Chapter 3 Inspections and Reports

3-1 General

This chapter provides guidelines to inspect bridges, culverts and tunnels, including documentation.

The guidelines presented herein are those in use by the WSDOT Bridge Preservation Office (BPO). Local Agencies are encouraged to follow these guidelines so as to provide a consistent basis for evaluation and reporting of inspection data. Coding for non-mandatory items may deviate according to the needs of an individual agency. Agencies are encouraged to document such deviations in a manner so as to aid in the evaluation of the associated inspection data.

The basis for bridge inspection policies and procedures are referenced throughout the chapter by the updated versions of the two following manuals:

The AASHTO *Manual for Bridge Evaluation* (MBE), Section 4, provides uniformity in the procedures and policies for determining the physical condition, maintenance needs, and load capacity of the nation's highway bridges.

The FHWA NHI 12-049 *Bridge Inspector's Reference Manual* (BIRM) is a manual on programs, procedures, and techniques for inspecting and evaluating a variety of in-service bridges. It provides guidelines regarding what preparation is necessary, how to inspect, what to look for, what equipment and tools are needed, how to document the results of the inspections, and provide appropriate follow-up to the inspection.

Depending on the inspection type, bridges submitted to the NBI and NTI have regular inspection intervals that must adhere to the intervals defined within the NBIS and NTIS. When a bridge is inspected late, the agency must document a justifiable cause that pushed the inspection beyond the required interval. The justifiable cause, identified as an unusual circumstance in the preamble of the NBIS and NTIS regulation, should be documented within the inspection report. Examples of unusual circumstances include severe weather, concern for inspector safety, concern for inspection quality, the need to optimize scheduling with other bridges, or other unique situations. Bridges with late inspections will be scheduled for the original inspection month during subsequent inspection cycles.

3-2 Inspection Types and Reporting

This section identifies and describes several inspection types, used by both the state and local agencies, that have been developed to address specific needs. Below is a list of those inspection types followed by a description of each inspection/report type.

- Initial
- Routine Bridge
- Routine Tunnel
- Nonredundant Steel Tension Member (NSTM)
- Underwater
- Complex Feature
- Interim
- Underwater Interim
- Damage
- Condition Safety
- WSDOT Safety
- Local Agency
- Short Span
- Two-Man UBIT Discontinued
- Informational
- Inventory
- In-Depth
- Geometric
- Feature Discontinued
- Scour Monitoring

3-2.1 *Bridge Inspection Reports*

All bridge field inspection reports (BIR) must be prepared at the completion of each inspection type to record the inspection findings, provide a narrative description of conditions at the bridge site, and note any changes in the WSBIS coding information. The Team Leader shall record and submit the findings of the specified type of inspection into BridgeWorks. A Routine Inspection will be included with all NSTM and Special Feature inspection types. A bridge inspection report must be completed and released in the BridgeWorks program within 90 days from the end of the associated inspections.

3-2.1.A Opening and Completing Bridge Inspection Reports

(1) Select the appropriate report type to be included in the record and enter/select the: Team Leader initials, Team Leader identification number, Assistant Inspector initials, date of inspection, and total number of crew hours at the bridge site. The Team Leader and Assistant Inspector are required to sign the approved and released copy of the BIR that is placed in the bridge file.

(2) Confirm the condition and adequacy coding for the various bridge elements and make any changes as necessary. Review the Adequacy Appraisal codes, NBI/SNBI condition codes, BMS and SNTI elements and their respective condition states. Provide notes and narratives from field observations describing the existing conditions and supporting condition codes. Verify that the correct Program Manager is listed on the inspection report.

(3) Update photos representing current or monitored conditions or defects. Photo narratives must include location and direction photo was taken, including photos representing typical conditions. Photos for Deck and Elevations should be updated approximately every 10 years or as conditions, at or around bridge, change significantly. Ensure that photos are identified in the element and note narratives.

(4) Prepare recommendations for repair of any bridge elements in need of repair and provide photos and descriptions of locations to be repaired. Update repair photos as conditions change. Verify out any repairs that have been completed and take a photo of the existing condition of repair. Repair and verification photos should be attached to the associated repair. Ensure all repair numbers and relevant repair or verification photos are identified in the element and note narratives. See Section 6-4 for additional repair instructions and procedures.

(5) Update the Files Tab with all newly gathered or updated file information, such as Scour Field Evaluations, Ground Lines, Element Condition Spreadsheets, Relevant Supporting Documentation, or Information for Inspection Coordination or Planning. Once the files are attached, PDF versions of the files, (if they are not already PDF) need to be created. Prior to locking the report, select all the appropriated PDF files for inclusion in the intended report.

(6) If it is determined that a critical bridge deficiency has been identified resulting in an emergency load restriction, lane closure, bridge closure or a failed bridge, open a Damage Inspection report type to flag and identify the finding. This will be in addition to the report being conducted (if applicable). Open a Critical Finding and complete the known information under the Critical Findings Tab. See Damage Report and Chapter 6 for additional information.

(7) Complete the report resources information on any soundings, inspection resources, support, or third-party requirements to include date completed, interval if applicable and date of next resource requirement.

3-2.2 *Initial Inspection (Triggered Inspection-No Interval, Next Routine Insp. at 24 months)*

An Initial Inspection is essentially the first Routine Inspection performed on any reportable new, replaced, rehabilitated, or temporary bridge. This inspection requires a Lead Inspector with a current Certification Number. It is conducted the same as a Routine Inspection outlined below and verifies any data already entered in BridgeWorks via the "Inventory" Report type. An Initial Inspection may also be performed when there is a change in bridge ownership. The initial inspection, used only for reportable structures, is reported to the NBI and NTI. When the Initial Inspection is conducted, the necessary information to schedule the Routine Inspection report type will also be entered.

The purpose of this inspection is to add bridges to the inventory, or document significant structural changes due to widening or rehabilitation and establish certain baseline information.

1. **Gathering Inventory Data** – Establishing baseline information about the bridge from the original construction plans or as-built plans can be performed in the office prior to the site inspection. Agencies shall record the required WSBIS data into BridgeWorks along with the applicable Bridge Management System (BMS) elements for the structure. Any information not known, or which cannot be determined from the plans can be left blank until the site inspection.

   Depending on the type of structure built, one or more of the following inspection types may also be required to be performed with the initial inspection, in addition to entering the Routine Inspection information:

   - An NSTM Inspection if the bridge contains nonredundant steel tension members. See Nonredundant Steel Tension Member (NSTM) Inspection.
   - An Underwater Inspection is needed to inspect underwater portions of the bridge. See Underwater Inspection.
   - A Complex Features inspection if the bridge contains unique design or construction elements. See Complex Feature Inspection.

   Conclusions and findings from these items should be incorporated into the Bridge Inspection Report (BIR) to support the applicable codes and ratings.

   Team Leaders should coordinate the planning and timing of the inspection with the appropriate project or construction offices prior to visiting the site.

2. **Site Inspection** – The Initial Inspection site visit must be conducted after the bridge has been constructed, preferably before it is placed into service, but within 90 days after it is open to traffic. As part of the site inspection, the Team Leader will verify, complete and correct, if necessary, any inventory information that had been initially coded into BridgeWorks. At the bridge site, the Team Leader should review and confirm all geometric information such as actual bridge dimensions, and measurements, and verify the list of bridge elements including the quantity and condition of each. As part of the initial site visit, at least two photographs of the bridge shall be taken: an elevation and a deck photograph. The elevation photograph should be taken (looking north or east) when possible, to show a view from one side of the bridge. The deck photograph should be taken (ahead on station) to show a view of the bridge looking onto the bridge deck.

   Additional information to collect may include initial soundings (channel profile), vertical clearance for the carried route or vertical clearances for all routes below.

   The Scour Field Evaluation Form and Vertical Clearance forms were developed for collecting this information and supplement the BIR. Examples of the forms are shown in Section 3-5.

3. **Check Coding** – The BIR form should note any inconsistencies found between the plans and the as-built bridge and should provide an explanation of any coding changes.

4. **Establish Routine Inspection Schedule and Resources** – Before releasing the report in BridgeWorks, the inspection interval and next inspection date for Routine or any other required inspections needs to be entered. In the review process and prior to release, the next inspection date, program scheduling requirements, and resources for future inspections need to be evaluated. For the State, these will be coordinated with Supervisors, and the Scour engineer, and then entered accordingly with correct interval and any force date to properly coincide with future scheduled inspections

3-2.3 *Routine Bridge Inspection (Scheduled 12, 24 or 48-Month Interval)*

Routine Inspections are the regularly scheduled inspections of an entire structure to ensure that the structure continues to satisfy present service requirements. Inspections consist of observations, measurements, or both, as needed to determine the physical and functional condition of the bridge, to identify any changes from “Initial” or previously recorded conditions. This inspection requires a Lead Inspector with a current Certification Number. Generally, Routine Inspection intervals are not to exceed 24 months throughout the life of the bridge. The acceptable tolerance for intervals of 24 months or greater for the next Routine inspection is up to three (3) months after the month in which the inspection was due. The acceptable tolerance for intervals less than 24 months for the next Routine inspection is up to two (2) months after the month in which the inspection was due. For any inspection conducted outside the month in which the inspection was due, regardless of interval, the subsequent Routine inspection will be reset to the original target month. Changes to the target month will require PM approval within BridgeWorks. Routine Inspections are reported to the NBI and NTI.

1. **Inspecting Bridge Components –** The BIRM describes the general inspection procedures to be followed for inspecting any concrete, steel, or timber bridges, and the specific procedures to follow for inspecting given bridge elements (i.e., the bridge abutments). These steps can be used by the Team Leader as a checklist to help accomplish the inspection and identify types of problems a given bridge or bridge element will be prone to. Following these procedures will help ensure that a thorough and comprehensive inspection is achieved. However, specific problems not covered in these general procedures may be encountered. If that is the case, the Team Leader may contact their respective WSDOT Bridge Program Support personnel.

2. **Inspecting for Scour –** The Routine Inspection of any bridge over water should include an assessment of existing scour conditions, the effect of scour on the bridge, effectiveness of countermeasures, and recommendations for repair, if appropriate. The field inspection is used in conjunction with the scour appraisal (see Section 5-3), to identify and verify the potential of harmful effects of scour to the bridge.

   Field inspection documentation for scour should include the specific location and extent of any deterioration, damage, or undermining in the following:

   - The stream channel and stream banks.
   - Substructure elements (abutments, pier walls, web walls, columns, or shafts).
   - Foundations (footings and seals). Measure and record the extent of foundation exposure and undermining.
   - Channel protection devices (i.e., dams and levees).
   - Scour countermeasures (riprap or shielding).
   - Recommendations for any repairs, replacement, or maintenance required.
   - Perform soundings on bridges as identified by the Scour Engineer using the Scour Field Evaluation form.

   The Scour Field Evaluation form was developed to supplement the BIR for water crossings by measuring the streambed cross-section (soundings) at a bridge to document observations related to scour. A copy of this form is shown in Section 3-5.

   Soundings of streambed elevations should be taken during the Initial Routine Inspection and during subsequent inspections as required. The form should note the location and depth of the streambed at each point where a sounding was taken. This information should then be plotted to identify long term changes in the channel cross section over time.

   Further discussion of inspection procedures for bridges over water can be found in the BIRM *Bridge Inspectors Reference Manual* and *HEC 18 Evaluating Scour at Bridges*.

3. **Routine Inspections with Extended Intervals** – Routine Inspections with extended inspection intervals greater than 24 months but not exceeding 48 months, must meet the criteria of CFR 23 650.311(a)(1)(iii) and as outlined in the WSDOT Extended Interval Policy sent to FHWA dated September 18th, 2023.

   - Reported bridges shall be re-evaluated against the policy criteria sent to FHWA after every inspection. Refer to the WSDOT Extended Interval Policy sent to FHWA, dated September 18th, 2023, under Appendix 3-C for further details.

- The Coding and Appraisal Unit will run data checks on each BIR to determine the reported structure's eligibility prior to release into the database.
- Team Leaders for the State shall place the following note in the zero (0) note of the BIR within BridgeWorks for existing extended interval bridges and candidate bridges:

  "Continue to validate the status of this bridge each inspection as a 48-month inspection candidate. Verify condition ratings, load ratings, vertical clearances, ADT, scour codes and that no major rehabilitation, or structural modification such as widening has occurred in the last two years."

4. **Routine Inspections with Inspection Intervals Less than 24 Months** – Bridges or culverts should be considered for more frequent inspections if structure or site conditions warrant more frequent inspection of the entire structure. Under CFR 23 (a)(1)(ii)(B) bridges included in the NBI that meet any of the following criteria must be inspected at intervals not to exceed 12 months.

   a. One or more of the NBI Deck, Superstructure, Substructure or Culvert code is rated equal to 3 or less.

   b. Observed scour condition is rated equal to a 3 or less.

   Where condition ratings are coded 3 or less due to localized deficiencies, a special or limited inspection (WSDOT Interim Inspection), limited to just those noted deficiencies can be used in conjunction with the regular interval Routine Inspection. In such cases there will be no more than 12 months between the two. See the description of Interim Inspection.

3-2.4 *Nonredundant Steel Tension Member (NSTM) (Scheduled 12- or 24-Month Interval)*

The National Bridge Inspection Standards (NBIS) require that an NSTM Inspection be performed, in addition to the required Routine Inspection, on regular intervals not to exceed 24 months on bridge members identified as NSTMs. This inspection requires a Lead Inspector with a current Certification Number and NSTM Endorsement. The acceptable tolerance for intervals of 24 months for the next NSTM inspection is up to three (3) months after the month in which the inspection was due. The acceptable tolerance for intervals of less than 24 months for the next NSTM inspection is up to two (2) months after the month in which the inspection was due. For any NSTM inspection conducted outside the month in which the inspection was due, regardless of interval, the subsequent NSTM inspection will be reset to the original target month. Changes to the target month will require PM approval within BridgeWorks.

According to the MBE, a nonredundant steel tension member is a steel tension member in a bridge whose failure could result in the partial or total collapse of the bridge. This section provides information to assist the Team Leader in identifying nonredundant steel tension bridge members, preparing written procedures, planning and performing effective NSTM Inspections and completing the required inspection report. The information presented here is meant as a summary of the main points of the NSTM Inspection. NSTMs were previously referred to as fracture critical members and a complete description can be found in the BIRM. NSTM Inspections are reported to the NBI.

1. **General** – Each agency shall identify the bridges within its jurisdiction which contain NSTMs. The agency can then identify, through documentation, the particular NSTMs within each bridge. For the member to be considered an NSTM, two conditions must exist.

   a. The member must be a steel member in tension. The area of the bridge where the member is located is subject to tensioning (expanding) forces.

   b. There is no load path, system, or internal redundancy in the member or the bridge. There must be no other structural elements able to carry the load of the member if the given member fails.

   There are four types of redundancy: load path, structural, system, and internal. Bridge owners in the past have mainly identified structures with only load path redundancy to determine whether a member is an NSTM. Load path redundancy is the number of supporting elements, usually parallel, such as girders or trusses. AASHTO neglects structural and internal redundancies in determining whether a member is an NSTM. For a bridge to be redundant, it must have more than two load paths. An exception to this is where steel three girder systems have pin and hangers. In this case, the pin and hangers are considered as NSTMs.

2. **Identify the Bridge Types** – The following is a list of the types of bridges in which NSTMs will be found. Figures are also shown which illustrate these bridge types and note the location of the NSTM areas.

   a. **Steel Two-Beam or Two-Girder Systems (Exhibit 3-1)**

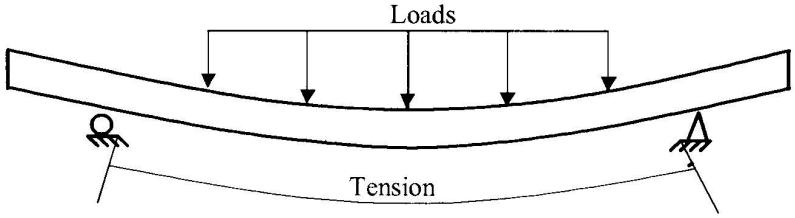
      (i) **Simple Spans** – Each beam or girder should be considered an NSTM as failure of either one could cause the bridge to collapse (Example A).

      (ii) **Continuous Spans** – In general, at the midpoint of the span, the bottom of the girder should be considered as an NSTM and over the pier, the top of the girder should be considered as an NSTM. A structural engineer may need to assess the bridge to determine the actual redundancy and presence of NSTMs (Example B).

      (iii) **Cantilever-Suspended Span** – In addition to the bottom of the girder at mid-span and the top of the girder over the pier, the top flange and adjacent portion of the web in the area of the cantilevered support should be considered as an NSTM (Example C).

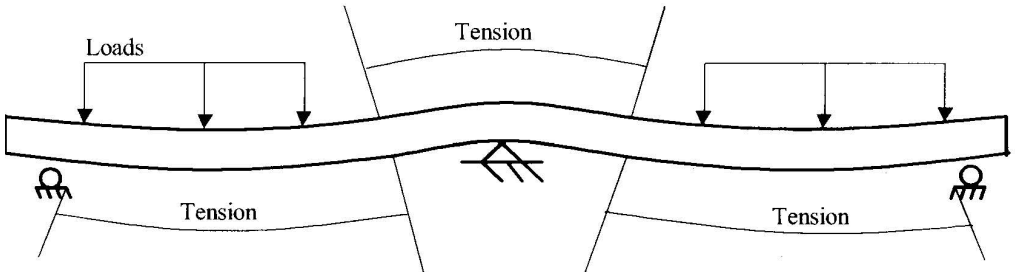
Exhibit 3-1 Steel Two-Beam or Two-Girder Systems

Example A: Simple Beam

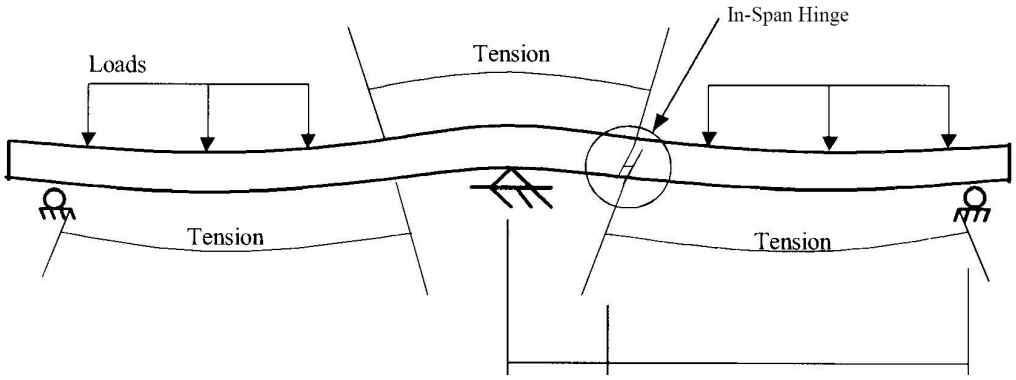


Example B: Continuous Spans

Exhibit 3-1 Steel Two-Beam or Two-Girder Systems



Example C: Cantilever - Suspended Spans



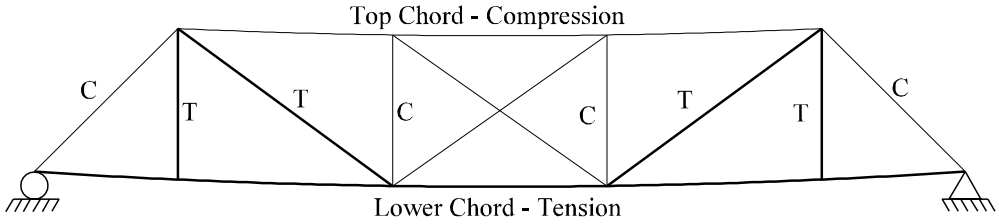
b. Steel Truss Systems (Exhibit 3-2) – Most truss bridges employ only two trusses and are thus considered as having NSTMs. All truss members in tension should be regarded as NSTMs. The exception is, when a detailed analysis by an experienced structural engineer, verifies loss of a member would not result in collapse of the bridge or major component.

The following elements within any truss bridge should also warrant special attention:

(i) **Pin-Connections** – Any load bearing pin connection in an NSTM or steel three girder system is considered as an NSTM.

(ii) **Category D and E Welds –** On a truss bridge, any tension member containing a Category D or E weld.

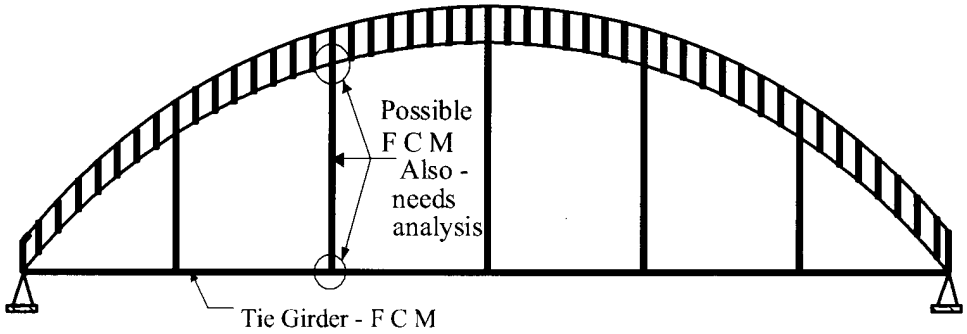
Exhibit 3-2 Steel Truss Systems



T - Tension, Fracture Critical Member (FMC)
C - Compression

c. **Tied Arches (Exhibit 3-3) –** The tie girder which keeps the supports from spreading apart is in tension and should be considered as an NSTM.

