BRIDGE INSPECTION GUIDELINES

CHAPTER 3 – BRIDGE AND CULVERT INSPECTION PROCEDURES AND REPORTING

3.1 INTRODUCTION

All bridge and culvert inspections and reporting shall comply with NBIS and must be performed by personnel who qualify as Bridge Inspector Team Leaders per 23 CFR 650.309 (Qualification of personnel) requires all inspectors to complete a total of 18 hours of FHWA approved bridge inspection refresher training course (FHWA-NHI-130053) over each 60 month period.

Bridge inspector qualifications per the Federal guidelines can be accessed via the link below:

23 CFR 650.309 (Qualification of personnel)

Preparing for an inspection begins prior to going to the field. Figure 3.1 displays a flowchart that details a routine bridge inspection process from preparing for an inspection until a signed and sealed inspection report has been uploaded to the database.

Figure 3.1 – ADOT Routine Bridge Inspection Flowchart

1. Inspection Team Leaders are assigned a list of structures to be inspected prior to the quarter the structures are due for inspection to allow for preparation time (Check if there's a need for permits, traffic control, access, etc.).
2. Inspection Team Leaders review latest inspection reports and prepare for the field inspection (Other inspection types like Underwater, In-Depth, Initial, Special and NSTM requires the team leaders to review additional documents. Chapter 2 of these guidelines describes the documents the Team Leaders must review or produce for each inspection type).
3. Inspection teams perform the field inspections per the referenced materials listed in Subsection 1.2 of these guidelines.
4. Inspection teams create a new inspection record for each structure inspected, upload new photos, and update the inspection notes and element conditions and quantities.
5. Inspection Team Leaders prepare cycle summary sheets and submit review packets to the QC Engineer (See table 3.1 for a description of the various documents utilized by ADOT's Bridge Inspection Section).
6. The QC Engineer reviews the submitted packets per the requirements listed in Chapter 6 of these guidelines, and returns them to the inspection Team Leaders with comments and/or corrections.
7. The Team Leaders address the QC review comments and corrections, sign and seal all the inspection reports, and submit an updated packet to the QA Engineer.
8. After the QA Engineer deems the packet to be complete; the QA Engineer will instruct the Team Leaders to upload the signed and sealed inspection report to BrM, and send the finalized packet to the Bridge Inspection Records Manager.
9. The Bridge Inspection Records Manager performs the final step of a bridge inspection as shown in Subsection 6.5 of these guidelines.

BRIDGE INSPECTION GUIDELINES

A big part of the inspection process is the submittal packet to the Quality Control Engineer. The packet should include the following documents and should be submitted in the order shown below:

- Bridge Inspection Cycle Summary Sheet
- Structure Inventory and Appraisal Report
- Repair Report (if applicable)
- Maintenance Report (if applicable)
- Inspection Report
- Inspection Supplemental Report (Applicable for NSTM, Underwater, Special, and In-Depth inspections)
- Inspection Procedure (Applicable only if the procedure was modified or updated for NSTM, Underwater, Special, and In-Depth inspections)
- Inspection Photographs
- Vertical and Horizontal Clearance Diagram (if applicable)
- Channel Profile Diagram (if applicable)
- Sketches (if applicable)

A description and purpose of the inspection documents is shown in Table 3.1:

Table 3.1 – Bridge Inspection Documents Description and Purpose

Document Name	Description	Purpose
Bridge Inspection Cycle Summary Sheet	A sheet listing the inspected structures ~~in~~ on a given route or within a LPA by an inspection team in a given time. ADOT structures are listed by route and increasing milepost. LPA structures are listed by increasing structure number.	Tracking of bridge inspection packet lifecycle (see section 3.5)
Structure Inventory and Appraisal (SI&A) Report	Form including all coded NBI items and most of Arizona Items.	All of the structure's information in coded form on one sheet for quick reference.
Repair Report	List of applicable repairs recommended with assigned priorities.	Informs the structure owner of the needed repairs with given priorities.
Maintenance Report	List of applicable maintenance items recommended with assigned priorities.	Informs ADOT's District / LPA maintenance units of the needed maintenance.
Inspection Report	Key part of inspection documents with components and elements condition rating and notes.	Review of all structure members & conditions

