐	☑	Qualifications of Team
☐	☐	☑	Past Performance
Not required As part of Official RFP	Not required As part of Official RFP	☑	Quality Assurance/Quality Control
☐	☐	☑	**Location:** The percentage of work performed in Michigan will be used for all selections unless the project is for on-site inspection or survey activities, then location should be scored using the distance from the consultant office to the on-site inspection or survey activity.
N/A	N/A	☐	Presentation
N/A	N/A	☐	Technical Proposal (if Presentation is required)
3 pages (MDOT Forms not counted) **(No Resumes)**	7 pages (MDOT Forms not counted)	19 pages (MDOT Forms not counted)	Total maximum pages for RFP **not including key personnel resumes**

REQUEST FOR PROPOSAL

Clear Form

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

If your firm is interested in providing services, please indicate your interest by submitting a Proposal, Proposal/Bid Sheet or Bid Sheet as indicated below. The documents must be submitted in accordance with the latest "Consultant/Vendor Selection Guidelines for Service Contracts" and "Guideline for Completing a Low Bid Sheet(s)", if a low bid is involved as part of the selection process. **Referenced Guidelines are available on MDOT's website under Doing Business > Vendor/Consultant Services >Vendor/Consultant Selections.**

RFP SPECIFIC INFORMATION

☑ BUREAU OF HIGHWAYS ☐ BUREAU OF TRANSPORTATION PLANNING ** ☐ OTHER

THE SERVICE WAS POSTED ON THE ANTICIPATED QUARTERLY REQUESTS FOR PROPOSALS

☑ NO ☐ YES DATED _____ THROUGH _____

☑ **Prequalified Services** – See page 1 of the attached Scope of Services for required Prequalification Classifications.

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

☑ **Qualifications Based Selection** – Use Consultant/Vendor Selection Guidelines

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

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

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

☐ **Qualifications Review / Low Bid** - Use Consultant/Vendor Selection Guidelines. See Bid Sheet Instructions for additional information.

For Qualification Review/Low Bid selections, the selection team will review the proposals submitted and post the date of the bid opening on the MDOT website. The notification will be posted at least two business days prior to the bid opening. Only bids from vendors that meet proposal requirements will be opened. The vendor with the lowest bid will be selected. The selected vendor may be contacted to confirm capacity.

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

☐ **Low Bid** (no qualifications review required - no proposal required.) See Bid Sheet Instructions below for additional instructions.

BID SHEET INSTRUCTIONS

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

Clear Form

PROPOSAL SUBMITTAL INFORMATION

REQUIRED NUMBER OF COPIES FOR PROJECT MANAGER	PROPOSAL/BID DUE DATE	TIME DUE
4	12/15/10	noon

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

MDOT Metro Region Office
Olukayode (Kay) Adefeso, P.E.
18101 West Nine Mile Road
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

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

MDOT FORMS REQUIRED AS PART OF PROPOSAL SUBMISSION

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

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

MICHIGAN DEPARTMENT OF TRANSPORTATION

SCOPE OF SERVICE
FOR
DESIGN SERVICES
DEVELOPING BRIDGE REPAIR ALTERNATIVES
2015 BRIDGE CALL FOR PROJECTS

CONTROL SECTION: 82022
JOB NUMBER: 111466

CONTROL SECTION: 82191, 82195
JOB NUMBER: 111467

CONTROL SECTIONS: 82123, 82252, 63191
JOB NUMBER: 111468, 111601

CONTROL SECTIONS: 63172
JOB NUMBER: 111469

LOCATION: METRO REGION - see the WORK PACKAGE LISTING for specific bridge numbers and locations.

PROJECT DESCRIPTION: To evaluate various repair alternatives for a prescribed set of bridges and recommend the most appropriate rehabilitation or treatment based on current conditions, remaining structure life and sound engineering judgment.

Up to 4 CONSULTANTS will be selected for this work

Project includes visiting the site for each structure and maintaining traffic to evaluate the bridges.

ANTICIPATED PROJECT START DATE: December 27, 2010

ANTICIPATED PROJECT COMPLETION DATE: September 30, 2011

PRIMARY PREQUALIFICATION CLASSIFICATION:
Bridge Project Scoping

SECONDARY PREQUALIFICATION CLASSIFICATION:
Maintaining Traffic Plans and Provisions

DBE REQUIREMENT: 10%

MDOT PROJECT MANAGER (MDOT PM):

Olukayode (Kay) Adefeso, P.E.
18101 W. Nine Mile Road
Southfield, Michigan 48075
PM Office: (248) 483-5214
Fax: (248) 569-7718
PM E-mail: adefesoo@michigan.gov

GENERAL INFORMATION:

Each year a number of bridges are selected for repairs based on many factors. Each of these bridges must have a detailed scope of work and an estimate developed prior to submitting for approval and design.

The deliverables for this scope of service will be the Scoping Reports for each bridge. The information contained in the Scoping Reports will be used by the Bridge Design Support Area to prepare rehabilitation plans. Therefore, in general terms, the content of the reports will need to be sufficient to adequately convey the general physical condition of each structure and the specific areas in need of repair. Current design standards and minimum requirement criteria must be taken into account when recommending repairs.

The bridges included in this scoping contract are located in various locations within the Metro Region. The work is proposed to be constructed in various years between 2010 and 2015. The determination of the scope of work for these bridges must take into account any road projects in the area. This information will be provided by MDOT.

MDOT has determined the following preliminary maintaining traffic concepts, which may be assumed by the consultant in developing the scopes of work. All maintaining traffic concepts shall be consistent with the MDOT Work Zone Safety and Mobility Policy.

1. When possible, work on the bridges shall be performed at night or on weekends to keep daytime lane closures to a minimum.
2. When night work is not possible, temporary or permanent widening and traffic shifts on the roadway and bridge shoulders should be evaluated for feasibility, such that as many lanes of traffic can be maintained as possible.
3. The feasibility of incentive/disincentive provisions should be considered and costs estimates added to the scope of work for each bridge as applicable.

DURATION AND SCHEDULE:

The duration of the project has been established using an average time per bridge determined from previous experience. If the CONSULTANT cannot meet these deadlines, the reason for the required extra time must be detailed in the priced proposal.

A. **PROJECT DATES:** To be determined when the consultant is selected

B. PROJECT SCHEDULE

By submittal of priced proposal, the CONSULTANT is verifying that they can meet schedule identified in this scope of work. The priced proposal must include a bridge by bridge schedule showing the required milestones. The CONSULTANT must notify the MDOT PM 48 hours prior to the site review date of any changes to this schedule.

C. MEETINGS

1. Project Initiation Meeting

A mandatory Project Kick-off Meeting will be held with the CONSULTANT prior to the start of the site review work. The CONSULTANT PM will be required to attend the meeting and it will be held at MDOT's Region Office unless an alternative site is mutually agreed to. The CONSULTANT will be responsible for documentation and distribution of all meeting minutes.

Each bridge will need to be categorized as a Rehabilitation/Replacement (R&R) work candidate, or a Capital Preventive Maintenance (CPM) work candidate, prior to finalizing the scoping reports. Many work packages will be a combination of both. During the Project Initiation Meeting, the categorization of the bridges in the work package will be discussed. After field reviews and prior to preparing Draft Reports, the CONSULTANT will submit a list of bridges, and the work category decided for each. Once concurrence with the MDOT PM is reached, the reports can be prepared, following the requirements of the work category.

2. 2. Sample Report Review and Progress meeting

The MDOT PM will decide if a Sample Report Review and Progress Meeting will be held with the CONSULTANT at the Region Office during the report preparation period, prior to the draft report submittal. Typically this is done if this is the first Bridge Scoping project the CONSULTANT has done for the Metro Region, or if the MDOT PM has no prior experience with the CONSULTANT. The MDOT PM and the CONSULTANT PM (report author) will be required to attend. A sample draft report (for one bridge) must be presented to the MDOT PM at the meeting. This report will be used to compare against the requirements of the Scope of Services. Questions on the report preparation may be asked at this time as well. The CONSULTANT is encouraged to ask questions throughout the duration of the project. A separate meeting with the Michigan Intelligent Transportation Center (MITSC) Development Engineer may be required to determine if there are any Intelligent Transportation Systems (ITS) components in or on the bridge, or in the immediate vicinity of the bridge.

GENERAL DESCRIPTION OF THE WORK:

The work for each bridge is broken down into three main components: **A)** Site Review **B)**

Engineering Analysis of Findings and, **C)** Report Preparation.

A. SITE REVIEW

1. General

Each bridge and environs must be visited by the CONSULTANT PM. The purpose of this visit is to locate all areas of deterioration, determine feasible repair options, and to ascertain quantities. Where necessary, high-reach equipment or an under bridge inspection crane must be used to get close enough to evaluate the structural components (See Section **EQUIPMENT AND SAFETY**, below).

The information collected in the field must be sufficient to determine quantities and locations of repairs and improvements. This information must be detailed in the field notes and/or sketches and are to be included in the report.

a. During the site review of the bridge, the following will be done, at a minimum:

(1) Sound all concrete elements (deck, superstructure, substructure, etc.) for delaminations and unsound areas. All delaminated areas are to be marked with chalk, crayon, or kiel, that will be evident in the photographs. Paint may be used on deck surface with MDOT PM approval. **The use of paint on substructure units is prohibited**. All delamination surveys are part of the site review work (not part of testing). Sketches of the deck and substructure units mapping the areas of delamination and cracking are to be included in the appendix of the scoping report. Percent of total surface area delaminations shall be calculated and shown on the sketches.

The underside of the deck must be visually inspected for wet areas, efflorescence, transverse cracking, longitudinal cracking, map cracking, delaminations, spalling, rust along beam edges, or any other evidence of deterioration. The type of cracking and severity must be described in detail in the report. Note areas of previous repairs, or where false decking is in place. Pictures of the area must be taken and a written description of the deterioration and location must be documented for inclusion into the report.

Visually inspect all substructure units for signs of settlement, lateral movement, cracking, spalling, exposed reinforcement and material defects. Note the condition of the backwalls, and check the bridge seat for undermining at bearing locations. For pier caps, check for flexural cracks and shear cracks.

(2) Note the type and condition of the bridge railing. Does the railing meet current standards? Is a thrie beam retrofit

necessary, or a railing replacement? If pedestrian fencing is present, note its condition. Guardrail on the approaches should also be evaluated. Note the condition of brush blocks, raised shoulders and sidewalks, and how these elements transition from the approaches.

(3) For reinforced concrete and prestressed concrete superstructures, visually inspect for shear or flexure cracking, exposed or broken prestressing strands, crushing of beam end in bearing areas, discoloration of concrete caused by corroding mild reinforcement or prestressing strands, high load hit damage and signs of previous repairs. Observe live loads crossing structure and note excessive deflections or working cracks. Inspect the concrete diaphragms for spalling or diagonal cracking from structure movement or excessive deflection, and any other concrete defects. Note the use of temporary supports, or if they may be needed for the structure to remain in service until proposed rehabilitation.

(4) For steel beam superstructures visually inspect for areas of section loss, heavily rusted areas or any web buckling due to excessive section loss. Note any areas that are prone to trapping drainage or debris. Note the condition of the paint system. Thickness readings shall be taken at each beam end that exhibits section loss using an ultra-sonic thickness gage. Preparation shall include removing all dirt, debris, and rust scale from the ends of each of the steel beams under the joints so that the steel can be inspected for section loss. Thickness readings on the web and the bottom flange are to be taken at the thinnest locations within 12 inches of the end of the beam. Do not remove paint on beam ends that exhibit no section loss. Mark the sheet as "No visible loss."