Exhibit 3-3 Tied Arches



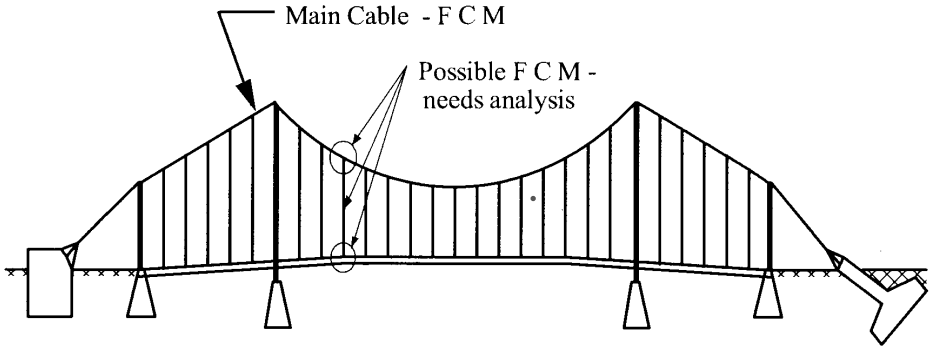
d. **Suspension Spans (Exhibit 3-4)**

(i) **Cables** – If the main suspension member is a cable, the cable should be considered as an NSTM (Example A).

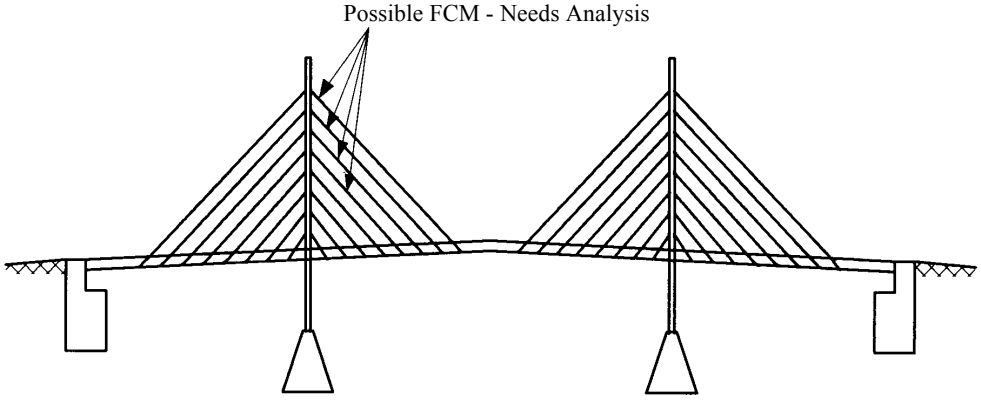
(ii) **Cable Stayed Bridge** – The bridge is of such complexity that it should be reviewed by a structural engineer to determine the criticality of the various stays to fracture (Example B).

Exhibit 3-4 Suspension Spans

Example A: Cable Suspension Bridge



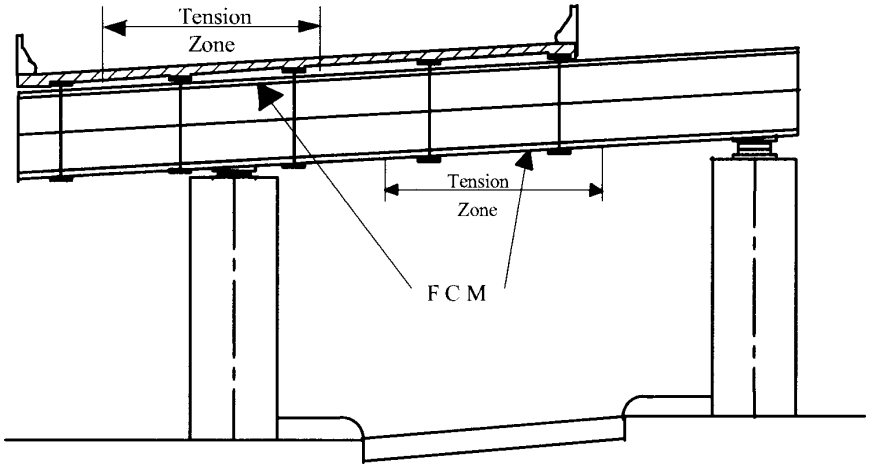
Example B: Cable Suspension Bridge



e. **Other NSTM Bridge Details**

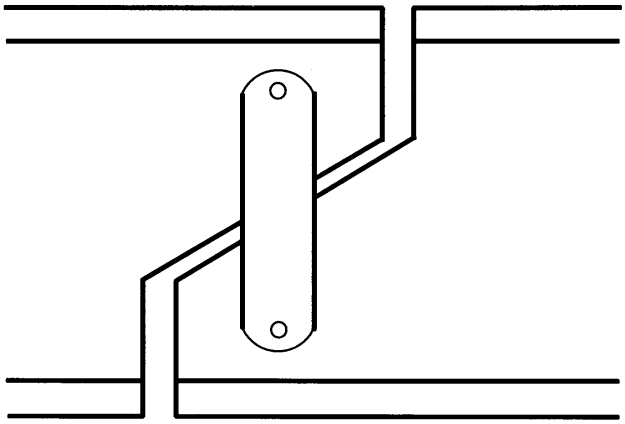
(i) **Steel Cross Beams and Caps** – Tension zones of the member or box beam should be considered as an NSTM (Exhibit 3-5).

Exhibit 3-5 Steel Cross Beams and Caps



(ii) **Pin and Hanger Supports** – The pin and hanger connection used to support a suspended span from a cantilever span should be considered as an NSTM if the member is non-redundant. The pin connection and hanger support in a two-girder or three-girder system are considered as NSTMs as the bridge has no built in redundancy. The same connections in a multi-beam system (more than 3 beams) are not NSTMs as the bridge has a high degree of redundancy. Pin connections in such bridges should be inspected with the same techniques and methods as NSTM pins (Exhibit 3-6).

Exhibit 3-6 Pin and Hanger Supports



3. **Prepare Written Procedures** – Once the NSTMs within a bridge have been identified, the agency must prepare a detailed plan as to how it will accomplish the NSTM Inspection. This written procedure may be developed by others being hired to perform the NSTM Inspection. However, if this is done, a qualified designee from the owner agency should carefully review the written plan to ensure that a sufficient analysis of the member will be made and that the task will be accomplished in a reasonable manner. These written inspection procedures are to be kept in each bridge file.

   NSTM Inspections can prove costly; therefore, in the development of the inspection plan, particular attention should be given to each of the following:

   a. **Scheduling** – Generally, it will be best to schedule an NSTM Inspection during cold weather (as cracks will be more visible), at low water (if the NSTM is underwater at high water), during daylight hours, and when traffic on the bridge will be lightest (as some form of traffic control may be necessary).

   b. **Equipment** – The Team Leader will require close access to each NSTM; thus, some type of equipment may be needed to provide sufficient access. Ladders, scaffolding, aerial work platforms, or UBITs may be deemed appropriate for a given situation. The choice of equipment will depend on the cost of rental, the time needed to perform the inspection using that equipment, and equipment availability. If a UBIT is used, it should be determined, before its use, whether it could overload the bridge, operate on the bridge grade, has sufficient reach, and if it might damage the deck. Use of a UBIT may also create a need for traffic control.

   c. **Workforce** – In order to keep the amount of time spent at the bridge site to a minimum, consideration should be given to the level of manpower needed. Once the number of individuals needed is determined, the duties to be performed by each individual should be clearly defined.

   d. **Tools** – The standard tools common to any Routine Inspection should be on hand for the NSTM Inspection. In particular, a wire brush, a magnifying glass, and a light source able to provide 50 to 100 lumens should be considered. In addition, specialized tools for carrying out nondestructive testing may also be warranted (i.e., a dye penetrant kit or ultrasonic testing device).

   e. **Inspection Procedures** – The NSTM inspection plan should identify the inspection interval and method(s) to be used. These should be developed depending on the criticality of the feature based on experience with other similar details or structures, calculated remaining fatigue life, current indications, material properties, consequences and likelihood of rapid failure, etc.

      If more than one type of inspection method is employed, identify when, where and how they are to be used. For example, a pinned truss bridge may require each of the pins to be examined visually during each inspection, supplemented by ultrasonic testing of ⅓ of the pins during each inspection. Therefore, all of the pins would be inspected ultrasonically in a 72-month period, if the inspection interval was 24 months.

4. **Perform the NSTM Inspection** – The purpose of the NSTM Inspection is to assess the structural condition of each bridge member identified as an NSTM. When inspecting these members, it is always best to err on the side of conservatism. The consequences of dismissing or failing to note a blemish on an NSTM are too great. Therefore, the inspection should be conducted carefully and thoroughly. Such close inspection of single members can be tedious; however, the Team Leader should work in a manner that ensures the same degree of care and attention to the last area inspected as the first. The previous pages described the general areas within a bridge where NSTMs will be located. The following pages describe the particular features to note.

   First, the Team Leader must gain access to the area with NSTMs. The Team Leader should be no further than 24 inches from the surface being inspected and should work with a light source of at least 50 to 100 lumens. The best viewing angle is at approximately 120°. The Team Leader will want to look for deteriorated surfaces or surface cracks. The BIRM discusses inspection procedures and the types of problems that may be found.

   The following areas or members should be checked:

   - Areas vulnerable to corrosion (under deck joints, on surfaces where water collects and in places where dissimilar materials meet).
   - Areas where there is a change in the bridge cross section, where stress is concentrated, or which show out-of-plane bending.
   - Web stiffeners (especially at the ends).
   - Coped sections and/or re-entrant corners.
   - Eye bars.
   - Shear connectors.
   - Pin and hanger assemblies.
   - Punched holes.
   - Rivet and bolt heads.
   - Tack welds and field welds (especially at weld ends or returns).

   If any cracks, blemishes, or other irregularities are found, the Team Leader will need to evaluate these further, which may include the use of a magnifying glass. A dye penetrant kit can be used to establish the limits of a crack. Use of magnetic or ultrasonic testing devices may be required to detect internal problems not apparent to the eye. The agency will need to determine which devices will be the most cost effective and reliable for the given situation.

   Finally, the Team Leader will need to record the location and size of any cracks found. Mark and date the crack ends in permanent marker for follow up on the structure.

   In most cases, it will be helpful to take a photograph of such cracks to provide visual documentation. This information and the photographs are to be included in the Visual Nonredundant Steel Tension Member Inspection Report.

5. **Prepare the Visual NSTM Inspection Report** – At the conclusion of the NSTM Inspection, a Visual NSTM Inspection Report should be prepared to provide detailed verification of the inspection findings. The report should provide qualitative and quantitative information concerning the NSTMs. This information is important for a number of reasons: it can offer insight about the condition of the member, it can provide a history of the bridge, and it can be used to substantiate the thoroughness of the inspection effort in the event of litigation arising from a bridge failure. See Section 3-5 for a copy of the Visual NSTM Inspection Report form.

   The inspection report should:

   - Identify what parts of the bridge were inspected and the location of each NSTM. (This can be shown on a photograph or sketch of the bridge.)
   - Describe the procedures followed to inspect the NSTM.
   - Describe the condition of the NSTM.
   - Provide the following details about any defects found:
     - What the defect is.
     - Where the defect is located (a sketch may be used to illustrate its location relative to the ends of the member, and its position in the cross section of the member).
     - Summarize the inspection findings (addressing how individual defects affect the member's overall condition).
     - Make any appropriate recommendations (i.e., repair the NSTM, recalculate load ratings, close the bridge).

6. **Finalizing the report** – Once completed the NSTM report along with any supporting documentation should be uploaded to the files tab and all resources updated accordingly as described in the beginning of this chapter under 'Opening and Completing Bridge Inspection Reports'.

7. **NSTM Inspections with Inspection Intervals Less than 24 Months** – NSTM Bridges with an NSTM Inspection Condition Code rated 4 (Poor) or less must be inspected at intervals not to exceed 12 months. NSTM Bridges may be considered for more frequent inspection based on load posting, susceptibility to impact damage or other known deficiencies.

8. This report should be entered in conjunction with the scheduled Routine Inspection and will be signed as a part of that entry. It is eligible for Electronic Signature.

3-2.5 *Underwater Inspection (Scheduled Interval Not to Exceed 60 Months)*

Bridges over water have special inspection requirements. If the bridge has members in water too deep to permit a visual or tactile (hands-on and/or wading) inspection from the surface at low water or during seasonal low stream flows, an underwater bridge inspection diver, with an FHWA Underwater Bridge Inspection endorsement must conduct an Underwater Inspection. An evaluation of the bridge's susceptibility to scour also needs to be conducted, see Section 5-3. Many bridge failures are due to underwater or scour problems; therefore, the importance of these types of inspection cannot be overemphasized. There may be environmental restrictions that need to be taken into consideration prior to conducting an Underwater Inspection.

An Underwater Inspection of submerged bridge elements is required on an interval not to exceed 60 months. The acceptable tolerance for intervals of 60 months for the next

Underwater inspection is up to three (3) months after the month in which the inspection was due. The subsequent Underwater inspection will be reset to the original target month. Changes to the target month will require PM approval within BridgeWorks.

The purpose of the Underwater Inspection is to examine the underwater elements to the extent necessary to determine their structural condition and adequacy. At a minimum, an underwater bridge inspection diver must swim by and examine all underwater portions of the bridge. If the underwater elements are covered with marine growth, portions of the structure need to be cleaned to positively ascertain the condition of the element. For concrete piers, this consists of cleaning 1 square foot patches near the surface, mid height, and bottom of all piers. For multiple pile bents, a one-foot band must be cleaned near the surface, mid-height, and bottom of one pile per bent, but no less than 10 percent of the piles. The underwater bridge inspection diver must also perform a visual or tactile inspection of the entire bridge footing at ground line to identify if any undermining of the footing exists, as well as probing to determine if scour holes are being filled in. If significant problems are encountered during the inspection, a more detailed inspection of the bridge may be needed.

Existing scour conditions must be evaluated during an Underwater Inspection. The Team Leader must assess condition and depth of the streambed, determine the susceptibility of the streambed to scour, and determine what countermeasures can be taken to safeguard the bridge. The primary requirement of the scour inspection is to establish a cross-section of the streambed. This is accomplished by sounding and can be carried out with either a fathometer (also known as a “fish finder”) or a lead line. See the BIRM and the MBE for guidance on performing Underwater Inspections. Underwater Inspections are reported to the NBI.

1. **Prepare Written Procedures –** Written inspection procedures need to be developed for each bridge requiring an underwater inspection. The inspection plan should detail as a minimum:
   - Type and interval of required inspection.
   - Location of members to be inspected.
   - Type(s) of foundation.
   - Bottom of foundation elevation or pile tip elevation.
   - Identification of scour critical substructure units.
   - Special equipment requirements.
   - Follow-up actions taken on findings of last inspection.
2. **Document the Underwater Inspection** – Prepare a Daily Site Dive Log for each dive and prepare an Underwater Inspection Report when inspection of the entire underwater portion of the bridge is concluded.
   a. **Daily Site Dive Log** – The Daily Site Dive Log must be completed by the inspection Team Leader (in concert with the diver). Section 3-5, provides a sample of the Daily Site Dive Log form. The form should summarize what equipment was used in the dive, what procedures were employed, what problems were encountered (such as strong currents or underwater obstructions or accumulations of debris) and should provide any information which may be helpful for planning future dives. At the conclusion of every dive, the diver must go over the inspection findings with the Team Leader to verify that the notes taken by the staff on the surface are a correct representation of what the diver found. The diver should also go over all underwater photos, making sure that the photo numbers and descriptions are correct.

b. **Underwater Inspection Report** – The Underwater Inspection Report must be completed by the underwater inspection Team Leader and reviewed by the diver. The report should be thorough and include the following information for the various levels of inspection performed.

(i) For a **Routine Underwater Inspection**, note:

- What conditions were found as a result of the visual inspection or cleaning.
- The condition of any protective coatings.
- Evidence of any significant defects or damage.
- Evidence of scour or the build-up of debris at the piers.
- The location of exposed foundation elements.
- Ground line elevations at the base of all piles or pile groups, elevations of the tops of all exposed footings and/or seals, and ground line elevations of all footings or seals at their corners.
- The condition of the streambed around each pier, including a description of any placed rock.
- The water flow (whether high, medium, or low) and an approximation of the velocity (ft/sec.).
- The influence of any significant environmental conditions (i.e., corrosive pollutants, salt water, etc.).
- Any changes to the surrounding area which have or may alter the flow characteristics around the pilings or piers (i.e., logs upstream, construction going on nearby).
- Any discrepancies between the bridge design and its actual configuration.
- Any recommendations for repairs, a subsequent scour inspection, a change in inspection interval, or an in-depth inspection.

In addition to the written information provided in the Underwater Inspection Report, problem areas in the bridge should be carefully identified and documented with drawings, photographs, and/or video recordings. Although underwater photos and video recordings are often preferred, they may not always offer clear views of the problem areas, so sketches and drawings are always needed to document findings.

3. **Finalizing the report** – Once completed the Underwater Report along with any supporting documentation should be uploaded to the files tab and all resources updated accordingly as described in the beginning of this chapter under 'Opening and Completing Bridge Inspection Reports'.

4. **Underwater Inspections with Inspection Intervals Less than 60 Months –** Bridges that require an Underwater Inspection meeting any of the following criteria must be inspected at intervals not to exceed 24 Months.

- Underwater Inspection Condition coded as serious (3) or less.
- Channel or Channel Protection Condition coded as serious (3) or less.
- Observed Scour Condition is coded as serious (3) or less.

Where condition ratings are coded 3 or less due to localized deficiencies, a special or limited inspection (WSDOT Interim Dive Inspection), limited to just those noted deficiencies can be used in conjunction with the regular interval Dive Inspection. In such cases there will be no more than 24 months of interval between the two. See the description of Interim Inspection.

5. **Underwater Inspection Intervals Less than 24 Months** – The acceptable tolerance for intervals of less than 24 months between dive inspection is up to two (2) months after the month in which the inspection was due.

3-2.6 *Complex Feature Inspection (Scheduled 12- or 24-Month Interval) (SNBI In-Depth Inspection)*

The Special Feature Inspection Type is being discontinued and replaced with the Complex Feature Inspection. Certain bridges will receive Complex Feature Inspections due to their design, material or function and are performed, in addition to the required Routine Inspection and requires a Lead Inspector with a current Certification Number. Complex Inspections are performed on regular intervals not to exceed 24 months. The acceptable tolerance for intervals of 24 months is up to three (3) months after the month in which the inspection was due. The acceptable tolerance for intervals less than 24 months is up to two (2) months after the month in which the inspection was due. For any inspection conducted outside the month in which the inspection was due, regardless of interval, the subsequent inspection will be reset to the original target month. Changes to the target month will require PM approval within Bridgeworks.

1. Bridges with complex features include but are not limited to:

   - *Moveable Bridges
   - *Floating Bridges
   - *Suspension Bridges
   - *Cable Stay Bridges
   - Ferry Terminals
   - Bridges with Pin and Hanger Details
   - Bridges built with High Strength Steel
   - Segmental Post Tension Concrete Boxes

   *Movable Bridges, Floating Bridges, Suspension and Cable-Stayed Bridges considered to be bridges with complex features in accordance with the NBIS.

2. Written procedures must be developed and included in the bridge file for all Complex Feature Inspections. Procedures should include:

   - Type, detail, and interval of required inspection.
   - The location of members to be inspected.
   - Special equipment required.

   a. **Movable Bridges (Code '1' in BridgeWorks)** – There are three basic types of movable bridges: vertical lifts, bascules, and swings. All of these structures are operated by either electro-mechanical drive systems or hydraulic systems. See the BIRM and the MBE for guidance on performing inspections on movable bridges.

   b. **Suspension Bridges (Code '3' in BridgeWorks)** – Suspension bridges consist of a pair of main cables hanging between and passing over two towers and anchored by backstays into large counterweights on opposite shores. Suspender ropes hang

from the main cables and support a pair of stiffening trusses or girders that run the length of the suspended spans. The stiffening trusses or girders support floor beams, stringers, and a roadway deck. Orthotropic decks may be used in place of the stringers and roadway deck. See the BIRM and the MBE for guidance on performing inspections of suspension bridges.

c. **Cable-Stayed Bridges (Code '9' in BridgeWorks)** – Cable-stayed bridges are very distinct structures with many unique details that require special inspection. On a cable-stayed bridge the longitudinal structural components that support the road deck are supported by inclined cables or stays that extend directly into anchors or saddles in one or two towers. One cantilevered component is balanced by another cantilevered component on the opposite side of the support tower. Typically, the deck is anchored to the ground in at least one spot to resist seismic forces and any unbalance in the cantilevered spans. See the BIRM and the MBE for guidance on performing inspections on cable-stayed bridges.

d. **Segmental Bridges (Code '5' in BridgeWorks)** – Segmental bridges are unique due to their construction. A segmental girder is a single or multiple box girder that is formed from segments post-tensioned together. This type of construction takes advantage of the standardization of the manufacturing process. See the BIRM and the MBE for guidance on performing inspections of concrete segmental bridges.

e. **Floating Bridges (Code '2' in BridgeWorks)** – Floating bridges in Washington State consist of concrete pontoons that are bolted together longitudinally and are held in position by steel cables connected to anchors on the bottom of the waterway. Some of the bridges are reinforced with prestressing steel. Two of Washington State's floating bridges contain movable spans that have unique operating characteristics.

f. **Ferry Terminals (Code '6' in BridgeWorks)** – Ferry Terminals (Code '6' in BridgeWorks) – Ferry terminals usually have a dock or holding area built over the water and a transfer span to carry traffic onto the ferry deck. The holding area can be constructed of treated timber, concrete, or steel components. The vehicle holding area or "dock" is typically considered a standard bridge structure and receives a Routine and Underwater Inspection. The transfer spans generally are steel trusses or girders with one end supported on the fixed pier and a free end which can be raised or lowered onto the boat to accommodate tidal changes. Transfer spans typically have their own structure I.D., and these structures are the ones with unique features which require the "Complex Feature" inspection. Ferry Terminal transfer spans have enough unique features that specific BMS elements and inspection procedures have been developed to help the inspector navigate through a ferry terminal inspection. The *Ferry Terminal Inspection Procedures Manual* is published as a stand-alone document and can be found as publication M 3105 at www.wsdot.wa.gov/publications/manuals/M3105.

g. **Pin and Hanger Connections (Code '4' in BridgeWorks)** – A pin and hanger is a system used to connect suspended spans to cantilevered spans. The hanger is connected to a beam or girder by a pin on one or both ends. In two-girder and three-girder systems, the pin and hanger connection is considered as an NSTM. Even when used in a multi-beam system where the bridge has a high degree of redundancy, the connection should still be inspected similar to an NSTM. This is due to problems experienced in other states with pins in multi beam suspended spans. See the BIRM and the MBE for guidance on performing inspections of pin and hanger assemblies.

h. **A-514 High Performance Steel (Code '7' in BridgeWorks)** – A-514 steel is used in high stress areas of larger steel bridges to reduce member size and total weight of steel. A typical location would be the top and bottom flanges of plate girders over the intermediate piers.

