

ATTACHMENT B

SERVICES TO BE PROVIDED BY THE STATE

1. **Services, Information, and Documentation.** The following services, information, documentation, and website links providing electronic access to this documentation, will be provided by the State:
 - a. Inspection files of each on- and off-system bridge to be inspected.
 - b. One 8.5" x 11" map showing the location of each bridge to be inspected will be located within each individual bridge folder.
 - c. The Texas Bridge Load Rating (TBLR) Program Manual and software, which is available at: <http://www.txdot.gov/inside-txdot/division/information-technology/engineering-software.html>
 - d. The "RATE" spreadsheet, which is available at: <http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/publications/bridge.html>
 - e. A login username and password for each Team Leader to use with the current bridge management software.
 - f. Standard inspection forms in electronic format. Documentation not generated as output by the bridge management software is accessible through the TxDOT's official form repository website at <http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/forms/bridge.html>. Forms to be used include the following:
 - Bridge Inspection Record (Form 1085)
 - Bridge Inspection Follow-up Action Worksheet (On-system) (Form 1386)
 - Bridge Inspection Follow-up Action Worksheet (Off-system)
 - Bridge Inventory Record (Form 536)
 - Revision to Bridge Inventory Record (Form 2242)
 - Channel Cross-Section Measurements Record (Form 2600)
 - Underclearance Record (Form 2601)
 - Bridge Structural Condition History (Form 2238)
 - Bridge Load Rating Statement (Form 2495)
 - Bridge Summary Sheet (Form 2602)
 - Summary of Needed Load Posting Materials (Form 2244)
 - Recommended Change in Bridge Load Posting (Form 1083R)
 - TxDOT Bridge Division Critical Inspection Finding (CIF) (Form 2598)
 - Scour Summary Sheet for Known Foundations (Form 2605*)
 - Scour Summary Sheet for Bridge Class Culverts (Form 2606*)
 - TxDOT Bridge Scour Plan of Action for Bridges with Item 113 Coded "3" (Form 2604*)*for reference purposes only
 - g. An electronic listing of National Bridge Inventory (NBI) data for all the bridge records to be inspected.
 - h. List of inspection database input fields currently blocked by the State, which is available at: <http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/publications/bridge.html>

- i. Structural plans for each bridge to be inspected, if the plans are available and are not already in the inspection file.
 - j. The National Highway System (NHS), Annual Average Daily Traffic (AADT), Reference Markers, and Speed Limit Maps, which are available at:
<http://www.txdot.gov/inside-txdot/division/transportation-planning/maps/statewide-planning.html>
 - k. List of emergency personnel names identifying their title, work affiliation, address, and office/cellular phone numbers.
 - l. Most current version of the Electronic Files Naming Convention sheet, which is available at:
<http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/publications/bridge.html>
 - m. List of State's District Bridge Inspection Coordinators.
2. **Texas Bridge Inspection Manual, Bridge Railing Manual, Metal Beam Guardfence Transition and End Treatment Identification Guide, and Coding Guide.** The *Texas Bridge Inspection Manual, Bridge Railing Manual, Metal Beam Guardfence Transition and End Treatment Identification Guide, and Coding Guide* are available at:
<http://www.txdot.gov/inside-txdot/forms-publications/consultants-contractors/publications/bridge.html>

ATTACHMENT C

SERVICES TO BE PROVIDED BY THE ENGINEER

1. **General.** Engineer shall:
 - a) inspect each bridge assigned by State in accordance with the current version of TxDOT's Bridge Inspection Manual (BIM), which is available at

<http://onlinemanuals.txdot.gov/txdotmanuals/ins/index.htm>;
 - b) record the findings on the appropriate standard forms provided by the State; and update the corresponding information in the bridge management software. (Note: Requirements and guidelines of the FHWA Bridge Inspectors Reference Manual (BIRM) (2012), and informational sources included therein, are made part of this Scope through reference in the BIM.)

In this attachment, "Date" means the date of the specific bridge inspection, unless noted otherwise. As used below, "ensure" means to make certain that something has happened or will happen, and includes an obligation to deploy the appropriate level of engineering or other technical expertise, consistent with the complexity, cost, and level of risk associated with a task. "Ensure" does not require the completion of any task assigned to a separate entity under any other agreement.

Engineer shall perform all bridge inspections within or before, the anniversary month of the previous inspection based on National Bridge Inspection Standards (NBIS) Items 90 and 91 of the National Bridge Inventory (NBI). For example, if NBIS Item 90 = 03162015 and NBIS Item 91 = 24; then the inspection shall be performed on or before March 31, 2017. If the inspection is performed after the anniversary month but within 30 days of the anniversary date of the previous inspection (April 15, 2017), Engineer shall provide an explanatory statement on a coversheet, to be placed on the top of Side 2 of the bridge inspection folder, citing the reason (e.g. scheduling flexibility or weather delays). Depending on the circumstances, inspections performed 30 days or more after the anniversary date may be grounds for termination of the contract.

2. **Standard of Care.** Engineer shall exercise a reasonable standard of care for routine safety inspections, which is an attentive visual and auditory inspection aided by routine inspection tools as afforded by routine means of access. Routine inspection tools are listed in the Federal Highway Administration (FHWA) Bridge Inspector's Reference Manual, Publication No. FHWA NHI 12-049 (BIRM), in Section 2.4.2, Standard Tools. Routine means of access includes the use of ladders, light climbing, walking, and watercraft. For other than the use of vehicle mounted high-definition video for visually assessing deck conditions, Engineer shall obtain the approval of the TxDOT Bridge Inspection Program Manager prior to the use of alternate technologies for gathering of inspection data. Engineer shall not use unmanned aerial vehicles (e.g., drones) in any manner in conjunction with routine bridge inspections.
3. **Safety - General.** Engineer shall require its employees, and shall require its subcontractors to require their employees, to use hard hats, safety vests, traffic cones, vehicle safety lights, and "BRIDGE INSPECTION AHEAD" or "SURVEY CREW AHEAD" advance warning signs for all bridges being inspected. In the placement and maintenance of signs and other traffic control devices, Engineer shall comply with the Texas Manual on Uniform Traffic Control Devices. Engineer shall minimize traffic flow disruption during inspection. Engineer shall comply with BIRM, as it relates to safety and traffic control. Refer to BIRM, Sections 2.2 for discussion on safety fundamentals and 2.3 for discussion on temporary traffic control. Engineer shall contact the TxDOT District Bridge Inspection Office for early coordination requirements when soliciting traffic control services.
4. **Safety - Coordination with Railroad Entities.** Engineer shall notify the TxDOT District Bridge Inspection Office at least 21 working days in advance of any inspection involving railroad right of way. State will coordinate with the appropriate Railroad Representative to determine if a flagman or special safety measures are required. Engineer shall provide flagger and any special protective safety measures, if required. Engineer shall provide evidence that each bridge inspection team member has an up to date certification of completion of the on-line Safety Awareness Course through Burlington Northern Santa Fe Railway (BNSF), available at BNSFcontractor.com.