Document Name	Description	Purpose
Inspection Supplemental Report	A document that, when applicable, must be filled out during or after the inspection. Provides information on inspection methods, access, equipment, permits or traffic control that were used to complete the inspection.	It provides the reviewers with what and how components were inspected to determine if the MBE inspection guidelines were followed.
Inspection Procedure	A document that, when applicable, must be reviewed prior to the inspection to ensure the Team Leader is appropriately prepared. Provides information on risk factors, inspection frequencies, required qualifications of inspecting personnel, the methods, access, equipment, permits or traffic control expected to be used during the upcoming inspection.	Addresses items that need to be communicated to the Team Leader to prepare for and to ensure a successful inspection.
Inspection Photographs	Photos that identify the structure taken during the inspection. The photos also identify and the structure's components condition and safety features.	The photos must include the standard photos described in Subsection 4.8.1.
Vertical and Horizontal Clearance Diagrams	A drawing of plan and elevation views of a bridge with vertical and horizontal clearance measurements provided for vehicular or railroad traffic.	Advises ADOT customers of any vertical or lateral clearance issues
Channel Profile Diagram	This diagram graphically and numerically documents the cross-section profile underneath the bridge.	For bridge hydraulics or scour evaluation.
Sketches	Prepare whenever inspection notes, condition states and photos are not adequate.	To better illustrate a condition encountered during the field inspection.

3.2 BRIDGE INSPECTION PLANNING

Inspection personnel should contact ADOT district maintenance units or appropriate LPA personnel prior to inspecting bridges that are located within their jurisdiction. ADOT district maintenance organizations or LPA personnel are encouraged to accompany the bridge inspection teams during the field inspections. They can provide valuable information about on-going maintenance issues, flooding history, previous repairs, and planned future projects. Moreover, in the case of LPAs, they may identify structures that need to be added or retired from the NBI.

3.2.1 Construction Zones and Traffic Restriction Review

When planning bridge inspections, websites that display information on traffic restrictions as a result of construction activities should be viewed to ensure the inspectors use the safest and the least time consuming route. When inspection personnel are going to be performing an inspection within a construction zone, they must coordinate their bridge inspection activities with ADOT's Resident Engineers, if possible. In some instances, inspection personnel will arrive at the site to find the structure they are scheduled to inspect under construction. The team leader should discuss with the site

superintendent the feasibility of an inspection of the structure in safe way that does not interfere with the construction activities. If the inspection is not safe to be performed, the inspection personnel must report the issue to the Bridge Inspection Section Leader in order for the structure to be rescheduled for an inspection at a later date.

3.2.2 Traffic Control Plans

When required, traffic control plans for bridge inspections should be prepared in consultation with ADOT Districts or LPA's. They must be submitted at least two weeks prior to the inspections and must be approved by the District or the LPA that have jurisdiction over the bridge. Earlier coordination with the District or the LPA should be considered for areas of the state with high traffic volumes in order to avoid any delays.

3.2.3 Record Drawing Updates

Bridge inspectors should gather all missing bridge documentation such as record drawings for existing structures and as-builts for new structures scheduled for an initial inspection. The record drawings and as-builts will help determine if any structures were retrofitted, repaired or rehabilitated. The inspection personnel must upload the record drawings, as-builts, or project plans to the bridge file in the database for initial inspections and for inspections of structures that don't have any plans previously uploaded to the bridge file in the database. If a structure is replaced, a request for a new structure number must be submitted to the Bridge Inspection Records Manager, along with a set of plans, and a request must be made in order for the replaced structure to be retired.

3.2.4 Railroad Permits

Prior to inspecting bridges which carry or cross over railroad tracks, a permit may need to be obtained from the railroad company. In general, when the bridge carries the railroad tracks, the railroad company would be the bridge owner (B.CL.01 [NBI item N22=27]). When the bridge spans over the railroad tracks, both ownership and maintenance responsibility belong to the state or the LPA, and B.CL.01 (NBI item~~s~~ N21) and B.CL.01 (NBI item N22) should be coded accordingly.

