Chapter 2 Bridge Files and Documentation

2-1 General

This chapter establishes policies on how the Washington State Department of Transportation (WSDOT) and local agencies maintain bridge files, both to meet Federal Highway Administration (FHWA) requirements and effectively manage physical assets (also sometimes called physical features) on WSDOT right of way. These policies apply to structures that are generally called bridges, culverts, tunnels, lids, detention vaults, overpasses, and undercrossings when they meet certain criteria commonly based on structure geometry, location, and use described in more detail below.

These policies also apply differently depending on bridge ownership and location and fall into three main categories:

1. WSDOT-owned structures on WSDOT right of way.
2. Local agency-owned structures on WSDOT right of way.
3. Local agency-owned structures on local agency right of way.

Unless otherwise specifically noted below, all policies apply to WSDOT and local agency owned structures on WSDOT right of way. However, only those policies directly associated with FHWA requirements apply to local agency owned structures on local agency right of way. There are occasionally special circumstances in which WSDOT owns a structure on local agency right of way. This chapter has no specific policies in this case, except that the bridge file must be maintained under all circumstances.

This chapter addresses the following topics associated with bridge files:

- Maintaining physical paper and electronic bridge files.
- Maintaining a state bridge inventory.
- Submitting state bridge inventory data to FHWA.
- Responding to FHWA and Statewide Program Manager (SPM) requests for information.

Each topic has components mandated by FHWA and components required by WSDOT policy. The following sections clearly identify the authorizing environment.

2-2 Maintaining Bridge Files and Documentation

This section is largely based on requirements established by Section 2 of the AASHTO *Manual for Bridge Evaluation* (MBE) with Interim Revisions. The MBE emphasizes three main points for maintaining a bridge file:

A. Bridge owners should maintain a complete, accurate, and current file of each bridge under their jurisdiction.

B. A bridge file always contains the current and sometimes the cumulative information about an individual bridge.

C. A bridge file may be stored electronically, on paper, or a mixture of both.

The remainder of this Section 2-2 describes WSDOT Bridge Preservation Office policy for maintaining bridge records. Local agencies are encouraged to follow a similar plan.

BridgeWorks Digital Signature

Starting in 2022, digital signatures can be applied to inspection reports as a feature within the BridgeWorks application. This feature is available to both state and local agency inspectors, but is not a requirement at this time. Inspecting agencies that wish to maintain their current signature process will be able to do so.

Digital signatures are applied to a pdf document which contains all the information associated with the inspection report or reports, including photos, attached files, and the federal SIA sheet. In cases where multiple inspections are performed simultaneously (routine and fracture critical, for instance) both reports will be included in this single pdf document and the digital signature will apply to all reports.

The original digitally signed inspection report(s) will be retained within WSBIS in a secured WSDOT server that prevents alteration of these documents once signed. These original documents will be available for viewing and copying from both the BridgeWorks application and the BEISt website. Copies can be downloaded by anyone with access to these sources.

Electronic Files

Electronic bridge files, including digitally signed inspection reports, are maintained on the BEISt internal website: http://beist/inventoryandrepair/inventory/bridge

This website contains the following:

1. Scanned copies of conventionally signed inspection reports in pdf format dating back to approximately the year 1998.
2. Scanned copies of the Washington State Structural Inventory and Appraisal (SIA) sheet dating back to 2011. Digitally signed inspection reports will include the SIA sheet in the inspection report pdf document.
3. Current inspection photographs in jpg format. Digitally signed inspection reports will include photos in the inspection report pdf document.
4. Current and historic repair recommendations displayed directly from the BPO database (See Section 2-3), dating back to approximately the year 2002. Digitally signed inspection reports will include all current repair recommendations in the inspection report pdf document.
5. Scanned copies of contract plans, as-builts when available, otherwise award plans. Note that the plan sheets on BEISt are not the official plans, which are owned by the WSDOT regions where the bridge is located.
6. In-house repair plans dating back to 2013.
7. Scanned copies of correspondence, historic repair and maintenance reports, miscellaneous studies, and other records are scanned from the paper files and loaded onto BEISt for selected bridges. This is generally done in response to a public disclosure request or a legal discovery requirement.