   Bridges fabricated from A514 steel have suffered from hydrogen cracks which occurred during fabrication. Also, higher strength steels generally are subject to larger stress ranges than the lower strength steels. In tension zones, cracks may initiate and propagate faster than in the lower strength steels. It is important that Team Leaders check tension zones closely for cracks particularly at welds, bolt holes, copes, and other fatigue prone locations.

3. This report should be entered in conjunction with the scheduled Routine Inspection and will be signed as a part of that entry. It is eligible for Electronic Signature.

3-2.7 *Interim Inspection (Scheduled 3, 6, 12- or 24-Month Interval) (SNBI Special Inspection)*

Interim Inspections for the State of Washington are considered Special Inspections under the NBIS. As a minimum, this inspection type is scheduled when condition ratings for Deck, Superstructure, Substructure or Culvert are coded 3 or less due to localized deficiencies, that need to be monitored between regular interval Routine Inspections. An Interim inspection may also be scheduled regardless of condition ratings, when a particular known or suspected deficiency, is identified as needing to be monitored. Interim Inspections are reported in the NBI.

The procedure for performing and documenting an Interim Inspection is the same as for a regular-interval Inspection, except that the focus is limited primarily to elements or areas identified with localized deficiencies or conditions that are being monitored.

Examples of conditions that may indicate Interim Inspection:

- Specifically identified bridge element or members show signs of advanced or rapid deterioration.
- Specific areas of damage needing to be monitored pending repair or replacement.
- Concerns over ongoing settlement that may adversely impact the supported structure.
- Foundation deterioration or damage may also warrant a visual inspection at an interval less than the mandatory 60 months.

1. **Determining the Interval** – The inspection interval will vary depending on the type of deficiency being monitored, and how rapidly the deterioration may be progressing. For Routine Inspections on 24-month intervals, Interim Inspections are typically done in the off year of the Routine Inspection. There are cases where Interim Inspections may occur several times during a calendar year on three- or six-month intervals. The inspecting agency along with the Team Leader will determine the appropriate inspection interval.
2. **Preparing for the Inspection –** The Team Leader should carefully review the past inspection reports to become familiar with the bridge, and to assure that the correct portions of the bridge receive the Interim Inspection. Notes in the report should instructed the inspector as to what to look for, what measurements to take, what results might be expected, and/or how the problem can affect the structural integrity of the bridge.

3. **Reporting** – A BIR documenting the inspection findings will be prepared by the individual who performed the inspection and will have specific language pertaining to the portions of the bridge needing the Interim Inspection, and what measurements need to be made.
4. **Documentation** – The Interim Inspection notes should detail the following:
   - The specific areas inspected.
   - Any measurements taken.
   - The procedures utilized to analyze and assess the given bridge element(s).
   - Testing results and/or findings.
   - Any recommendations for maintenance or repair.
   - Photos to document where and how to take repeatable measurements.

   In addition to the written information provided in the Interim Inspection Report, problem areas in the bridge should be carefully identified and documented with drawings/ sketches, and photographs, to facilitate accurate comparison of changes in condition and to provide repeatable measurements.
5. **Finalizing the report** – Once the Interim Report is completed, any supporting documentation should be uploaded to the files tab and all resources updated accordingly as described in the beginning of this chapter under 'Opening and Completing Bridge Inspection Reports'.
6. **Interim Inspection Intervals Less than 24 Months** – The acceptable tolerance for intervals of less than 24 months between inspections is up to two (2) months after the month in which the inspection was due.

3-2.8 *Underwater Interim (Scheduled 3, 6, 12, 24, 36 or 48-Month Interval) (SNBI Special Inspection)*

Underwater Interim Inspections for the State of Washington are considered Special Inspections under the NBIS. As a minimum, this inspection type is scheduled when condition ratings are coded 3 or less due to localized deficiencies, that need to be monitored between regular interval Underwater Inspections. An Underwater Interim inspection may also be scheduled regardless of condition ratings, when a particular known or suspected deficiency, is identified as needing to be monitored. Underwater Interim Inspections are reported in the NBI.

The procedure for performing and documenting an Interim Underwater Inspection is the same as for a regular-interval Underwater Inspection, except that the focus is limited primarily to elements or areas identified with localized deficiencies or conditions that are being monitored.

Examples of conditions that may indicate Interim Inspection:

- Extensive localized scour or rapidly progressing deterioration of the stream bed in which normally buried footings become exposed or pile supported footings become undermined. of the stream bed.
- Foundation deterioration or damage may also warrant a visual inspection at an interval less than the mandatory 60 months.

1. **Determining the Interval** – The inspection interval will vary depending on the type of deficiency being monitored, and how rapidly the deterioration may be progressing.

   a. For scour related findings where a normally buried spread footing is found exposed, or in the case of a pile supported footing which becomes undermined, the Interim Inspection is placed on a 12-month interval.

      During subsequent Interim Inspections, the interval may be adjusted upwards if the scour is determined to be stable and non-threatening to the structure. Adjusting a scour related Interim Inspection interval upwards is done slowly over time, i.e., 12, 24, 36, or 48 months, until the maximum 60-month inspection interval is reached.

   b. For non- scour related Underwater Inspection findings (i.e., foundation damage or deterioration) the Underwater Interim Inspection interval will usually be set at 24 months.

   c. There may be cases where Interim Inspections should occur several times during a calendar year on 3- or 6-month intervals. The inspecting agency along with the Team Leader will determine the appropriate inspection interval. The Underwater Inspection Note should detail the follow.

   d. Consideration should be given to performing an Underwater Interim Inspection for load posted bridges, provided the load restriction is due to element's that are only visible by Underwater Inspection techniques.

2. **Preparing for the Inspection –** The Team Leader should carefully review the past inspection reports to become familiar with the bridge, and to assure that the correct portions of the bridge receive the Underwater Interim Inspection.

3. **Reporting** – A BIR documenting the inspection findings will be prepared by the individual who performed the inspection and will have specific language pertaining to the portions of the bridge needing the Underwater Interim Inspection, and what measurements need to be made.

4. **Documentation** – The Underwater Inspection Note should detail the following:

   - The specific areas inspected for the Interim Inspection.
   - Any measurements taken.
   - The procedures utilized to analyze and assess the given bridge element(s).
   - Testing results and/or findings.
   - Any recommendations for maintenance or repair.
   - Recommendations for additional inspections and frequencies.

   In addition to the written information provided in the Underwater Interim Inspection Report, problem areas in the bridge should be carefully identified and documented with drawings, photographs, and/or video recordings. Although underwater photos and video recordings are often preferred, they may not always offer clear views of the problem areas, so sketches and drawings are always needed to document findings.

5. **Finalizing the report** – Once completed the Interim Underwater Report along with any supporting documentation should be uploaded to the files tab and all resources updated accordingly as described in the beginning of this chapter under 'Opening and Completing Bridge Inspection Reports'.
6. **Underwater Interim Inspection Intervals Less than 24 Months** – The acceptable tolerance for intervals of less than 24 months between dive inspections is up to two (2) months after the month in which the inspection was due.

3-2.9 *Damage Inspection (Unscheduled-No Interval by WSDOT)*

A Damage Inspection is an unscheduled inspection with no assigned interval to assess structural damage resulting from an environmental or human event. The scope of inspection should be sufficient to determine the need for emergency load restrictions or closure of the bridge to traffic, and to assess the level of effort necessary to define a repair. Depending on the specific situation, the need for an In-Depth or more frequent Routine or Interim Inspections may be indicated. This determination should be made by the Team Leader in conjunction with their supervisor. Damage Inspections are reported to the NBI or NTI.

Damage Inspections are categorized by type based on the damage received or how it was found or is being reported. Team Leaders should create a Damage Inspection Report in BridgeWorks and choose one of the following events:

- A – Scour
- B – Flood
- C – Collision (Bridge Impact/Hit)
- D – Overload
- E – Fire
- G –Earthquake
- H – Fatigue
- I – Deterioration
- M - Erosion
- N – Unknown/Other
- P – Bridge Rail
- S – Reported by Others - Collision (Bridge Impact/Hit)
- T – Reported by Others – Fire
- V – Reported by Others – Other

1. **Preparing for the Inspection –** If called upon to perform a Damage Inspection, Team Leaders should familiarize themselves with the type of bridge and the location of the damage. Office review of as-built plans and photos should take place prior to inspecting the damaged structure.
2. **Conducting the inspection –** When conducting a Damage Inspection for any reason, a thorough examination of the damaged areas should be made, along with an assessment of any residual damage to other bridge components. The amount of time and effort required to make this assessment will depend upon the extent and seriousness of the damage. For flood events, post event follow-up inspections may be necessary after the water fully subsides. When completed, the Team Leader should be able to provide the necessary information and assist in assessing the structure's safety and condition. Observations by the Team Leader for recommending or determining appropriate measures to protect the bridge from failure or further damage.

Assessments that need to be made during the inspection:

- Identify any damaged, fractured, and impacted members and elements.
- Measure/Calculate and record any section loss of materials and note location.
- Identify number, position/location and extent of any damaged reinforcement or tensioning strands.
- Measure any noted misalignment or movement.
- Determine any loss of foundation support.
- Compute the amount of any section loss.
- Measure the amount any member is out of alignment.
- Check connection locations adjacent to and around areas of damage.

For bridges impacted by flooding events:

- Observe for water over the bridge deck. Also note the overtopping in BAP02.
- Observe for missing approach roadway or deck sections and/or collapsed spans.
- Site down the bridge rail for sags or discontinuities that may indicate settlement.
- Observe the deck joints for steps, asymmetry, excessive gaps, or impaction that may indicate settlement, tilting, or rotation of the piers.
- From a safe location on the channel banks, observe for tilting, rotation, settlement, or loss of foundation at each pier.
- Identify scour around underwater bridge elements.
- Document channel bank erosion.
- Identify damage to designed channel protection such as riprap.
- Document any indication of lateral migrations in the channel.
- Document sediment transport or accumulation.
- Document debris transport or accumulation (especially around piers).
- Take soundings if possible.
- Assess if the bridge should be open, closed, or posted before leaving the bridge.
  - All bridges that are overtopped should be closed until water recedes below the deck.
  - Scour Critical (BAP03 codes of C or D) and Unknown Foundation (BAP03 code of U) bridges that are in pressure flow (flow up to the bottom of the superstructure) should be closed until in-water inspection of the foundations can be made.

3. **Reporting** – A BIR documenting the inspection findings will be prepared by the individual who performed the inspection and will have specific language identifying the cause and areas of damage, as well as individual elements and locations impacted.
4. **Documentation** – The Damage Inspection, date, time, and a short description should be documented in the "0" Note. Details of actual damage to members/elements, or areas around the bridge should be described and quantified within the affected element notes. Documentation should be detailed regarding specific members, location, quantities, or extent, and include measurements of section loss, deformity, or misalignment.

Supporting materials and notes should include:

- Drawings or sketches indicating location and extent of damage. See Section 3-5 for Girder Damage Templates.
- Photographs providing overall, up close, and detailed depictions of damage elements that support evaluation and conclusions.
- Records of measurements that may need to be verified or repeated.
- Soundings and Ground Line representation of channel profiles.
- Physical check for verification of clearances at damage locations.

In addition to the documentation, of the damage and collection of supporting information, resulting conditions states of elements need to be quantified. Condition Codes for

Deck, Superstructure, Substructure, Culvert, Underwater Inspection, Channel, Channel Protection and Observed Scour, all need to be evaluated and adjusted appropriately.

Team Leaders writing the report should work with their supervisor, the BPO Repair Section, and the BPO Risk Reduction Engineer throughout the writing and review process to assess the following:

- Overall bridge condition and status.
- Required repairs, and priorities.
- Need for any required posting or restrictions.
- Scheduling or inspection interval adjustment of future inspections.
- Requirements for CFDR documentation and FHWA notification.

5. **Finalizing the report** – Once the Damage Report is completed, to include any recommended repairs, postings or restrictions, any supporting documentation should be uploaded to the files tab and all resources updated accordingly as described in the beginning of this chapter under 'Opening and Completing Bridge Inspection Reports'.

   Prior to release, ensure that any additional required inspection types are scheduled or adjustments to other inspection frequencies are made. If required, initiate and enter required CFDR information.

3-2.10 *CFDR (Critical Finding Damage Report) (Dedicated Tab in BridgeWorks)*

A Critical Finding Damage Report (CFDR) is not an actual report, but rather a tab entry into BridgeWorks of specific information to track information on open Critical Findings and facilitate reporting to FHWA on the status. When an incident or discovered condition results in the need for reporting of a Critical Finding, usually the temporary closure or restriction of a structure, an authorized BridgeWorks user for an agency is responsible for opening a CFDR using the "Critical Findings" tab. The CFDR should be opened at the time of the incident or discovery as part of a Routine or Damage Inspection but may be entered using an Informational Report. After the release of any associated report, the CFDR may be managed and updated for status using an open Informational Report.

Descriptions entered on the Critical Finding tab should only be a brief summary to accompany the dated entries reporting the Identification of a Critical Finding, Actions Taken, Updates and any Resolution. BridgeWorks uses these entries along with other structure inventory information and condition reporting already existing for the structure to generate a report for Program Managers. Historical and open Critical Findings will remain associated with the structure.

Inspectors should work with Supervisors, Organizational Engineers, and Program Managers for determining when a CFDR is required, how it should be reported and any necessary updates. For specific information on entry descriptions, see Chapter 6, "Completing the CFDR" and "CFDR Tracking and Reporting".

3-2.11 *Local Agency Safety (Interval set by agency, Not Reportable)*

A Local Agency Safety Inspection is used by agencies other than WSDOT to inspect structures owned by WSDOT or other agencies. Some examples include:

- a railroad bridge over local agency route.
- a state-owned pedestrian bridge over a local agency route.
- a state-owned bridge carrying traffic over a local agency route.

Local Agency Safety Inspections are performed at the discretion of agencies that do not own but have an interest in the structure. The inspection scope and inspection interval are also entirely determined by that agency. These inspections are not reported to the NBI or NTI and are not subject to the NBIS or NTIS. These inspections are intended to assess the safety of the structure for any immediate hazard to the route crossing under it, and the inspection is directed to only those portions of the structure that could affect that undercrossing route.

The agency performing a Local Agency Safety Inspection should limit inspection notes to BMS element 379 – Local Agency Safety. Repair recommendations should be limited to only those findings that directly affect the safety for users of the route under the bridge. In cases where the bridge owner also maintains an inspection record in WSBIS, the repair can be added to the repair report. In cases where the bridge owner doesn't use WSBIS (most railroads for example), entering repairs into the repair report will need to be supplemented with direct contact with the structure owner.

Agencies that own a non-reportable structure and maintain a record in WSBIS typically use the Condition report type for that structure.

3-2.12 *WSDOT Safety (Interval set by agency, Not Reportable)*

A WSDOT Safety Inspection is used by WSDOT to inspect structures owned by other agencies. For this report WSDOT will maintain the WSDOT Safety report type.

WSDOT Safety Inspections are performed at the discretion of WSDOT when it does not own but has an interest in the structure. The inspection scope and inspection interval are also entirely determined by WSDOT. These inspections are not reported to the NBI or NTI and are not subject to the NBIS or NTIS. These inspections are intended to assess the safety of the structure for any immediate hazard to the route crossing under it, and the inspection is directed to only those portions of the structure that could affect that undercrossing route.

WSDOT Safety Inspections should limit inspection notes to BMS element 378 – WSDOT Safety. Repair recommendations should be limited to only those findings that directly affect the safety for users of the route under the bridge. In cases where the bridge owner also maintains an inspection record in WSBIS, the repair can be added to the repair report. In cases where the bridge owner doesn't use WSBIS (most railroads for example), entering repairs into the repair report will need to be communicated through the region or rail office to the owner of the structure. Typically addressed by the region office.

For WSDOT owned non-reportable structures with a record in WSBIS, inspectors will typically use the Condition report type for that structure.

3-2.13 *Condition Inspection (Interval set by agency, Not Reportable)*

A Condition Inspection is used in cases where an agency owns a structure that is not reportable to the NBI or NTI but is using WSBIS to maintain a comprehensive record of the structure for both public safety and long-term maintenance. These inspections are separate from Short Spans and are conducted on structures that typically do not carry live traffic open to the public and are therefore not reportable. Examples include:

- A state or local agency pedestrian bridge, regardless of whether it crosses over a state or local agency route.
- A transit structure where the owner chooses to maintain a record in WSBIS, regardless of whether it crosses over a state or local agency route.

This inspection is performed at the discretion of the agency which owns the structure, and the inspection scope and inspection interval is also entirely determined by that agency. Condition Inspections are similar to Routine Inspections, but without specific federally mandated requirements for inspection interval, level of detail, or appraisal coding. These inspections are not reported to the NBI or NTI and are not subject to the NBIS or NTIS.

3-2.14 *Short Span Inspections (Interval set by agency, Not Reportable)*

This inspection type is used for bridges/culverts that have an opening of 20 feet or less as measured along the center of the roadway between under copings of abutments, spring lines of arches, or extreme end openings of multiple boxes. Short Span bridges may also include multiple pipe culverts, but the clear distance between openings must be less than half of the smaller contiguous opening. Short Spans are not reported to the NBI.

Even though short span bridges are not reported to the NBI, in the interest of public safety and long-term maintenance, it is recommended that agencies inspect short span bridges consistent with a full NBI inspection. If possible, assigned structure numbers should be unique to separate them from reportable structures. The interval of the inspections for these bridges will be at the discretion of the owner agency.

An Assistant Inspector who has 3 years of bridge condition inspection or the approval of their supervisor and has successfully completed a FHWA approved comprehensive bridge inspection training course can perform as a Team Leader for Short Span Inspections.

1. **Inspection Criteria** – Inspections are recommended for the following short span bridges:
    - Timber structures with spans between 4 and 20 feet.
    - Single span concrete or metal structures, other than metal corrugated pipes with spans between 6 and 20 feet.

- Multiple span concrete structures with total openings between 8 and 20 feet.
- Metal corrugated pipes with openings between 8 and 20 feet.
- Multiple concrete or steel pipe structures with total openings from 10 and 20 feet.

See Appendix 3-A1 through 3-A3 for clarification. These guidelines are not intended to replace sound engineering judgment. When in doubt, a conservative approach should be taken.

2. **Determine the Interval –** Recommended intervals are as follows:
   - **12 Months** – Timber with red/yellow tags, any other material in poor condition needing monitoring, scour issues, load posting, etc.
   - **24 Months** – All other structures, with BMS elements in Condition States 3 or 4.
   - **48 Months** – Metal structures in good condition or concrete with only minor problems.
   - **72 Months** – Concrete structures in good condition.
3. **Performing the inspection** – Conduct Short Span Inspections consistent with Routine Inspections and fill in all the applicable fields listed on the WSBIS coding form.
   - Provide all the same information and supporting documentation to include Deck and Elevation Photos, and Scour Field Evaluations.

   An Underwater Inspection is performed on short span bridges with structural elements underwater. If the Team Leader is unable to assess the condition of the elements either visually or by probing, an underwater bridge inspection diver must conduct the Underwater Inspection. This inspection determines the structural condition and adequacy of the short span bridges underwater elements.
4. **Short Span Bridges Not Inspected** – If the short span bridge is not inspected, the following are some guidelines to follow:
   a. WSDOT Team Leaders should note the milepost, type of bridge, features carried, features intersected, take elevation, and deck photographs, and notify maintenance personnel that future inspections of the bridge are their responsibility.
   b. Local Agency Team Leaders should note the milepost, type of bridge, features carried, features intersected, take elevation, and deck photographs, and determine if the need for any future inspection of the bridge is necessary and coordinate with their maintenance personnel.
5. **Finalizing the report** – Once the Short Span Report is completed, any supporting documentation should be uploaded to the files tab and all resources updated accordingly as described in the beginning of this chapter under 'Opening and Completing Bridge Inspection Reports'. Submit the data through normal bridge inspection reporting procedures. First or initial inspections on short spans will still be entered into Bridge Works as a Short Span type. However, a comment will be entered under the "0" Note to indicate that the inspection on that date was the initial inspection.

3-2.15 *2-Man and 3-Man Agreement Inspections (2-Man Inspection Type Discontinued)*

Local agencies can enter into signed agreements with the State allowing WSDOT to assist those agencies with inspections requiring the use of specialized equipment such as UBITS. WSDOT can provide all the resources and perform the inspection (3-Man) or provide the UBIT with driver and bucket operator to assist the Agency in conducting their own inspection (2-Man).