These thickness readings will be compared with the original thickness and the percentages of section loss will be calculated. This data will be tabulated in a specific format (as shown in Attachment No. 2, Steel beam section loss detail sheets) and sketches will be prepared of major components, showing the location of the deteriorated areas. Specifically, if beam end repairs are necessary, show the locations of beam ends in need of repair on the existing erection diagram from the as-built plans. This information will be presented in the Appendix of the scoping report. These documents are used by Lansing Bridge Design to prepare rehabilitation plans, and C & T Bridge Operations Unit to perform load rating analyses if requested.

Visually inspect the steel superstructure for any areas that may exhibit out of plane bending or distortion such as web to diaphragm or cross frame connections, lateral gusset plates to web connections, or connections of any other secondary members to beams. Note the existence of any fatigue prone details, or any welding in the tension zones that are transverse to the plane of stress. Inspect any pin and hanger assemblies for proper operation. Does the pin and hanger meet current standards? Note the condition of pin plates and if the ends are touching due to pin and hanger closure.

(5) In other areas of heavy flaking rust, the CONSULTANT will clean as necessary to measure for any section loss. Thickness readings will be taken at the thinnest locations and recorded.

(6) Note the condition of all bearing devices. For steel bearings such as rocker bearings or pedestal bearings, inspect for pack rust, rocker alignment, section loss and paint condition. For elastomeric bearings, check for excessive bulging of the sides (greater than 15% of bearing thickness), shear deformation due to thermal movement, splitting and tearing, and discoloration from exposure to light.

(7) For timber structures visually inspect for checks (separations of the wood fibers parallel to the grain direction) knots and splits which are natural defects that may provide openings for decay and begin to reduce the strength of the members. Inspect for fungus, insect damage or any other effects of nature. Inspect for in-service defects such as fire damage, vehicular collision, abrasion or mechanical wear, overload distress, excessive deflection of flexural members, weathering or warping and chemical damage. Perform a pick or penetration test at various locations, which involves lifting a small sliver of wood with a pick or pocket knife, and observing whether or not it splinters or breaks abruptly. Sound wood splinters, while decayed wood breaks abruptly. Inspect areas near the support to check for horizontal shear cracks along the grain of the member. Inspect bearing areas for crushing due to decay. Note the condition of fasteners and connections.

(8) The vertical clearance of the bridge must be field verified and noted in the executive summary and stated in the report. A picture of any vertical clearance sign attached to the bridge must be taken. See the MDOT Bridge Design Manual, Volume 5, Section 7.01.08 for minimum vertical clearance requirements. For structures not meeting minimum vertical underclearance criteria, raising the structure to meet current

standards must be considered in selecting the repair option. Any option including a deck replacement, superstructure replacement or bridge replacement must meet the minimum vertical underclearance requirement as it is very difficult to obtain a design exception. The cost of raising the grade of the bridge to obtain acceptable underclearance must take into account additional approach work.

(9) The width of the structure must be evaluated to determine whether it is functionally obsolete. If widening is necessary to upgrade the structure to current standards, or for maintaining traffic during construction, this must be stated in the report. Please refer to the MDOT Bridge Design Guides, Section 6.05 for acceptable bridge deck cross sections. This will include possible widening to meet current standards for radii. The CONSULTANT will describe how and where the widening is to take place and provide a plan view sketch showing the proposed widening. Specify if widening can be done within the deck overhang, or if additional beam lines and substructure width will be needed to accommodate the required deck cross section. Widening may also require additional approach work to transition between the roadway width and the new bridge width.

(10) The CONSULTANT must determine if part-width construction is possible or if the entire crossing must be closed and a detour used. Final detailed traffic control costs for construction will be determined by MDOT.

(11) Any work required for the approaches must be included in the report and these items accounted for on the Estimate Sheet.

(12) The CONSULTANT must prepare a formal letter informing the local government agency of the proposed work and to determine their future needs at each structure.

b. The area immediately around the structure must be closely evaluated to determine if there are any site issues or constraints that may have an impact during construction. Each quadrant of the structure is to be evaluated and photo-documented. These include items such as:

c.

(1) Businesses or driveways close to the approaches.
(2) Utilities attached to or near the bridge.
(3) Signs or sign brackets attached to the bridge. Specify if the connections are bolted or welded.
(4) MITS dynamic message boards.
(5) Poor alignment or geometrics.
(6) Approach and departure guardrail terminals or the presence of

impact attenuators.

(7) Bank erosion or scour. Unusual channel features.

(8) Railroad tracks that have been removed from over or under the bridge.

(9) Proximity of other bridge structures.

(10) Is drainage sufficient? Any evidence of ponding on the structure?

(11) Is Right-of-Way limited and might additional ROW or easements be required?

(12) ITS components, such as cameras, changeable message signs, conduit, and other ITS elements.

c. Additionally the following items are some of the items that, if apply, must be evaluated and costs considered:

(1) Is the bridge historical? (MDOT PM to provide information if applicable)

(2) Does this bridge have special structural design features which may affect the repair options such as lack of load path redundancy, fracture critical members, category E' allowable fatigue stress details, etc? (See AASHTO Standard Specification for Highway Bridges, 17th edition, Section 10.3, tables 10.3.1A, 10.3.1B and 10.3.1C for descriptions and illustrative examples.)

(3) Is the minimum vertical underclearance deficient?

(4) Is the structure functionally obsolete? Will widening be required as part of rehabilitation effort?

(5) If it is a turn-around structure, or has a turn around on it, do the radii meet current standards? Is widening of the bridge required to meet current radii standards?

(6) Are there environmental issues that may impact the project?

(7) If it is a pedestrian structure, do the geometrics meet current ADA criteria? If not, consider what repair options would be necessary to meet the minimum criteria set by the ADA.

(8) Are there sidewalks on the bridge? If so, do the geometrics meet current ADA standard? Are there sidewalk ramps within the limits of the bridge approach? If so, do the sidewalk ramps meet current ADA standard?

(9) Determine impacts of the proposed bridge treatment on the existing horizontal and vertical alignments, pavements, curb and gutter, drainage, right of way (ROW), etc. Every effort shall be made to minimize ROW impacts within the limits of the projects. In areas of potential ROW impacts, the Consultant shall 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) Review and document the final scope for conformance to 3R/4R Guidelines for non freeway jobs and 4R, AASHTO and Interstate Standards for freeway jobs. Documentation shall include existing condition, treatment as per design standards, and recommendation.

(11) Identify areas where bridge design standards cannot be met on the final proposed recommended treatment, give justification and documentation as to the reason, and prepare the design exception. The preparation of a Design Exception Request form for the recommended proposed treatment may be necessary to fulfill the Federal Highway Administration requirements for structures on National Highway System (NHS) routes.

(12) 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 will include location, existing type and condition, and the recommended treatment.

(13) Document and identify any possible utility conflicts and estimate the cost of relocation and/or adjustment.

(14) Document and identify locations of possible environmental issues which may impact the project, and estimate the cost of treatment.

(15) Develop Construction Zone Traffic Control Concepts in accordance with the Michigan Department of Transportation Mobility Policy. See Attachment 1.

(16) 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 MDOT.

If, during the site review, the CONSULTANT finds any structural condition that may cause the bridge to be load restricted (such as holes in beams, broken prestressing strands, etc.), or which may require other immediate action (such as lane closures or emergency repairs to holes in the deck, temporary supports, false decking due to spalled concrete, etc.), the CONSULTANT will notify the MDOT PM or DPM as soon as possible. The CONSULTANT will be provided with a list of contact information of key personnel within MDOT in the event that the MDOT PM or DPM is unavailable. The CONSULTANT will provide documentation of the condition (such as beam measurements, pictures taken, etc.) to MDOT as quickly as possible.

2. Scoping Checklist and Determining Repair Options

Completing the Scoping Checklist (provided by MDOT PM) and making an initial determination of the most appropriate repair option, based on the physical

condition of the bridge, economic considerations, and engineering judgment, is to be done in the field.

The types of repair options that are to be considered must be separated into two major work type categories: 1) Capital Preventive Maintenance and 2) Rehabilitation / Replacement.

Capital Preventive Maintenance (CPM)

a. Joint Replacement
b. Pin and Hanger Replacement
c. Complete Painting
d. Zone Painting
e. Shallow Concrete Overlay
f. Thin Epoxy Overlay
g. Deck patching, Healer Sealer
h. Scour Countermeasures
i. HMA Overlay
j. Substructure Patching

Rehabilitation / Replacement

a. Deep Concrete Overlay
b. Superstructure Repairs
c. Substructure Repair (Substructures with an NBI rating of 4 or less)
d. Substructure Replacement
e. Deck Replacement
f. Superstructure Replacement
g. Structure Replacement

The Bridge Deck Preservation Repair Matrix (Attachment No. 1) must be consulted for reasonable deck repair options based on the condition of the deck surface and underside. This is to be used as a guide, and shall not substitute for sound engineering judgment. See **ENGINEERING ANALYSIS** for more discussion about the option choices.

3. Photographs

Photo-documentation of the bridge and the surrounding areas must be included in the report. All of the pictures must be mounted on 8½" X 11" media and are to be captioned with a description of what the picture is intended to show. Each copy of the bridge report must have this series of pictures showing at least the following items and sequenced in the following order:

a. Elevation views of both sides of the bridge
b. Deck surface (entire deck surface to be photographed, including joints)
c. Railing, sidewalks, brush blocks, raised shoulders or any other feature of the deck surface
d. Approaches
e. Underside of deck (to sufficiently document condition)

f. Typical superstructure elements (beams, diaphragms, cross bracing, lateral bracing, bearings, pin and hangers, etc.)
g. Abutments, including wingwalls and slope protection
h. Piers showing all faces
i. Waterways / railroad tracks
j. Major deteriorated areas
k. Load posting signs
l. Vertical clearance signs
m. Signs or ITS attached to the bridge including connections
n. Utilities including connections
o. Quadrant photos, showing businesses or other items that could affect the cost of the construction, including ITS components
p. Quadrant photos, showing side slopes, downspouts or other items that could affect the cost of construction.

In addition, pictures must be taken which will support the CONSULTANT's repair recommendations. All pictures must be captioned to describe the general view (such as north elevation, etc.) and to describe the pertinent item or deterioration. The deck surface photos will be an "aerial view" taken from a height of at least 12 ft above the surface of the deck. These photos will be taken after the deck delamination survey and the areas of delamination are expected to show clearly in the photo.

4. Testing

During the site review phase, the CONSULTANT may determine that material testing is desirable to better understand the condition of the deck and therefore make a better judgment on the best repair option. Advance approval of the MDOT PM is required prior to initiating any testing.

If the CONSULTANT PM determines that material testing is needed, a testing proposal must be submitted to the MDOT PM or DPM for approval. The testing proposal will show the bridges for which testing is to be performed, what tests are to be performed, what specific information is to be gained from the testing, how this information is to be used, and the cost of testing and necessary traffic control. Proposals submitted with insufficient justification for testing will be denied. Where the deck is beyond saving, as judged by visual indications, or where the appropriate repair option is clearly indicated, material testing will not be performed.