Paper Files

Appendix 2-A has a plan of the WSDOT Bridge Preservation Office indicating where paper files are maintained. Paper files must be maintained on WSDOT owned or maintained structures except as noted below, including:

1. All conventionally signed bridge inspection reports, including but not limited to routine, fracture critical, underwater, and special report types. Original signed reports are stored in paper files and digital copies are stored electronically. Signed damage inspections in response to fires, floods, earthquakes, etc. shall also be included. For inspection reports digitally signed within the BridgeWorks application, no paper files are required. As of 2022, documents digitally signed by another application are not approved for electronic storage without a conventional signature and stored as a paper file.
2. Any and all miscellaneous special inspections, studies, investigations, or file reviews. Examples include but are not limited to: load testing documentation, findings from FHWA technical advisory requests for information, survey results, or ground/slope stability studies. For inspection reports digitally signed within the BridgeWorks application, no paper files are required. As of 2022, documents digitally signed by another application are not approved for electronic storage without a conventional signature and stored as a paper file.
3. A current printout of any specific inspection requirements/procedures, usually but not necessarily associated with fracture critical, underwater, or special inspection reports.
4. A stamped Load Rating Summary sheet which shows the controlling ratings shall be placed in the letter file. The original load rating calculations for state owned bridges shall be filed in the Risk Reduction section at the WSDOT Bridge Preservation Office.
5. Scour files are located in the Risk Reduction section at the WSDOT Bridge Preservation Office.
6. All current agreements with other agencies for maintenance, rehabilitation, or shared ownership.

Note: The inspection reports, miscellaneous studies and inventory data is cumulative, meaning that all historic as well as current data must be kept in the bridge file. All documents listed above, and others listed in the MBE, may be stored electronically as a supplement to the paper files. WSDOT bridge files stored electronically have a backup system intended to protect the electronic data for the life of the structures.

Other Files – Some bridge records are not available electronically at the BEISt internal website or in paper files as indicated in Appendix 2-A. The WSDOT *Bridge Design Manual* M 23-50 provides some guidance on where these records are located. The following provides some additional information:

Contract Documents – For contracts let thru WSDOT Contract Ad and Award, Washington State Archive maintains a paper cumulative file by contract number of awarded contracts and construction documents as required by the *Construction Manual* Section 10-3. WSDOT Records and Information maintains electronic copies of finalized As-Built Contract Plans.

WSDOT Bridge and Structures Office maintains structural plans and selected shop drawings which are stored electronically. Structural plans include culvert shop drawings that contain plan and design information along with plan contracts from other agencies that complete work on the WSDOT system. Shop drawings include: steel structures, expansion joints, specialized bearings (such as pot or seismic isolation bearings), prestressed girders, post-tensioned structures, and special structural designs (such as pontoon, suspension, or movable bridges).

WSDOT maintains a state Contract History database that records all contract work completed on state managed structures. This database correlates contract number and contract work to structures maintained by the WSDOT bridge inventory and starting in 2017 associates this contract work to each BMS element in each structure affected by this contract.

In-House Repair Documents – WSDOT maintains a cumulative file of all in-house repair recommendations made by the Bridge Preservation Office, and follow-up verification information when repairs are completed. If maintenance reports prepared by region maintenance crews are provided to the bridge record, they are also permanently retained. In-house drawings and specifications supplementing the repair recommendations are also retained in the electronic record starting in 2013.

Correspondence on Significant Actions or Findings – WSDOT maintains a cumulative file of correspondence (letters, emails, memos, etc.) related to significant actions or findings, including but not limited to:

- Urgent or emergency actions including posting, restricting or closing a bridge
- Critical findings, including Critical Damage Bridge Repair Reports (see WSBIM Chapter 6)
- Special reports, including deck delamination/chloride testing, settlement/ movement monitoring, and life cycle studies

This correspondence may need a "summary memo to file" after the significant actions or findings are fully addressed. This memo is intended to provide full context and the final disposition of the actions or findings for the record.