The 2-Man inspection type in BridgeWorks was originally used to identify and schedule State UBIT resources used by Local Agencies but is being discontinued. The 2- Man Inspection resource is still available but will not be entered into BridgeWorks as an inspection type. WSDOT still provides the UBIT with driver and operator/assistant inspector at cost, and the Team Leader representing the Local Agency will still perform the inspection. Inspection intervals may vary depending on terms of the agreement between the State and the Local Agency. The Local Agency shall determine the level and inspection interval for their structures within the agreement. Going forward, agencies using the WSDOT UBIT resource either as a 2-Man Inspection or a 3-Man Inspection should do the following:

1. **Enter the Appropriate Report Type –** The agency or lead inspector for the agency will need to identify the reportable type of inspection being performed. This will normally be either a Routine or an NSTM.
2. **Enter the UBIT Resource** – The UBIT and Two Man Resources should be entered as a resource under the Routine or NSTM Inspection type (not both) for the bridges that require the resource.
    a. Under the Resource Box at the bottom of the Routine or NSTM Inspection type tabs in BridgeWorks, select the UBIT resource in the drop down.
    b. Under the column “Used” select the type of UBIT used for the current or last inspection. Under the “Min”, “Max”, and ‘Pref” columns enter the appropriately desired size of UBIT.
    c. Under the “Hours” and “OTHrs” (Over Time Hours) columns, enter the number of hours used for the current or last inspection.
    d. Under the “Freq” and “Date”, columns enter the Interval and Date of the current or last inspection. The “Need” date will automatically populate. If it does not or there is already a “Date” entered, use the “Ovr Need” to enter the date and it will override. Enter the “Interval” and “Need Date” information to coincide with the inspection interval and due date month above. This will ensure that the equipment will be scheduled to coincide with the month the desired inspection is due.
    e. To indicate that the UBIT will be needed with only the driver and operator, and the Lead Inspector will be agency provided (Two Man), under the “Resource” column select an additional resource as 2-Man. With out that, the UBIT resource will be scheduled as a full inspection team.

        Examples

        - Routine or NSTM Inspection conducted every two years with a UBIT in May, with next inspection required 5/8/2030. Agency desires WSDOT to do the complete inspection and write the report.
            i. Enter …. UBIT Resource……Freq = 24……Need Date 5/8/2030

- Routine or NSTM Inspection conducted every two years with a UBIT in May, with next inspection required 5/8/2030. Agency conducts inspection.
  i. Enter …. UBIT Resource……Freq = 24……Need Date 5/8/2030
  ii. Enter …. 2-Man Resource
- Routine Inspection conducted every two years in August, but only requires a UBIT every four years. Agency conducts inspection. Last Two Man Inspection 8/10/23, Next Routine 8/10/25. Next Routine Inspection with UBIT 8/10/27.
  i. Enter …. UBIT Resource……Freq = 48……Need Date 8/10/2027
  ii. Enter …. 2-Man Resource

f. WSDOT compiles inspection schedules and resource by month, up to 1-year in advance each year. If the Resources and Resource Need Dates are filled out and updated each inspection to coincide future Inspection Need Dates, resources under agreements will automatically get scheduled for the month those inspections are due. WSDOT should contact the agencies at least the month prior to the actual scheduled date.

3. **Performing the Inspection** – WSDOT should contact the agencies at least one month prior to the actual scheduled inspection need dates. If that does not happen or the agency is scheduling further out, the agency may contact WSDOT Bridge Preservation. In both cases of either 2-Man or 3-Man Inspections, WSDOT and the agency under agreement will coordinate the days and times of inspections. For agencies using private consultants to conduct the inspection, it is the agency under agreement that WSDOT will coordinate with. Local Agencies are responsible for providing traffic control, arranging for RR flagging or any other required coordination.

   a. For 2-Man Inspections, WSDOT will provide the UBIT with driver and a bucket operator to also act as assistant inspector. The representative for the Local Agency must meet all the necessary qualifications to act as a Team Leader for the inspection being performed. The representative Team Leader needs to have the proper PPE for fall protection and have received all the required fall protection training necessary to utilize the UBIT. If there are any questions do not hesitate to contact WSDOT Bridge Preservation in advance for assistance.

   b. For 3-Man Inspections, WSDOT will coordinate with the agency under agreement for the days and times of the inspections to be performed. Local Agencies are responsible for providing traffic control, arranging for RR flagging or any other required coordination. WSDOT will provide the UBIT with driver, bucket operator/assistant inspector and the qualified Team Leader to conduct the inspection and prepare the report.

   c. Assigned Team Leaders from either WSDOT or the agency under agreement should perform the necessary required inspection, such as a Routine and/or NSTM, and enter them into BridgeWorks following the procedures for opening and completing those specific reports.

4. **Finalizing the report** – Once the associated report is completed, any supporting documentation should be uploaded to the files tab and all resources updated accordingly as described in the beginning of this chapter under 'Opening and Completing Bridge Inspection Reports'. Before releasing the report be sure to complete the following:

   a. Update the resources for the report as described above and insure that need dates for the resources coincide with required next inspection dates. If there are any questions, the agency or team leader may contact WSDOT Bridge Preservation Supervisors for assistance.

   b. For WSDOT UBIT drivers and bucket operators/co-inspectors performing 2-Man Inspection support, ensure the correct RO Number are used for each structure inspected and notify your supervisor when the inspections have been completed.

3-2.16 *Informational Report*

This report type is used to add notes, data, files or photos to a report between scheduled inspections. Additionally, the Informational Report can be used to change the inspection interval if necessary or to just assign a next scheduled inspection date without having to change the normal inspection interval. An Informational Report type does not involve field work and is typically used by inspection staff and the Bridge Information Group. Data that is updated through an Informational Report can be accessed from the SI&A report on BEISt. Depending on the type of data updated, it may be necessary to print out and sign the report for scanning into BEISt (see "Signed Informational Report" type). This will be determined by the Team Leader and their supervisor. Informational Reports are not reported in the NBI or NTI. An Assistant Inspector who has 3 years of bridge condition inspection experience or the approval of their supervisor and has successfully completed a FHWA approved comprehensive bridge inspection training course can create an Informational Report.

3-2.17 *Signed Informational Report*

This report type is similar to the Informational Report type regarding the entry and updating of administrative information, photos, files, notes, or adjusting inspection dates and intervals. However, any time an Informational Report includes the changing of NBI condition codes that may directly affect and change the overall rating of a structure, possibly affecting the inspection interval and reporting requirements, the report must be signed. This type of report must be entered by a certified Team Leader, reviewed through the QC process, signed, and then uploaded into BEISt. An example of Informational Reports that may require a signature may include changes to the below listed NBI or SNTI condition codes.

- Deck Condition
- Superstructure Condition
- Substructure Condition
- Culvert Condition
- Observed Scour Condition
- Underwater Inspection Condition
- Channel Condition
- Channel Protection Condition
- NSTM Inspection Condition

3-2.18 *Inventory*

This report type is used to administratively enter or update new or altered bridge records. The data entered is based off plan reviews and information derived from project documents or real-estate agreements. Once entered, this report generates information within the bridge record that will require field verification by inspectors when conducting Initial and Routine Inspections. This report type may also provide detailed information on a new or altered structure to assist the inspection team in field verification and is intended to stay in the bridge record until an Initial or follow up Routine Inspection is completed.

For Local Agency structures, the Inventory Report type is created and removed by the Local Programs Bridge Inventory Engineer (LPBIE) for new structures. When agencies need an inventory report, they will contact the LPBIE for assistance.

For WSDOT structures, the Inventory report type is always created and removed by the BPO Information Group and is closely coordinated with the Contract History database. BPO inspection teams shall always review the information in an inventory report type and update the record as needed, including clearly indicating when the construction work is completed.

Examples of construction work that tracked by this report type include:

- New structures
- Retrofits and rehabilitation (deck replacement, seismic retrofits, strengthening, etc.)
- Any new or replaced BMS elements (new joints, rails, overlays, etc.)
- Utility work
- Roadway alterations UNDER bridges that affect vertical and horizontal clearances (new pavement, roadway widening, etc.)
- Functional changes (bridge changed from 2 way to 1 way traffic due to construction of new parallel bridge, for example)

Examples of construction work NOT tracked by this report type include:

- Repair work tracked in the Repair List
- Any changes to the structure record which are not performed in the field by inspectors (updated ADT, NHS designation, etc.)

An Assistant Inspector who has 3 years of bridge condition inspection experience or the approval of their supervisor and has successfully completed a FHWA approved comprehensive bridge inspection training course can create an Inventory Report. This report type is not reported to the NBI or NTI.

3-2.19 *In-Depth (SNBI Special Inspection)*

Any time a bridge element or portion of the bridge requires further evaluation, analysis, or investigation to accurately assess its condition, complete an In-Depth Inspection. This inspection may involve testing, monitoring, targeted evaluation prior to a contract, or conducting specific analyses of given bridge elements. The need for an In-Depth Inspection generally arises resulting from a Routine or Interim Inspection; or just a need for additional information to support contract work or requests for information.

In-Depth Inspections are performed as needed and do not have inspection interval. They are treated as one-time only inspections typically to gather additional information. If the inspecting agency feels that subsequent inspections are needed on regular intervals, Interim Inspections should be utilized instead. They are not reported in the NBI or NTI.

1. **Performing the Inspection** – The In-Depth Inspection should include as detailed analysis as necessary to determine the condition of the given bridge element or elements. There can be no standard set of procedures to follow or observations to be made. Many factors will influence the depth and extent of analysis required. Prior to scheduling the inspection, Team Leaders should ensure they fully understand the purpose of the inspection and the information type and detail required.
2. **Reporting** – There is no standard form to be completed for reporting In-Depth Inspection findings. When the inspection is concluded, the Team Leader should prepare a BIR along with any additional documentation to note:
   - The location of each bridge element inspected.
   - The procedures used to analyze and assess the particular bridge element.
   - The names, titles, and observations made by any specialists who were consulted.
   - The results of any testing performed.
   - Any recommendations for maintenance or repair.

   On all In-Depth Inspections, all changes/updates to NBI or NTI data shall be released into the inventory within 90 days of the date of inspection.

3-2.20 *Geometric (Anticipated Discontinuance in 2025)*

This inspection type is used to collect vertical and horizontal roadway clearances for routes both on and under bridges and would also include a complete review and update of all. The vertical clearance cards associated with the bridge. Vertical and horizontal roadway clearances are collected at an 8-year interval for minimum vertical clearances of 16.5 feet and less, and at a 16-year interval for minimum vertical clearances greater than 16.5 feet. An Assistant Inspector can perform as a Team Leader for Geometric Inspections. Geometric data that has been collected using LIDAR can be used to update bridge inventory data. as a Geometric Inspection as long as the Team Leader has reviewed the LIDAR data. This inspection type is not reported to the NBI or NTI.

3-2.21 *Scour Monitoring*

This inspection type is used when scour monitoring is performed as required by a Scour Plan of Action (POA) for a triggering storm event. See Sections 5-3.2 and 5-3.3.1. This typically involves during event and post- event inspections by regional maintenance crews who then report the findings to the BPO Scour Engineer. If multiple site visits occur for a triggering storm event, this report type only needs to be recorded for that storm event with a start date and an end date. The start date is the first day the structure is observed for a triggered event. The end date is the day the inspection or monitoring closes out for the event in accordance with the scour plan of action (POA).

3-3 Bridge Inspection Orientation

Designation of bridge orientation and a component numbering system for the bridge elements is needed for consistency within the inspection reports. Orientation and component numbering systems typically follow the conventions of the bridge owner and inspecting agency. To ensure consistency between inspections, the designated orientation will be identified at the beginning of each bridge inspection report.

State Owned Structures

- For east to west routes (typically even numbered routes) the designated beginning of a structure is at the west end moving to the east in the direction of increasing milepost. For south to north routes (typically odd numbered routes) the designated beginning of a structure is at the south end moving to the north. There are a few exceptions regarding route orientation and numbering within the state, as well as a few that are confusing regarding geographic orientation. In any case, the orientation should default to the direction of increasing milepost.
- For directional traffic ramp structures, such as on-ramps and off-ramps, orientation will normally be in the direction of traffic. This allows for inspections to start where the bridge is first accessed while traveling the associated route.
- For overcrossing structures, orientation will normally be crosswise to the orientation of the associated route and start at the west or south for consistency. For a south to north route, an overcrossing structure will be oriented west to east (left to right). Over a west to east route, an overcrossing structure will be oriented south to north (right to left).

Once the designated orientation of a structure is identified, subcomponents will typically be numbered from the left to the right looking ahead on stationing in the direction of orientation. If the State inspects bridges for another agency, unless the agency already has a clearly designated orientation within the report, designated orientation will typically follow State convention (See Exhibit 3-7 through Exhibit 3-10)

Exhibit 3-7 Bridge Nomenclature

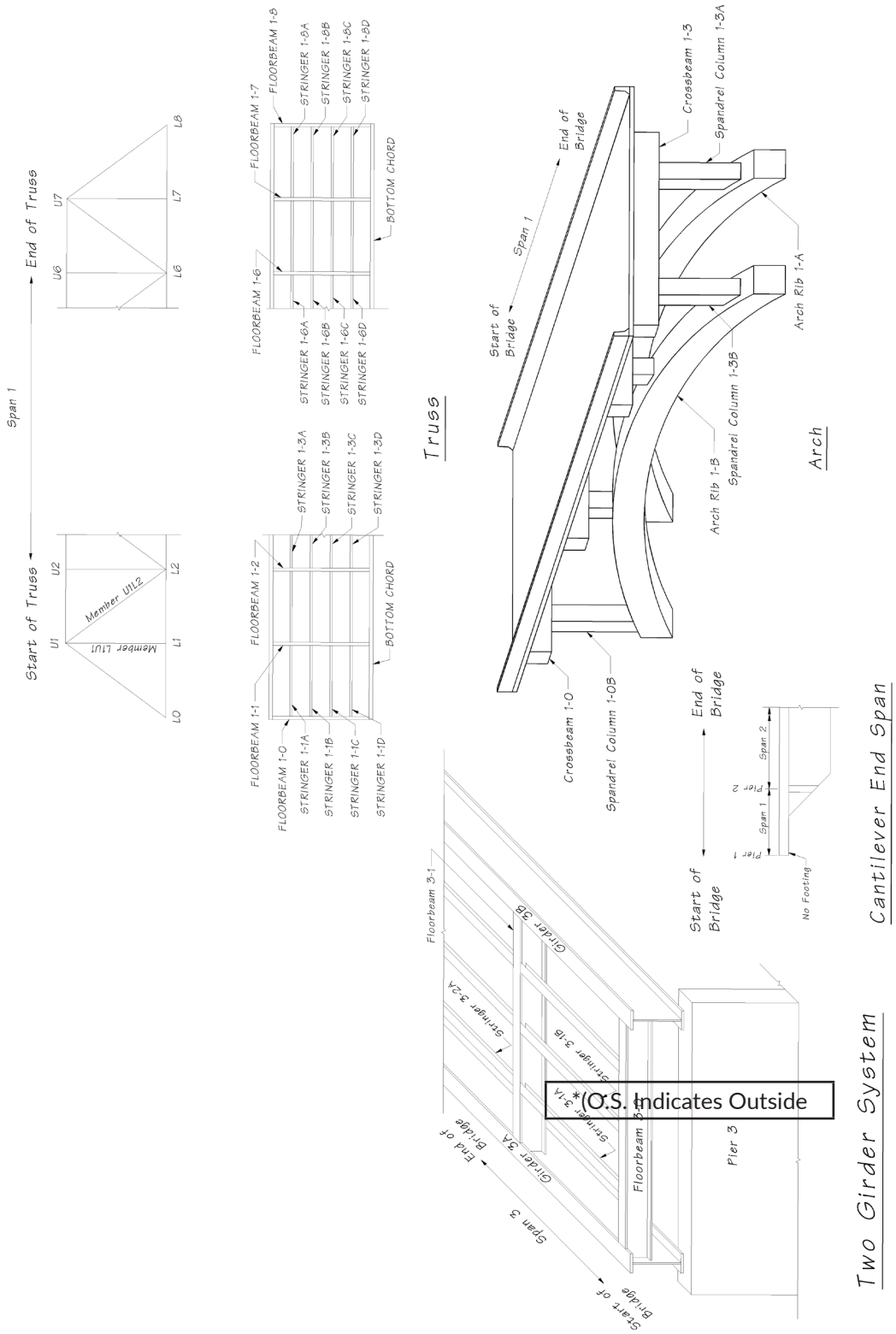
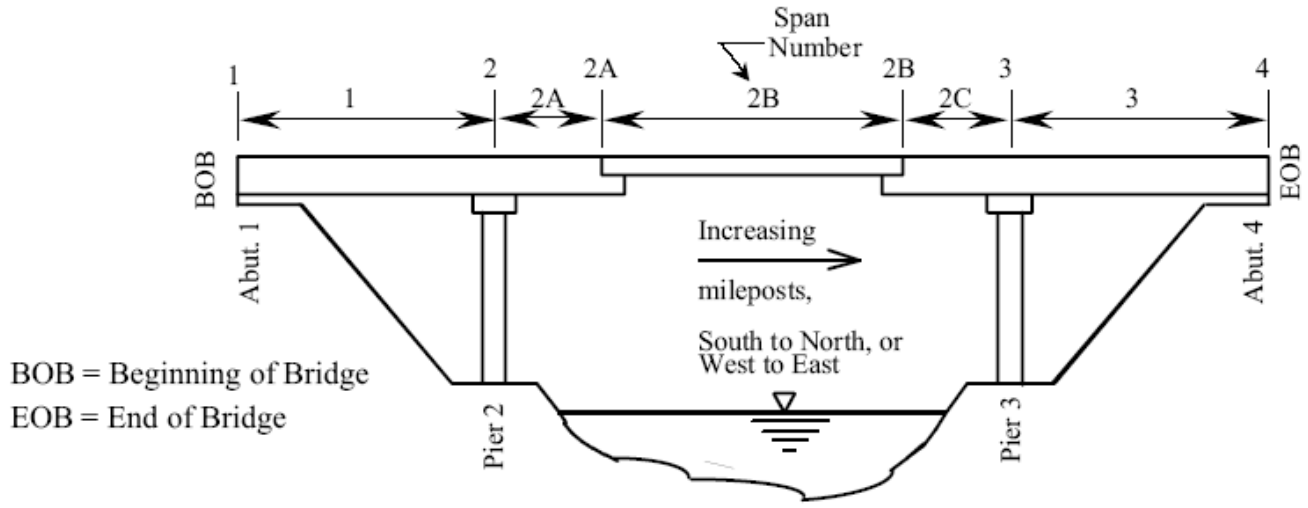


Exhibit 3-8 Component Location



Orientation:

B.O.B. normally south or west ends following route orientation.

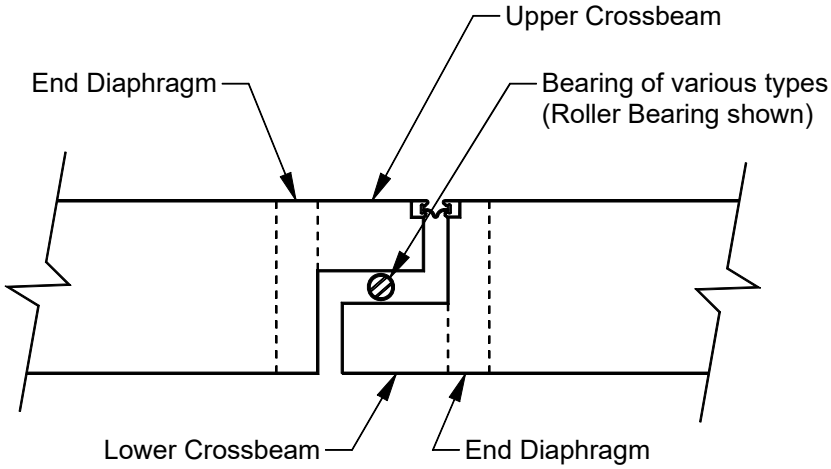
Exceptions Include:

One way ramps – B.O.B. = First end to receive traffic.

Selected bridges that follow plan orientation.

There is no golden rule about orientation except that B.O.B. Must always be identified in the '0' note along with basis for this assumption. It is helpful to refer to geographical markers (streets, rivers, etc) when describing the B.O.B.