The results and analysis of any testing that is approved and performed will be discussed in the Site Review Findings section of the report and the actual test reports will be included in the Appendix.

ENGINEERING ANALYSIS

The engineering analysis phase will include an evaluation of the site review findings, preparation of, and evaluation of a minimum of three repair strategies, including the preparation of cost estimates, the selection of the best repair option, and finally the determination of the appropriate work type category (R&R or CPM).

1. Rehabilitation/Replacement Work Category

For proposed R & R work proceed with the preparation of and evaluation of at least three repair strategies, including the estimate of cost of the repair strategies and the selection of the best repair option. This phase shall also consider the scope of road work and maintaining traffic concepts as outlined in the scope.

An initial repair option will have been determined during the site review in the field. The CONSULTANT is required to perform an engineering analysis of this option and on the options above and below it from the list in the section "Scoping Checklist and Final Posted Scope 4/1/09 Page 9 of 14 Determining the most appropriate Repair Options". For example, if deck replacement is determined to be the most appropriate repair option, a cost estimate shall be prepared for the overlay and superstructure replacement options.

For the superstructure replacement and bridge replacement options, the CONSULTANT will also analyze eliminating or correcting undesirable or deficient design characteristics (e.g., structural capacity, widening, etc.). Analysis of the load carrying capacity of some components of the bridge may be required.

2. Estimating Various Repair Options

Cost estimates for each of the Repair options will be prepared for each structure. A standard form Estimate Sheet with unit prices will be used (Provided by MDOT PM). The Estimate Sheet, on 8½" x 11" paper, provides spaces to show all of the repairs to be performed for that call for projects year. Calculations for the paint area will be prepared by the CONSULTANT and included in the Appendix of the report.

The estimates required are "early preliminary estimates" and not the more detailed "engineering estimates." The object is to determine the most economical method of treatment and to establish the budget. The more detailed estimates will be determined in the design phase (not a part of this authorization).

If additional information is necessary for a unit price not on the list, contact the MDOT PM.

3. Capital Preventive Maintenance Work Category

For proposed Capital Preventive Maintenance work proceed with the preparation of a cost estimate using the Cost Estimate Sheet. This phase shall also consider the scope of road work and maintaining traffic concepts as outlined in the scope. If additional information is necessary for a unit price not on the list, contact the MDOT PM.

REPORT

1. Rehabilitation / Replacement Work Category

The deliverables for a Rehabilitation/Replacement work category for this scope of work will be the reports, photographs, estimate sheets, field notes and scoping checklist. One electronic PDF file will be submitted for each bridge scope included in the work package list. This PDF file shall be the report in its entirety. In addition to the PDF file, the CONSULTANT shall submit the Microsoft Excel files for each

bridge.

For each bridge, a binder clip containing the scoping reports as described below will be submitted. The binder clip will contain all information pertaining to the site review findings and recommended repair options for each bridge. Two sets of each report will be submitted.

A summary sheet showing Bridge ID, bridge location, proposed work, and estimated cost per bridge shall serve as a cover sheet.

a. *Table of Contents:*
A table of contents will be provided for the complete document.

b. *General Site Review Procedures:*
This section will summarize the general procedures used during the site review. This information will include a table showing the site review dates for the bridge, equipment used, traffic control procedures, site review procedures, etc.

c. *Executive Summary:*
This is to include a statement of the recommended treatment for the bridge and the cost (in FY dollars as directed by the MDOT PM) of the initial repair. The executive summary will be a stand alone section and will not refer to other sections of the report, nor will the main text refer to information in the executive summary. The information to be included in the executive summary shall be as stated follows:

(1) Recommended repair option, and cost in 2016 dollars
(2) The general condition, and current NBI ratings for item 58A (deck surface), item 58 (deck), item 59 (superstructure), and item 60 (substructure) from the Bridge Safety Inspection Report.
(3) The percent deficiencies of the deck surface, deck underside and substructure units. State if recommended repair option is consistent with the Bridge Deck Preservation Repair Matrix and justification as to why or why not.
(4) Eligibility for FHWA funding and current sufficiency rating. State whether structure is on or off the National Highway System (MDOT PM to provide this information).
(5) The measured existing vertical underclearance, and any utilities on the structure. State the Region or TSC contact personnel for utility and maintenance of traffic issues (MDOT PM to provide this information).

d. *Field Site Review Findings:*
This section will include, as a minimum, discussion of the following areas:
(1) Overall assessment of the condition of the bridge including an evaluation of the beam end thicknesses (webs and bottom

flanges) taken during the site review. Reference to current NBI ratings for items 58A, 58, 59, & 60. State percent deck surface and underside deficiencies.Sketches of beam end repair areas, all substructure elements showing repair areas for all faces, and typical deck sections for widening options.

(2) Site issues, i.e., geometrics, vertical clearance, maintenance of traffic, utilities, scour, etc. In case of the situation where no site issues that would impact the rehabilitation of the structure were identified, a statement will be made that all areas were investigated and no issues were found.

(3) Testing results and implications to the repair options. If no testing was performed, this will be stated in the report.

(4) The following outline may be used for a consistent presentation format for the body of this section of the report:

(a) Approaches (approach slab and sleeper slab if applicable, guardrails)
(b) Deck (surface, underside, joints, sidewalk, brush block, bridge railing)
(c) Superstructure (beams, diaphragms, cross frames, paint system, bearings, pin and hangar)
(d) Substructure (abutments, backwalls, wingwalls, piers, slope protection, scour)
(e) Site Issues
  i) Maintaining Traffic
  ii) Geometrics
  iii) Vertical Clearance
  iv) Signs
  v) Quadrants
  vi) ADA/Standards Compliance, etc.
  vii) Utilities
  viii) Channel condition
  ix) ITS Components
(f) Material Testing

e. *Rehabilitation Options:*
This section will include a discussion of the rehabilitation options considered. For each option evaluated, a discussion of the necessary improvements and the associated costs will be included. The report must discuss and state the reasoning and judgment for selection of the recommended option. This discussion will also include the reasoning for the elimination of all other options, as appropriate.

f. *Summary with Repair Recommendation:*
This section will state the recommended course of action for the bridge and the factors used in determining this recommendation. This section will also briefly discuss the effects of postponing the recommended improvements.

g. *Maintaining Traffic / Mobility Summary*
This section shall include an analysis of the traffic control plan in accordance with the Michigan Department of Transportation's Mobility Policy. Various traffic control alternatives shall be evaluated.

h. *Cost Estimate Sheets*
A cost estimate must be prepared for each repair option that was considered. The cost estimate sheet can be found in the appendix, attachment number 5.

i. *Appendix:*
Index sheet with Photo Titles
Word document with photos and descriptions
Scoping Checklist(s)
Field notes and sketches
Paint calculations – Paint Areas, Deck Areas, etc.
Table of beam end thickness readings (if applicable)
Lab test reports (if applicable)
Road preliminary estimate (separate spreadsheet)
Existing plan sheets (general plan of site and general plan of structure)
Current bridge inspection reports

2. Capital Preventive Maintenance Work Category

The deliverables for CPM reports will be similar to that for R&R, with two main exceptions. The Summary with Repair Recommendations section will only include brief discussion and listing of the repairs being recommended. Discussion on other repair recommendations, comparing and contrasting the logical alternatives, will not be needed. Once agreed upon by the MDOT PM as a CPM category bridge, the repairs will be less involved, such as listed on Page 10, and will not require the additional analysis. The second difference will be reflected in the Cost Estimates. There will only be need for one estimate.

a. Formatting for the reports, including Table of Contents, executive summary sheet, scoping checklist, a discussion of the component conditions as described above under Field Review Findings, an MOT/Mobility Summary, Cost Estimate Sheets, and Appendix materials will follow as prescribed for the R&R reports. One electronic PDF file will be submitted for each bridge scope included in the work package list. This PDF file shall be the report in its entirety. In addition to the PDF file, the CONSULTANT shall submit the Microsoft Excel files for each bridge. The package shall be submitted in a binder clip. Two sets of each binder clip will be submitted.

Incomplete final reports or reports with errors will be returned to the Consultant for revision. Failure to make the required changes will be considered a failure to meet the terms of the scope of work.

TRAFFIC CONTROL

A. TRAFFIC CONTROL & PERMITS DURING SITE REVIEW

The traffic control during the site review will be the responsibility of the CONSULTANT. Permits for the traffic control and for working in the MDOT right-of-way must be obtained from the MDOT TSC in which county the bridges are located, prior the start of work. On the permit application, please indicate the Control Section and Job Number. Allow ample time for permit issuance. The CONSULTANT must follow all requirements as issued with the Permit from the MDOT TSC. Nighttime lane closures for deck inspection may be allowed at the discretion of the MDOT PM. Approval for nighttime work must be obtained prior to the start of work.

B. RAILROAD FLAGGING & PERMITS

If it is necessary to work over an active railroad during the site review phase, the CONSULTANT will be responsible for obtaining the necessary permits and flagmen. Costs for this will be considered an expense and must be detailed in the traffic control section in the proposal and on the invoice.

GENERAL

A. SOFTWARE REQUIREMENTS

The CONSULTANT is required to own and use Microsoft Excel version 2002 or later for all spreadsheets, Microsoft Word version 2002 or later for word processing, and Adobe Acrobat for pdf files. The requested electronic files (see Section 1, **REPORT**) must be submitted in these applications. Electronic file templates for all of the attachments can be provided via E-mail, from the MDOT website. Contact the MDOT PM with a request a Compact Disc.

B. EQUIPMENT AND SAFETY

The CONSULTANT will be responsible for obtaining and operating the high reach equipment for inspection under the bridge. However, MDOT will provide an under bridge inspection crane for the CONSULTANT's use in certain situations, for example, high river and railroad crossings. The CONSULTANT will still be responsible for traffic control and for scheduling. Contact the MDOT PM or DPM a minimum of 14 days in advance for scheduling use of the equipment.

During the inspection, the CONSULTANT is responsible for traffic control and all aspects of personal safety of his or her staff. Traffic control will follow standard MDOT procedures. The CONSULTANT will be responsible for obtaining all permits and notifying the Region Engineer in writing (with a copy to the MDOT PM) of the time and location of the work.

All other inspection equipment and personal safety equipment such as hard hat, steel toed shoes, reflective vest, and eye protection will be responsibility of the CONSULTANT.

C. OTHER

No diving of river crossings is expected as part of this work. However, if it does become necessary, it will be dealt with under a separate authorization.

APPENDICES

Attachment A Work Package Listing

Attachment No. 1. Construction Zone Traffic Control Concept

Attachment No. 2. Detailed Beam Survey Report

Attachment No. 3. Bridge Scoping Checklist

Attachment No. 4. Structure Clearance Measurement Form

Attachment No. 5. Estimate Sheet

CONSULTANT PAYMENT: Milestone

Payment to the CONSULTANT will be Milestone Payments.

Milestone Payments Schedule:

All field work is complete on all structures	**30%**
Draft report review is complete	**35%**
Final deliverables complete and accepted	**35%**
Total	**100%**

Compensation for this project shall be on a **milestone** basis. Compensation shall be divided into payments for the completion of a portion of the services (deliverables).

The MDOT Project Manager may authorize payment if a milestone is delayed due to circumstances beyond the Consultant's control.

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.