5. **Inspection Area.** Engineer shall inspect only those bridges located within the assigned inspection area. Engineer shall notify TxDOT's District Bridge Inspection Office a minimum of two weeks in advance of any inspection to be performed with the proposed inspection locations and dates of performance.
6. **Bridge Locations.** Engineer shall include an 8 ½ inch x 11 inch copy of the bridge location map with the bridge location highlighted in each bridge inspection folder. Engineer shall verify that the GPS coordinates in the database are accurate (i.e., located on the bridge). If the coordinates are missing or not accurate, Engineer shall collect new coordinates using a hand held GPS unit and provide coordinates in a decimal format. Sub-meter, differentially corrected data is not required. Engineer shall notify the TxDOT District Bridge Inspection Coordinator of missing maps and needed corrections. Engineer is not required to electronically update bridge location maps.
7. **New Bridges.** Each new bridge located by Engineer requires approval from the TxDOT District Bridge Inspection Office before an identification number is assigned, the bridge is inspected, or the bridge is added to the inventory. If approval is granted to inspect a new bridge, Engineer shall create a new folder labeled in the format established by TxDOT, complete all forms, calculations, sketches, and input all necessary data into the NBI to ensure a complete and accurate record. Engineer shall also create a record, supplemented with all required documentation, in the current bridge management software.
8. **Bridges Under Construction.** Engineer shall inventory or inspect a bridge that is under construction only with the approval of the TxDOT District Bridge Inspection Coordinator. Engineer shall change Item 41, Operational Status, to U for any bridge found to be under construction. If no inspection is completed, Engineer shall insert a brief memo explaining the construction and lack of inspection into the folder and upload the memo to the current bridge management software. Engineer shall update Item 91, Inspection Date with the date of the visit.
9. **Deleting Bridge Records.** Engineer shall not delete any bridge record from the inventory without prior approval of the TxDOT District Bridge Inspection Office.
10. **Inspection Team Leader.** Engineer shall provide an inspection team leader that has been approved by the TxDOT Bridge Division to be present at each site for the duration of the bridge inspection as an active participant in the inspection. This team leader must meet the requirements outlined in the Code of Federal Regulations and in the TxDOT BIM.

Engineer shall notify the TxDOT District Bridge Inspection Office and the TxDOT Bridge Division Inspection Branch Office of any changes in personnel who are identified as inspection team leaders on either the Engineer's inspection teams. This includes the addition or removal of an inspection team leader. Engineer shall notify State within 30 days of a team leader leaving an inspection team and immediately upon a team leader joining an inspection team.

Engineer shall obtain written approval from the TxDOT Bridge Division before an individual acts in the capacity of an inspection team leader.

11. **Reporting Requirements.** Engineer shall submit completed reports to State within 60 days following inspection date. Each submitted report must include the physical folders as well as the electronic data updates and file attachments within the bridge management software. Engineer shall enter condition ratings and other coding changes along with reports and sheets, as detailed below in Items 14 and 16, using the bridge management software. Engineer shall immediately notify, both verbally and in writing, the TxDOT District Bridge Inspection Office if a bridge needs special consideration. Examples of a bridge that needs special consideration include a bridge where Engineer recommends closing the bridge or lowers a condition rating to a 3 or less. If the inspection indicates significant deterioration of any structural element, Engineer shall include documentation such as notes, measurements, sketches, and photographs with the written notification. Engineer shall complete the Critical Inspection Finding form and email it to both the TxDOT District Bridge Inspection Office and the TxDOT Bridge Division Inspection Branch. To notify the TxDOT Bridge Division Inspection Branch, Engineer shall email the Critical Inspection Finding form to: BRG_Critical_Findings@txdot.gov.

If Engineer is recommending a change of status of an on-system bridge structure (e.g., load restriction, revision of an existing load restriction, or the removal of a load restriction), Engineer shall submit the recommendation to the TxDOT Bridge Division as soon as the calculations are complete, but not more than 30 days after the inspection date. A recommendation to change the load posting status must include (1) most recent bridge inspection record, (2) load rating calculations, (3) pictures, (4) as-built plans or inventory sketch, and (5) completed Bridge Load Posting Recommendation Form 1083R (Form 1083R used for On-System structures only). Engineer shall upload the recommendation, along with supporting documentation, to TxDOT's Dropbox Service at <https://ftp.dot.state.tx.us/dropbox/> and notify State by sending an e-mail to: BRG_Load_Posting@txdot.gov. Engineer shall also email the TxDOT District Bridge Inspection Office that a load posting recommendation has been sent to the TxDOT Bridge Division and include in that e-mail all information sent via the Dropbox Service.

12. **Email.** Engineer shall maintain an Internet email address and notify the Inspection Branch of the TxDOT Bridge Division if it changes. State will use this e-mail to distribute all bulletins, policy changes, and updates to the Statewide Consultant Pool for Bridge Inspections.
13. **Quality Control Program.** Engineer shall have a quality control program in place that ensures that all deliverable work is of high quality. Engineer shall submit a plan detailing its program to the Inspection Branch of the TxDOT Bridge Division for review and approval prior to beginning work. State may review or audit the programs.
14. **Inspection Folder Contents – On-System Bridges.** Engineer shall complete the forms and provide the information, listed below, for each on-system bridge. For any form or sketch that requires Engineer's seal, Engineer shall also provide its firm name and number. Engineer shall (1) place the information and completed forms in each bridge's inspection folder in the order detailed section 27, Order of Forms within the Original Folder, and (2) upload the information and completed forms to the bridge management software according to section 28, Naming Conventions and Locations for Uploading of Files.
 - a. **Bridge Inspection Record, TxDOT Form 1085** — Form 1085 delineates the basic components of the bridge to be inspected. Engineer shall enter a condition rating for each component and sub-component following guidelines in the Bridge Inspector's Reference Manual (BIRM) and in accordance with the Coding Guide provided in the current TxDOT Bridge Inspection Manual. For any condition rating of seven or lower, Engineer shall include comments explaining the rating. Form 1085 includes an appraisal of traffic safety features, waterway adequacy, and approach alignment. For grade separation bridges, Engineer shall record the vertical clearance stated on the existing vertical clearance signs in the "Miscellaneous" section of the form under the sub-component "Signs".

Note: Form 1085 is generated by the bridge inspection management software and Engineer shall use Form 1085 in the official inspection report. The PDF version of Form 1085 provided on the TxDOT website is for informational purposes only and shall not be submitted as part of the official inspection report.
 - b. **Bridge Inspection Follow-Up Action Worksheet (On-System), TxDOT Form 1386** — Engineer shall use Form 1386 to summarize areas of bridge deterioration and make a recommendation of how the bridge can be repaired.

Engineer shall classify and group recommended repairs as follows:

Critical – Actions required within 30 days;

Urgent – Actions required within 6 months; or

Routine – Actions recommended within 24 months.

Engineer shall group recommended follow-up actions from previous inspections that have not been performed and are still warranted for the structure together, list again, and note that they were not performed since the last inspection.

If immediate action is required to maintain the safety of a structure, Engineer shall notify the TxDOT District Bridge Inspection Coordinator immediately by telephone. Engineer's inspection team leader shall be available to State for coordination of emergency efforts. If the TxDOT District Bridge Inspection Coordinator is not available, refer to the emergency contact list provided by the TxDOT District Bridge Inspection Coordinator and contact one of the individuals identified on this list.

Note: One extra copy of Form 1386 is required for each on-system bridge, grouped by TxDOT Maintenance Section. Engineer shall submit these copies to the TxDOT District Bridge Inspection Office at the end of the work authorization. For any bridge not requiring maintenance, Engineer shall still submit Form 1386 with first line in the comments section populated with "No action required."