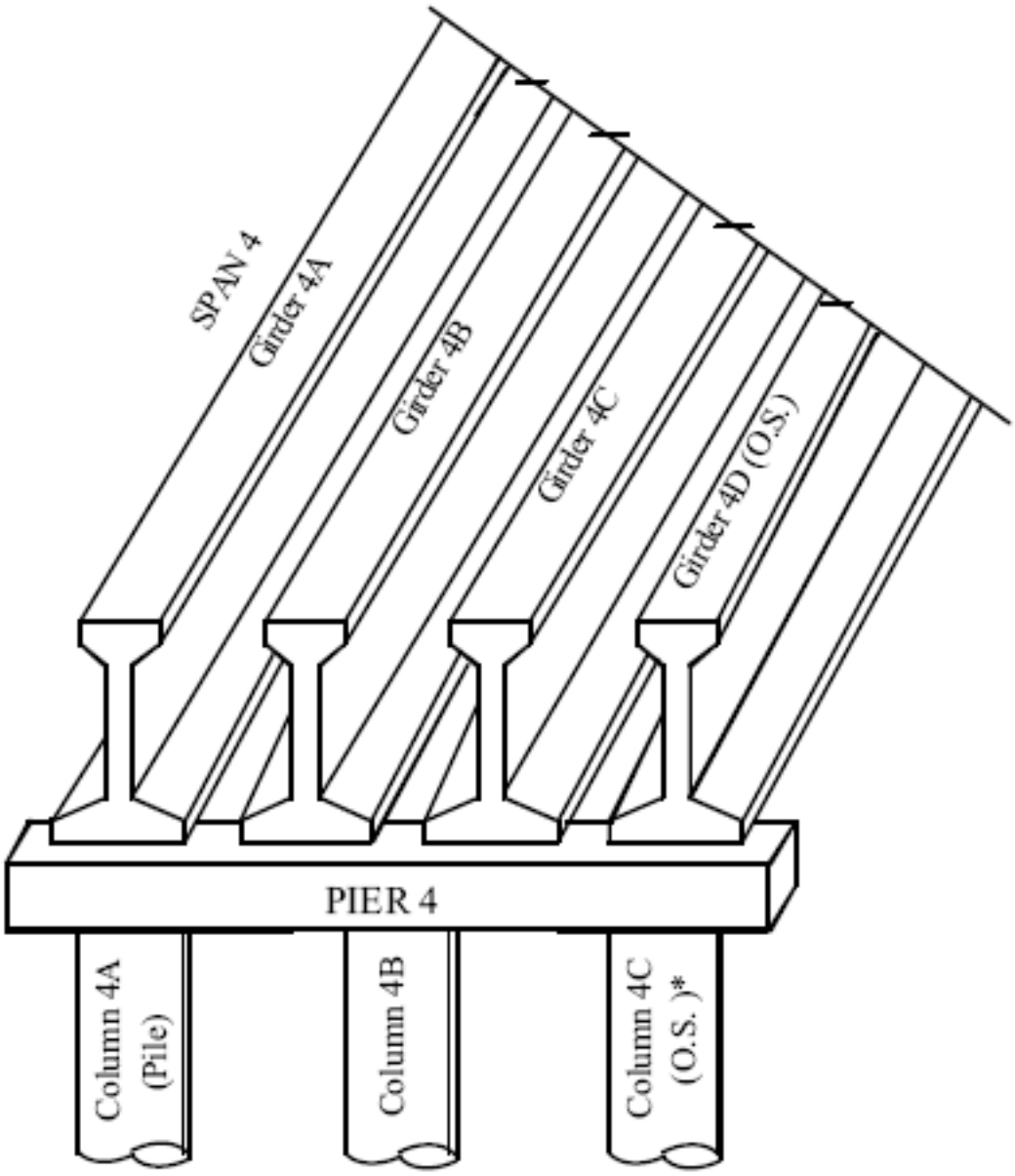
Exhibit 3-9 In-Span Hinge Callout



IN-SPAN HINGE CALLOUT

(Do not Quantify Crossbeams in BMS for Box Girder)

Exhibit 3-10 Component Identification



Section 3-4 provides guidelines for inspection processes and procedures specific to the State and the Office of Local Programs. These guidelines can be used as a reference or can be implemented.

3-4 Policy and Procedures

This section discusses the specific policies and procedures that are utilized in BPO or LP that are supplementary guidelines for field work and inspection report writing. These best management practices are utilized by inspection teams and are specific to each program.

3-4.1 *BPO Policy and Procedures*

3-4.1.A General Inspection and Report Writing

1. Columns on the first page of the BIR contain NBI and agency specific items with associated coding information for each structure within the inventory. The numbers within parenthesis next to these item titles are WSBIS item numbers and are unique to the BridgeWorks program corresponding to FHWA and/or agency specific items. Over the next several years, new SNBI coding requirements are being incorporated, phasing out older ones. Many of the items will start to show the new SNBI numbers in place or in addition to the existing numbers.
2. When circumstances (including obstruction of bridge elements) prevent any required work from being completed at the time of inspection, report the situation to your supervisor so a determination can be made whether or not the bridge needs to be rescheduled in the current inspection year. It is the responsibility of the Team Leader to ensure that the bridge inspection is completed unless the supervisor delegates the responsibility. Bridges that cannot be inspected due to high water will be rescheduled in the current inspection year during lower flows. Bridges that need cleaning or vegetation removed will require coordination with maintenance for dirt and/or vegetation removal prior to re-inspection. If the supervisor determines that the bridge does not need to be rescheduled in the current inspection year, clearly identify why the work wasn't completed and what is required of the next team leader to achieve the task.
3. Traffic lanes on a structure are numbered from right to left looking in the direction of traffic on one-way multilane routes. For reversible lanes assumed orientation should be described in the report.
4. Whenever an in-span hinge separates two bridges, the bearings, restrainers, and joint are to be coded with the "dependent" structure. Identify how these elements are associated in the report. Explain any exceptions to this rule in the 0 note.
5. Whenever measurements are taken, for joint openings, monitored conditions, or anything else, include in the report the date and the air temperature when the measurements were taken. Unless there is a warranted condition, only measurements from the last three inspections need to be maintained.
6. Refer to specific joints by pier or span numbers instead of joint numbers. There may be unique circumstances where using joint numbers are justified. Under these circumstances, justification for using joint numbers must be documented in the report.
7. Investigate fully and report any and all joint noises and their origination.

8. Compare Curb to Curb Width (B.G.06) with Horizontal Clearance (1491 and 1495). Typically, they should be the same, except for non-mountable medians.
9. Detailed notes are to be entered separately under each Bridge Management System (BMS) element. NBI notes should reference the appropriate BMS element note. Maintain any details of flagged defects or damage within the BMS element note.
10. Inspection report summary comments are required for any BMS element in Condition State (CS) 2, 3 or 4. Comments need to be detailed in accurately describing and supporting the assigned condition states. The comments can be supported with photos but should, on their own, contain the necessary details to document the location and extent of conditions.
11. Avoid using phrases for significant defects such as “open crack” without a further description such as width, and any repetitive nature. Mark the specific defect location on the bridge with any measurement and the date. Consider taking a photo of the marked defect to include in the inspection report. For concrete crack size guidelines, see the table in Section 4-4.
12. When submitting reports for initial review, include field notes in the review package along with a clean copy of the report, the WSBIS sheet, the inspection photographs, and other relevant reports (NSTM, soundings, etc.). The WSBIS sheet is required to reflect all current changes associated with the inspection.
13. Describe photos with respect to bridge orientation, not geographic direction. Photos should identify the orientation, location, and what is photographed. All photos, except deck and elevation photos, must be numbered and referenced in the notes or in an attached file such as a NSTM inspection Report.
14. Ensure that photographs are accurately titled and up to date in depicting the current condition as is described in the report notes. Report notes should contain the detailed information and be accurately supported by the photos.
15. Photos no longer relevant to the report should be deleted. Keep repair photos in the report for an additional inspection cycle so the Bridge Preservation Supervisor can compare them.
16. Deck and Elevation Photos should be assessed at each inspection. Update photos if there are new conditions or changes to the structure.

3-4.1.B Bridge Inspection Notes Standard Practice

1. Cardinal directions (north, south, east, and west) are not to be abbreviated and are never capitalized, except at the beginning of a sentence. The directions northeast, southeast, northwest, and southwest may be abbreviated NE, SE, NW, and SW.
2. For acronyms, follow the standard practice of spelling out the first time use with the acronym in parenthesis following (e.g., Local Programs (LP)).
3. Use of abbreviations should be limited. Common abbreviations:

F	Fahrenheit	A.M.	a.m.
in. or ″	inch (inches)	P.M.	p.m.
ft. or ‘	foot (feet) ‘symbol only used when followed by a dimension in inches.	NW NE SW SE	directions
L	length	D	depth
W	width	etc.	etcetera
sq. ft.	square feet or SF	LF	linear feet
psi	pounds per sq. in.	YT	Yellow tagged
psf	pounds per sq. ft.	RT	Red tagged
ACP	asphalt concrete pavement	LMC	latex modified concrete
BST	bituminous surface treatment	HMA	hot mix asphalt
SR	State Route	US	National Highway
I	Interstate	Jan	January, etc.

4. Limit the use of symbols to ° for degrees and % for percent.
5. Use of the “Tilde” (~) symbol is not allowed.

Dimensions are noted with a space or hyphen between feet and inches, and a hyphen between whole inches and fractions of an inch. When combined with other dimensions, a ‘0’ should precede bare fractions of an inch. Measurements greater than 12″ may be listed in inches, if appropriate. Decimal inches may also be used. For example:

1′ 1-1/16″ × 6′ 0-7/8″ 6″ × 14″ timber stringers

8″ × 14″ × 1/2″ deep spall

3 ft. wide × 14 ft. long × 2.5 ft. tall bridge corbel

12 ft. (L) × 15′ 6″ (W) × 3″ (D) popout in south face of Pier 2 1′ 0-3/4″(l) × 0.125″(w) crack in east face of Girder 2F

42.2″ long anchor bolts

3-4.1.C Report Notes Within BridgeWorks

0 Note – Orientation

- Bridge orientation and identification of the pier/span numbering system is always required, stating the basis of orientation such as "increasing mileposts," "ramp direction," or per plans. Any potentially confusing orientation issues or deviations from standards (west to east or south to north) must be clearly identified. Identifiable physical features at beginning or end of bridge may also be used.
- Place any special instructions and information that doesn't fit anywhere else under the 0 note.
- For bridges receiving Routine Inspections that are still open to traffic while under construction, enter the standard note provided under 3-4.1. L, "Inspection of Structures Under Contract"
- For bridges receiving Extended Interval Routine Inspections at 48-months, enter the standard note provided under "Routine Inspection" for "Routine Inspections with Extended Intervals".
- Flood Monitoring information for triggered Scour POA events will be entered in the zero note with the Start Date, Flow rates or other descriptions of the triggering event, Subsequent inspections/monitoring, and the End Date. Other elements in the report will be used to report defects noted during the event. If there are no defects noted during the monitoring event, the zero note will be the only record of this report type. This information will be retained until the next inspection type is entered. The next inspection should delete the scour monitoring information to avoid cluttering the zero note with outdated information.

1 Note – This note is maintained by the Team Leader and is used for explanatory information. regarding bridges that contain NSTMs and/or Complex Features. Use this note to explain any complex features, procedures, areas to be inspected or complicated scheduling. Do not redundantly repeat resource information or dates that an inspection occurred.

5 Note – Bridge Management Engineer maintains this note. It contains information regarding scheduled rehabilitation or replacement, and other upcoming program management items.

6 Note – **Agreements:** This note is maintained by WSDOT supervisors for use in documenting information, clarification and directions for inspections associated with other agency agreements, memorandums of understanding or larger umbrella agreements. This note would record and clarify the existence of any agreement or MOU obligation and may provide direction to inspectors for inspection work required, and any subsequent processing or dissemination of completed reports. Examples may include.

- Agreement with other State Agency requiring inspectors to perform a condition inspection on structures overcrossing a state route in conjunction with a State Safety Inspection.
- Memorandum with Federal Agency on shared structure requiring state to inspect the route above and report the structure on the NBIS as a Routine and provide a courtesy copy of the report.
- Umbrella agreement with Local or Other State Agency outlining shared responsibilities related to the inspection.

9 Note – The 9 note is used to create the executive summary for an Underwater Inspection Report.

11 Note – For state-owned structures, the Load Rating Engineer maintains this field. For Local Agency owned structures, the bridge owner can designate others, such as a load rating engineer, other personnel, or consultant, to maintain this field. This note is used to explain any load posting placed on a bridge. This note is closely associated with the Revise Rating flag (2688), see Section 3-4.1.E.

3-4.1.D Operating Level Code (1660)

Verify that load posting signs are in place at the bridge and in advance of the bridge. Advance load postings should be placed in advance of the nearest intersecting road, ramp, or wide point in the road where a driver can detour or turn around. Verify that load posting signs and advance load posting signs match the posting requirements in Note 11 or Recommended Posting Type (WEP03) and Recommended Posting Value (WEP04). Note within BridgeWorks under Operating Level Code (1660) any findings. Take a photo of any existing posting signs and advance posting signs. Code Actual Posting Type (BEP03) and Actual Posting Value (BEP04) based on the posting signs. Ensure that Item 1293) (open or closed) and the Posting Status (BPS01) is coded appropriately.

If required posting signs are missing or inaccurate, inspectors shall notify the Risk Reduction Engineer for state-owned bridges and the Local Agency Bridge Engineer for locally owned bridges on the date of the inspection. The federally mandated timeframe for remediation is 30 days from the inspection date.

3-4.1.E Revise Rating Flag (2688)

Load rating issues should be addressed within the body of the BIR in the (2688) note. Delete any notes that don't have relevance to the existing condition of the bridge.

3-4.1.F Scour Code (1680) and SNBI B.AP.03

For State owned bridges, the Scour Engineer maintains the Scour code (1680) and SNBI B.AP.03 field and notes. For Local Agency owned structures, the bridge owner can designate others, such as a hydraulic or scour engineer, other personnel, or consultant, to maintain this field. Any scour comments by the Team Leader should be placed in BMS Element (#361) Scour Flag, Channel Condition (BC09), Channel Protection Condition (BC10), Scour Condition (BC11), or Channel Protection (1677), depending upon which is most appropriate. Inspector codes for SNBI B.C.09, B.C.10, and B.C.11 are supported by the notes in BMS Element 361 and NBI 1677 fields.

3-4.1.G Soundings Resource

When preparing for an inspection that requires soundings, print any existing stream cross section file to include in your inspection field packet. The inspector should take notice of the soundings resource 'Need' or 'Ovr Need' dates and whether the resource is for underwater inspectors or regional inspectors, to determine if soundings are due during their inspection. The Scour Engineer determines which State bridges need stream cross sections (soundings) by placing a "Y" in the Soundings Flag (2693). When this is required as part of the inspection, perform the following:

1. Enter data into the Scour Field Evaluation Form, see Section 3-5.
    a. If you could not take soundings on the initial inspection trip, plan on getting them on another trip, either by coordinating with another Team Leader or by doing it yourself.
    b. If there is a reason soundings should be taken at a different time of the year (i.e., low water, low tide, or fish windows), add a resource with an explanation under the Report Types Tab.
    c. If soundings are unattainable, contact the scour section for guidance.
2. Attach the completed form to the appropriate bridge inspection report File Tab, replacing any already existing form and remove the old one.
3. Change the Soundings Flag (2693) from "Y" to "*" for State bridges only.
4. When you return to the office
    a. For WSDOT owned bridges, submit an email to the scour section (to: Scour Assistant cc: Scour Engineer) with the Scour Field Evaluation attached. The email shall include any significant findings and/or repair need that need to be brought to the Scour Engineer's immediate attention.
    b. For local agency structures, submit the Scour Field Evaluation to the local bridge owner as part of your submittal. BPO scour section does not process channel cross sections for the local agencies. Feel free to contact the BPO scour section if you have questions or concerns.
5. The Scour Engineer will email an electronic stream cross section file that you will attach to the report Files tab.
    a. Replace any existing stream cross section file with the updated one and remove the old one.
    b. Print the new stream cross section file and include it with your inspection review packet.

3-4.1.H Timber Structures

- Yellow Tagged (YT) members have rot and a shell greater than or equal to 1-½". A YT member requires a Priority 2 repair. The need for Interim Inspections is determined by the lead and the Regional Supervisors.
- Red Tagged (RT) members have rot and a shell less than 1-½". An RT member requires a Priority 1 repair. Schedule an Interim Inspection. Determine the extent, location, and significance of decay. Provide details for the Load Rating Engineer.

3-4.1.I Culverts

- Culverts are defined as identified in Chapter 1 and Appendix 3-A.
- NBIS Length (B.G.01), Total Length (B.G.02), Maximum Span (B.G.03), Minimum Span (B.G.04), Out-Out (B.G.05), and Curb-Curb (B.G.06), are determined in accordance with the associated SNBI listings.
- The BMS element quantity is determined by measuring from inlet to outlet of one barrel/pipe and is not dependent upon the number of barrels or pipes. This will typically be equal to the SNBI Out-Out measurement for structures not located on a skew.
- When inspecting culverts as either a reportable structure or as a short span, record the maximum and minimum fill depths over the culverts at the outer edges of the traveled roadway.

3-4.1.J Vertical Clearances (1370, 1374, and 2694,)

Minimum Vertical Clearances

Every Routine, Short Span, Safety or Condition inspection shall include a verification statement of the vertical clearance (VC) card comparing it with the current condition and any significant changes (new asphalt, additional lanes, new curb/gutter, etc.). Verification will also include at least one vertical clearance measurement if traffic allows, and ideally at the low point if possible. If changes in conditions or conflicts with the VC card are identified, note discrepancies, and collect all new clearances if possible. If no changes or discrepancies are identified, no further action is required.

For structures with clearances greater than 16’-6”, and with no other noted changes or discrepancies, the verification of a vertical clearance measurement is optional.

Each Inspection

- Check for all postings on bridge, and in advance, are in place.
- Check that Posted clearances are consistent with existing conditions and documentation.
- Update 2694 as applicable.
- Update the WSBIS as applicable.

When to Collect or Verify Vertical Clearances

- Whenever a clearance card is missing, incomplete or inaccurate. High traffic volumes may prevent the ability to acquire this information without traffic control.
- When changes in alignments, geometry or conditions affecting current measurements are identified.
- At bridges where the clearances box has been populated with a “V”.
- When Team Leader feels that over height hit damage is occurring significantly enough to check the existing clearance information.
- As a part of over height load damage inspections.

Where to Collect or Verify Vertical Clearances

- Minimum clearances along all lane stripes, edges of pavement/curb or controlling grade breaks between these points.
- Appurtenances (lights, signs, utilities) that control minimum vertical clearances should be documented as well, but in most circumstances will be used only to create a repair recommendation to relocate appurtenance. Provide vertical clearance information to the Sign Bridge Engineer.
- For existing postings verify lowest accessible clearance location first and verify other locations as required.
- For over height impact Damage Inspections, measure all accessible lane stripe locations below and around the points of impact.

Documenting Vertical Clearances

- Document all measured clearances. Drawings should be neatly transcribed and turned in to the Bridge Geometry Engineer. Photos are to be placed in the Photos/2694 Clearance folder in BridgeWorks and the Bridge Geometry Engineer notified of this action.
- 2694 Note should reference: Vertical clearances taken or checked on (date). Minimum clearance below the bridge measured to be (measured minimum clearance) below (exact location). See photo #. REPAIR #00000. In situations where multiple structures are controlled by one structure that requires posting, the recommended posting locations and the presence or omission of signage shall be appropriately documented in the 2694 notes of each of the involved structures.
- Update WSBIS fields (1370), (1374) and (1499). Appurtenances are not coded. Consult with the Bridge Geometry Engineer for questions.

Posting Requirements and Recommendations

- Bridges with field measured minimum clearances over the traveled lanes equal to 14’ 3” up to and including 15’ 3” require posting on the structure at the controlling location and advance warning signs at one or both shoulders.
- All bridges with field measured minimum clearances less than 14’ 3” require additional advance posting signs in advance of nearest intersecting roads, ramps, or a wide point in the road where a driver can detour or turn around.
- All posted clearances shall be 3” less than the actual lowest measured clearance, except as follows:

  a. In some cases, WSDOT intentionally posts clearances with more than a 3” buffer. This decision will be documented in the 2694 note, identifying the posting clearance required.

  b. A tolerance to the 3” buffer for existing bridge posting signs is allowed. See criteria listed below.

     - If the actual measured opening for a bridge or tunnel increases by 2” or less the existing signing may remain. *(i.e., a bridge clearance changes from 15’-0” to 15’-2”, the existing warning sign of 14’-9” may remain.)*
     - If the actual measure opening for a bridge or tunnel increases by more than 2” the signs shall be replaced. *(i.e., a bridge clearance changes from 14’-9” to 15’-0”, the existing warning sign of 14’-6” shall be corrected.)*

- If the actual measured opening for a bridge or tunnel decreases by 1” or less the existing signs may remain. *(i.e., a bridge clearance changes from 15’-0” to 14’-11”, the existing warning sign of 14’-9” may remain.)*
- If the actual measured opening for a bridge or tunnel decreases by more than 1” the existing signs shall be replaced. *(i.e., a bridge clearance changes from 14’-10” to 14’-8”, the existing warning sign of 14’-7” shall be corrected.)*

There are situations where bridges should be posted for minimum vertical clearances in the shoulders (outside traveled way). Check with the Bridge Geometry Engineer for details. Appurtenances such as lights or signs that suspend below those bridge elements are to be noted. Those that are 15’3” or less within a traveled path or have evidence of traffic impact damage are to be written up as a repair to be removed or relocated.

Vertical Clearance (V) Repair

- A Priority 1 or 2 Vertical Clearance (V) Repair is warranted as follows:
- Priority 1: When vertical clearance posting is found deficient (for example less than 2” buffer), missing, or where the signage on and in advance of the bridge do not match.
- Priority 2: When a vertical clearance posting on and in advance of the bridge is found conservative (more than 5” buffer) without prior documentation from the Region or other authorized authority.
- Each repair written should identify and include the following language:
- (Minimum clearance measured to be (measured clearance) located at (controlling location) on (date measured). Post for (3” less than measured clearance) in accordance with the most current WSDOT Low Vertical Clearance Signing Policy. Contact Bridge Geometry Engineer at Bridge Preservation 360-570-2544 with any questions.

3-4.1.K Horizontal Clearances

- Collect minimum shoulder widths on both sides of roadway and edge of traveled way (fog line) to permanent obstruction (columns, abutments, retaining walls, toe of slopes). See Item 1379 for ramps, gores, and other more complex configuration examples.
- Collect horizontal clearances where the clearance flag has been populated with an “H”.
- Update WSBIS fields (1379) and (1383) (Minimum Lateral under Clearance Right & Left).

3-4.1.L Inspection of Structures Under Contract

New bridges and bridges reopening from major retrofits, widening, or rehabilitation are required to have an Initial Inspection conducted on them within 90 days of opening to traffic. Bridges under rehabilitation or retrofit while still open to traffic are required to receive their scheduled Routine Inspections within the acceptable tolerance period.

New structures and structures closed under contract.

1. Information organized and provided under Inventory or Informational Report Types by the Bridge Inventory Technician will include the Project Office contact and contract numbers.
2. BPO inspector MUST contact the Project Office (Project Engineer if possible) prior to performing inspection. Do not directly talk to contractor without first contacting the region.

3. Perform the Initial Inspection within 90 days of opening or re-opening to traffic. If significant safety issues, or defects are identified, report the findings to the Inspection Supervisors first and then the Region Project Office.
4. Complete the Initial Inspection Report Type.