Attachment A

Work Package 1 - JN 111466

	STRUCTURE		Facility Carried	Feature Intersection
1	R10	82022	VINING ROAD	NORFOLK & WESTERN RR
2	S02	82022	I-94 EB	WAYNE RD
3	S03	82022	I-94 WB	WAYNE RD
4	S04-3	82022	I-94 EB	MERRIMAN RD
5	S04-4	82022	I-94 WB	MERRIMAN RD
6	S05	82022	I-94 EB	MIDDLEBELT RD
7	S06	82022	I-94 WB	MIDDLEBELT RD
8	S07	82022	I-94 EB	INKSTER RD
9	S08	82022	I-94 WB	INKSTER RD
10	S09	82022	I-94 EB	ECORSE RD
11	S10	82022	I-94 WB	ECORSE RD
12	S11	82022	I-94 EB	BEECH-DALY RD
13	S12	82022	I-94 WB	BEECH-DALY RD
14	S35	82022	RAMP TO US-12	I-94
15	S36	82022	WYOMING AVENUE	I-94
16	S37	82022	OZGA RD	I-94
17	S52	82022	RAMP H TO SB MERRI	N BD MERRIMAN ROAD
18	S56	82022	VINING RD.	I-94 INTERCHANGE

Attachment A

Work Package 2 - JN 111467

	STRUCTURE		Facility Carried	Feature Intersection
1	**B01**	**82191**	I-75 SB	BLAKELY DRAIN
2	**B02**	**82191**	I-75 NB	BLAKELY DRAIN
3	**S12**	**82191**	PENNSYLVANIA RD	I-75
4	**S13**	**82191**	I-75 SB	US-24 CONN
5	**S14-1**	**82191**	I-75 NB	EUREKA RD
6	**S14-2**	**82191**	I-75 SB	EUREKA RD
7	**S16-1**	**82191**	I-75 NB	ALLEN RD
8	**S16-2**	**82191**	I-75 SB	ALLEN RD
9	**S17-1**	**82191**	I-75 NB	NORTH LINE RD
10	**S17-2**	**82191**	I-75 SB	NORTH LINE RD
11	**S09**	**82195**	M-10 SB TO EB RAMP	I-75 & RAMP TO SB
12	**S11-1**	**82195**	I-75 E-N RAMP	M-10
13	**S11-2**	**82195**	M-10S TO I-75E RMP	M-10
14	**S12**	**82195**	I-75 NB	M-10
15	**S13**	**82195**	I-75 SB	M-10
16	**S15**	**82195**	M-10N TO I-75S RMP	M-10
17	**S16**	**82195**	I-75 W S RAMP	M-10
18	**S17**	**82195**	I-75 SB ENT RMP	I-75 NB ENT RAMP

Attachment A

Work Package 3 - JN 111468, 111601

	STRUCTURE		Facility Carried	Feature Intersection
1	S10	82252	M-102 (8 MI RD)	I-75
2	S10-7	82252	M-102 EB SERV RD	I-75
3	S10-8	82252	M-102 WB SERV RD	I-75
4	S04-1	63192	M-5 N.BD. MAINLINE	12 MILE RD
5	S04-2	63192	M-5 S.BD. MAINLINE	12 MILE ROAD
6	S04-5	63192	M-5 NB COLL-DIS	12 MILE RD
7	S04-6	63192	M-5 S.BD. COLL-DIS	12 MILE RD
8	S01	63192	I-96 EB, RAMP J	M-5/I-96/I-696
9	S02	63192	M-5	I-96/I-696
10	P03	82123	CHERRYLAWN PED X-O	I-96
11	P04	82123	CLARENDON AV WALKO	I-96
12	P05	82123	IVANHOE AVE WALKOV	I-96
13	P06	82123	ROOSEVELT STREET WALKOV	I-96
14	S11	82123	I-96 RAMP OVER LAND	I-96
15	S11-5	82123	I-96 RAMP OVER WB SERVICE ROAD	I-96 WB SERVICE ROAD
16	S12	82123	HUBBELL AVENUE	I-96
17	S13	82123	FULLERTON AVENUE	I-96
18	S29	82123	WEST CHICAGO AVENUE	I-96

Attachment A

Work Package 4 - JN 111469

	STRUCTURE		Facility Carried	Feature Intersection
1	R01-5	63172	NB JOSLYN TO I-75	GTW RR
2	S01-1	63172	I-75 NB	M-59
3	S01-2	63172	I-75 SB	M-59
4	S03-3	63172	UNIVERSITY DR (EB)	I-75
5	S03-4	63172	UNIVERSITY DR (WB)	I-75
6	S06-1	63172	I-75 NB	I-75 BL & M-24
7	S06-2	63172	I-75 SB	M-24 & I-75 BL
8	S07-3	63172	M-24 CONN EB	I-75
9	S07-4	63172	M-24 CONN WB	I-75
10	S13	63172	WALDON RD	I-75
11	S14	63172	SASHABAW RD	I-75
12	B01	63173	I-75	DEERLAKE CREEK
13	S01	63173	HOLCOMB ROAD	I-75
14	S02	63173	M-24	I-75 SB
15	S03	63173	I-75 NB	M-24
16	S04	63173	DAVISBURG ROAD	I-75
17	S05	63173	RATTALEE LAKE ROAD	I-75
18	S07	63173	HOLLY ROAD	I-75
19	S08	63173	LAHRING ROAD	I-75
20	S09	63173	BELFORD ROAD	I-75

DEVELOP THE CONSTRUCTION ZONE TRAFFIC CONTROL CONCEPTS

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. Review the traffic data and the project site to determine project specific construction zone traffic requirements. Requirements shall be consistent with the MDOT Work Zone Safety and Mobility Policy. Any necessary or recommended exceptions shall be clearly identified.

C. Prepare preliminary recommendations for maintaining traffic. Items that should be considered for inclusion in the recommendations are:
   I. Method for maintaining traffic.
   ii. Need for detour, staging, and flagging operation.
   iii. Need for temporary widening or shoulder upgrading.
   iv. Time constraints and lane requirements.
   v. Local considerations (school buses, emergency vehicles, large traffic generators, etc.).
   vi. Need for temporary traffic signals (a minimum of two signal heads in view at all times).
   vii. Construction zone speed limits.
   viii. Special events (parades, festivals, etc.).
   ix. Recommendations for expedited construction due to critical target dates

D. Submit the recommendations with the Draft Scoping Package.

E. Receive any items returned by the Project Manager as incomplete or deficient and make the necessary revisions.

F. Submit the recommendations with the Final Scoping Package.

Statewide Scoping Package Master Checklist
BRIDGE

Current Date: 3/23/09

Total Project Cost: $0

(Refer to Chapter 7 of the Scoping Manual for Details)

I. Job and Scoping Package Information (**Major Only** - see page 2 for additional information)

Job Number: _____ **Route:** _____ **Structure ID:** _____
Control Section: _____ **CS BMP:** _____ **PR # BMP:** _____
PR Number: _____ **CS EMP:** _____ **PR # EMP:** _____
Template: _____ **Length:** _____ **Length:** _____

Featured Intersection: _____ **Route Over:** _____

Preliminary Engineering (PE) Cost: _____ **Construction Cost:** _____
Right-of-Way Cost: _____ **Construction Engineering (CE) Cost:** _____ %

Current Year RSL: _____ Value _____ Year **Construction Year RSL:** _____ **Prop Fix Life:** _____ Yrs
NBI Rating: _____ **Sufficiency Rating:** _____
Location: _____
Proposed Fix: _____

Scoped By: _____ **Date:** _____
TSC QC By: _____ **Date:** _____
Region QA By: _____ **Date:** _____

Job Number:

Bridge Scoping

II. Project Scoping Document Package

Details / Checklist	Included in Package?	
Statewide Scoping Package Master Checklist - Bridge	☐ Yes	
Bridge Scoping Report & Details Worksheet	☐ Yes	
MPINS Project Concept Statement	☐ Yes	
Program Revision Request (Form 2604)	☐ Yes	
Culvert Scope Inspection Form (for applicable templates)	☐ Yes	☐ NA
Constructability Checklist	☐ Yes	

By Template, if checkbox appears, item is required (unless otherwise noted).

	R&R	T&S	CPM	Bridge Rplc	Bridge Rehab	Bridge CPM	Bridge CSM	Other	NA
Engineer's Estimate									
Trns*port (Itemized Estimate Report & Project Concept Estimate Report)	☐	☐	☐	☐	☐	☐	☐	☐	
Hand Calculations & Assumptions	☐	☐	☐	☐	☐	☐	☐	☐	☐
Traffic									
Preliminary MOT Concept	☐	☐		☐	☐	☐	☐	☐	
Mobility Analysis	☐	☐	☐	☐	☐	☐	☐	☐	
Traffic Analysis & Safety Review	☐	☐	☐	☐	☐	☐	☐	☐	
Geometric Summary Review (Reviewed and/or addressed per the 3R/4R Guidelines)	☐	☐		☐	☐	☐	☐	☐	☐
Proposed Pavement Recommendations (if applicable)	☐	☐	☐						☐
Soils Information and Recommendations (If applicable, From Region Soils Engineer)	☐	☐		☐	☐	☐	☐		☐
General Items & Information									
As-Builts/Old Plans	☐	☐	☐					☐	☐
Current Sufficiency Report	☐	☐	☐	☐	☐	☐	☐	☐	☐
Condition Reports for Existing Sewers (if applicable)	☐	☐		☐	☐	☐	☐	☐	☐
Condition Reports for Existing Culverts (if applicable)	☐	☐		☐	☐	☐	☐	☐	☐

Statewide Scoping Package Master Checklist - Continued

Job Number:

Bridge Scoping

	R&R	T&S	CPM	Bridge Rplc	Bridge Rehab	Bridge CPM	Bridge CSM	Other	NA
Maintenance Log Sheets	☐	☐	☐	☐	☐	☐	☐		☐
Pavement Historical Database (PHD) Data (if applicable)	☐	☐	☐					☐	☐
ROW Sheets with Impacts Highlighted	☐	☐	☐	☐	☐	☐	☐	☐	☐
http://www.mdot.state.mi.us/rowfiles/index.cfm									
Existing Utility Information	☐	☐	☐	☐	☐	☐	☐	☐	☐
Field Review Notes	☐	☐	☐	☐	☐	☐	☐	☐	☐
Supporting Photos (Road Approach)	☐			☐	☐	☐	☐		☐
Previous Call For Projects Information	☐	☐	☐	☐	☐	☐	☐	☐	☐
Correspondance	☐	☐	☐	☐	☐	☐	☐	☐	☐
Additional Information Resulting From the Worksheet	☐	☐	☐	☐	☐	☐	☐	☐	☐
Bridge Scoping Report									
Executive Summary				☐	☐	☐	☐		☐
Field Site Review				☐	☐	☐	☐		☐
Rehabilitation Options				☐	☐	☐	☐		☐
Summary of Repair Recommendation				☐	☐	☐	☐		☐
Maintaining Traffic/Mobility Summary				☐	☐	☐	☐		☐
Appendix:									
Photos				☐	☐	☐	☐		☐
Bridge Rehabilitation Scoping Checklist (Form 1891)				☐	☐	☐	☐		☐
Estimate Sheets for Each Option				☐	☐	☐	☐		☐
Field Notes & Sketches				☐	☐	☐	☐		☐
Existing Plan Sheets (General Plan of Site & General Plan of Structure)				☐	☐	☐	☐		☐
Current Bridge Inspection Reports:									
Bridge Safety Inspection Form (Form 2502)				☐	☐	☐	☐		☐
Bridge Analysis Report (Form 231)				☐	☐	☐	☐		☐
Detail Beam Survey Report (Form 267) (If available/applicable)				☐	☐	☐	☐		☐
Bridge Underclearance Measurements (Form 1190)				☐	☐	☐	☐		☐
Diver Inspection Report (If available/applicable)				☐	☐	☐	☐		☐

III. General Items and Background Information

Has the project been added to ProjectWise? ☐ Yes

Is the project to be packaged with other projects? ☐ Yes ☐ No

List potential package job numbers & templates.	