- c. **Elemental Inspection** — Engineer shall collect elemental data for all on-system structures for use in the TxDOT Bridge Management Information System (BMIS). Engineer shall collect and group information by span, with the exception of culverts where Engineer shall collect and group elemental data by the structure. Engineer shall determine the elemental data and quantities in each condition state for each on-system bridge in accordance with the American Association of State Highway and Transportation Officials (AASHTO) Manual for Bridge Element Inspection. Engineer shall enter this information into the bridge management software. Engineer shall print the Element Inspection Summary Listing report from the bridge management software and include it in the bridge inspection folder. The Engineer's inspection team leader must initial the form adjacent to the printed name near the top of the form. Engineer may use any means, except unmanned aerial vehicles (drones), for the collection and recording of this information in the field. Engineer is not required to place field forms and other summary lists in the folder.
- d. **Bridge Inventory Record, TxDOT Form 536** — Form 536 describes the bridge and has room for a detailed sketch on the reverse side for those bridges that do not have construction plans available. Engineer may hand draw a sketch or electronically paste a drawing to the reverse side.

A new Form 536 is not necessary and the existing form shall remain in the folder with no modification by the Engineer if

- (1) Form 536 with revision date 08/2016 (or newer) is in the folder;
- (2) There have been no changes to the structure; and
- (3) The existing description and sketch properly represent the current geometry.

If one or more of items (1), (2), and (3), above, are untrue, Engineer shall complete a new Form 536 and placed it in the bridge folder. Sketches are not required if plans are in the folder. Engineer shall capture deck surfacing type and thickness on Form 536. For many culverts, this consists of an overall combined thickness of pavement and fill.

If there is no Form 536 in the folder, Engineer shall complete a new form. If plans are unavailable, Engineer shall complete both sides of the form. If plans are available, Engineer shall only complete the front side of the form.

If major (i.e., structural) changes have been made to the bridge (e.g., lengthening, widening, partial reconstruction, span replacement), Engineer shall complete a new Form 536. If a sketch is located in the folder and there are no original and no widening plans, Engineer shall update or replace the sketch.

In cases where new bridge attachments are created, Engineer shall archive all the existing documents/attachments and not delete any information.

Note: It is acceptable to draw a sketch on a separate sheet of paper. Engineer shall title this separate sheet "Bridge Inventory Record Sketch, Sheet 2 of 2".

- e. **Revision to Bridge Inventory Record, TxDOT Form 2242** — Engineer shall only use Form 2242 for minor (i.e., non-structural) changes to the Bridge Inventory Record. Engineer shall complete Form 2242 for every inspection except when new inventory records and new inventory sketches are completed. Engineer shall update an existing form if space is available; otherwise, Engineer shall complete a new form. If both the inventory record and the inventory sketch have no changes, then Engineer shall populate the first line of the comments section with "No changes".

- f. **Channel Cross-Section Measurements Record, TxDOT Form 2600** — Engineer shall complete Form 2600 for each span bridge over a waterway (whether the waterway is wet or dry). Form 2600 is not required for culverts. Engineer shall take measurements on the upstream side of the bridge starting at the abutment. Each measurement must be taken from a fixed reference on top of the bridge down to the channel bed. Engineer shall take measurements at each bent, at each significant change in the channel bed, and at the mid-point of the channel. Engineer shall record the horizontal distance between the preceding bent and each vertical measurement as well as the cumulative horizontal distance from the beginning of the bridge (i.e., abutment) to each measurement. Several reference dimensions must be recorded, including top of water level (see Form 2600). Engineer shall add comments on the back side of the form.

Note: Engineer may take measurements on the downstream side of the bridge or from below the bridge if bridge/approach geometry, construction activities, or traffic volumes make upstream measurements from the deck unsafe. If a situation will require traffic control, Engineer shall contact the TxDOT District Bridge Inspection Coordinator to arrange for traffic control a minimum of two weeks in advance of the planned inspection. If any means other than a weighted tape from the upstream side of the deck is used, Engineer shall explain in the Comments Section on the reverse of Form 2600. Engineer shall also record cross-section data and comments in the bridge management software.

- g. **Channel Cross-Section Sketch** — Engineer shall provide a channel cross-section sketch for span-type bridges. Culverts do not require a channel sketch or an update to any such sketch that may already be in the folder. Calculations of culvert sediment material quantities are not required. If there is an existing channel cross-section sketch plotted to scale in the bridge folder, Engineer shall bring that sketch forward into the current report, plot the new data on it in different color ink, and reference it with the engineer's team leader's initials and date. If the channel profile has not changed significantly from the previous inspection, the engineer's team leader must initial and date a note stating that no significant change has occurred. For all span-bridges that have plans available, Engineer shall plot the channel cross-section on a copy of the bridge layout sheets from the plans. Engineer shall insert two copies of the layout into the folder: one copy must be plotted on as a "work copy" and one copy must remain clean as a "master copy." If plans are not available, Engineer shall draw a sketch. It is acceptable for the horizontal and vertical scales to differ.

Note: If the current sketch already has four different inspection cross-section plots and the channel has changed significantly enough to warrant another plot, Engineer shall use a fresh (i.e., clean) copy of the layout. Engineer shall clearly identify channel cross-section plot sheets with the structure identification number. Hand drawn sketches and copied plan sheets must match an appropriate common scale such as 1" = 10', 1" = 20', etc. The official document is the hand-plotted cross-section, whether on a layout sheet or hand-drawn sketch, as opposed to any plot generated by the bridge management software. Engineer shall ensure that all lines plotted on a sketch are clearly reproducible

by copying or scanning. Engineer shall not use graphite lead pencils for the plotting of data. Engineer shall reserve an area on the layout or sketch for placing a legend. In this area, Engineer shall place the following: (1) legend that identifies the inspection team leader and inspection date with a unique data plot line style and (2) “no significant change in channel cross-section” notes, if applicable, initialed and dated by inspection team leader. In the legend area, Engineer shall place the notation “downstream” next to plot line identification if the measurements for the plot were taken on the downstream side.

- h. **Underclearance Record, TxDOT Form 2601** — For on-system underpasses, Engineer shall use Form 2601 to record lateral clearance information for all RR tracks and traffic lanes passing underneath the structure, including turnaround lanes. Engineer shall also record all existing vertical clearance sign information. Engineer shall provide a brief sketch indicating dimensions and reference points for collected horizontal clearance data. All dimensions on sketches must be from a fixed reference point, such as a column. Engineer shall not collect nor record any vertical clearance measurements for on-system bridges. It is acceptable for Engineer to reuse Form 2601 from a previous inspection if additions, modifications, dates, and signatures can be clearly added and attributed to the current inspection team leader.
- i. **Marked-Up NBI Sheet** — Engineer shall place an NBI printout with current changes to the database marked in red pen in the folder.
- j. **Scour Documentation** — This documentation will take the form of at least two items.
 - i. Folders for span-bridges over waterways will have:
 - a scour analysis (HEC-18 or other approved scour software), or Texas Secondary Evaluation and Analysis for Scour (TSEAS) analysis (as applicable per site conditions), **and**
 - a Scour Summary Sheet for Known Foundations (Form 2605) or Scour Summary Sheet for Unknown Foundations (Bridge Division, Geotechnical Section).
 - ii. Folders for bridge-class culverts will have:
 - a Scour Summary Sheet (Form 2606).