Structures under contract construction while still open to traffic.

1. If the inspectors identify that the structure is under contract prior to arriving on site, they should contact the Project Office (Project Engineer if possible) and let them know that the structure requires a Routine Inspection. If not and the inspectors arrive on site and can safely access the structure, proceed with the inspection without interfering with any ongoing construction activities.
2. Conduct the most complete Routine Inspection possible.
3. Do not change or alter element quantities in the bridge report based on any construction activities or expected final configuration.
4. Under each element that is impacted or not accessible, provide a comment stating the limitations of the inspection.
    - Example: South rail not accessible due to construction, temporary traffic rail in place to protect work zone.
    - Example: West abutment not accessible due to construction.
    - Example: Bearings at west abutment not accessible.
    - New girder line north of Girder Line A not inventoried as construction is not complete.
5. Leave previously noted defects and any associated condition states, or repairs for areas under construction in the report.
6. Attempt to identify when the contract is expected to be complete.
7. Notify regional supervisor of inspection completion, and anticipated contract completion date, but DO NOT force date inspections or resources without coordinating with supervisors.
8. Complete the Routine Report Type.
9. Under the “0 Note” provide the following statement:
    - “At the time of this inspection, the bridge is currently under contract construction for rehabilitation, retrofit or widening and is at least partially open to traffic. The scheduled Routine Inspection was performed in accordance with FHWA and Agency standards and guidelines. However, the scope of the inspection in inherently defined and limited to accessible areas and elements not directly impacted by construction and where activities will not interfere with the contract. Impacted areas and elements that were not fully accessible are described in the inspection notes. Previously identified element quantities, defects and condition states for elements or areas under construction are considered to remain the same and will not be changed until the contract is complete, and a new Initial Inspection is performed”. See photos.
10. Provide 2 or 3 photos showing the general areas and extent of construction.

3-4.1.M Bridge Scour for Local Agency Bridge Inspections

- Bridges with Scour Code (1680) of 2 and 3, or SNBI Scour Vulnerability (B.AP.03) of C or D, are scour critical. For reports with a scour code of "6", "U"or "B.AP.03 code = 0" the bridge is assumed to be scour critical.
- Bridges with a scour code of "6", "U", or SNBI Scour Vulnerability (B.AP.03) of "0", "E", or "U" are assumed to be scour critical and need a priority 1 repair called out in the (1680) note.

  The call out in the (1680) note should read as follows: "This inspection report assumes the bridge is scour critical. REPAIR #XXXXX"

  The Repair should read as follows: "(1680) is coded ["U", "6" or B.AP.03 code = 0] indicating that the bridge foundation is not known, is tidal, and/or has not been evaluated. Perform evaluation of scour potential and any required mitigation. Indicate determination and any requirements under the (1680) note."
- Scour critical bridges, and those that are assumed to be scour critical, that have exposed footings or have a history of exposed footings due to scour, REQUIRE a priority 1 scour repair documented in the BMS Element (#361) – Scour flag note in BridgeWorks. This repair should read as follows: "Scour mitigation needs to be evaluated."
- All scour critical bridges need soundings at every Routine Inspection. The (2693) note needs the following comment: "Take soundings every Routine Inspection on this scour critical bridge." Also ensure that the (2693) flag is set to "Y" at all times. This will help the process stay in place over time.
- Bridges that are not scour critical do not need cross sections unless there is some specific need that is documented in the report.

3-4.1.N Rental Equipment

The Enterprise and Risk Management Office has declared that equipment damage insurance must be purchased when renting access equipment. If the rental company does not offer insurance, insurance can be purchased through the Department of Enterprise Services (DES). The DES insurance option can take up to two weeks to process so plan accordingly.

For rented access equipment the following is required:

- Review the paperwork, when receiving the equipment, to ensure that it reflects insurance for the rented equipment.
- Review the invoice when you receive it from the BPO Accountant, making sure that the rate and time used are correct.
- Notify the rental office of any discrepancies found.
- Write the bridge number and dates used on the invoice.
- Return it to the BPO Accountant for processing.

3-4.1.O Bridge Inspection Safety

A Pre-Activity Safety Plan (PASP) is required prior to any field activity. A copy of the PASP form is located at W:\Data\Bridge\RegionalInsp\FORMS\SAFETY.

3-4.1.P Identifying the Purpose of Inspections in the Bridge Inspection Report

Within the Inspection Note (B.IE.11), under the specific inspection tab, indicate the purpose and schedule of any Interim or Special Inspections that are required. Statement should briefly describe what is to be accomplished during the Interim or Special Feature Inspection. An example note may read:

- "Interim Inspections of YT and RT timber members are done on a 48-month interval next due xx/xx/xx. UBIT is required to access RT members at Pier X."

An abbreviated note identifying the scope should be placed in the 0 note of the actual Interim Inspection report.

- "Interim Inspection conducted to monitor YT and RT timber members.

3-4.1.Q Agreements Inspections

Team Leader will provide the complete submittal package for each bridge inspected, which includes the signed inspection report, the SI&A sheet, the inventory sheet, all photos and files. The inspection report may be digitally signed. This package is given to the Bridge Resource Technician (BRT) who checks them against the scope of work. If there is anything missing, the BRT needs to check with the inspectors and follow up with the Bridge Preservation Accountant (BPA) if there are problems with providing a complete submittal package. The complete submittal package for each bridge is scanned and loaded onto BEISt, and a hardcopy filed in the unofficial letter file in the resource room. The complete submittal packages for each bridge are sent to the agency via USPS to the address in the agreement along with a transmittal letter listing all inspection reports provided. A copy of the transmittal letter is given to the BPA for filing with the invoices and agreements.

3-4.2 *LP Policy and Procedures*

Local Agency Policy and Procedures differing from those in the WSBIM are detailed in the *Local Agency Guidelines* (LAG) Chapter 34. Electronic copies of the LAG are available on the WSDOT Local Programs website at www.wsdot.wa.gov/localprograms.

Local agencies are encouraged to review the BPO Policies and Procedures in the preceding section and adopt or modify the advice to the benefit of their Bridge Program. Local Agency bridge personnel are encouraged to contact the WSDOT Local Programs Bridge Engineer for guidance and advice on bridge program questions.

3-5 Forms

This section contains inspection forms typically used by the State. Local agencies have the option of developing their own forms with similar information or utilizing the forms in this section.

Exhibit 3-11	Bridge Inspection Report
Exhibit 3-12	WSBIS Form
Exhibit 3-13	Scour Field Evaluation
Exhibit 3-14	Daily Site Dive Log
Exhibit 3-15	Visual NSTM Inspection Report
Exhibit 3-16	WSDOT Form 234-030 Prestressed Concrete Damage Drawing Template
Exhibit 3-17	Girder Elevation Template
Exhibit 3-18	Ultrasonic UT Inspection Report
Exhibit 3-19	UT Inspection Schedule
Exhibit 3-20	Pin and Hanger Visual Inspection Report
Exhibit 3-21	Complex Features Inspection Report
Exhibit 3-22	Vertical Clearance Card Generic
Exhibit 3-23	Vertical Clearance Card Steel
Exhibit 3-24	Vertical Clearance Card Tunnel

Exhibit 3-11 Bridge Inspection Report (Page 1 of 2)

WSDOT

BRIDGE INSPECTION REPORT

Page 1 of 2

Printed On: 12/18/202

CD Guid: 9470aae8-70e2-435f-9eb6-bb7ef18a4a5c

Agency: Washington State | Program Mgr: Roman G. Peralta | CD Status: Work | Release Date:

Structure No. SAMPLE **SID** XB116301 **Structure Name** SAMPLE

Carrying **Route On** 00000 **Mile Post** 0.00

Intersecting **Route Under** **Mile Post**

Inspector's Signature | Cert # | Cert Exp Date | Co-Inspector's Signature

Current Inspections Performed

Report Type	Subtype	Rsk Mthd	Begin Date	Comp Date	Interval	Due Date	Hours	Inspector	Cert No	Co-Insp

Component Condition Ratings

		Overall Condition Classification	(BC12)
		FHWA Deck Overall	(BC01)
		WSDOT Deck Overall	(WC01)
		Bridge Railings	(BC05)
		Bridge Railing Transitions	(BC06)
		Bridge Joints	(BC08)
		Superstructure Overall	(BC02)
		NSTM Inspection	(BC14)
		Bridge Bearings	(BC07)
		Substructure Overall	(BC03)
		UW Inspection	(BC15)
		Culvert Overall	(BC04)
		Scour Condition	(BC11)
		Channel Condition	(BC09)
		Channel Protection	(BC10)
		Chan/Prot (NBI Disc)	(1677)
		Pier/Abut/Prot (NBI Disc)	(1679)

Appraisal

		Scour Critical (NBI Disc)	(1680)
		Scour Vulnerability	(BAP03)
		Scour Plan of Action	(BAP04)
		Waterway (NBI Disc)	(1662)
		Overtopping Likelihood	(BAP02)
		Appr Roadway Align	(BAP01)
		Fatigue Details	(BIR02)
		Seismic Vulnerability	(BAP05)

Miscellaneous Fields

		Year Built	(BW01)
		Asphalt Depth	(WIE30)
		Design Curb Height	(WIE31)
		Bridge Rail Height	(WIE32)
		Number of Utilities	(WIE33)
		Subject to NBIS	(WIE34)
		Inspn QA Date	(BIE09)

Inspection Flags

		Soundings	(WIE20)
		Clearance	(WIE21)
		Revise Rating	(WIE22)
		PhotosFlag	(WIE23)
		Roadside Hardware Flag	(WIE25)
		QA Flag	(WIE24)

BMS Elements

Element	Element Description	Total	Units	CS 1	CS 2	CS 3	CS 4

Notes

Repairs

Repair No	Pr	R	Repair Descriptions	BMS	Noted	Maint	Verified
			(No repairs for this structure)				

Exhibit 3-11 Bridge Inspection Report (Page 2 of 2)

WSDOT

BRIDGE INSPECTION REPORT

Page 2 of 2

Printed On: 12/18/202

CD Guid: 9470aae8-70e2-435f-9eb6-bb7ef18a4a5c

Agency: Washington State | Program Mgr: Roman G. Peralta | CD Status: Work | Release Date:

Structure No. SAMPLE **SID** XB116301 **Structure Name** SAMPLE

Carrying **Route On** 00000 **Mile Post** 0.00

Intersecting **Route Under** **Mile Post**

All Inspections and Resources Required

Report Type	Subtype	Rsk Mthd	Begin Date	Comp Date	Interval	Due Date	Hours	Inspector	Cert No	Co-Insp

Inspection Note	Insp QC Date	Inspn Data Update Date	

Exhibit 3-12 WSBIS Form

WSDOT

WSBIS Bridge Inventory Report

Agency: Washington State
Program Manager: Roman G. Peralta
Printed On: 12/18/2024

CD Status: Work
CD Date: 12/18/2024
CD Guid: 9470aae8-70e2-435f-9eb6-bb7ef18a4a5c

Approved		
Revised		
RFC		
AAN		
Not Reviewed		

Carrying:
Route On: 00000 Milepost: 0.00
Intersecting:
Route Under Milepost:

Structure No: SAMPLE Soundings: Clearance: Revise Rating: Photos: Rdside Hdwr: QA:

Inspections Performed

Report Type	Subtype	Risk Mth	Begin Date	Comp Date	Freq	Hours	Inspector	Cert No	Co-Insp

Features

Feature Designation	Feature Type	Feature Location	Feature Name	Program Manager
H01	H - Highway	C - Carried on bridge		Roman G. Peralta
W01	W - Waterway	B - Below bridge		

Bridge ID and Location

		Last Recorded	Updated
Structure ID	(BID01)	XB116301	
Previous Structure ID	(BID02)		
Structure Type	(WID01)	1 - Bridges and culverts carrying public roadways	
Structure Number	(WID02)	SAMPLE	
Structure Sort Number	(WID03)	99SAMPLE	
Structure Name	(BID02)	SAMPLE	
Owner	(BCL01)		
Maintenance Responsibility	(BCL02)		
County	(BL02)	1 - 1	
City	(WL05)	0 - UNINCORPORATED	
Place Code	(BL03)		
Highway Agency District	(BL04)		
Metro Planning Org	(BL12)		
Section	(WL06)		
Township	(WL07)		
Range	(WL08)		
Obsolete Flag	(WID05)		
Border Structure ID	(BL07)		

Toll	(BCL05)	
Hist. Significance (NRHP)	(BCL04)	
Hist. Significance (HAER)	(WCL04)	
Special Structures Flag	(WID04)	

Geometry

		Last Rec.	Updated
NBIS Br Length	(BG01)		
Total Structure Len	(BG02)		
Max Span Length	(BG03)		
Min Span Length	(BG04)		
Out-to-Out (NBI Disc)	(1360)		
Out-to-Out	(BG05)		
Curb-to-Curb (NBI Disc)	(1356)		
Curb-to-Curb	(BG06)		
Sidewalk/Curb L	(BG07)		
Sidewalk/Curb R	(BG08)		
Min Vert Clrnc Over	(WH12)		
Min Vert Under Br	(WH13)		

Aprch Rdwy Width	(BG09)	
Median Code	(BG10)	
Skew (NBI Disc)	(1310)	
Skew	(BG11)	
Curved Bridge	(BG12)	
Max Br Height	(BG13)	
Sidehill Bridge	(BG14)	
Irr. Deck Area	(BG15)	
Calc. Deck Area	(BG16)	0.0

Exhibit 3-13 Scour Field Evaluation (Page 1 of 2)

Washington State Department of Transportation

Scour Field Evaluation

Date of Evaluation:	Lead Inspector:	Co-Inspector:	Bridge Number:	
			Bridge Name:	
			Structure ID:	

Channel Condition:	Location	Description of Condition	**Soundings:**	
Alignment/Angle of Attack:			Measurements Taken From:	
Thalweg/Meander:			Height from Deck (ft):	
Degradation:			Distance to Water Surface (ft):	
Aggradation:			Thalweg (ft):	
Debris Effecting Flow:			Distance to thalweg (ft):	
Bank Erosion/Instability:			Distance was measured from:	
Countermeasures:	Type[2]	Description of Condition	Ahead or Back on Station?	
Upstream Channel:			**Location:**	**Measurement (ft)**
Upstream Right Bank[1]:				
Upstream Left Bank[1]:				
Under Bridge Channel:				
Under Bridge Right Bank[1]:				
Under Bridge Left Bank[1]:				
Piers:				
Abutments/Wingwalls:				
Downstream Channel:				
Downstream Right Bank[1]:				
Downstream Left Bank[1]:				
[1] *Right and Left orientation when looking downstream.*				
Scour:	Location	Description of Condition		

[2] ***LWM**, Large Woody Material; **MWM**, Mobile Woody Material; **MB**, Meander Bar; **CVW**, Cross Vein Weir (aka Drop Structure); **HLR**, Heavy Loose Riprap; **LLR**, Light Loose Riprap; **HPR**, Hand Placed Riprap; **FGR**, Fully Grouted Riprap; **PGR**, Partially Grouted Riprap; **QS**, Quarry Spalls; **BWW**, Bendway Weirs; **GB**, Guide Banks; **CD**, Check Dams; **BRR**, Buried Rock Revetment; **COW**, Cut-Off Wall; **CSP**, Concrete Slope Paving; **ACM**, Articulating Concrete Mattress; **GMB**, Gabion Mattresses/Baskets; **GFM**, Grout-Filled Mats.*

Washington State Department of Transportation

Scour Field Evaluation
Continuation

Dates of Evaluation (Begin/Completion):	Lead Inspector:	Co-Inspector:	Bridge Number:	0
1/0/1900	0	0	Bridge Name:	0
			Structure ID:	0

APPENDIX C

Table 54. Channel - defect severity guidance for component condition ratings.

Defect	Minor	Moderate	Major
Alignment	Flow angle of attack 15-30 degrees with respect to the bridge substructure, or 5-15 degrees with respect to wall piers.	Flow angle of attack 30-45 degrees with respect to the bridge substructure, or 15-30 degrees with respect to wall piers.	Flow angle of attack more than 45 degrees with respect to the bridge substructure, or more than 30 degrees with respect to wall piers.
Migration	Thalweg has moved from its baseline location, but movement has arrested or does not threaten the bridge or approach roadway.	Thalweg movement has not arrested and impacts embankment stability.	Thalweg movement has begun to undermine approach roadway.
Degradation	Exists within tolerable limits or has arrested.	Sloughing of banks, resulting in vertical embankments on both sides of the channel. Bridge is not yet impacted.	Sloughing of banks, resulting in vertical embankments on both sides of the channel. Bridge is impacted.
Aggradation	Exists within tolerable limits or has arrested.	Exceeds tolerable limits. Hydraulic opening is significantly blocked, increasing potential for overtopping or channel restriction.	Hydraulic opening is mostly blocked. May cause frequent overtopping or channel restriction.
Debris	Restricts channel slightly, or is prone to build-up.	Large deposits exist and restrict the channel, causing increased water velocities, redirecting stream flow, or eroding banks.	Hydraulic opening mostly blocked, significantly redirecting stream flow or impacting waterway capacity.
Bank Erosion/ Instability	Erosion/instability that does not impact the bridge or approach roadway.	Significant erosion/instability that is progressing toward the bridge or approach roadway.	Stability of the approach roadway embankment is impacted.

Soundings Continued:	
Location:	Measurement (ft)

Exhibit 3-14 Daily Site Dive Log (Page 1 of 3)

Washington State Department of Transportation

Daily Site Dive Log

Inspector		Date
Bridge Number	Bridge Name	
Bridge Type	Waterway Name	
Dive Objective		

Diving Operation

Type of Operation ☐ SCUBA ☐ Snorkel ☐ SSA ☐ Other _____

Equipment
Suit _____
Air Supply _____
Site Access _____
Inspection Tools _____
Repair Tools _____
Repair Materials _____

Conditions

Water ☐ Salt ☐ Fresh ☐ Brackish Temperature _____ °F Visibility _____
Surface ☐ Calm ☐ Choppy ☐ Rough
Surf ☐ Small ☐ Medium ☐ Large ☐ N/A
Tide ☐ High ☐ Low ☐ Flood ☐ Ebb ☐ N/A
Current ☐ Fast ☐ Moderate ☐ Slow Velocity _____ ft/sec.
Weather ☐ Sunny ☐ Cloudy ☐ Overcast ☐ Rain Air Temperature _____ °F
Thermocline Temperature _____ °F Depth _____ ft.

Diver Checks

☐ First Aid Equipment on Site
☐ Comunication for EMS
☐ Dive Gear Inspection
☐ Air Source Checked
☐ PASP Reviewed _____
☐ _____
☐ Physical Condition of Diver(s) Checked
☐ Communications for Diver(s) Checked
☐ Team Briefed and Understands Dive Plan
☐ Special Site Hazards Noted

Dive Plan and Dive Team Procedures

Page 1 of _____

Exhibit 3-14 Daily Site Dive Log (Page 2 of 3)

Dive Schedule					
Dive No.	Entry Time	Exit Time	Total Time in Water	Maximum Depth	Remarks

Dive Narrative

Dive Team Members

_____ (Print Name) Diver Stdby DPIC Notes Other (Role)

_____ (Print Name) Diver Stdby DPIC Notes Other (Role)

_____ (Print Name) Diver Stdby DPIC Notes Other (Role)

_____ (Print Name) Diver Stdby DPIC Notes Other (Role)

_____ (Print Name) Diver Stdby DPIC Notes Other (Role)

Page 2 of _____

Exhibit 3-14 Daily Site Dive Log (Page 3 of 3)

WSDOT Dive Team
- Daily Rough Log

Date: ____________ Bridge # / Site: ____________

Dive Number	Diver(s)	Air (psig)		Time			Max Depth	Letter Group	Surface Interval	Rep. Dive Group	Roles (Initals)			Remarks
		In	Out	In	Out	Total					DPIC	Stdby	Other	

Exhibit 3-15 Visual NSTM Inspection Report (Page 1 of 2)

Washington State Department of Transportation

NONREDUNDANT STEEL TENSION MEMBER INSPECTION REPORT

Bridge Name:
Bridge No:
Structure ID:
Structure Type:
Agency:
Milepost:

Date:
Hours:
Inspector ID #:
Lead Inspector Initials:
Co-Inspector Initials:

Procedures:

Riveted Floor Truss

1. As required, use mirrors or other equipment to check inside surfaces of NSTM's.
2. Check for loose or unevenly loaded member sub-elements.
3. Check girder web at areas around floorbeam and lateral bracing.
4. For continuous spans with welded stud shear connectors, check top flange soffit for cracking in tension areas and document location in weld category C
5. Check all rivets at connection plates, with emphasis on the end row of cover plates and outside edges of splice plates.
6. Check for any welds, including plug, tack, or repair welds. Record location of welds, regardless of condition, and document weld type and category.
7. Check NSTM's and associated connection or gusset plates for areas of heavy or pitted corrosion, nicks, gouges, sharp bends, and collision damage. Record location of all these conditions and estimated section loss, if applicable.
8. Check all heat straightened or repaired areas. Record location of these areas, regardless of condition.
Steel Girder

Riveted Steel Girder

1. Check a sampling of rivets, with emphasis on the end row of cover plates and outside edges of splice plates.
2. Check girder web at areas around floorbeam and lateral bracing.
3. For continuous spans with welded stud shear connectors, check top flange soffit for cracking in tension areas and document location in weld category C.
4. Check for any welds, including plug, tack, or repair welds. Record location of welds and document weld type and category.
5. Check NSTM's for areas of heavy or pitted corrosion, nicks, gouges, sharp bends, and collision damage. Record location of all these conditions and estimated section loss, if applicable.
6. Check all heat straightened or repaired areas. Record location of these areas, regardless of condition.