Project Van Tour Notes or Other Project Constraints

Additional CS, PR, Direction and Etc Information (other than the major listed on page 1)

BRIDGE SCOPING REPORT & DETAILS WORKSHEET

(Refer to Chapter 7 of the Scoping Manual for Details)

I. Job and Scoping Package Information (Major Only)

Job Number:		**Route:**		**Structure ID:**	
Control Section:		**CS BMP:**		**PR # BMP:**	
PR Number:		**CS EMP:**		**PR # EMP:**	
Template:		**Length:**		**Length:**	

Featured Intersection: **Route Over:**

Location:

Proposed Fix:

Scoped By:		**Date:**	
TSC QC By:		**Date:**	
Region QA By:		**Date:**	

II. Executive Summary

III. Typical Cross Sections

Existing Typical: (Bridge/Road Approach)

Proposed Typical: (Bridge/Road Approach)

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

Job Number:

Bridge Scoping

IV. Existing Conditions (Typical)

A. Existing Structure Features and Ratings

Structure Type: _____ No. of Spans: _____

Structure Length: _____ ft Reference A Width: _____ ft Deck Area: _____ sft

Skew Angle: _____ degrees Reference B Width: _____ ft Measure: _____

Bridge Rail Type: _____ Bridge Rail Condition _____

Are any of the bridge elements considered historic? ☐ Yes ☐ No If yes, which one? _____

Is there existing pedestrian fencing? ☐ Yes ☐ No

Is there an existing HMA overlay? ☐ Yes ☐ No If yes, HMA thickness? _____ in

Existing beam type? _____

Condition Ratings:

NBI Rating: _____ Sufficiency Rating: _____

#58 Deck: _____ #58A Deck Surface: _____ #58B Deck Bottom Surface: _____

#59 Superstructure: _____ #59A Paint _____ #60 Substructure: _____

Section Loss _____ Joint Condition _____

Is there evidence of scour? ☐ Yes ☐ No If yes, what elements? _____

Is the structure scour critical? ☐ Yes ☐ No If yes, # 113 scour rating? _____

Is the structure fracture critical? ☐ Yes ☐ No

Is the structure considered structurally deficient? ☐ Yes ☐ No

Is the structure considered functionally obsolete? ☐ Yes ☐ No If yes, what elements? _____

Are there any temporary supports? ☐ Yes ☐ No

How many temporary supports are in place? _____

What is the condition of the existing temporary supports? _____

B. Existing Approach - Mainline:

Type: HMA ☐ Concrete ☐ Composite ☐

Number of Lanes: _____ Lane Widths: _____ ft Posted Speed: _____ mph Design Speed: _____ mph

Approach Pavement: _____ in Agg Base: _____ in Subbase: _____ in

Mainline Pavement Depths: _____ in Agg Base: _____ in Subbase: _____ in

C. Existing Approach - Shoulder:

Type: HMA ☐ Concrete ☐ Composite ☐ Aggregate (Only) ☐

Widths:

Left Shoulder		Right Shoulder	
Paved Width:	_____ ft	Paved Width:	_____ ft
Total Width:	_____ ft	Total Width :	_____ ft

Shoulder Pavement: _____ in Agg Base: _____ in Subbase: _____ in

Shoulder Pavement Depths: _____ in Agg Base: _____ in Subbase: _____ in

Are there existing sleeper slabs? ☐ Yes ☐ No ☐ Unknown

Is there a wide-flanged beam terminal joint? ☐ Yes ☐ No ☐ Unknown

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

D. Existing Ramps on the structure:

☐ Yes ☐ No

Full Accel/Decel Lanes Present on the Structure? ☐ Yes ☐ No Length: _____ ft

Lane Tapers Present on the Structure? ☐ Yes ☐ No

Other notes on existing ramps:

E. Existing Photos: (If applicable per proposed Scope)

Elevation views (both sides of bridge)	☐ Included	☐ NA
Deck surface, joints and railing	☐ Included	☐ NA
Approaches	☐ Included	☐ NA
Underside of Deck	☐ Included	☐ NA
Superstructure Elements (beams, bearings, pin & hanger and etc)	☐ Included	☐ NA
Substructure Abutments (including slope protection) and piers	☐ Included	☐ NA
Waterways/Railroad tracks	☐ Included	☐ NA
Major deterioration areas	☐ Included	☐ NA
Signs (vertical clearance signs, load posting signs or etc)	☐ Included	☐ NA
Utilities	☐ Included	☐ NA
Quadrant photos	☐ Included	☐ NA

F. Existing Geometrics:

Existing Bridge Cross Slope? Lanes _____ % Shoulders _____ %

Parabolic Cross Slope?	☐ Yes	☐ No	☐ NA
Is the structure superelevated?	☐ Yes	☐ No	
Superelevations meet Standard?	☐ Yes	☐ No	
Is the structure curved?	☐ Yes	☐ No	
Horizontal Curve(s) meet Standard?	☐ Yes	☐ No	
Vertical Curve(s) meet Standard?	☐ Yes	☐ No	

Other notes on geometrics, existing super rates:

G. Existing Drainage:

1. Culvert Information

Existing Culverts that require work? (If no, skip to next section) ☐ Yes ☐ No

If project has culverts 36" in diameter to less than 10' in width that require work, include Culvert Inspection Forms for each culvert (if applicable with project template, work type and scope).

Total Number of culverts that require work? _____ ea

Existing Box Culverts? ☐ Yes ☐ No Max Size: _____ ft x ft Condition: _____

If project has box culverts greater than 10 feet in width, contact the Region Bridge Engineer for culvert inspection forms (if applicable with project template, work type and scope).

If yes, does box culvert have barrier or guardrail protection? ☐ Yes ☐ No

Does box culvert protection meet current standards? ☐ Yes ☐ No

Have the Culverts been extended in the past? ☐ Yes ☐ No ☐ Unknown

If yes, was the extension of like size/material? ☐ Yes ☐ No

List culverts requiring work below (one per line, ie: 3 - 12" - round - conc -end sections)

# of culverts	Ex Size	Shape	Ex Material	End Treatment	Feature Requiring Modification*	End Sections within Clear Zone?
						☐ Yes ☐ No
						☐ Yes ☐ No
						☐ Yes ☐ No
						☐ Yes ☐ No
						☐ Yes ☐ No
						☐ Yes ☐ No
						☐ Yes ☐ No
						☐ Yes ☐ No

*Features include: culvert, end sections, headwall, length, size, etc.

2. Ditch Information

Existing Ditches? (If no, skip to next section) ☐ Yes ☐ No

What is the condition of the existing ditch system? _____

Is the ditch bottom deteriorating, eroding or shifting location? ☐ Yes ☐ No

Is there sediment build up in the ditches? ☐ Yes ☐ No

Are the ditch slopes stable? ☐ Yes ☐ No

Is there evidence of water overtopping the ditch? ☐ Yes ☐ No

Are there any obstructions downstream? ☐ Yes ☐ No ☐ Unknown

Any evidence or data showing downstream capacity may be inadequate? ☐ Yes ☐ No ☐ Unknown

Is the Right-of-Way (or drainage easement) to an acceptible outlet? ☐ Yes ☐ No ☐ Unknown

(If no, contact your supervisor for further action)

Does the culvert align with the ditch?

Vertically align? ☐ Yes ☐ No

Horizontally align? ☐ Yes ☐ No

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

3. Storm Sewer Information

Existing Storm Sewer? (If no, skip to next section) ☐ Yes ☐ No

What material is the storm sewer?

What is the approximate age of the sewer? ____ yrs

Is there recent video inspection information available? ☐ Yes ☐ No

What is the condition of the existing storm sewer?

Cracking?	☐ Yes	☐ No	☐ Unknown
Spalling?	☐ Yes	☐ No	☐ Unknown
Corrosion?	☐ Yes	☐ No	☐ Unknown
Are there any joint gaps or open seams?	☐ Yes	☐ No	☐ Unknown
Is there exposed steel?	☐ Yes	☐ No	☐ Unknown
Is there any sewer deformation or buckling?	☐ Yes	☐ No	☐ Unknown
Any water or sediment seeping in through cracks in the sewer?	☐ Yes	☐ No	☐ Unknown

Existing acceptible drainage outlets? ☐ Yes ☐ No Name of water body outleting into:

Manhole/Inlet Information

What material are the structures?

What is the average condition of the structures?

Cracking?	☐ Yes	☐ No	☐ Unknown
Spalling?	☐ Yes	☐ No	☐ Unknown
Corrosion?	☐ Yes	☐ No	☐ Unknown
Are there any joint gaps or open seams?	☐ Yes	☐ No	☐ Unknown
Is there exposed steel?	☐ Yes	☐ No	☐ Unknown
Any water or sediment seeping in through cracks in the structures?	☐ Yes	☐ No	☐ Unknown

What is the average condition of the grates/covers?

4. Channel Information (River, Stream, Creeks and Tributaries)

Existing River, Stream, Creek and Tributary? (If no, skip to next section) ☐ Yes ☐ No

Existing Federally Regulated Waterway (Navigable Waterway)? ☐ Yes ☐ No

ie: Includes the rivers, streams, creeks, tributaries and wetlands that are connected to navigable waterways and are contiguous to the Great Lakes. These segments are typically under the jurisdiction of the Army Corps of Engineers and the US Coast Guard.

Existing cold water trout stream? ☐ Yes ☐ No

Obstructions in the channel? ☐ Yes ☐ No

Are there stream side inlets? ☐ Yes ☐ No Condition:

Is there any sheet piling? ☐ Yes ☐ No Is it constricting the stream? ☐ Yes ☐ No

Check upstream and downstream culvert sizes compared to MDOT's culvert.

Upstream culvert is: MDOT's. Upstream Size:

Downstream culvert is: MDOT's. Downstream Size:

Channel bank stability:

Does the bridge/culvert align with the stream channel?