(1) Engineer shall review the data in the scour or TSEAS analysis and applicable Scour Summary Sheet in relation to the current structure and stream bed conditions. Engineer shall acknowledge agreement with the data in applicable document by placing a concurrence annotation, initialing, and dating the document. When the applicable scour document is not representative of the structure and stream bed conditions in the field, Engineer shall identify this by recording comments on the List of bridges with recommended coding changes for scour critical, Item 22.f.

A Bridge Scour Plan of Action (POA) for Bridge's with NBIS Item 113 Coded “3”, “2”, or “1” has been prepared for all structures identified as scour critical. Engineer shall review the scour POA and identify required updates on List of bridges with recommended coding changes for scour critical, Item 22.f.

These efforts are only a review of the documentation in the folder. Engineer is not required to perform an analysis or update any of the documentation. Engineer shall take photographs of conditions that have changed and include these photographs with other photographs in the inspection report.

Note: Engineer shall also use Item 22.f to identify all structures that is missing any scour documents, including Scour or TSEAS analysis, applicable Scour Summary Sheet, and Scour POA. Engineer shall not remove other existing scour documentation from the bridge folder.

- k. **Bridge Structural Condition History, TxDOT Form 2238** — Engineer shall update the Form 2238, if there is already Form 2238 in the bridge folder. Engineer shall create a new Form 2238 if the existing form has no remaining blank lines. If there is no existing Form 2238 in the bridge folder Engineer shall create a new Form 2238 and populate it with data from all existing inspections reports in the folder. Engineer shall check the inspection folder, NBI database, and bridge management software for evidence of other inspections (e.g., underwater, fracture critical) or significant events (e.g., impact damage, repair, widening) that have occurred since the last date entered on this form. Engineer shall add to this form, in chronological order, new inspection/event dates and other appropriate information. New Forms 2238 are to be placed on top of any existing history forms that will remain in the folders.

- 15. **Calculations for On-System Bridges. Engineer shall use** the “Load Factor” method as illustrated in AASHTO’s Manual for Bridge Evaluation 2008, or newer, with current revisions when performing load rating calculations for on-system bridges. Engineer shall present on-system ratings to the State in HS loading. Engineer shall include a cover sheet for the load rating that summarizes the calculations for all load rated components identifying the controlling rating and including the corresponding coding for the bridge inspection database NBIS Items 64 and 66.

- a. Engineer shall perform a load rating for span bridges with any of the following conditions:
 - (1) Recommended changes in load ratings due to components with deterioration or damage that affects structural capacity;
 - (2) Design load < HS20 and no existing load rating with which the Engineer concurs; and
 - (3) H20-S16 amended by Texas Highway Department (THD) Supplemental No. 1 design loads and no existing current load rating.

In the case of substandard design loads, if no deficiencies are noted in the deck and substructure, Engineer may limit the analysis to the superstructure of the bridge.

- b. Engineer shall assign culverts a load rating based on data from respective plan sheets or TxDOT culvert standards. For load ratings of culverts with design loads other than HS-20, HL-93 or HS-25, Engineer shall utilize the Load Rating Guidance Document.

Engineer shall complete the applicable section of Form 2495 and attach pertinent documents and supporting data used to complete the form (e.g., calculations, plan sheets advising of design load). Form 2495 is not required for structures when a new load rating is performed.

- 16. **Inspection Folder Contents – Off-System Bridges.** Engineer shall complete the following forms and necessary information for each off-system bridge. Engineer shall place the forms and information in each folder in the order detailed at the end of this attachment in section 27, Order of Forms within the Original Folder, and upload them to the bridge management system according to section 28, Naming Conventions and Locations for Uploading of Files.

- a. **Bridge Inspection Record, TxDOT Form 1085** — Form 1085 delineates the basic components of the bridge to be inspected. Engineer shall enter a condition rating for each component and sub-component following guidelines in the BIRM and in accordance with the Coding Guide Provided in the current TxDOT Bridge Inspection Manual’s “Coding Guide.” For any condition rating of seven or lower, Engineer shall include comments explaining the rating. Form 1085 also includes an appraisal of traffic safety features, waterway adequacy and approach alignment. For grade separation bridges, Engineer shall record the vertical clearance stated on the existing

vertical clearance signs in the “Miscellaneous” section of the form under the sub-component “Signs”.

Note: Form 1085 is generated by the bridge inspection management software and Engineer shall use Form 1085 as part of the official inspection report. The PDF version of Form 1085 provided on the TxDOT website is for informational purposes only and shall not be submitted as part of the official inspection report.

- b. **Bridge Inspection Follow-Up Action Worksheet (Off-System)** — Engineer shall use this form to summarize areas of bridge deterioration and make a recommendation of how the bridge can be repaired.

Engineer shall classify and group recommended repairs as follows:

Critical – Actions required within 30 days,

Urgent – Actions required within 6 months, or

Routine – Actions recommended within 24 months.

Engineer shall group recommended follow-up actions from previous inspections that have not been performed and are still warranted for the structure together, list again, and note that they were not performed since the last inspection.

If immediate action is required to maintain the safety of a structure, Engineer shall notify the TxDOT District Bridge Inspection Coordinator immediately by telephone. Engineer’s inspection team leader shall be available to State for coordination of emergency efforts. If the TxDOT District Bridge Inspection Coordinator is not available, refer to the emergency contact list provided by the TxDOT District Bridge Inspection Coordinator and contact one of the individuals identified on this list.

Note: One extra copy of this form is required for each off-system bridge, grouped by owning jurisdiction. Engineer shall submit these copies to the TxDOT District Bridge Inspection Office at the end of the work authorization. For any bridge not requiring maintenance, Engineer shall still submit this form with the first line in the comments section populated with “No action required.”

- c. **Bridge Summary Sheet TxDOT Form 2602** — Engineer shall fill out Form 2602 for all off-system bridges. On Form 2602, Engineer shall summarize component’s load rating; condition rating; previously recommended, observed, and currently recommended load posting; and materials needed to properly load post the bridge. Engineer shall document the condition, location, and number of all load posting signs in place on the date of inspection for all load posted bridges, including advance signs. Engineer shall also record the load limit shown on existing load posting signs. Engineer shall ensure that these signs appear and are legible in the photographs required in item 20.f, Photographs of Load Posting Signs.
- d. **Elemental Inspection** — Engineer shall collect elemental data for all off-system structures on the National Highway System (NHS) for use in the TxDOT Bridge Management Information System (BMIS). Engineer shall collect and group information by span, with the exception of culverts where Engineer shall collect and group elemental data by the structure. Engineer shall determine the elemental data and quantities in each condition state for each NHS off-system bridge in accordance with the American Association of State Highway and Transportation Officials (AASHTO) Manual for Bridge Element Inspection. Engineer shall enter this information into the bridge management software. Engineer shall print the Element Inspection Summary Listing report from the bridge management software and include it in the bridge inspection folder. The Engineer’s inspection team leader must initial the form adjacent to the printed name near the top of the form. Engineer may use any means, except unmanned aerial vehicles (drones), for the collection and recording of this information in the field. Engineer is not required to place field forms and other summary lists in the folder.