3.2.5 Canal Bridge Inspection

Inspections of canal bridges are best performed during canal dry out periods. In addition, some structures are fenced in and may need a key to access the structure elements. For these reasons, inspection personnel should contact the canal owners for the dry out periods and to coordinate access to the structure prior to scheduling the inspections. Canal Bridge Inspection Access & Summary Sheets uploaded to the Bridge tab in the database shall be utilized for access coordination and updated, if needed. Inspectors shall strive to schedule inspections of canal bridges during the dry out periods. If an inspection team arrives to inspect a canal structure after proper coordination with the canal owner has been completed and a permit has been issued, but they discover that the canal has been dried out or the gates are locked with no personnel at the canal to assist; the Team Leader shall follow the guidelines shown below:

Situation	Steps to be taken
Underwater inspection scheduled and the canal was dried out by the owner	1. Notify the ADOT Bridge Inspection Section Leader. 2. Contact the canal owner to check the status of other canal structures due for inspection on the same day or week. 3. Perform the inspection using waders, by probing elements below shallow water, or visually (as conditions allow) 4. Report the inspection as an "Underwater Inspection" although a dive didn't occur *.
Fenced in canal structure with a locked gate	1. Contact the canal owner to check if canal owner personnel will be able to unlock the access gate. 2. If the access gate can be unlocked on the same day, the Team Leader shall decide how to adjust the daily inspection schedule to be able to inspect the structure after the access gate is unlocked. 5. If the access gate cannot be unlocked on the same day, the Team Leader shall notify the ADOT Bridge Inspection Section Leader. 3. The inspection shall be rescheduled for a time where the access gate is open.

* Scheduled dry out periods vary by canal owner. If a canal was discovered to be dry during a scheduled underwater inspection that does not guarantee that the canal will be dried out when an inspection team arrives onsite to perform the structure's next regularly scheduled underwater inspection.

3.2.6 Border Bridges

Jointly owned border bridges with California, City of Needles, and Nevada are inspected by Caltrans (CT) or Nevada DOT (NDOT) under the terms of an Intergovernmental Agreements (IGA) between Arizona and the two neighboring states. Inspection reports and data must be obtained from CT and NDOT, and shall be documented in ADOT's bridge inventory database.

3.2.7 Safety Compliance

It is imperative that bridge inspection personnel, whether ADOT in-house staff, LPA inspectors, or consultants to comply with all of ADOT's safety policies at all times including but not limited to wearing hard hats, steel toed boots, and safety vests.

3.3 FIELD INSPECTION

During a Field visit, inspection personnel team members should adhere to the following:

- Remain within the limits of the right of way.
- When specifying traffic directions on the state highway system, the highway's cardinal direction should always be used instead of the compass direction. For example, I-10 from Phoenix to Tucson is EB (cardinal) direction although actually it is in north to south compass

direction.

- Compass directions should be used when specifying all locations other than the state highway system.
- In the event a new structure that qualifies to be included in the NBI is found, inspection personnel should perform an initial inspection of that structure while in the field. Afterwards, the Bridge Inspection Records Manager should be informed of the new structure in order to assign a new structure number, create a bridge file in the database, and request a set of plans from the owner. After the bridge file is created, the inspection team shall update the database with the information gathered in the field and from the plans in order to generate all necessary initial inspection documents.
- When inspecting a structure with no record drawings, inspection personnel should prepare elevation, plan, and cross-section details for a load rating analysis by the Bridge Management Section in addition to obtaining all required NBI information.
- The inspector must immediately contact the Bridge Inspection Program Manager via phone whenever a bridge element has deteriorated or has been damaged to an extent where a new load rating must be performed. An email with photos and details can be sent at the end of the day. A review of the Load Rating Report could provide valuable information about critical bridge elements and locations. An increase in overlay thickness could also justify the need for a new load rating.
- In the event that a scour plan of action (POA) does not reflect current field conditions, the Team Leader must alert the Bridge Inspection Program Manager via phone or an email with photos and details that can be sent at the end of the day in order to request an updated POA.

3.4 CHARACTERIZATION OF CONCRETE DETERIORATION

The following terms, which are found in FHWA's Specifications of the National Bridge Inventory (SNBI), when describing crack width, abrasion, wear, scaling, delamination, spalling or patched areas of concrete elements:

3.4.1 Concrete Cracking:

A concrete crack is described as a complete or incomplete separation of concrete into two or more parts produced by breaking or fracturing. Describing cracks should include length, width, spacing, location, orientation, and structural or non-structural nature of the cracking should also be considered.

In general, cracks can be considered:

- Insignificant: Crack width less than 0.004 inches (prestressed) or 0.012 inches (reinforced), or medium width cracks that have been sealed.
- Medium: Crack width ranging from 0.004 to 0.009 inches (prestressed) or 0.012 to 0.05 inches (reinforced).
- Wide: Crack width wider than 0.009 inches (prestressed) or 0.05 inches (reinforced).
- Medium pattern (map): Crack spacing of 1 foot to 3 feet.
- Heavy pattern (map): Crack spacing less than 1 foot.