Vertically align? ☐ Yes ☐ No

Horizontally align? ☐ Yes ☐ No

Does the bridge/culvert span the existing channel? ☐ Yes ☐ No

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

5. General Existing Drainage Information

Existing Underdrains? ☐ Yes ☐ No Max Size: ____ in Type: ____

Existing Spillways/Downspouts? ☐ Yes ☐ No

Existing Detention Basins? ☐ Yes ☐ No Condition: ____

Existing Retention Basins? ☐ Yes ☐ No Condition: ____

Existing Pump Stations? ☐ Yes ☐ No

Existing County Drains? ☐ Yes ☐ No *(If yes, list Sta and drain name in text box below.)*

Flooding History? ☐ Yes ☐ No

Settlement areas near existing drainage features? ☐ Yes ☐ No

Are any of the existing drainage areas greater than 2 square miles? ☐ Yes ☐ No ☐ Unknown

Is the structure influenced by a dam either upstream or downstream? ☐ Yes ☐ No ____

Is there an existing stream guage in the vicinity? ☐ Yes ☐ No ☐ Unknown

Other general notes on existing drainage or drainage related issues:

H. Existing Guardrail or Concrete/Cable Median Barrier: (attached to bridge rail)

Existing Guardrail? ☐ Yes ☐ No Type: ____ Length: ____ ft Condition: ____

Existing Guardrail Retrofit? ☐ Yes ☐ No Type: ____ Length: ____ ft

Existing Guardrail Anchorage? ☐ Yes ☐ No Type: ____ (choose or enter text)

Existing Median Barrier? ☐ Yes ☐ No Type: ____ Length: ____ ft Condition: ____

Existing Glare Screen? ☐ Yes ☐ No Length: ____ ft Condition: ____

Existing Attenuators? ☐ Yes ☐ No Number: ____

I. Existing Utilities: (on the structure)

Existing Private Utilities? ☐ Yes ☐ No

Existing Public Utilities? ☐ Yes ☐ No

Existing Water Mains? ☐ Yes ☐ No Condition: ____

USGS Stream Gauging Station? ☐ Yes ☐ No

Existing Asbestos? ☐ Yes ☐ No

List Utility Type & Info:

J. Existing Signals: (on the structure)

Existing Signals? ☐ Yes ☐ No

Existing Flashers? ☐ Yes ☐ No

Existing Ped Signals? ☐ Yes ☐ No

Existing Ped Push Buttons? ☐ Yes ☐ No

Existing Traffic Loops? ☐ Yes ☐ No ☐ Unknown

Number of Intersections: ____

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

K. Existing Sidewalk or Non-Motorized Facility: (on the structure)

Existing sidewalk? ☐ Yes ☐ No Width: ____ ft Barrier separated?: ☐ Yes ☐ No

Sidewalk location ____

Existing non-motorized? ☐ Yes ☐ No Width: ____ ft Barrier separated?: ☐ Yes ☐ No

Existing sidewalk ramps? ☐ Yes ☐ No Number of ramps: ____ Condition: ____

Are ramps ADA compliant? ☐ Yes ☐ No Number of non-compliant ramps: ____

L. Existing General Conditions: (some items below will require photos - see manual)

Existing truss or cantilever signs attached?	☐ Yes	☐ No	Number: ____
Are the sign mounts welded to the structure?	☐ Yes	☐ No	
Are the sign mounts bolted to the structure?	☐ Yes	☐ No	
Existing raised pavement markers?	☐ Yes	☐ No	
Existing right turn lanes?	☐ Yes	☐ No	Number: ____
Existing left turn lanes?	☐ Yes	☐ No	Number: ____
Existing ROW fence on or near the approaches?	☐ Yes	☐ No	Condition: ____
Existing railroad crossings?	☐ Yes	☐ No	Type: ____
Existing freeway lighting attached?	☐ Yes	☐ No	
Existing ITS facilities attached?	☐ Yes	☐ No	
Existing erosion issues?	☐ Yes	☐ No	
Existing slope stability issues?	☐ Yes	☐ No	
Existing settlement areas?	☐ Yes	☐ No	
Existing maintenance issues/concerns?	☐ Yes	☐ No	
Existing airport in the vicinity?	☐ Yes	☐ No	
Is this a Corridor of Significance?	☐ Yes	☐ No	Type: ____
Is there an Access Management Plan for the project area?	☐ Yes	☐ No	
Is there an EA or EIS Study for the project area?	☐ Yes	☐ No	

M. Other General Notes on Existing Conditions:

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

V. Proposed Structure Work

Type:

A. Proposed New Structure

Total Bridge Replacement? ☐ Yes ☐ No Number of Spans:

Structure Length: ft Structure Width: ft Deck Area: sft

Skew: degrees Measure:

B. Proposed Superstructure and/or Deck Rehabilitation

Superstructure replacement?	☐ Yes	☐ No		
Widen Deck?	☐ Yes	☐ No		
Length: ft On existing substructure				
Length: ft Extension of substructure				
Replace Deck?	☐ Yes	☐ No		
Concrete deck patching?	☐ Yes	☐ No		
Patch isolated spalls?	☐ Yes	☐ No		
HMA overlay without waterproofing membrane?	☐ Yes	☐ No		
HMA overlay with waterproofing membrane?	☐ Yes	☐ No		
Epoxy overlay?	☐ Yes	☐ No		
Concrete overlay?	☐ Yes	☐ No		
Replace joints?	☐ Yes	☐ No	Type:	
Bridge railing work?	☐ Yes	☐ No	Length: ft	
Beam end repairs?	☐ Yes	☐ No	Material:	
Structural steel repairs?	☐ Yes	☐ No		
Structure painting?	☐ Yes	☐ No	Type:	Location:
Pin & hanger replacement?	☐ Yes	☐ No	All? ☐ Yes ☐ No	Number: ea

If selected number list quantity and location:

Reinforcing plates and/or angles?	☐ Yes	☐ No		
Bearing replacement?	☐ Yes	☐ No	Number:	ea
Rocker re-alignment?	☐ Yes	☐ No	Number:	ea
Deck Drain Extensions?	☐ Yes	☐ No	Number:	ea

Other fix or notes on superstructure and/or deck rehabilitation:

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

D. Proposed Substructure Rehabilitation

Concrete spall patching? ☐ Yes ☐ No Abutment area: _____ sft Pier area: _____ sft

Pier replacement? ☐ Yes ☐ No _____

Temporary supports? ☐ Yes ☐ No

Other fix or notes on substructure rehabilitation:

E. Proposed Miscellaneous Rehabilitation

Scour analysis required? ☐ Yes ☐ No

Scour Erosion/erosion repairs (add notes below)? ☐ Yes ☐ No

Scour countermeasures? ☐ Yes ☐ No

Replace approach pavement? ☐ Yes ☐ No Length: _____

Repair slope protection? ☐ Yes ☐ No

Park or business concerns? ☐ Yes ☐ No

Other fix or notes on miscellaneous rehabilitation:

F. Proposed Safety Upgrading

Replace bridge railing? ☐ Yes ☐ No Length: _____ ft

Block out existing railing with thrie beam? ☐ Yes ☐ No Length: _____ ft

Upgrade approach guardrail? ☐ Yes ☐ No Length: _____ ft

Concrete filler wall between pier columns? ☐ Yes ☐ No Length: _____ ft

Guardrail for pier protection? ☐ Yes ☐ No Length: _____ ft

Pedestrian fence? ☐ Yes ☐ No Length: _____ ft

Other fix or notes on safety upgrading:

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

G. Proposed Approach - Mainline:

Type: HMA ☐ Concrete ☐ Composite ☐

Number of Lanes: _____ Lane Widths: _____ ft Design Speed: _____

Pavement Thickness: _____ in Agg Base: _____ in Subbase: _____ in

Approach Length: _____ ft

Do the proposed widths result in any widening? ☐ Yes ☐ No

Proposed sleeper slabs? ☐ Yes ☐ No ☐ Unknown

List all work type(s) and related fix life(s):

H. Proposed Approach - Shoulder:

Type: HMA ☐ Concrete ☐ Composite ☐ Aggregate (Only) ☐

Widths:

Left Shoulder		Right Shoulder	
Paved Width: _____ ft		Paved Width: _____ ft	
Total Width: _____ ft		Total Width : _____ ft	
Pavement Thickness: _____ in	Agg Base: _____ in	Subbase: _____ in	

Do the proposed widths result in any widening?	☐ Yes	☐ No	
Will the existing shoulders be left in place in the proposed project (if yes, continue)?	☐ Yes	☐ No	☐ Unknown
Will the existing shoulder be used for Maintaining Traffic (if yes, continue)?	☐ Yes	☐ No	☐ Unknown
Are existing shoulder cores available?	☐ Yes	☐ No	☐ Unknown
Are shoulder cores for the existing shoulders needed?	☐ Yes	☐ No	☐ Unknown
Is the existing shoulder density 92% or greater?	☐ Yes	☐ No	☐ Unknown
Is the existing shoulder density 90% or greater?	☐ Yes	☐ No	☐ Unknown

I. Proposed Ramps:

Ramp Pavement (typ): _____ in Agg Base: _____ in Subbase: _____ in

Accel/Decel lanes need extensions or upgrades? ☐ Yes ☐ No Length: _____ ft

Do the proposed widths result in any widening? ☐ Yes ☐ No

List ramps and proposed work:

J. Proposed Geometric Corrections:

Proposed Normal Section Cross Slope: Lanes: _____ %

Cross Slope Modification(s)? ☐ Yes ☐ No

Horizontal Curve Modification(s)? ☐ Yes ☐ No

Vertical Curve Modification(s)? ☐ Yes ☐ No

Superelevation Modification(s)? ☐ Yes ☐ No

Other notes on geometrics, existing super rates:

K. Proposed Drainage:

1. Culvert Information

Not Applicable? ☐

List proposed culvert work below to match existing pipe info:

# of culverts	Ex Size	Shape	Ex Material	Feature Requiring Work	Prop Work * (see below)

* Work types = replace, extend, new end section, rehabilitation, new erosion control

Proposed New Culverts? ☐ Yes ☐ No

Proposed New Box Culverts? ☐ Yes ☐ No

Do any existing or new box culverts require protection/safety work? ☐ Yes ☐ No

2. Ditch Information

Not Applicable? ☐

Proposed New Ditches? ☐ Yes ☐ No

Proposed Ditch Cleanout? ☐ Yes ☐ No

Will any open drainage be enclosed with the project? ☐ Yes ☐ No ☐ Unknown

Do drive culverts need to be removed and replaced to new grade lines? ☐ Yes ☐ No ☐ Unknown

Summarize ditch modifications within project limits:

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

3. Storm Sewer Information

Not Applicable? ☐

Proposed New Storm Sewer? ☐ Yes ☐ No

Proposed Storm Sewer Replacement? ☐ Yes ☐ No Increase in size? ☐ Yes ☐ No

Proposed New Drainage Outlets? ☐ Yes ☐ No

Name of water body outleting into: _____

Is video inspection required during design to identify the pipe condition? ☐ Yes ☐ No

Summarize storm sewer modifications within project limits:

4. Stream Channel Information

Not Applicable? ☐

Proposed Stream Channel Relocation - Temporary? ☐ Yes ☐ No

Proposed Stream Channel Relocation - Permanent? ☐ Yes ☐ No

Other Proposed Stream Work? ☐ Yes ☐ No

Proposed Impacts to Federally Regulated Waterway (Navigable Waterway)? ☐ Yes ☐ No

Proposed Impacts to Cold Water Trout Streams? ☐ Yes ☐ No

Summarize stream channel modifications within project limits:

5. General Proposed Drainage Information

Proposed Underdrains? ☐ Yes ☐ No Type: _____ Size: _____ in

Proposed Spillways/Downspouts? ☐ Yes ☐ No

Road Grade Raise > 4"? ☐ Yes ☐ No

A road grade raise of greater than 4" will require an analysis as per the Road Design and the Drainage Manuals.