Main Suspension Cable

1. Walk suspended line cables, inspecting the condition of paint protective system.

NSTM Location	NSTM Type	NSTM Per Girder or Truss Line	Plan Sheets		
			Sh. No.	Contr.	Sh. Name

Note: NSTM = Non-Redundant Steel Tension Member

Exhibit 3-15 Visual NSTM Inspection Report
(Page 2 of 2)

Washington State Department of Transportation

NONREDUNDANT STEEL TENSION MEMBER INSPECTION REPORT

Bridge Name:		**Date:**	
Bridge No.:		**Hours:**	
Structure ID:		**Inspector ID #:**	
Structure Type:		**Lead Inspector:**	
Agency:		**Co-Inspector:**	
Milepost:			

Truss / Girder	Span	Location	Feature Inspected	Detail Description	Remarks

NSTM Report and Cover.xlsx -Visual NSTM Findings

Printed 12/18/2024

Exhibit 3-16 WSDOT Form 234-030 Prestressed Concrete Damage Drawing Template

Washington State Department of Transportation

Prestressed Concrete Damage Drawing Template

Bridge Number: _____ Inspected By: _____

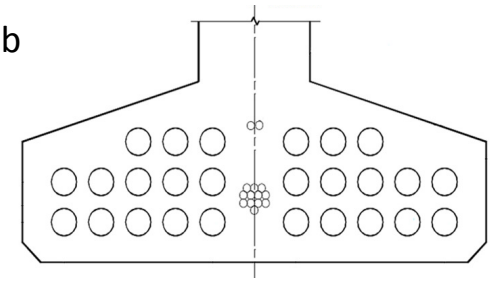
Bridge Name: _____ Notes: _____

Date: _____

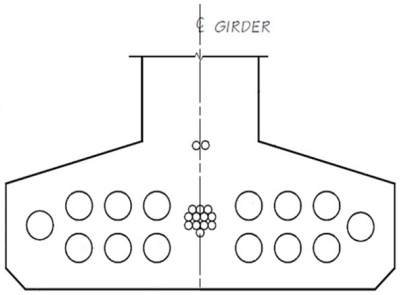
Looking: _____

Location: _____

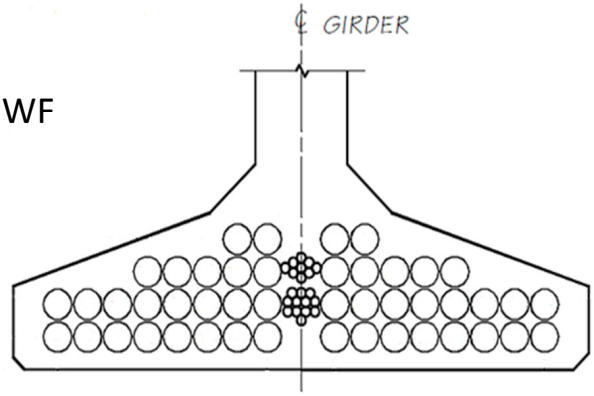
Bulb



W



WF



DOT Form 234-030
Revised 10/2015

Exhibit 3-17 Girder Elevation Template

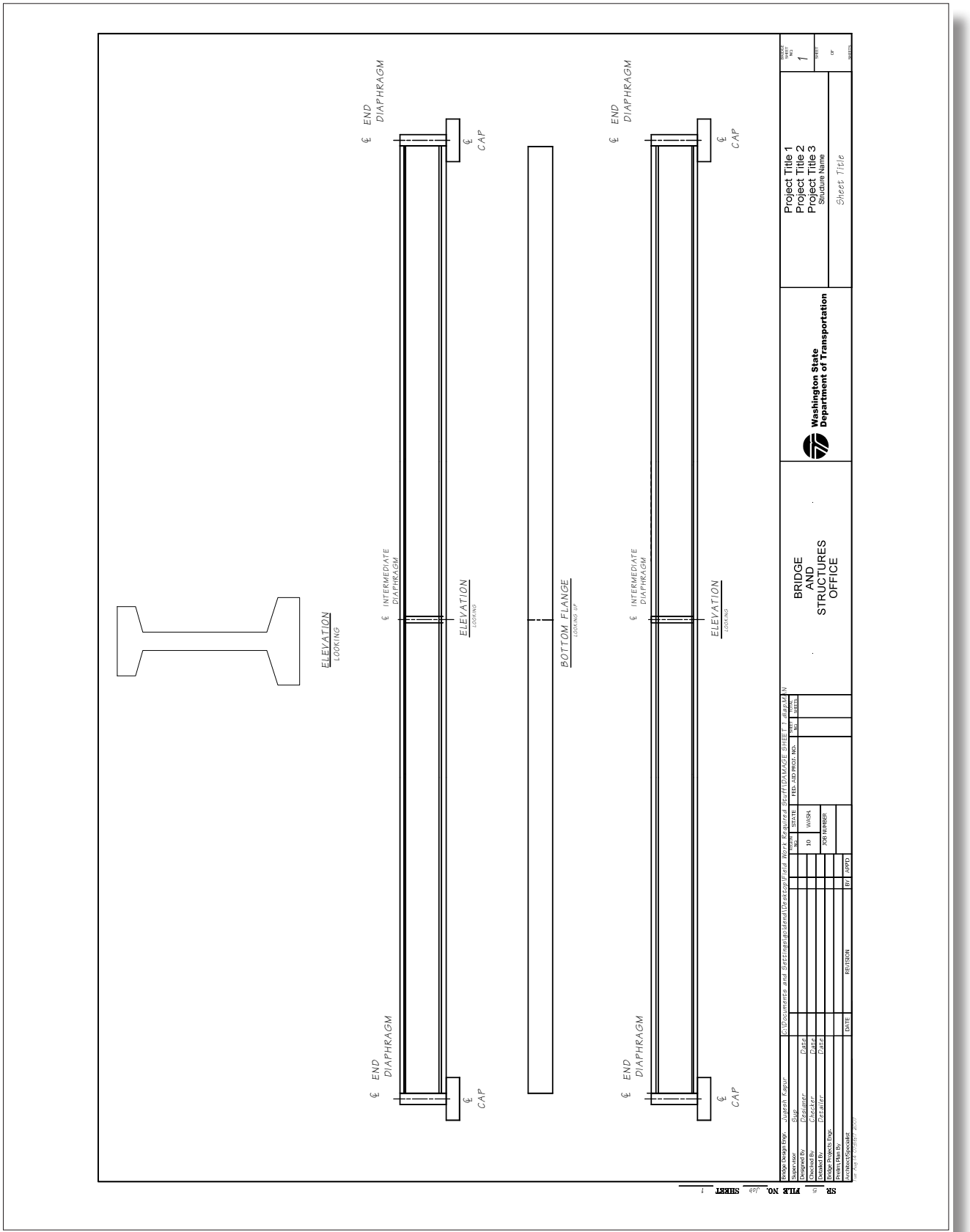


Exhibit 3-18 Ultrasonic UT Inspection Report (Page 1 of 2)

Washington State Department of Transportation

UT INSPECTION REPORT

Bridge Name:
Bridge No:
Structure ID:
Structure Type:
Agency:
Milepost:

Date:
Hours:
Inspector ID #:
Lead Inspector Initials:
Co-Inspector Initials:

Inspected items:

Procedures:

Pins
1. When possible, test from both ends of pins.
2. Verify pin length shown on back reflection with plans. If back reflection does not match the plans, conduct manual length measurement and document correct pin length.
3. Start test with transducer at or near pin center for back reflection check, then run transducer around full perimeter of pin, searching for indications or significant loss of back reflection.
4. Whenever the test suggests that there is a defect in a pin, store and print out the indication with all associated equipment and settings documented. The location of the transducer shall also be documented using a clock hand convention (1 O'clock to 12 O'clock).

UTM Location	UTM Type	UTM Per Girder or Truss Line	Plan Sheets		
			Sh. No.	Contract	Sh. Name

Note: UTM = Ultrasonic Tested Member

1 of 3

Exhibit 3-18 Ultrasonic UT Inspection Report (Page 2 of 2)

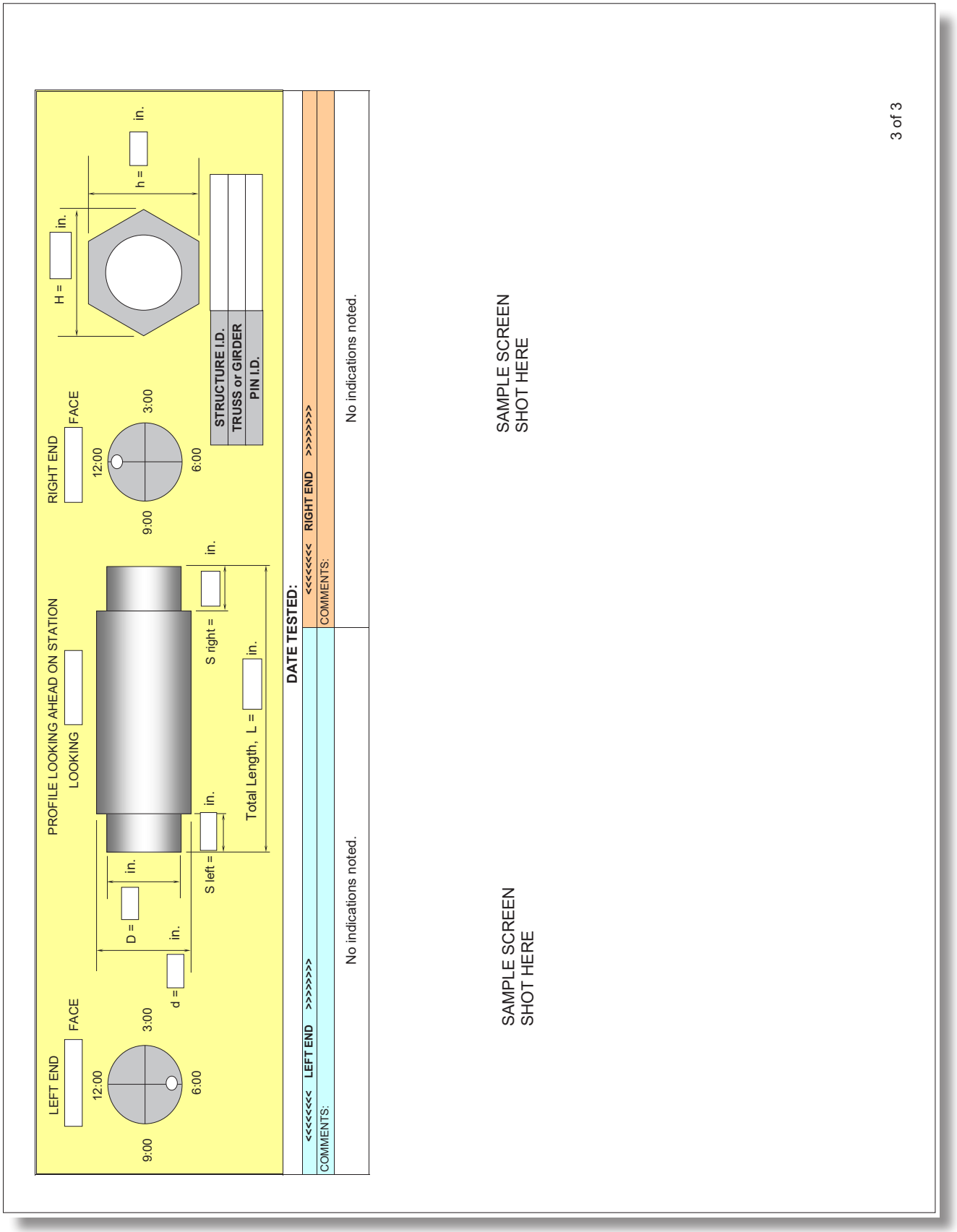


Exhibit 3-19 UT Inspection Schedule

Washington State Department of Transportation

UT INSPECTION SCHEDULE

Truss / Girder	Span	Location	Detail Description	Redundant	Condition State		Freq. (Months)	UT Inspection Date	Next Inspection Date
					VT	UT			

1 of 1

Exhibit 3-20 Pin and Hanger Visual Inspection Report (Page 1 of 2)

Washington State Department of Transportation

VISUAL PIN AND HANGER INSPECTION REPORT

Bridge Name:		**Date:**	
Bridge No:		**Hours:**	
Structure ID:		**Inspector ID #:**	
Structure Type:		**Lead Inspector Initials:**	
Agency:		**Co-Inspector Initials:**	
Milepost:			

Inspected Items: Pins and Hangers

Procedures:

Hangers

1. Check for loose or unevenly loaded member sub-elements.
2. Check for any welds, including plug, tack, or repair welds. Record location of welds, regardless of condition, and document weld type and category.
3. Check members for areas of heavy or pitted corrosion, nicks, gouges, and sharp bends, and. Record location of all these conditions and estimated section loss, if applicable.
4. Check all heat straightened or repaired areas. Record location of these areas, regardless of condition.

Pins

1. Check for pitting, laminar rust, surface deformation, and pack rust. It is important to check the pin, pin nuts, and all members surrounding the pin for this kind of steel deterioration.
2. Check for mobility and noise of pin and surrounding members. If the pin is physically "frozen" it is important to note this because the added stress can affect other members in the structure.
3. Observe and record abnormalities like; alignment, pin wear, loose pin nuts, and amount of nut engagement. It is important to note that full nut engagement is when the nut is flush with the pin or the pin is extending past the nut.
4. Check for paint system failure on pin nuts, pin, and surrounding members.

Location	Type	Member Per Girder or Truss Line	Plan Sheets		
			Sh. No.	Contr.	Sh. Name

Visual Pin and Hanger Report.xls Printed 12/18/2024

Exhibit 3-20 Pin and Hanger Visual Inspection Report
(Page 2 of 2)

Washington State Department of Transportation

VISUAL PIN and HANGER INSPECTION REPORT

Bridge Name:		**Date:**	
Bridge No.:		**Hours:**	
Structure ID:		**Inspector ID #:**	
Structure Type:		**Lead Inspector:**	
Agency:		**Co-Inspector:**	
Milepost:			

Truss / Girder	Span	Location	Feature Inspected	Detail Description	Remarks
PINS					
HANGERS					

Visual Pin and Hanger Report.xls

Printed 12/18/2024

Exhibit 3-21 Complex Features Inspection Report (Page 1 of 2)

Washington State Department of Transportation

COMPLEX FEATURES INSPECTION REPORT

Bridge Name:
Bridge No:
Structure ID:
Structure Type:
Agency:
Milepost:

Date:
Hours:
Inspector ID #:
Lead Inspector Initials:
Co-Inspector Initials:

Inspected items:

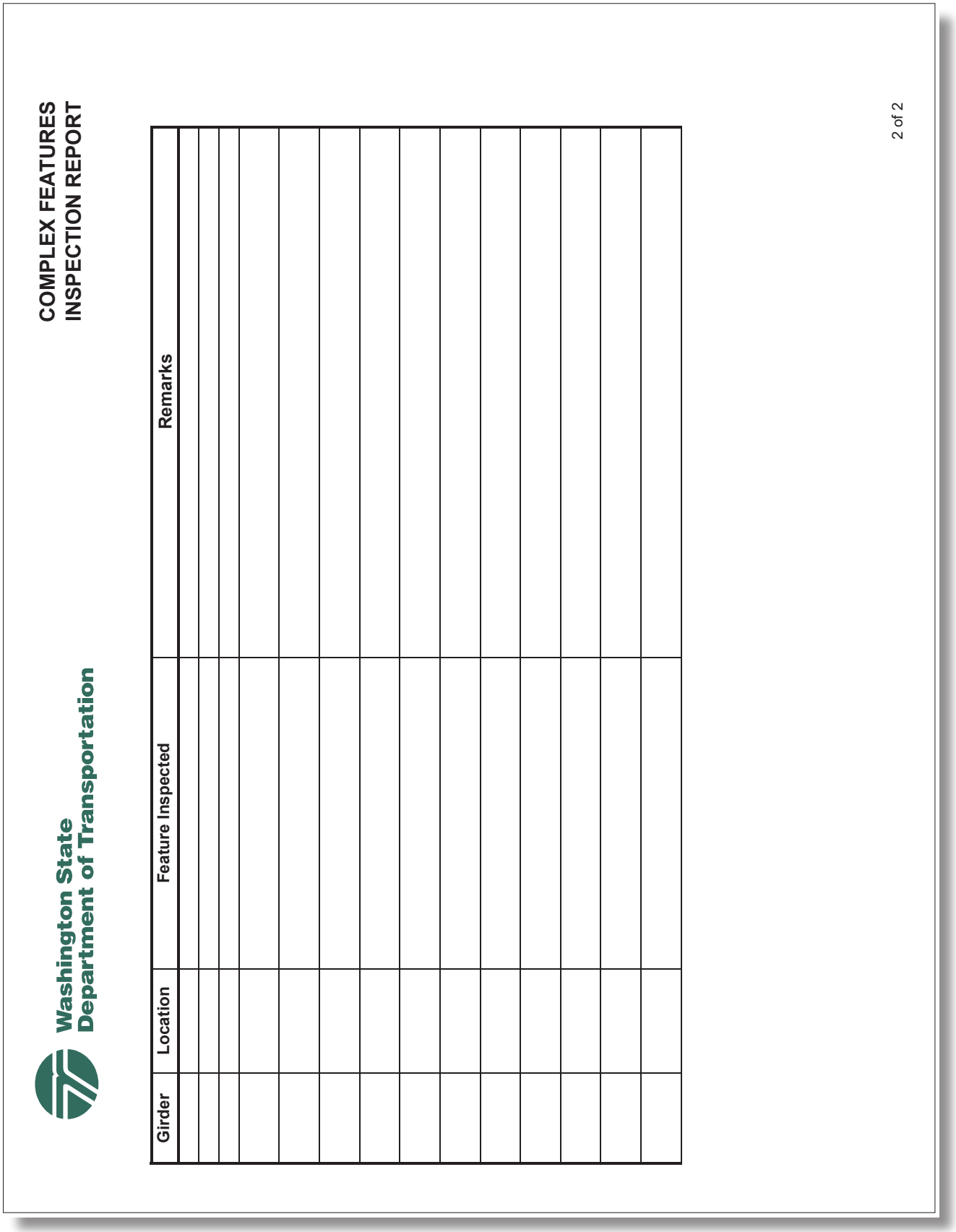
Procedures:

High strength steel welded girder top and bottom flanges, webs, and stiffeners:
1. Visually inspect for cracks in the welds in the areas of high strength steel.
2. Inspect areas where there is a change in the bridge cross section, where stress is concentrated, or which show out-of-plane bending.
3. Nondestructive testing, such as magnetic particle and liquid dye penetrant, will be used in suspect areas where visual inspection cannot confirm a defect.

Complex Features	Complex Feature Type	Feat Per Girder or Truss Line	Plan Sheets		
			Sh. No.	Contract	Sh. Name

1 of 2

Exhibit 3-21 Complex Features Inspection Report (Page 2 of 2)



COMPLEX FEATURES
INSPECTION REPORT

Washington State
Department of Transportation

2 of 2

Girder	Location	Feature Inspected	Remarks

Exhibit 3-22 Vertical Clearance Card Generic

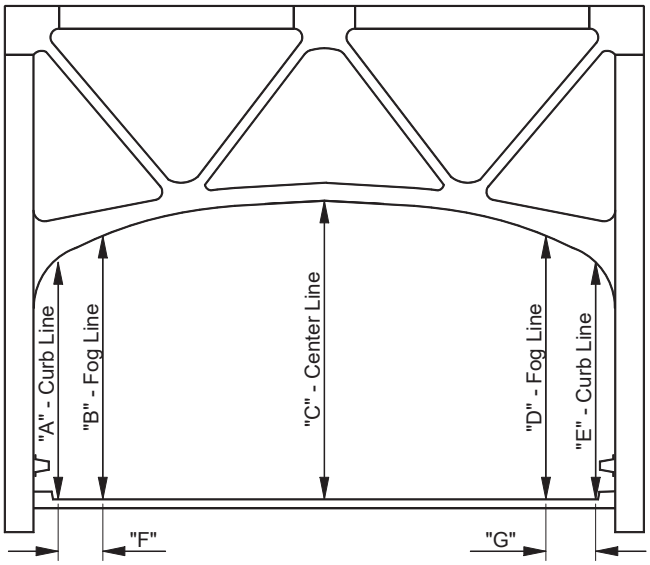
Bridge Number:	
Structure ID:	
Looking:	
Measurement Date:	
Photo Date:	
Inspection/Co Initials:	
Minimum Vertical Clearance Posted For:	
Posting on Structure:	
Posting on Shoulder:	
Advance Detour Intersection Posting for Vertical Clearance 14'-0" or less:	

Note:
Vertical measurements are actual measures rounded down to the nearest inch. Posted clearances are typically 3 inches less than the lowest clearance for a particular through movement.

Exhibit 3-23 Vertical Clearance Card Steel

Bridge Number:	
Structure ID:	
Looking:	
Measurement Date:	
Photo Date:	
Inspection/Co Initials:	
Minimum Vertical Clearance Posted For:	
Posting on Structure:	
Posting on Shoulder:	
Advance Detour Intersection Posting for Vertical Clearance 14'-0" or less:	

Note:
Vertical measurements are actual measures rounded down to the nearest inch. Posted clearances are typically 3 inches less than the lowest clearance for a particular through movement.