- e. **Bridge Inventory Record, TxDOT Form 536** — Form 536 describes the bridge and has room for a detailed sketch on the reverse side for those bridges that do not have construction plans available. Engineer may hand draw a sketch or electronically paste a drawing to the reverse side.

A new Form 536 is not necessary and the existing form shall remain in the folder with no modification by the Engineer if:

- (1) Form 536 with revision date 08/2016 (or newer) is in the folder;
- (2) There have been no changes to the structure; and
- (3) The existing description and sketch properly represent the current geometry.

If one or more of items (1), (2), and (3), above, are untrue, Engineer shall complete a new Form 536 and placed it in the bridge folder. Sketches are not required if plans are in the folder. Engineer shall capture deck surfacing type and thickness on Form 536. For many culverts, this consists of an overall combined thickness of pavement and fill.

If there is no Form 536 in the folder, Engineer shall complete a new form. If plans are unavailable, Engineer shall complete both sides of the form. If plans are available, Engineer shall only complete the front side of the form.

If major (i.e., structural) changes have been made to the bridge (e.g., lengthening, widening, partial reconstruction, span replacement), Engineer shall complete a new Form 536. If a sketch is located in the folder and there are no original and no widening plans, Engineer shall update and replace the sketch.

In cases where new bridge attachments are created, Engineer shall archive all the existing documents/ attachments and not delete any information.

Note: For off-system bridges, these forms and sketches serve as as-built plans in many cases because original plans do not exist. When plans are available and copies are included in the folder, a detailed sketch is not required; however, the Engineer shall complete the front side of the Bridge Inventory Record. It is acceptable to draw a sketch on a separate sheet of paper. This separate sheet shall be titled "Bridge Inventory Record Sketch, Sheet 2 of 2".

- f. **Revision to Bridge Inventory Record, TxDOT Form 2242** — Engineer shall only use Form 2242 for minor (i.e., non-structural) changes to the Bridge Inventory Record. Engineer shall complete Form 2242 for every inspection except when new inventory records and new inventory sketches are completed. Engineer shall update an existing form if space is available; otherwise, Engineer shall complete a new form. If both the inventory record and the inventory sketch have no changes, then Engineer shall populate the first line of the comments section with "No changes".
- g. **Channel Cross-Section Measurements Record, TxDOT Form 2600** — Engineer shall complete Form 2600 for each span bridge over a waterway (whether the waterway is wet or dry). Form 2600 is not required for culverts. Engineer shall take measurements on the upstream side of the bridge starting at the abutment. Each measurement must be taken from a fixed reference on top of the bridge down to the channel bed. Engineer shall take measurements at each bent, at each significant change in the channel bed, and at the mid-point of the channel. Engineer shall record the horizontal distance between the preceding bent and each vertical measurement as well as the cumulative horizontal distance from the beginning of the bridge (i.e., abutment) to each measurement. Several reference dimensions must be recorded, including top of water level (see Form 2600). Engineer shall add comments on the back side of the form.

Note: Engineer may take measurements on the downstream side of the bridge or from below the bridge if bridge/approach geometry, construction activities, or traffic volumes make upstream measurements from the deck unsafe. If a situation will require traffic control, Engineer shall contact the TxDOT District Bridge Inspection Coordinator to arrange for traffic control a minimum of two weeks in advance of the planned inspection. Engineer shall coordinate with the TxDOT district for traffic control arrangement. If any means other than using a weighted tape from the upstream side of the deck is used, Engineer shall explain in the Comments Section on the reverse of Form 2600. Engineer shall also record cross-section data and comments in the bridge management software.

- h. **Channel Cross-Section Sketch** — Engineer shall provide a channel cross-section sketch for span-type bridges. Culverts do not require a channel sketch or an update to any such sketch that may already be in the folder. Calculations of culvert sediment material quantities are not be required. If there is an existing channel cross-section sketch plotted to scale in the bridge folder, Engineer shall bring that sketch forward into the current report plot the new data on it in different color ink, and reference it with the engineer’s team leader’s initials and date. If the channel profile has not changed significantly from the previous inspection, the engineer’s team leader must initial and date a note stating that no significant change has occurred. For all span-bridges that have plans available, Engineer shall plot the channel cross-section on a copy of the bridge layout sheets from the plans. Engineer shall insert two copies of the layout into the folder: one copy must be plotted on as a “work copy” and one copy must remain clean as a “master copy.” If plans are not available, Engineer shall draw a sketch. It is acceptable for the horizontal and vertical scales to differ.

Note: If the current sketch already has four different inspection cross-section plots and the channel has changed significantly enough to warrant another plot, Engineer shall use a fresh (i.e., clean) copy of the layout. Engineer shall clearly identify channel cross-section plots with the structure identification number. Hand drawn sketches and copied plan sheets must match an appropriate common scale such as 1” = 10’, 1” = 20’, etc. The official document is the hand-plotted cross-section, whether on a layout sheet or hand-drawn sketch, as opposed to any plot generated by the bridge management software. Engineer shall ensure that all lines plotted on a sketch are clearly reproducible by copying or scanning. Engineer shall not use graphite lead pencils for the plotting of data. Engineer shall reserve an area on the layout or sketch for placing a legend. In this area, Engineer shall place the following: (1) legend that identifies the inspection team leader and inspection date with a unique data plot line style and (2) “no significant change in channel cross-section” notes, if applicable, initialed and dated by inspection team leader. In the legend area, Engineer shall place the notation “downstream” next to plot line identification if the measurement for the plot were taken downstream.

- i. **Underclearance Record, TxDOT Form 2601** — Engineer shall complete this form for all grade separations, including pedestrian, utility, and railroad underpasses. Engineer shall provide a brief sketch indicating dimensions and reference points for collected vertical and horizontal clearance data. Engineer shall also record existing clearance signs. NBIS Item 54.2 must reference the minimum vertical clearance under the structure over any portion of the useable pavement in travel lanes or flush and paved shoulders. Engineer shall not use ultrasonic measuring.
- j. **Marked-Up NBI Sheet** – Engineer shall place an NBI printout with current changes to the database marked in red pen in the folder.
- k. **Scour Documentation** — This documentation will take the form of at least two items.
 - (1) Folders for span-bridges over waterways will have:

- (A) Scour analysis (HEC-18 or other approved scour software), or Texas Secondary Evaluation and Analysis for Scour (TSEAS) analysis (as applicable per site conditions), and
 - (B)
 - (i) TxDOT Form 2605, Scour Summary Sheet for Known Foundations, or
 - (ii) Scour Summary Sheet for Unknown Foundations (TxDOT Bridge Division, Geotechnical Section).
- (2) For bridge-class culverts Engineer shall include a Scour Summary Sheet (Form 2606).

Engineer shall review the data in the scour or TSEAS analysis and applicable Scour Summary Sheet in relation to the current structure and stream bed conditions. Engineer shall acknowledge agreement with the data in applicable document by placing a concurrence annotation, initialing, and dating the document. When the applicable scour document is not representative of the structure and stream bed conditions in the field, Engineer shall identify this by recording comments on the Lists of Structures, 22.f) below.

A Bridge Scour Plan of Action (POA) for Bridge's with NBIS Item 113 Coded "3", "2", or "1" has been prepared for all structures identified as scour critical. Engineer shall review the scour POA and identify required updates on List of Structures, 22.f.