3.4.2 Concrete Abrasion, Wear and Scaling:

Abrasion and wear is the gradual wearing away of concrete surfaces due to friction and impact from traffic, machinery, or abrasive materials. It is caused by constant heavy traffic, high speed water flow, or other environmental factors.

Scaling is a surface condition that causes concrete to slake or peel with gradual and continuing loss of mortar and aggregate over an area due to freezing and thawing or de-icing chemicals.

In general, abrasion, wear, and scaling can be considered:

- Minor: Exposed coarse aggregate, but the aggregate remains secure in the concrete.
- Moderate: Coarse aggregate loose or has popped out of the concrete matrix.

3.4.3 Concrete Delamination, Spalling, Patched Area:

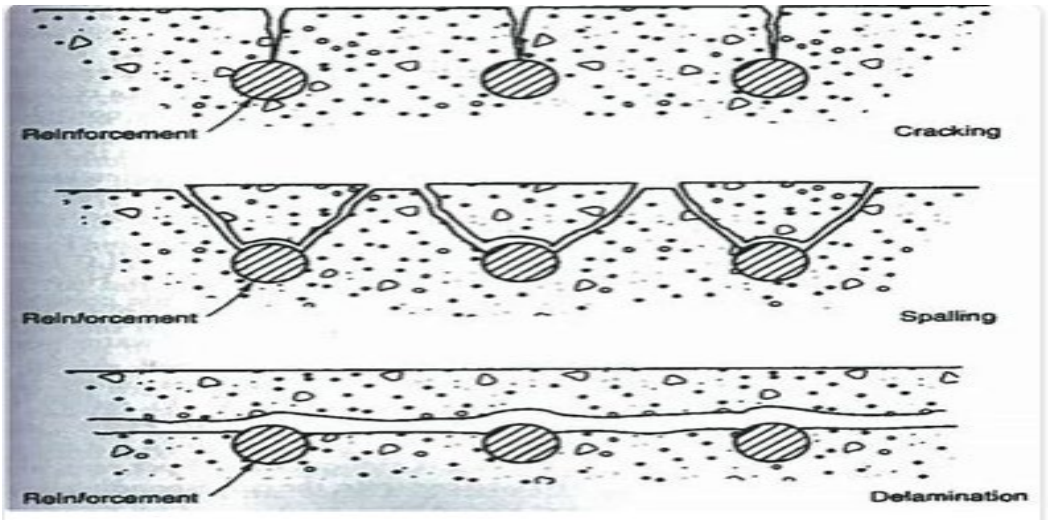
Concrete delamination is the detachment of a thin layer of concrete from the concrete surface. Concrete spalling is the breakdown of concrete via natural weathering and/or a chemical reaction that causes the top layers of the concrete to separate from the rest of the concrete. A patched concrete area is a deteriorated or damaged area that was previously repaired using a concrete patch.

In general, delamination, spalling, and patched areas can be considered:

- Minor: Delamination, small spall, or patched area that is sound.
- Moderate: Large spall or patched area that is unsound or showing distress.

Spall size can be considered:

- Small: 1 inch or less deep or 6 inches or less in diameter.
- Large: Greater than 1 inch deep or greater than 6 inches in diameter.



An example of cracking, spalling, and delamination

3.5 BRIDGE INSPECTION LIFECYCLE

When planning an inspection, inspection teams shall assemble bridges into packets. The lifecycle of a packet consists of the milestones shown in Figure 3.2:

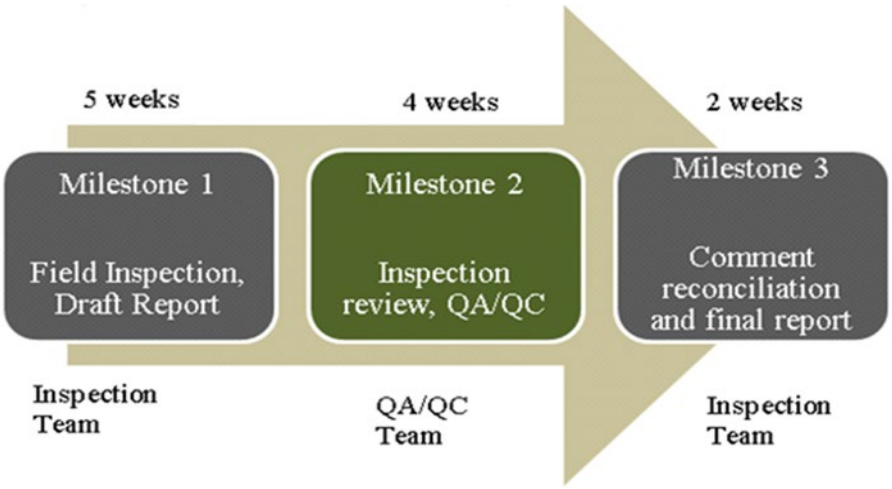


Figure 3.2 – Inspection Packet Milestones

The completion of the field inspection of the first bridge in a packet marks the beginning of the 11-week lifecycle of a bridge inspection packet. This lifecycle procedure applies to all inspections, whether performed by in-house staff, LPA inspectors or consultants, and shall be observed unless an exemption is granted by Bridge Inspection Program Manager.

3.6 CRITICAL FINDINGS

3.6.1 Definition and Reporting Responsibilities

Critical Findings are defined as structural or safety related deficiencies which require immediate action to ensure public safety. Critical findings must be addressed with immediate corrective action to restore service on that structure and safeguard the travelling public using it in a timely manner. ADOT's "Critical Findings Procedure" must be followed after a critical finding has been reported. Subsection 3.6.2 covers ADOT's critical findings procedure.

A Critical Findings is a finding that warrants the following:

a) Full or partial closure of any bridge (including lane or shoulder closure);
b) An NSTM to be rated in serious or worse condition, as defined in the NBI by the NSTM inspection item, coded three (3) or less;
c) A deck, superstructure, substructure, or culvert component to be rated in critical or worse condition, as defined in the NBI by the Deck, Superstructure, or Substructure Condition Rating items, or the Culvert Condition Rating item, coded two (2) or less;
d) The channel condition or scour condition to be rated in critical or worse condition as defined in the NBI by the Channel Condition Rating or Scour Condition Rating items, coded critical (2) or less; or
e) Immediate load restriction or posting, or immediate repair work to a bridge, including shoring, in order to remain open.

Critical findings can be discovered in 2 ways:

1. The critical finding is discovered during a field inspection by bridge inspection personnel.
2. The critical finding is discovered by non-bridge inspection personnel, and the Bridge Inspection Section is notified of it (By District or local agency staff, or via the ADOT Traffic Operations Center (TOC)).

3.6.2 Critical Findings Procedure for State Owned Structures:

ADOT's "Critical Findings Procedure" defines any critical findings considering the location and the redundancy of the member affected and the extent of a deficiency. Deficiencies include, but are not limited to scour, damage, corrosion, section loss, settlement, cracking, deflection, distortion, delamination, loss of bearing, and any condition posing an imminent threat to public safety.

3.6.2.1 Procedure for Critical Findings Discovered by Bridge Inspection Personnel:

The following procedure shall be followed when bridge inspection personnel discover a critical finding during a field visit to a state owned structure that warrants the following:

(a) Conditions 3.6.1(a) and 3.6.1(e):

1) The Team Leader shall immediately contact ADOT's Traffic Operations Center (TOC) (Dial 602.712.6591 and select option 3), report the condition, and request an ADOT Emergency Response Unit (ERU)/DPS/Local Law Enforcement Agency be dispatched to the bridge.
2) The Team Leader shall call the Program Manager and/or the Bridge Inspection Section Leader to report the critical finding, as soon as the situation permits.
3) Upon the arrival of a unit authorized to close or partially close the bridge, the Team Leader shall explain the critical finding, and request the bridge be closed or partially closed to traffic immediately.
4) The Team Leader shall keep the Program Manager and/or the Bridge Inspection Section Leader updated until the safety of the public is ensured.
5) The Team Leader must note the date and time the Critical Finding was discovered, the incident duration, and the traffic restrictions imposed.

(b) Conditions 3.6.1(b), 3.6.1(c), and 3.6.1(d):

1) If, in the opinion of the Team Leader, full or partial closure is needed to ensure the public's safety; the Team Leader should follow step 1 as noted in Subsection 3.6.2.1(a).
2) If the Critical Finding does not pose an imminent danger to the traveling public, the Team Leader shall contact the Program Manager and/or the Bridge Inspection Section Leader as soon as possible to alert them of the critical findings and discuss what corrective action needs to be taken to address the safety issues.
3) The Program Manager or the Bridge Inspection Section Leader will contact the ADOT District the bridge is located within, and alert them to safety issues that need to be addressed as soon as possible.
4) The team Leader shall remain at the bridge site to meet with the District's personnel, if

needed.