Impacts to County Drains? ☐ Yes ☐ No

Proposed Pump Stations? ☐ Yes ☐ No

Proposed Storage Basins? ☐ Yes ☐ No Type: _____

Proposed erosion control items? ☐ Yes ☐ No

Hydraulic Analysis required? ☐ Yes ☐ No

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

L. Proposed Guardrail or Concrete/Cable Median Barrier: (attached to bridge rail)

Proposed Guardrail?	☐ Yes	☐ No	Type:		Length:	ft
Proposed Guardrail Retrofit?	☐ Yes	☐ No	Type:		Length:	ft
Proposed Guardrail Anchorage?	☐ Yes	☐ No	Type:		(choose or enter text)	
Proposed Median Barrier?	☐ Yes	☐ No	Type:		Length:	ft
Proposed Glare Screen?	☐ Yes	☐ No			Length:	ft
Proposed Attenuators?	☐ Yes	☐ No	Type:		Number:	

M. Proposed Utilities: (on the structure)

Proposed New/Relocated Private Utilities?	☐ Yes	☐ No
Any cost participation of water main relocation proposed?	☐ Yes	☐ No
Proposed New/Relocated Public Utilities?	☐ Yes	☐ No

List New or Relocated Utility Info:	

N. Proposed Signals: (on the structure)

Proposed Signals?	☐ Yes	☐ No	Number of Intersections:	
Proposed Flashers?	☐ Yes	☐ No	Proposed Traffic Loops:	☐ Yes ☐ No
Proposed Ped Signals?	☐ Yes	☐ No		
Proposed Ped Push Buttons?	☐ Yes	☐ No		

O. Proposed Sidewalk or Non-Motorized Facility: (on the structure)

Proposed sidewalk?	☐ Yes	☐ No	Width:	ft	Barrier separated?	☐ Yes ☐ No
Proposed non-motorized?	☐ Yes	☐ No	Width:	ft	Barrier separated?	☐ Yes ☐ No
Proposed ADA ramps?	☐ Yes	☐ No	Number of ramps:			

P. Proposed General Conditions:

Proposed truss or cantilever signs?	☐ Yes	☐ No	Number:	
Proposed right turn lanes?	☐ Yes	☐ No	Number:	
Proposed left turn lanes?	☐ Yes	☐ No	Number:	
Proposed new ROW fence?	☐ Yes	☐ No		
Proposed ROW fence replacement?	☐ Yes	☐ No		
Proposed railroad impacts?	☐ Yes	☐ No		
Proposed freeway lighting attached?	☐ Yes	☐ No		
Proposed ITS facilities attached?	☐ Yes	☐ No		
Proposed erosion control items?	☐ Yes	☐ No		
Proposed slope stabilization work?	☐ Yes	☐ No		
Will a Phase I Site Assessment be needed?	☐ Yes	☐ No		
Any features from an existing Access Management Plan being incorporated into the proposed project?	☐ Yes	☐ No		
Is the proposed work consistent with an EA or EIS Study for the proposed project?	☐ Yes	☐ No		

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

Q. Other General Notes on Proposed Improvements:

Job Number:

Bridge Scoping

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

VI. Bridge Underclearances (see Design Manual for Details)

Corridor Underclearance Requirements (14' 6" or 16'):

Grade separated facilities:

Structures underclearance requirements:

Grade separated railroad meet underclearance requirements (23'): ☐ Yes ☐ No ☐ NA

VII. Anticipated Design Exception(s) (check all that apply)

Design Speed	☐	Vertical Clearance	☐
Lane Width	☐	Vertical Alignment	☐
Shoulder Width	☐	Vertical (SSD)	☐
Bridge Width	☐	Grade	☐
Structural Capacity	☐	Cross Slope	☐
Horizontal Clearance	☐	Superelevation	☐
Horizontal Alignment	☐	Accel & Decel Lengths	☐
Horizontal (sightline offset)	☐		

VIII. Permits & Agreements Required (check all that apply)

Statutory Participation (Act 51)	☐	Parking Agreements	☐
DEQ	☐	Utility Relocation Agreements	☐
Corp of Engineers	☐	Non-motorized Maint. Agreements	☐
County Drain (for review, not permitting)	☐	Drainage Agreement	☐
Variance (noise, other...)	☐	Maintenance Agreements	☐
NPDES (over 5 acres of exposed earth)	☐	Participation (other)	☐

IX. Environmental Information

Wetland impacts?	☐ Yes	☐ No	☐ Unknown	Approx acreage:
Floodplain impacts?	☐ Yes	☐ No	☐ Unknown	100 Yr Flood Elev:
Known contamination sites (LUST, etc...)?	☐ Yes	☐ No	☐ Unknown	
Known threatened or endangered species?	☐ Yes	☐ No	☐ Unknown	
Impacts to local park facilities (4F, 6F)?	☐ Yes	☐ No	☐ Unknown	
Impacts to US National Forest land?	☐ Yes	☐ No	☐ Unknown	
Known historic bridges or other structures	☐ Yes	☐ No	☐ Unknown	
Clearing required?	☐ Yes	☐ No	☐ Unknown	
Tree removals and/or replacements?	☐ Yes	☐ No	☐ Unknown	
River or stream impacts?	☐ Yes	☐ No	☐ Unknown	

X. Real Estate

ROW acquisitions?	☐ Yes	☐ No	☐ Unknown	Number:
Property owner relocations?	☐ Yes	☐ No	☐ Unknown	Number:
Grading permits?	☐ Yes	☐ No	☐ Unknown	Number:
Drive permits?	☐ Yes	☐ No	☐ Unknown	Number:
Sidewalk permits?	☐ Yes	☐ No	☐ Unknown	Number:
Easements required?	☐ Yes	☐ No	☐ Unknown	Number:

XI. Stakeholder Information

Proposed Activity Level of Stakeholder Engagement

Level I	☐ Yes	☐ No
Level II	☐ Yes	☐ No
Level III	☐ Yes	☐ No
Level IV	☐ Yes	☐ No
Level V	☐ Yes	☐ No

XII. Supplemental Information

Is this project in an Metropolitan Planning Organization (MPO)?	☐ Yes	☐ No	☐ Unknown
Will a Value Engineering (VE) be required (cost > $25 Million)?	☐ Yes	☐ No	☐ Unknown
Will there be FHWA Oversight on this project?	☐ Yes	☐ No	☐ Unknown
Will a Life Cycle Cost Analysis (LCCA) be required?	☐ Yes	☐ No	☐ Unknown
Are poor soils anticipated?	☐ Yes	☐ No	☐ Unknown
Is there soil boring information available?	☐ Yes	☐ No	☐ Unknown
Is there pavement coring information available?	☐ Yes	☐ No	☐ Unknown
Is there survey information available?	☐ Yes	☐ No	☐ Unknown
Will there be Multi-Modal or Modal Connectivity opportunities?	☐ Yes	☐ No	☐ Unknown
Have different alternatives been analyzed?	☐ Yes	☐ No	☐ Unknown

XIII. Site Visit Notes

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

XIV. Traffic and Mobility

A. Maintenance of Traffic (MOT) Scheme:

Closure Type: Full Closure: ☐ Part width Construction: ☐ Combination: ☐

Traffic Routing: On existing Route: ☐ Directional Detour Route: ☐

Full Detour Route: ☐ Signed Alternate Route: ☐

Will detour route utilize local roadways? ☐ Yes ☐ No ☐ Unknown

If yes, will local approval of the detour route be attainable? ☐ Yes ☐ No

Will detour route require improvements? ☐ Yes ☐ No

Will project require pedestrian detours? ☐ Yes ☐ No ☐ Unknown

Traffic Restrictions? ☐ Yes ☐ No

Please list any known traffic restrictions (including detour route).	

Please give a brief description of MOT plan (including detour route).	

B. Safety Items:

	R&R	T&S	CPM	Bridge	Other
Accident History (Information from One Line Listing)	☐	☐	☐	☐	☐
Safety Review/Crash Analysis	☐	☐	☐	☐	☐
Geometric Sketch	☐	☐	☐	☐	☐
TOR Package	☐	☐	☐	☐	☐

a. TOR Calculation Spreadsheet
b. UD-10s; only for miss codings or additional crashes

Has this proposed project been identified on the High Crash List? ☐ Yes ☐ No _____ Year

Has this project been identified on the FHWA 5% Report? ☐ Yes ☐ No ☐ Unknown

C. Mobility (see Mobility Manual):

	R&R	T&S	CPM	Bridge	Other
Existing Capacity Analysis (includes V/C calc, travel time, LOS, etc)	☐	☐	☐	☐	☐
Proposed Capacity Analysis (includes V/C calc, Delay Worksheet, LOS, etc)	☐	☐	☐	☐	☐
Preliminary Transportation Management Plan (TMP) (if applicable)	☐	☐	☐	☐	☐

Delay Mitigation Measures:

Temporary widening	☐	Dynamic Lane Merge System	☐
Temporary crossovers	☐	Moveable Temp Barrier	☐
Temporary signal	☐	Incentive/ Disincentive	☐
Flag Control	☐	Lane Rental	☐
Mobile closure	☐	A + B	☐
Night or weekend work	☐		

Other Delay Mitigation Notes:

BRIDGE SCOPING REPORT & DETAILS WORKSHEET - Cont.

XV. Concept Statement Info (check all that apply)

☐	Adjacent Jobs	☐	Agency Permit Required
☐	Bridge Painting	☐	Change in Bus Access/Parking
☐	Contaminated site in area	☐	Controversial
☐	Crosses Farmland	☐	Crosses Floodplains
☐	Crosses Streams/Lakes/Drains	☐	Crosses Wetlands
☐	Detour or Road/Ramp Closure	☐	Displacements of Residences/Businesses
☐	Engineering Survey Required	☐	Enhancement Job
☐	Environmental Issues	☐	Hazardous Materials
☐	Heritage Route	☐	High Impact Project
☐	High Tourist Route	☐	Historic Bridge
☐	Natural/Federal Landmarks	☐	Other
☐	Other Environmental Issues	☐	Over 1 Acre Earth Disturbance
☐	Over 5 Acres Earth Disturbance	☐	Public Controversy
☐	Reduced Traffic Flow	☐	Rip Rap Required
☐	ROW/Grading Permit on Recreational Property	☐	ROW/Grading Permit Needed
☐	ROW/Grading Permit on Farmland	☐	Traffic Generators
☐	Tree Removals	☐	Widening of Road or Bridge
☐	Work Outside of Existing Shldr/Curbs	☐	Work Outside Toe of Slope

Michigan Department
of Transportation
1190 (05/07)

STRUCTURE
CLEARANCE MEASUREMENTS

FILE 205

☐ INTERIM REPORT ☐ FINAL REPORT

DISTRIBUTION: Bridge Management Engineer of C & T, Engineer of Utilities & Permits, Engineer of Traffic & Safety, Region Bridge Engineer, Region Files

NOTE: Refer to instructions in the CONSTRUCTION MANUAL for detailed description and examples.

TO: **BRIDGE MANAGEMENT ENGINEER CONSTRUCTION & TECHNOLOGY DIVISION**	FROM (Region/TSC Construction Engineer)	REGION/TSC	DATE
FACILITY CARRIED	FEATURE INTERSECTED	CONTROL SECTION	
LOCATION		STRUCTURE NO.	

A — ROUTE UNDER STRUCTURE

Check boxes to indicate direction of Inventory. For multiple routes under, complete form for each route.