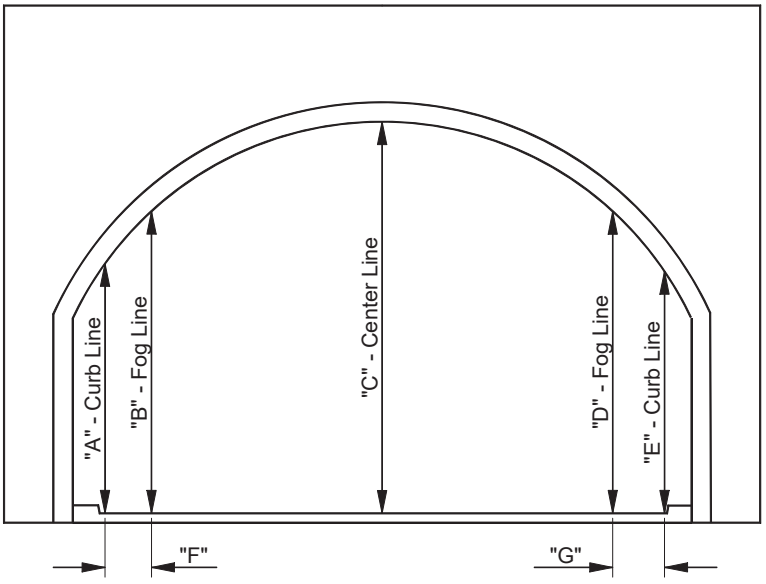


Location	Field Measurement						
	A	B	C	D	E	F	G

Exhibit 3-24 Vertical Clearance Card Tunnel

Bridge Number:	
Structure ID:	
Looking:	
Measurement Date:	
Photo Date:	
Inspection/Co Initials:	
Minimum Vertical Clearance Posted For:	
Posting on Structure:	
Posting on Shoulder:	
Advance Detour Intersection Posting for Vertical Clearance 14'-0" or less:	

Note:
Vertical measurements are actual measures rounded down to the nearest inch. Posted clearances are typically 3 inches less than the lowest clearance for a particular through movement.



Location	Field Measurement						
	A	B	C	D	E	F	G

3-6 Appendices

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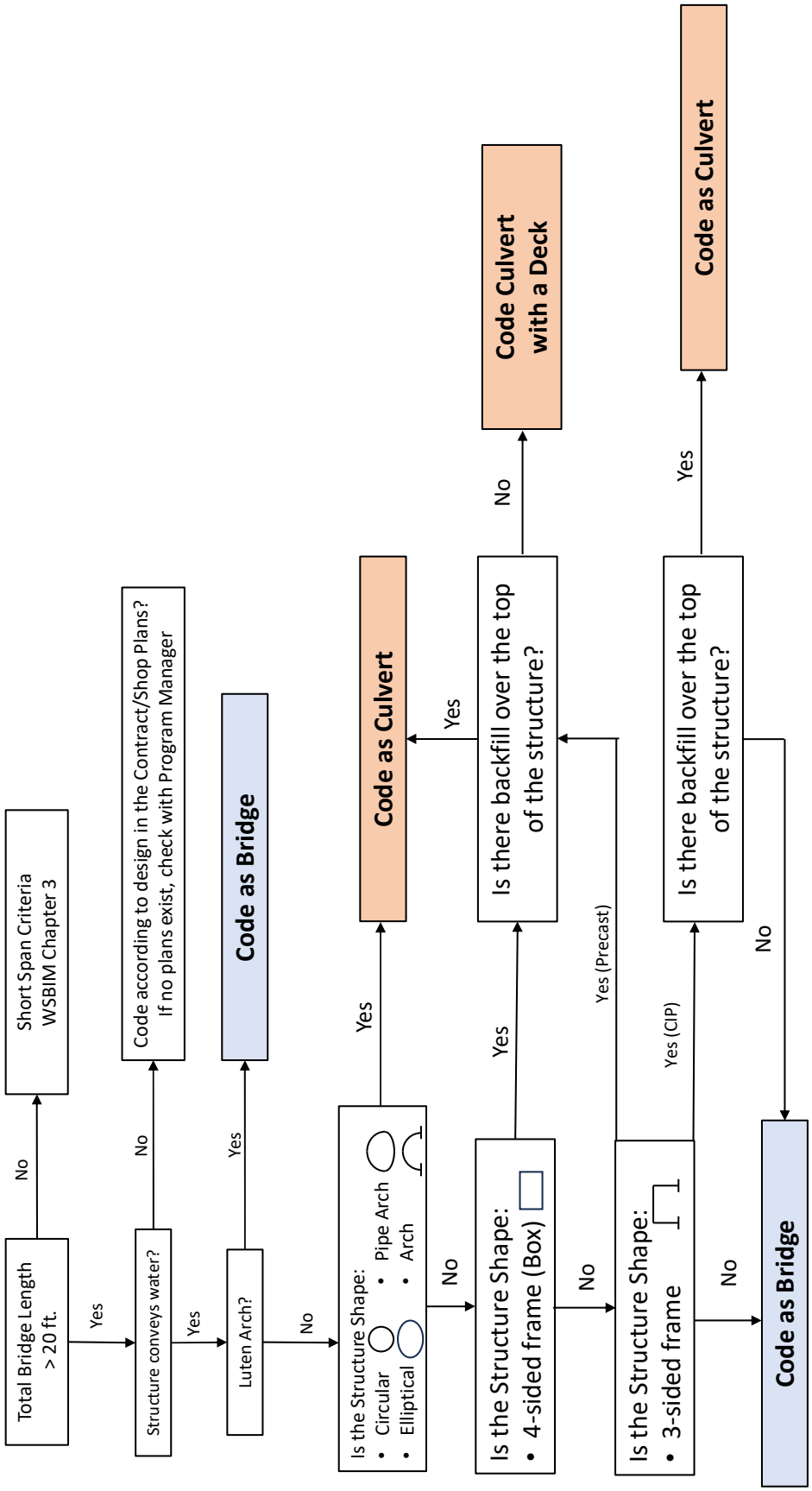
Appendix 3-A Bridge/Culvert Coding Matrix



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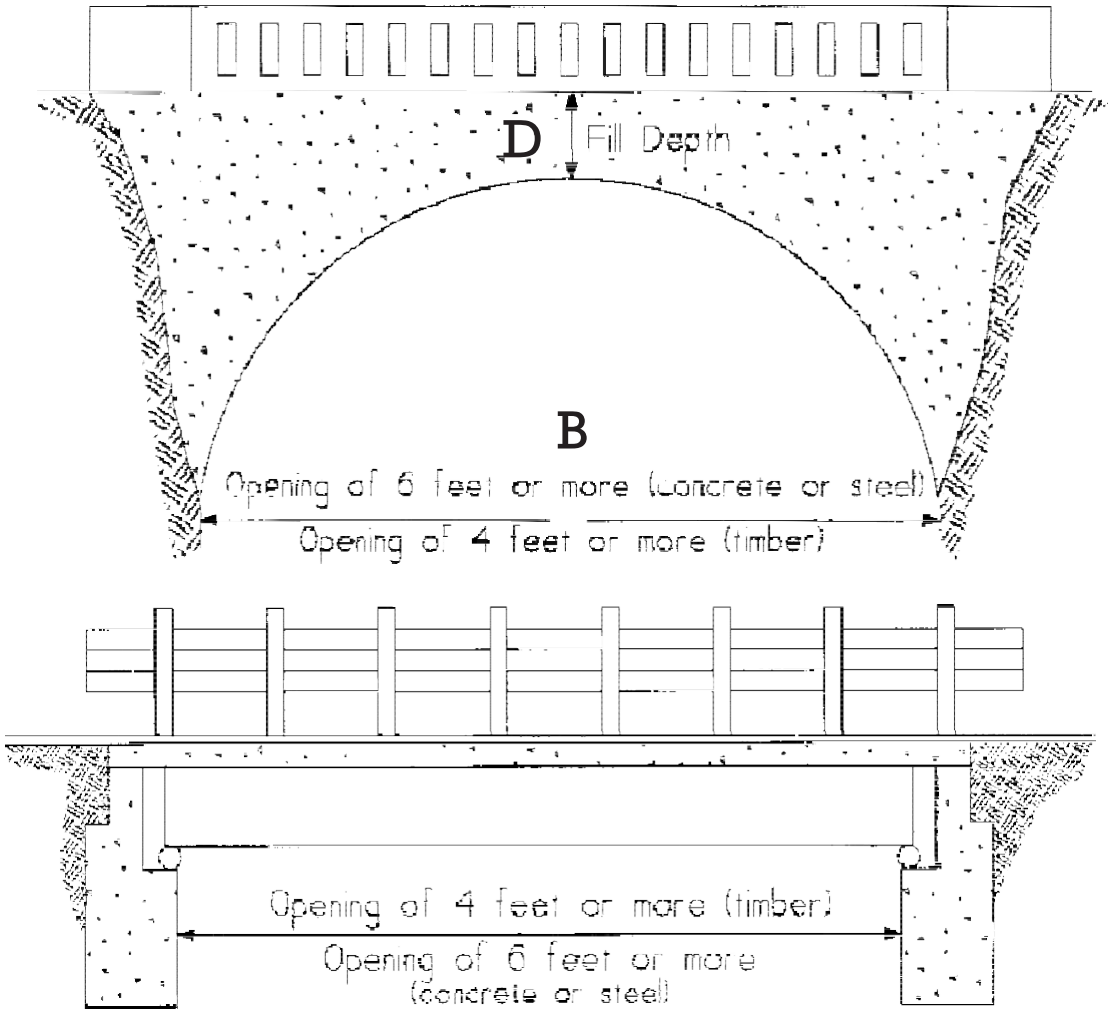
Appendix 3-B Short Span Bridge Criteria

Short Span Inspections for bridges and culverts with a span of 20 feet or less, are recommended and performed by the Washington State Department of Transportation (WSDOT) Bridge Preservation Office when the outlined criteria are met. Structures not meeting one or more of the outlined criteria are turned over to region maintenance for responsibility of inspection and maintenance.

In the event that a structure is determined not to be inspected as a short span, the Team Leader making the determination will verify with Regional Supervisors and shall ensure that this information is passed on to the proper contacts within the region.

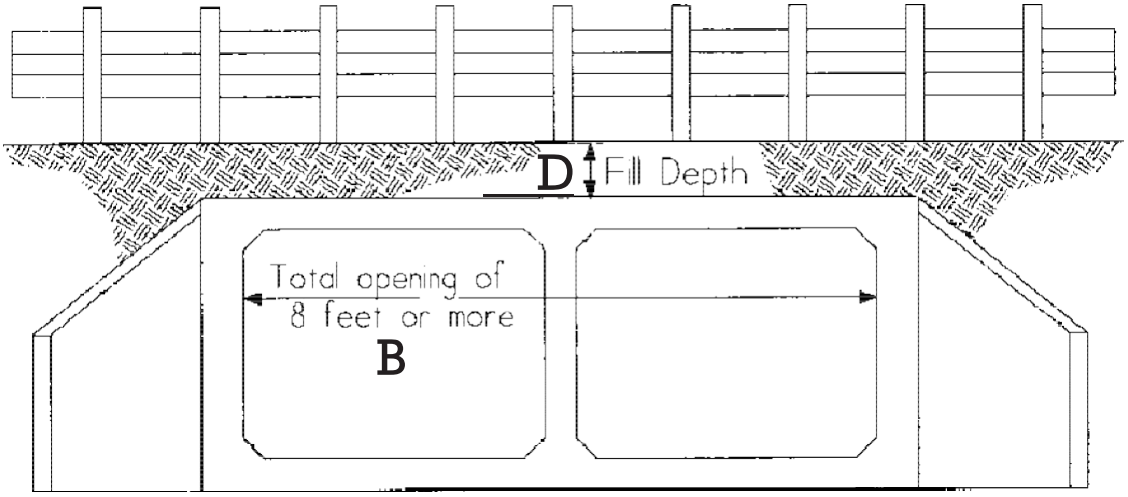
Single Span, Pipe, Barrel, or Box Culverts or Bridges

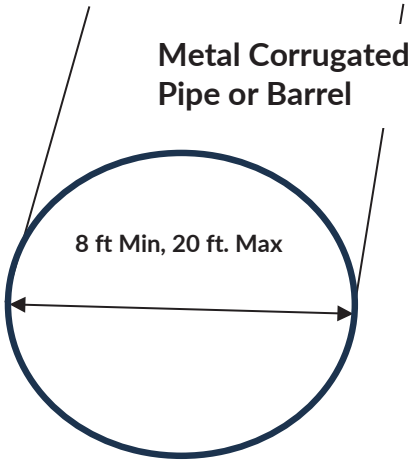
1. CONCRETE Structures: Opening of 6 feet or more.
   STEEL Structures: Opening of 6 feet or more.
   TIMBER Structures: Opening of 4 feet or more.
   Structures not meeting the minimum turned over to region maintenance for responsibility.
2. Depth of fill (D) must be less than B/2 (where B = Maximum opening distance).
   For structures 20 ft. and under, if the depth of fill is greater than B/2 the structure is turned over to region maintenance for responsibility of inspection and.

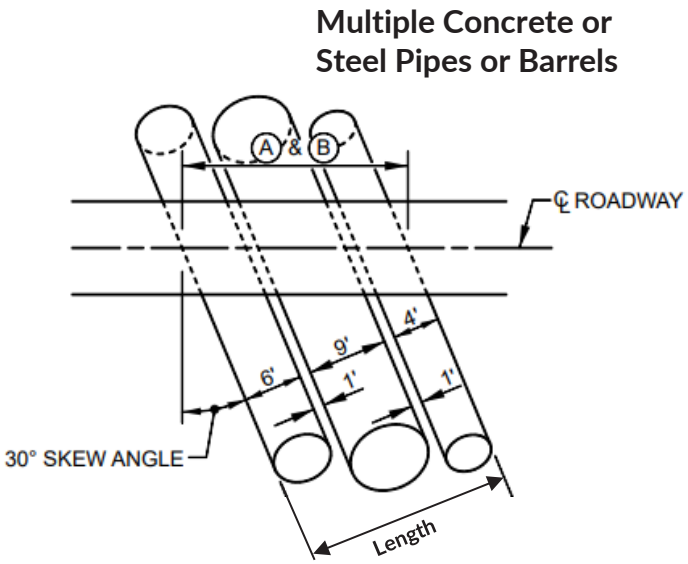


Multi Span/Structure Pipe Barrel or Box Culverts or Bridges.

1. Total Opening across all pipes, barrels, or boxes must be 8 feet or more.







Ⓐ = $\frac{\text{Length}}{\text{Cos } 30°}$ = 10 ft Min, 20 ft. Max Ⓑ = Blank

NOTE: THE DISTANCE BETWEEN CONSECUTIVE PIPES MUST BE EQUAL TO (=) OR LESS THAN (<) 1/2 THE DIAMETER OF THE SMALLEST PIPE IN THE SERIES FOR THE SERIES TO BE CONSIDERED ONE STRUCTURE.

Appendix 3-C UBIT Inspections and Procedures

1. **Determining Bridges to Receive Inspections with a UBIT –** Team Leaders will work with supervisors to determine the appropriate resources and need in scheduling of UBIT resources for bridge inspections. UBITS or other resources are often needed to gain sufficient access to determine the structural condition of bridge members. These may include floor beam and stringer connections, pier caps, bearings, restraint devices or other features at midspan or on top of interior piers that are too high for ladders.
2. **Record and Update the UBIT Resource in the Inspection Report –** The UBIT resource, under the Resources portion of the report has to be updated after every inspection to ensure that the date for the next required use of resource stays in synchronization with the associated report. If inspection due dates for associated Routine, NSTM or Complex Feature reports move, the Resource due dates must also be adjusted. Team leaders and supervisors will need to coordinate this to insure it is done properly on a case-by-case basis when moving them around.

   Local Agencies may reach out to Bridge Preservation or Local Programs for assistance with this if necessary. See “Two- and Three-Man Agreement Inspections” under Chapter 3 Report Types.
3. **Interval –** There is no set criteria on which bridges, or how often UBIT resource inspections need to occur. Need and interval should be determined by ability to access all elements of a bridge against bridge condition and history, type and location of elements, bridge configuration coincidence of required regularly scheduled inspections. New bridges that would require a UBIT for complete access should, at a minimum, receive a UBIT resource inspection for the Initial Inspection or the first Routine Inspection to follow. For bridges that do not need a UBIT resource each Routine Inspection, the inspection interval can be scheduled to alternate with inspection years. The following criteria is provided as a guideline:

Type of Structure	Maximum Interval (Months)
Timber	24
Steel Trusses NSTM	24
Steel Bridges with NSTM or Complex Features	24
Non-NSTM Steel Bridges	48
Concrete Bridges with Movable Bearings in the Interior Spans	48
Concrete Bridges with Fixed Bearings or No Bearings.	72

5. **Agreement Work and Cost Recovery –** For agreement work, private consultants, acting as an Agent for a Local Agency, may inspect using State Owned UBIT Resources as long as the Local Agency itself is operating under agreement with WSDOT. State work force drivers and inspectors, must always include equipment hours under the appropriate RO number on time sheets in order to accurately reflect in cost recovery billing.
6. **Fall Protection Plans –** As in all other inspection work, all Agency, State (WISHA) and Federal (OSHA) requirements for equipment operation, and employee safety, to include Personal Protective Equipment and Training must be observed for any personnel involved in the utilization and operation of the equipment. This will normally include a PASP (Pre-Activity Safety Plan. Refer to Agency Standards, State and Federal Regulations.

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Appendix 3-D FHWA Letter for Routine Extended Interval Inspections

Washington State Department of Transportation

Transportation Building
310 Maple Park Avenue S.E.
P.O. Box 47300
Olympia, WA 98504-7300
360-705-7000
TTY: 1-800-833-6388
www.wsdot.wa.gov

September 18, 2023

Ralph Rizzo, Division Administrator
FHWA Washington Division
711 S. Capital Way, Suite 501
Olympia, WA 98501-1284

Attention: Loren Wilson, P.E., Division Bridge Engineer

RE: National Bridge Inspection Standards Extended Inspection Interval Policy

Dear Mr. Rizzo:

This letter represents WSDOT's response to FHWA's June 13, 2022 Memorandum regarding the Extended Bridge Inspection Interval Policy and Implementation in accordance with Sub Part C NBIS 650.311 Paragraph (a)(1)(iii)(B). This policy and the documented criteria for Routine inspections, utilizes WSDOT's "48 Month Inspection Policy" previously approved in 1998 by FHWA and includes refinements to conform with the requirements outlined in Paragraph (a)(1)(iii)(A) of the 2022 NBIS. WSDOT does not currently have an extended interval policy for Underwater or Non-redundant Steel Tension Member (NSTM) inspections.

Bridges meeting the outlined criteria may have the routine inspection interval extended to 48 months but not greater. Bridges eligible for extended intervals must meet specified criteria and will be identified based on program needs, resources, and requirements. The eligibility of bridges with extended interval inspections will be reviewed each inspection cycle against the outlined criteria for continued eligibility, notwithstanding changes in condition due to damage or deterioration that may occur or become evident between inspection cycles.

Bridges evaluated for Routine extended interval inspections at a 48-month frequency shall meet all of the following criteria.

1) Component Condition Ratings
    a. Deck (B.C.01) equal to or greater than 6.
    b. Superstructure (B.C.02) equal to or greater than 6.
    c. Substructure (B.C.03) equal to or greater than 6.
    d. Culvert (B.C.04) equal to or greater than 6.

2) For Bridges over Water
    a. Channel Condition (B.C.09) equal to or greater than 6.
    b. Channel Protection (B.C.10) equal to or greater than 6.
    c. Scour Vulnerability (B.AP.05) Coded A or B

d. Scour Condition (B.C.11) equal to or greater than 6.

3) Load Ratings
   a. Inventory Load Rating Factor (B.LR.05) equal to or greater than 1.
   b. Routine Permit Loads (B.LR.08) coded A or N.
   c. No Administrative Load Ratings.

4) Steel Bridges
   a. Fatigue Details (B.IR.02) coded N (for no category E or E' weld details)

5) Vertical Clearances
   a. All roadway vertical clearances (B.H.13) equal to or greater than 14 feet.

6) Superstructure
   a. Span Material (B.SP.04)
      i. C01-C02 Reinforced Cast-In-Place or Precast Concrete.
      ii. C03-Prestressed Pretensioned Concrete.
      iii. C04P-Prestressed Cast-In-Place Concrete Post Tensioned.
      iv. C05-Prestressed Precast Concrete Post Tensioned
      v. S01-S05 Steel (Rolled, Welded, Bolted, Riveted or Bolted/Riveted)
   b. Span Type (B.SP.06)
      i. A01-Filled Arch (No Spandrels)
      ii. B02-B03 Multiple Box Girder/Beam (Adjacent or Spread)
      iii. F01-F02 Three- and Four-Sided Frames
      iv. G01-G02 Girder/Beam I-Shaped (Adjacent and Spread)
      v. G03-G04 Girder T-Beam/T-Beam Inverted
      vi. G05-G06 Girder/Beam Double T (Adjacent and Spread)
      vii. G07-G08 Girder/Beam Channel (Adjacent and Spread)
      viii. S01-S02 Slab (Solid or Voided)
      ix. P01-P02 Pipe (Rigid or Flexible)

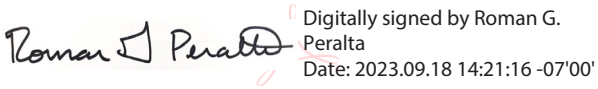
7) The maximum ADT (B.H.09) will be 100,000 and the maximum ADTT (B.H.10) will be 10,000.

8) Eligible bridges must receive an Initial Inspection and be in service for at least 24 months. This applies to:
   a. New bridges
   b. Rehabilitated bridges
   c. Structurally modified or widened bridges.

Washington State will be implementing these revisions within the upcoming 2024 Washington State Bridge Inspection Manual (WSBIM) updates and will continue to monitor structures for continued eligibility, in conjunction with the 2022 SNBI and any revisions or additions to it, going forward.

If you have any questions or concerns, please do not hesitate to contact me at 360-570-2557 or by email at peraltr@wsdot.wa.gov.

Sincerely,



Roman G. Peralta, P.E.
WSDOT Bridge Preservation Engineer

RGP:tms
GAS

cc: Sonia Lowry, WSDOT Local Programs Bridge Engineer
Greg Seipel, WSDOT Bridge Condition Engineer

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