5) The Team Leader must note the date and time the Critical Finding was discovered, the incident duration, and if any traffic restrictions were imposed.

ADOT personnel will keep FHWA updated per the requirements shown in Subsection 3.6.2.2 (steps 2 and 3).

3.6.2.2 Procedure for Critical Findings Discovered by Non-Bridge Inspection Personnel:

The following procedure shall be followed when non-bridge inspection personnel discover a critical finding on a state owned structure and ADOT's Districts or the TOC were notified of the situation first:

1) After being notified of a critical finding, ADOT's Bridge Group personnel (State Bridge Engineer, Program Manager, or the Bridge Inspection Section Leader) will gather the information received from the District's personnel that responded to the critical finding discovery or contact them for any additional information needed in order to update "ADOT's Bridge Critical Findings Status Report".
2) FHWA must be notified within 24 hours of the discovery of all critical findings on the National Highway System (NHS) that meet either condition 3.6.1(a) or 3.6.1(b). ADOT's Bridge Group personnel will notify FHWA within 24 hours of the critical finding discovery and will also provide an initial update on the critical finding. The initial update will include the following:
    a) Structure owner.
    b) NBI structure number.
    c) Date of critical finding.
    d) Description of the critical finding including any available photos.
    e) Description of the immediate action taken to address safety issues, the date the immediate action was taken, and a brief description of future action to be taken to completely resolve the critical finding.
    f) Status of the corrective actions (Active/Completed).
    g) Estimated date when the critical finding will be completely resolved.
    h) Date of completion if corrective actions are completed (This step will be part of the final update).
3) ADOT's Bridge Group personnel will provide FHWA with timely updates until the critical finding is completely resolved.

3.6.3 Critical Findings Procedure for Local Public Agencies Owned Structures:

When a critical finding occurs on a structure owned by a LPA, the owner must inform ADOT of such findings unless the critical finding was discovered by a bridge inspector performing a bridge inspection. The bridge owner must also periodically update ADOT of the progress made until the deficiency is removed, and the critical finding is completely resolved. ADOT Bridge Inspection Section will keep FHWA informed of the status of LPA owned structures critical finding(s).

3.6.3.1 Procedure for Critical Findings Discovered by Bridge Inspection Personnel:

The following procedure shall be followed when bridge inspection personnel discover a critical finding

during a field visit to a structure owned by a Local Public Agency that warrants the following:

(a) Conditions 3.6.1(a) and 3.6.1(e):

1) The Team Leader shall immediately contact the Local Law Enforcement Agency, report the condition, and request personnel authorized to close the bridge to traffic be dispatched to the bridge site.
2) The Team Leader shall call the Program Manager and/or the Bridge Inspection Section Leader to report the critical finding, as soon as the situation permits.
3) Upon the arrival of a unit authorized to close or partially close the bridge, the Team Leader shall explain the critical finding, and request the bridge be closed or partially closed to traffic immediately.
4) The Team Leader shall keep the Program Manager and/or the Bridge Inspection Section Leader updated until the safety of the public is ensured.
5) The Team Leader must note the date and time the Critical Finding was discovered, the incident duration, and the traffic restrictions imposed.

(b) Conditions 3.6.1(b), 3.6.1(c), and 3.6.1(d):

1) If, in the opinion of the Team Leader, full or partial closure is needed to ensure the public's safety; the Team Leader should follow step 1 as noted in Subsection 3.6.3.1(a).
2) If the Critical Finding does not pose an imminent danger to the traveling public, the Team Leader shall contact the local agency that owns the bridge as soon as possible to alert them of the critical findings and discuss what corrective action needs to be taken to address the safety issues as soon as possible.
3) The team Leader shall remain at the bridge site to meet with the LPA's personnel, if needed.
4) The Team Leader must note the date and time the Critical Finding was discovered, the incident duration, and if any traffic restrictions were imposed.

ADOT personnel will keep FHWA updated per the requirements shown in Subsection 3.6.3.2 (steps 2 and 3).