		LEFT OPENING		RIGHT OPENING	
		☐ SOUTH BOUND	☐ WEST BOUND	☐ NORTH BOUND	☐ EAST BOUND
	ITEM NUMBER AND DESCRIPTION	FEET	INCHES	FEET	INCHES
54	Minimum Underclearance	*		*	
10	Best Underclearance (10' Wide Load)				
47	Total Horizontal Clearance	.		.	
55	Minimun Right Lateral Clearance	.		.	
56	Minimum Left Lateral Clearance	.		.	
	Signed Underclearance				

B — ROUTE CARRIED BY STRUCTURE - Multiple Level Structures or Thru Trusses Only

Check boxes to indicate direction of inventory.

		LEFT OPENING		RIGHT OPENING	
		☐ SOUTH BOUND	☐ WEST BOUND	☐ NORTH BOUND	☐ EAST BOUND
	ITEM NUMBER AND DESCRIPTION	FEET	INCHES	FEET	INCHES
53	Minimum Vertical Clearance Over Deck	*		*	
10	Best Vertical Clerance Over Deck (10' Wide Load)	*		*	
	Signed Underclearance				

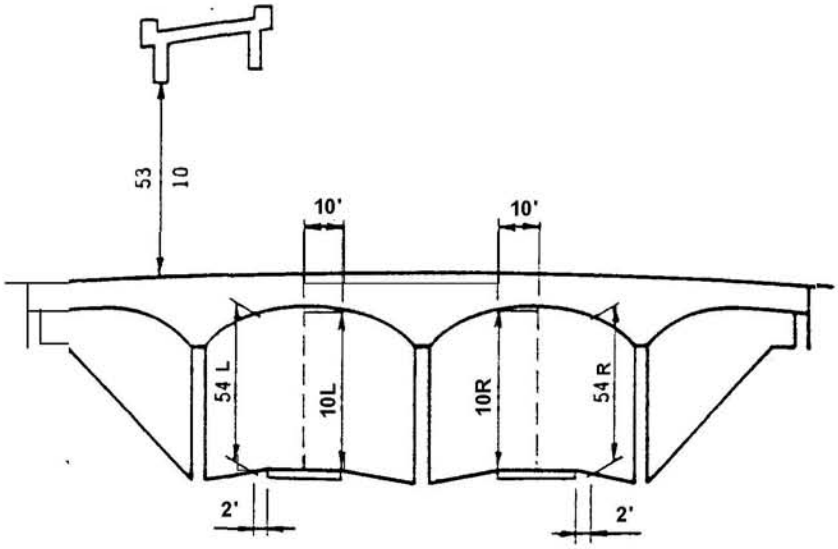
DATE OF INITIAL RESTRICTION (If traffic is being maintained)	DATE STRUCTURE OPEN TO TRAFFIC

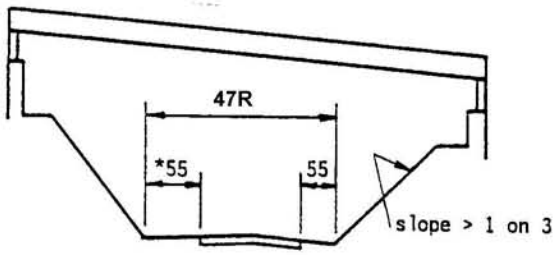
REMARKS

MEASUREMENTS BY (Signature)	DATE
PROJECT ENGINEER (Signature)	DATE

*** On signle roadways with two-way traffic, use right opening and record highest minimum underclearance without crossing over centerline.**

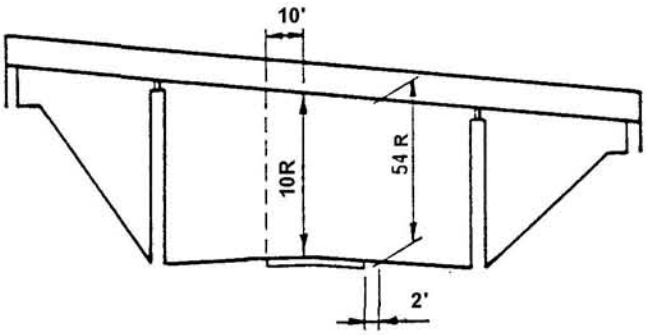
EXAMPLES ON BACK





Item 55 - Minimum lateral clearance on right.

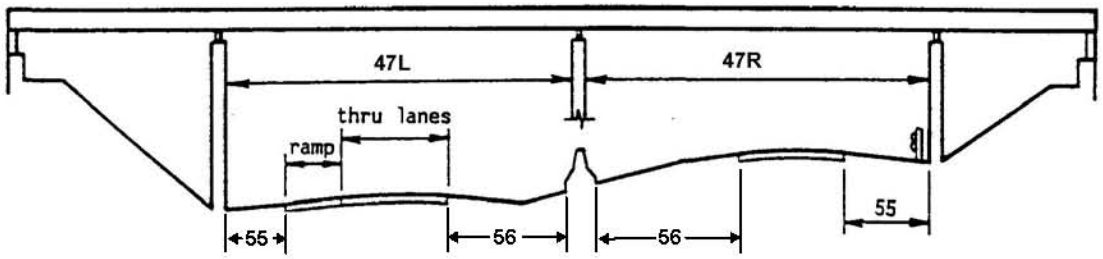
* Item 56 - Minimum lateral clearance on left. Code left side for structure over one-way traffic.



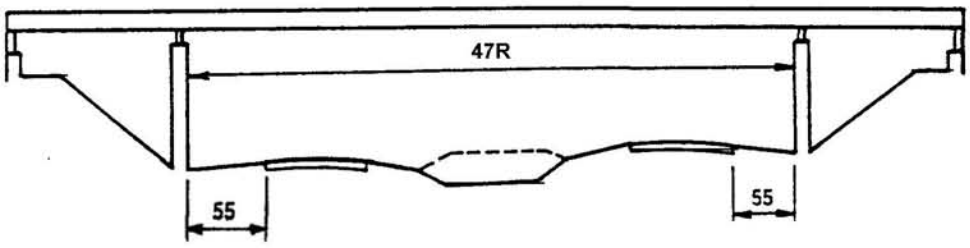
* Take measurement 2ft off edge of pavement unless underclearance is less over pavement.

Item 10L and 10R - Minimum vertical clearance best 10'.

Item 54L and 54R - Minimum vertical underclearance. For divided highways, record both.*



Items 55, 56 and 47 for divided highways. Measure both sides and record the minimum for items 55 and 56.



Item 56 - Minimum lateral clearance on left. Code as 000 for a dual highway with no obstruction in the median area,

2010

____ CALL FOR PROJECTS
BRIDGE REPAIR COST ESTIMATE

REV. 1/20/10

ENGINEER: DATE: DECK AREA: SFT STRUCTURE ID:
LOCATION: DECK DIM:
PRIMARY REPAIR STRATEGY: STR. TYPE:

WORK ITEM	QUANTITY	DIMENSION	UNIT COST		TOTAL
NEW BRIDGE					
Multiple spans, Concrete (add demo. & road approach & traffic control)		SFT	$160.00	/SFT	
Multiple spans, Steel (as above)		SFT	$175.00	/SFT	
Single span (or multi span over water), Concrete (as above)		SFT	$190.00	/SFT	
Single span (or multi span over water), Steel (as above)		SFT	$220.00	/SFT	
Pedestrian Bridge (includes removal, add traffic control)		SFT	$285.00	/SFT	
Other					
NEW SUPERSTRUCTURE					
Concrete (includes removal of old super & new railing, add traffic control & approach)		SFT	$120.00	/SFT	
Steel (as above)		SFT	$150.00	/SFT	
Over Water (add to new superstructure cost)		SFT	$28.00	/SFT	
Other					
WIDENING					
Added portion only. _____ ft of width (add road approach widening)		SFT	$185.00	/SFT	
Other					
NEW DECK					
Includes removal of old deck & new railing (add traffic control & approach)		SFT	$70.00	/SFT	
Other					
DEMOLITION					
Entire bridge, grade separation		SFT	$27.00	/SFT	
Entire bridge, over water		SFT	$36.00	/SFT	
Other					
SUPERSTRUCTURE REPAIR					
Concrete Deck Patch (includes hand chipping)		SFT	$32.00	/SFT	
HMA Cap (no membrane - add bridge rail if req'd)		SFT	$1.25	/SFT	
HMA Overlay with WP membrane (add bridge rail if req'd)		SFT	$5.00	/SFT	
Removal of Concrete Wearing Course (latex) or Epoxy Overlay		SFT	$1.50	/SFT	
Removal of HMA Overlay		SFT	$1.00	/SFT	
Epoxy Overlay		SYD	$34.00	/SYD	
Shallow Overlay (includes joint replmt & hydro, add bridge rail if req'd)		SFT	$25.00	/SFT	
Deep Overlay (includes joint replmt & hydro, add bridge rail if req'd)		SFT	$26.00	/SFT	
PCI Beam End Repair ($2000-$4000 per beam end)		EA	$3,000.00	EA	
Repair Structural Steel ($2400 bolted, $6200 welded)		EA	$5,000.00	EA	
High Load Hit Repair (PCI Beam)		SFT	$200.00	/SFT	
Paint Structural Steel		SFT	$9.00	/SFT	
Partial Painting		SFT	$18.00	/SFT	
Pin & Hanger replacement (includes temporary supports)		EA	$6,600.00	EA	
Other					
SUBSTRUCTURE REPAIR					
Pier repair (measured x 2) Replace unit if spalled area > 30%		CFT	$200.00	/CFT	
Pier repair over water (measured x 2)		CFT	$230.00	/CFT	
Pier replacement		CFT	$75.00	/CFT	
Abutment repair (measured x 2)		CFT	$200.00	/CFT	
Temporary Supports for Substructure Repair		EA	$1,800.00	EA	
Slope Protection repairs		SYD	$80.00	/SYD	
Other					
MISCELLANEOUS					
Expansion or Construction Joints (includes removal)		FT	$420.00	/FT	
Bridge Railing, remove and replace		FT	$215.00	/FT	
Thrie Beam Railing retrofit		FT	$30.00	/FT	
Deck Drain Extensions		EA	$500.00	EA	
Scour Countermeasures		LSUM		LSUM	
Other					
ROAD WORK					
Approach Pavement, 91/2" RC (add C & G, GR, Slope, Shldr.) 40' ea. end		SFT	$8.00	/SFT	
Approach Curb & Gutter (18' ea. quad.)		FT	$36.00	/FT	
Guardrail Anchorage to Bridge (<40')		quads	$1,400.00	/quad	
Guardrail, Type B or T (beyond GR anchorage to bridge, <200')		FT	$20.00	/FT	
Guardrail Ending (end section)		EA	$1,800.00	/EA	
Roadway Approach work (beyond approach pavement)		LSUM		LSUM	
Utilities		LSUM		LSUM	
Other					
TRAFFIC CONTROL - Unit Cost to be determined by Region or TSC T&S					
Part Width Construction		LSUM		LSUM	
Crossovers		EA	$250,000.00	EA	
Temporary Traffic Signals		set	$18,000.00	/set	
RR Flagging		LSUM		LSUM	
Detour		LSUM		LSUM	
Other					
CONTINGENCY (10% - 20%) (use higher contingency for small projects)		%	$0.00		$0.00
MOBILIZATION (estimate at 5% but put "10% max" in pay item description) (per Design Update 2009-	5.0	%	$0.00		$0.00
INFLATION (assume 5% per year, beginning in 2011)		%	$0.00		$0.00

(DOES NOT INCLUDE PE & CE) **CONSTRUCTION TOTAL** **$0.00**