These efforts are only a review of the documentation in the folder. Engineer is not required to perform an analysis or update any of the documentation. Engineer shall take photographs of conditions that have changed and include these photographs with other photographs in the inspection report.

Note: Engineer shall also use Item 22.f, List of bridges with recommended coding changes for scour critical, to identify all structures that is missing any scour documents, including Scour or TSEAS analysis, applicable Scour Summary Sheet, and Scour POA. Engineer shall not remove other existing scour documentation from the bridge folder.

- I. **Bridge Structural Condition History, TxDOT Form 2238** — Engineer shall update the Form 2238, if there is already Form 2238 in the bridge folder. Engineer shall create a new Form 2238 if the existing form has no remaining blank lines. If there is no existing Form 2238 in the bridge folder Engineer shall create a new Form 2238 and populate it with data from all existing inspections reports in the folder. Engineer shall check the inspection folder, NBI database, and bridge management software for evidence of other inspections (e.g., underwater, fracture critical) or significant events (e.g., impact damage, repair, widening) that have occurred since the last date entered on this form. Engineer shall add to this form, in chronological order, new inspection/event dates and other appropriate information. New Forms 2238 are to be placed on top of any existing history forms that will remain in the folders.
17. **Summary of Needed Load Posting Materials, TxDOT Form 2244** — Engineer shall use Form 2244 to order signs and sign hardware needed for load posting of off-system bridges. Engineer shall prepare a separate Form 2244 for each local jurisdiction, as agreed upon with the TxDOT District Bridge Inspection Office, to ensure each local jurisdiction will have the materials necessary to properly post all of its bridges. Engineer shall submit the summary to State. Engineer shall never provide the summary directly to any local jurisdiction.
18. **Calculations for Off-System Bridges.** Engineer shall provide bridge load rating calculations in accordance with TxDOT's bridge inspection policy. In performing the calculations for off-system bridges, Engineer may use the Texas Bridge Load Rating (TBLR) Program, which calculates load

ratings using a Working-Stress analysis, or with the Microsoft Excel Spreadsheet titled "RATE", which uses Load Factor analysis. State will accept either working-stress or load factor analysis.

Engineer shall verify and revise, if needed, the coding of NBIS Items 41, 41.1, and 41.2 for all bridges. Engineer shall notify the TxDOT District Bridge Inspection Office immediately if Engineer recommends the closure of a bridge. Engineer shall submit details and calculations supporting this recommendation. Engineer shall notify the TxDOT District Bridge Inspection Office of (1) missing load posting signs; (2) changes in load posting; or (3) newly recommended load postings, along with calculations and all supporting documentation, no later than 30 days from the discovery. State will set a time to meet with Engineer to review the findings, and State will notify bridge owner.

- a. Engineer shall perform a load rating for all timber, steel, and truss span bridges with any of the following conditions:
 - (1) Recommended changes in load ratings due to components, including deck, stringers or beams, truss members, bent caps, and piling or columns, with deterioration or damage that affects structural capacity;
 - (2) Design load < HS20 and no existing load rating with which the Engineer concurs; and
 - (3) H20-S16 amended by THD Supplemental No. 1 design loads and no existing current load rating with which the Engineer concurs.

Engineer shall sign, seal, and date all calculations and documentation referring to load rating capacity. It is acceptable to initial and date the calculations and only sign, seal, and date the Bridge Summary Sheet that summarizes the results of the calculations, rather than signing and sealing each page of the calculations themselves.

- b. Engineer shall assign culverts a load rating based on the data from respective plan sheets when available. For load ratings of culverts with design loads other than HS-20, HL-93 or HS-25, Engineer shall utilize the Load Rating Guidance Document.

Engineer shall complete the applicable section of Form 2495 and attach pertinent documents and supporting data used to complete the form (e.g., calculations, plan sheets advising of design load). Form 2495 is not required for structures when a new load rating is performed.

19. **Hard Copy Folders.** Engineer shall provide monthly submissions of bridge inspection folders unless otherwise directed by the TxDOT District Bridge Inspection Office. Engineer may submit folders to the TxDOT District Bridge Inspection Office by mail or in-person delivery. If folders are to be returned by mail, Engineer shall use boxes no larger than 12 inches wide by 10 inches high by 15 inches deep that meet 200-pound burst test or 32 psi edge crush test requirements. (These specifications are commonly associated with "Standard Duty" file boxes or bankers' boxes. Boxes meeting higher specifications are acceptable.).
20. **Photographs.** Engineer shall provide color photo documentation using digital photographs having a minimum resolution of 1200 pixels x 1800 pixels. The photos must be true aspect prints with a vertical dimension of 4 inches and a horizontal dimension of 6 inches (minimum 300 dots per inch). Photos must be clear images, free of blur and pixilation. Engineer shall present the photos on 8 ½ inch x 11 inch paper with two photos per page. Engineer shall include for each photo a caption noting the photo title, direction the viewer is facing, and description of each photo. These photo pages must show the Engineering Firm name, contract number, bridge identification number, and inspection date. Photo numbering is permitted but not required. Engineer shall electronically print photos to PDF - they shall not be scanned to PDF.

Engineer shall, at a minimum, provide the following photographs for each inspection and place them in the folder:

- a. Roadway View — Photograph taken looking along the centerline of the roadway showing a view of the bridge as seen from the roadway. This photo may be taken from shoulder area if necessary for safety considerations. Regardless of vantage point, photo must capture the leading corners of the bridge. Whenever possible, this photo must be taken in the direction of traffic for one-way bridges. It is not necessary to capture load posting signs in this photograph. Multiple roadways crossing over a culvert and structures with divided roadways require separate photographs for each roadway.
- b. Elevation View — Photographs taken of the bridge showing the overall length. It may be impossible to show the entire structure length on long structures. In these cases, use an oblique angle at a further distance to attempt to capture an overall picture. Do not submit multiple pages of photographs attempting to show every part of a long structure.
- c. Superstructure View — Photographs taken from underneath the bridge showing the type of superstructure and its typical condition. Bridges with multiple types of superstructures require separate photographs representing each superstructure type. The underside photo of the superstructure is not required for culvert structures. For truss bridges, this photo must show the floor system - Roadway and Elevation Views are sufficient to capture general superstructure views.
- d. Stream, Roadway, or Railroad Under View — Photograph taken showing the stream, roadway, or railroad as it passes under the bridge or through the culvert. Photographs of a stream must show evidence of scour if present (See sections 20.g. and h. for detailed photos of scour). Multiple features passing under a bridge require separate photographs representing each of those features. Photographs must be taken as close as possible to the centerline of the underpassing feature or approximately in line with supports to show how the feature passes through the bridge opening. For culverts, this photograph must be taken on the side opposite that of the elevation view to document both the inlet and outlet conditions. Consider geometry and site conditions when determining which side of culvert to use for the Stream Under View. The photograph must be looking through the culvert barrels whenever possible.
- e. Upstream and Downstream Channel Views — Photographs to document the condition of the channel upstream and downstream of the structure. Photographs must be taken from the deck whenever possible. Photographs must capture a small portion of the structure edge or rail to give an indication of the channel's approach and departure angles relative to the side of the bridge.
- f. Photographs of Load Posting Signs — If the bridge is load posted, photographs to document the condition of signs. One photograph must be taken at each approach that captures the entire sign and its position relative to the bridge. If possible, the combined vertical height of the sign and post must approximately fill the vertical dimension of the photograph. If the bridge requires load posting and both signs are missing, no photographs are required but a comment must be added to the Roadway View photo stating that signs are missing. If one sign is missing and the other is present, only one photograph is required but must have a note regarding the missing sign. Engineer must record missing signs on the Inspection Record (in the "Misc." section, "Signs" sub-section) and Bridge Summary Sheet.
- g. Detail Photographs for Component Ratings of 4 or lower — Detail photographs for documentation on all components rated 4 or lower on the Bridge Inspection Record. The component condition rating and deterioration details must be noted in the photograph caption.
- h. Photographs of Recommended Maintenance Needs — A photograph of each recommended maintenance need. Delineator needs do not require photographs.