3.6.3.2 Procedure for Critical Findings Discovered by Non-Bridge Inspection Personnel:

The following procedure shall be followed when non-bridge inspection personnel discover a critical finding on a structure owned by a Local Public Agency, and ADOT's Districts or the TOC were notified of the situation first:

1) After being notified of a critical finding, ADOT's Bridge Group personnel (State Bridge Engineer, Program Manager, or the Bridge Inspection Section Leader) will gather the information received personnel on site or contact them for information in order to update "ADOT's Bridge Critical Findings Status Report".
2) ADOT's Bridge Group personnel will provide FHWA with an initial update on the critical finding. The initial update will include the following:
    a) Structure owner.
    b) NBI structure number.

c) Date of critical finding.
d) Description of the critical finding including any available photos.
e) Description of the immediate action taken to address safety issues, the date the immediate action was taken, and a brief description of future action to be taken to completely resolve the critical finding.
f) Status of the corrective actions (Active/Completed).
g) Estimated date when the critical finding will be completely resolved.
h) Date of completion if corrective actions are completed (This step will be part of the final update).

3) ADOT's Bridge Group personnel will provide FHWA with timely updates until the critical finding is completely resolved.

Below is a sample of ADOT's Bridge Critical Findings Status Report:

ARIZONA DEPARTMENT OF TRANSPORTATION	Bridge Critical Finding Status Report - 2025									
NBI Structure Number (B)	Date of finding (C)	Owner (A)	Description of critical finding (email report and/or photos) (D)	Status of corrective actions: Active/Completed (F)	Brief description of the immediate action taken to ADDRESS safety issues (E)	Date the immediate actions were taken to ADDRESS safety issues (E)	Brief description of the future action taken to completely RESOLVE the current CF (E)	Estimated Date when CF will be completely resolved (G)	Provide a brief description of the action taken to completely RESOLVE the current CF (E)	Date of completion if corrective actions are completed (H)
08258	1/24/25	Pima County	Localized failure (decay and colllapse) of the deck timber was observed during a routine inspection in December, 2023.	Completed	The owner, Pima County, decided in the best interest of the public to close the bridge.	3/25/2024	The bridge is scheduled for replacement at the end of 2025. It will remain closed until replaced.	12/31/2025	Once ADOT was notified that the bridge was closed to the public, the Program Manager contacted Pima County and ADOT maintenance to provide a photo showing the type of traffic control used to prevent the public from accessing the bridge. Photos received show concrete barrier on both sides of the bridge. As a result, vehicles will not be able to cross the bridge. The status of the bridge was changed to Closed (N41 = Closed to all traffic) in BrM.	1/30/2025
01112	3/16/2025	ADOT	A large hole was discovered in the I-10 Country Club WB OP bridge deck	Completed	The lane where the hole was found was closed immediately in order to quickly repair the hole.	3/16/2025	The SC District contacted their on-call concrete contractor and tasked them with repairing the hole. As the contractor started cleaning loose concrete in preperation for mixing and pouring a highstrength mix, the size of the hole grew to 8 feet long, and it was determined that the hole size is too big and requires a batched mix to be used.	3/17/2025	The District's on-call contractor prepared the distressed area for repair, and poured highstrength fast setting concrete into the formed area. The right lane remained closed until concrete breaks can show that the mix has reached an acceptable strength in order to open the lane for traffic. At 1:28 pm, the right lane was reopened to traffic.	3/17/2025

A full size page of ADOT's Bridge Critical Findings Status Report is included in Appendix A.

3.7 COMPLEX BRIDGES

The Manual for Bridge Evaluation (MBE) provides description of some complex bridge types. Those types include, but are not limited to:

- Moveable bridges: Common types include the swing span, vertical lift span, and bascule span.
- Suspension bridges: Common types include bridges with spans incorporating cable-suspended and eyebar-chain suspension systems.
- Cable-Stayed bridges consist of concrete or steel box girders or trusses supported by cables originating from a tall tower or towers.
- Tied arch bridges tie the ends of the arch ribs to the lower chord in such a manner that horizontal forces generated within the arch rib as they are loaded are restrained by the lower chord, acting in tension like a bowstring. Vertical ties transmit vertical dead and live load forces from the deck up to the arch.
- Prestressed concrete segmental bridges may be made up of cast-in-place segments or precast segments.

The only complex bridge type listed above within Arizona's bridge inventory is the prestressed concrete segmental type.

The Department has developed a list of complex structures and structures with complex features, and the list can be made available upon request.