21. **Forms.** Engineer shall ensure that all inspection findings submitted to State are typed, using the TxDOT electronic forms, when available. Sketches must be of sufficient quality that clear and legible copies and scans can be made.
22. **Lists of Structures.** Engineer shall provide State with the following lists of structures, as both hard copies and as native Microsoft Excel files, updated with each submittal, and a cumulative version at the end of the work authorization. State will not accept Adobe Portable Document Format (PDF) files. For each bridge, the list format must include the facility carried and feature crossed, as well as the NBI number and the data outlined below. Off-system bridges must be grouped by local jurisdiction. On-system bridge lists must be grouped by County and Maintenance Section Number. Within each grouping, Engineer shall list bridges in increasing order by NBI number.
- a. **List of bridges recommended for special inspections** — This list must include bridges to be added to State’s current fracture critical or underwater lists. The list shall also identify structures that have those special inspections performed but have no corresponding reports in the folder. Engineer shall include a photo of the components that require the fracture critical or underwater inspection. The list must include a brief comment describing the fracture critical element to be inspected. For structures that require an underwater inspection, Engineer shall provide the depth of water at a component requiring a diving inspection. Engineer shall also list missing reports. Engineer shall email a copy of this list and photos to the TxDOT District Bridge Inspection Coordinator and the TxDOT Bridge Inspection Program Manager.
 - b. **List of bridges with any condition rating of 4 or lower** — This list shall include all bridges with any component rated 4 or lower. Engineer shall (1) report whether the condition rating is new or previously existed; (2) identify the component NBIS Item (e.g., 58, 59), its current condition rating, and previous condition rating; and (3) give a brief description of condition.
 - c. **List of bridges requiring changes in Operational Status** — This list includes all bridges that require changes in operational status (e.g., bridges that do not meet State Load Posting Policy and require load restrictions, bridges that no longer require posting, bridges that are newly under construction, bridges that are newly closed). Engineer shall provide the old and new coding for Operational Status (NBIS Item 41.0) and a brief description of the reason for the change.
 - d. **List of bridges with recommended changes in vertical clearance signs (off-system bridges only)** — For each proposed sign change, Engineer shall provide the existing signed clearance, the minimum measured clearance, and the clearance for the proposed sign.
 - e. **List of bridges with missing or inaccurate GPS coordinates** — Coordinates will be reported in decimal format, carried out to eight places. Engineer shall e-mail a copy of this list to the TxDOT District Bridge Inspection Office and the TxDOT Bridge Inspection Program Manager.
 - f. **List of bridges with recommended coding changes for scour critical (NBIS Item 113)** — This list includes structures whose analysis or Scour Summary Sheet needs to be reevaluated because of changes in site conditions (e.g., improvement, repair, degradation). This list must also identify structures that require a scour analysis, scour summary, or Plan of Action, where none exists. Engineer shall provide a copy of this list to the TxDOT District Bridge Inspection Coordinator and, by email, to the TxDOT Bridge Inspection Program Manager.
 - g. **List of bridges needing plan sheets** — This list includes bridges that have no plans in their folders or are missing sheets such as a layout, detail sheet, or other sheets that document design load, widenings, or other essential items. Engineer shall provide the year of construction, Control-Section-Job Number, and a brief description of sheets or plans that are needed. The goal is to document geometry, design load, and elemental quantities without unduly adding bulk to the folders. Many culverts may only have Plan and Profile and Standard sheets available.

- h. **List of bridges inspected after inspection due date** — This list includes bridges whose routine inspection occurred after the inspection due date, due to unforeseen circumstances such as weather, scheduling, etc. The list must identify previous inspection date, current inspection date, and reason for the delayed inspection.
23. **Bridge Inspection Follow-Up Action Worksheet Summary** — On-system and off-system - This list summarizes the information from the Bridge Inspection Follow-Up Action Worksheets of all the bridges assigned in the work authorization. Engineer shall submit the electronic worksheet summary, in Microsoft Excel format, to the TxDOT District Bridge Inspection Office with cumulative updates for each successive submittal and a complete listing at the end of the work authorization.
24. **On-System Data.** For each on-system bridge, Engineer shall submit one original hard copy of the inspection findings (The Report). The Report shall be submitted and clipped into the bridge's six-sided folder provided by the State. Engineer shall provide new six-sided folders for newly inventoried bridges or as replacements to damaged folders. The order of the various forms within the folder shall be made uniform in all of the TxDOT Districts, as shown below in section 27, with no exceptions. This folder shall contain the originals of all documents. Duplicate folders are not required and shall not be submitted.

An electronic copy of all inspection photos shall be submitted in JPEG format on a USB flash drive in electronic folders containing copies of all forms for each inspection that have been uploaded to the bridge management software. Electronic folders for each bridge shall be named by the bridge ID (e.g. 12-123-0123-45-001). Photos shall be named in a convention that includes both the bridge ID and photo description (e.g. 12-123-0123-45-001_Downstream). All other files shall be named as described in section 28. Individual JPEG photo file sizes shall not be less than 0.5 MB and shall not exceed 1.5 MB in size. Electronic files for the various required bridge lists shall also be included on the thumb drive.

25. **Off-System Data.** For each off-system bridge, the Engineer is required to submit one original hard copy of the inspection findings (The Report). The Report shall be submitted and clipped into the bridge's six-sided folder provided by the State. (The Engineer shall provide new six-sided folders for newly inventoried bridges or as replacements to damaged folders.) The order of the various forms within the folder shall be made uniform in all of the State's Districts, as shown below in section 27, Order of Forms within Original Folder. This folder must contain the originals of all documents. Additionally, Engineer shall submit one summary package shall be submitted. The items to be included in the summary package shall relate to each local jurisdiction as detailed below in section 26, Summary Packages. The summary package must summarize the bridge conditions, load posting requirements, and needed maintenance repairs of all the local jurisdiction's bridges. Engineer shall not submit duplicate folders.

Requirements for the electronic submission of documents and photographs for off-system bridges is the same as that for on-system bridges. See section 24, On-System Data.

26. **Summary Packages.** Engineer shall prepare a standard hard copy summary package for each off-system bridge-owning jurisdiction, as agreed upon with the TxDOT District Bridge Inspection Office). The content of these summary packages shall be identical in all of the TxDOT Districts. The packages are intended to be summary reports for bridge inspection findings, maintenance items needed, and load posting requirements. Engineer shall assemble summary packages in three-ring binders and deliver them to the TxDOT District Bridge Inspection Office.

The TxDOT District Bridge Inspection Office will designate the distribution of summary packages within the three-ring binders. Summary packages must include copies of the following for each bridge, in this order:

- (1) Follow-Up Action Worksheet;
- (2) Bridge Summary Sheet;

- (3) Bridge Inspection Record; and
- (4) Inspection Photos.

Engineer shall group bridges within each summary package by local jurisdiction and ordered within each group by NBI number. Engineer shall include the respective Summary of Needed Load Posting Materials with each local jurisdiction's summary packages

27. **Order of Forms within Original Folder.** Each folder is to have two dividers and six sides to which documents can be fastened, beginning with the inside surface of the front cover (Side 1) and ending with the inside surface of the back cover (Side 6). Folder labels must reflect the most current bridge designation information and must match the format established by the TxDOT District Bridge Inspection Office.

When completing the forms, if the inspector and Engineer-of-Record is the same person, only the signature located next to the seal is required. Load rating calculations must be signed and sealed by a practicing engineer licensed in the State of Texas. In addition, the firm name and firm number (as registered with the Texas Board of Professional Engineers) must be recorded on every form where "Firm Name" is identified as an input field or where an engineering seal and signature are required. When a subcontracted engineer seals a document, both the prime and subcontractor firm names and numbers shall be recorded on the document.

Engineer shall place items onto each side so that the first list item is the first document seen when looking at a side and the last item is the back document on a side. Engineer shall ensure that it maintains the order of documents consistent with this across all TxDOT districts. This list includes only those documents for which the Engineer is responsible.

Side 1

- Location map with bridge highlighted
- All current inspection photos
- All other photos from previous inspections in chronological order with the most recent on top and oldest at the bottom

Side 2

- Memo to Bridge Folder, Late Inspection Justification (if applicable)
 - ◆ Signed and dated by Engineer-of-Record
- Memo to Bridge Folder, Delayed Inspection due to Construction, etc. (if applicable)
 - ◆ Signed and dated by Engineer-of-Record
- Bridge Inspection Follow-Up Action Worksheet (On-System), Form 1386
 - ◆ Typed name of inspection Team Leader
 - ◆ Signed, sealed, and dated by Engineer-of-Record
- Bridge Inspection Follow-Up Action Worksheet (Off-System), Form XXXX
 - ◆ Typed name of inspection Team Leader
 - ◆ Signed, sealed, and dated by Engineer-of-Record
- Bridge Summary Sheet, Form 2602 (off-system)

- ◆ Inspection Team Leader's Signature
- ◆ Signed, sealed, and dated by Engineer-of-Record
- Bridge Inspection Record, Form 1085
 - ◆ Team Leader's name and signature
 - ◆ Signed, sealed, and dated by Engineer-of-Record
- Bridge Load Rating Statement, Form 2495 (if applicable; include copies of plan sheet(s) or other documents indicating design load)
 - ◆ Typed name of inspection Team Leader and Engineer-of-Record
 - ◆ Signed, sealed, and dated by Engineer-of-Record
- Current Load Rating Calculations (if applicable)
 - ◆ Signed, sealed, and dated by Engineer-of-Record
- Bridge Inventory Record, Form 536
 - ◆ Team Leader's signature
 - ◆ Signed, sealed, and dated by Engineer-of-Record
- Inventory Sketch (if not on Side 2 of Form 536)
 - ◆ Signed, sealed and dated by Engineer-of-Record
- Revision to Bridge Inventory Record (if applicable), Form 2242
 - ◆ Team Leader's signature and date

Side 3

- Underclearance Record (if applicable), Form 2601
 - ◆ Team Leader's signature
- Channel Cross-Section Measurements Record (if applicable), Form 2600
 - ◆ Team Leader's signature (comments section)
- Channel Cross-Section Sketch (if applicable)
 - ◆ Team Leader's initials and date

Side 4

- Marked-Up NBI Sheet (Bridge Detail Report/Structure Inventory and Appraisal Sheet)
- Scour Summary Sheet (Form 2605 or 2606 as applicable)
- All other scour related reports/documents (or indexing information, if applicable)
- All Scour photos

Side 5

- Element Inspection Summary Listing Report (if applicable; field forms are not required)
- Special Inspection Records and Reports (Underwater, Fracture Critical Inspections, etc.)

Side 6

- Bridge Structural Condition History Sheet(s) (Form 2238)
- Previous inspections and all attachments in chronological order with most recent placed closer to the top and oldest at the bottom
- Plans

28. **Naming Conventions and Locations for Uploading of Files.** Each file uploaded to the bridge management software must be in PDF format. The file names will have the following naming convention where DD = District #, CCC = County #, CCCC = Control #, SS = Section #, and SSS = Structure #:

- Inspection Attachment:
 - a. Routine inspection documents; File name: *DD-CCC-CCCC-SS-SSS_RTInsp.pdf* – This file will include the following, in this order:
 1. Delayed Inspection due to Construction Memo (if applicable, will be the only document in this attachment)
 2. 25th Month Anniversary Inspection Memo (if applicable)
 3. Follow-Up Action Worksheet
 4. Bridge Summary Sheet (if applicable)
 5. Bridge Inspection Record
 6. Bridge Load Rating Statement (Assumption or Concurrence - if applicable)
 7. Channel Cross-Section Sketch (if applicable)
 8. Underclearance Record (if applicable)
 9. Recommended Change in Bridge Load Posting (if applicable)
 - b. Routine inspection photographs; File name: *DD-CCC-CCCC-SS-SSS_RTPhotos.pdf*

Note: Photos sheets are to be electronically printed to PDF and not scanned to PDF.
- Bridge Attachments:
 - a. Bridge Inventory Record: *DD-CCC-CCCC-SS-SSS_InvRec_YYYY-MM.pdf* (YYYY-MM corresponds to the year and month of initial record) This includes any applicable sketch.
 - b. Revision to Bridge Inventory Record (when applicable): *DD-CCC-CCCC-SS-SSS_InvRevision_YYYY-MM.pdf* (YYYY-MM corresponds to the year and month of most recent change to inventory record.)

- c. Load Rating; File name: DD-CCC-CCCC-SS-SSS_LR_YYYY-MM.pdf (YYYY-MM corresponds to the year and month of analysis). This includes the Bridge Load Rating Statement with Assigned load ratings as well as calculations.
- d. Original plans; File name: DD-CCC-CCCC-SS-SSS_OrigPlans_YYYY.pdf (YYYY corresponds to the year of construction completion.)
- e. Widening plans; File name: DD-CCC-CCCC-SS-SSS_Widening_YYYY.pdf (YYYY corresponds to the year of completion of the widening construction; there could be multiple widening plans and years)
- f. Scour Documents; File name: DD-CCC-CCCC-SS-SSS_Scour_YYYY.pdf for scour analyses, DD-CCC-CCCC-SS-SSS_ScourSumSht_YYYY.pdf for Scour Summary Sheets; *DD-CCC-CCCC-SS-SSS_ScourPOA_YYYY.pdf* for Scour Plans of Action (YYYY corresponds to the year of the scour document)

NOTE: See the most current version of the “Electronic Files Naming Convention” document for naming of other attachment files not listed above. Scanned files can be black and white except for the Channel Cross-Section Sketch which shall be in color. All files shall be of sufficient resolution to be clearly readable on a computer screen and when printed to hard copy. However, the use of the highest quality settings when generating PDF documents is typically not needed and results in unnecessarily large electronic files.