2-2.1 *Transferring Bridge Ownership and/or Program Manager*

Whenever a bridge transfers ownership and/or program manager responsibility, the entire bridge file, both paper and electronic, must be transferred to the new owner/ program manager. Bridge transfers must be acknowledged and documented by both program managers involved along with any additional deeds, agreements, plans or other documentation available. All transfer documentation must be retained in the bridge file. See Appendix 2-B for a checklist and SPM signoff sheet. In some cases, the acknowledgement of the transfer by the program managers may be the only documentation available.

Transferring Bridge Ownership and/or Program Manager responsibilities are performed by the SPM or Local Programs DPM, but updating the electronic record in WSBIS must be performed by the Superuser account under the direct control of the SPM. This is intended to ensure that adequate documentation for these transfers are in place.

In cases where WSDOT transfers a bridge file to another agency, a complete electronic copy of the entire bridge file is made and retained permanently. Other agencies are encouraged to follow this practice, but are not required to.

2-2.2 *Dead/Obsolete Bridge Files*

When a bridge is demolished or permanently removed from service and no longer considered appropriate for inclusion in the bridge inventory, the program manager for the "dead" bridge shall add documented acknowledgement of the removal from the inventory into the bridge file which then must be retained for a minimum of five years. WSDOT maintains dead bridge files permanently. Local agencies are encouraged to maintain permanent dead bridge files as well, though there is no requirement to do so.

See Section 2-3.3 for more information on processing "dead" bridge electronic records in the WSBIS.

2-2.3 *Structures on WSDOT Right of Way*

WSDOT shall maintain a bridge file for all structures considered appropriate for inclusion in the WSBIS that are on the WSDOT right of way, including local agency bridges passing over state routes or adjacent to state routes, whether or not the structure is subject to the NBIS or reported to the NBI. For more information, see Section 2-3.4.

2-3 Maintaining a State Bridge Inventory – WSBIS

Washington State is required by 23 CFR 650.315 to maintain an inventory of all bridges (structures) subject to the National Bridge Inspection Standards (NBIS), from which selected data is reported to FHWA as requested for entry into the National Bridge Inventory (NBI). FHWA has a Stewardship Agreement with Washington State to submit NBI data on March 15 and October 1 each year.

The Moving Ahead for Progress in the 21st Century Act by the US Congress (MAP-21) has partially superseded 23 CFR Part 500, and mandates that National Bridge Elements be submitted to FHWA for all NBI bridges carrying National Highway System (NHS) routes. See www.fhwa.dot.gov/map21 for more information about MAP-21.

Federal law under 23 CFR Part 500 provides an option for state agencies to maintain a Bridge Management System (BMS), with the incentive that federal funding can be used with more flexibility. Washington State has chosen to implement a BMS and integrally incorporate it into the state inventory for bridges managed under the WSDOT bridge program. In addition, Washington State maintains an inventory to meet WAC 136-20-020, which requires that each county maintain an inventory of bridges in the state inventory. The Washington State Bridge Inventory System (WSBIS) is maintained to meet these federal and state laws and regulations. The WSBIS is also maintained to meet the WSDOT mission statement with respect to operating the state bridge structures, and provides a means for local agencies to do the same.

The WSBIS Coding Guide provides detailed instructions on how to create, update, and delete records in WSBIS, see Appendix 2-C. This coding guide is intended to define the data fields and how to edit them for use by bridge inspectors and inventory managers. This coding guide is largely based on the federal coding guide and must meet the following requirements:

1. Whenever a database field has to be translated to match the federal coding guide, this translation must be clearly defined.
2. The WSBIS coding guide cannot contradict the federal coding guide. In cases where the federal coding guide is either inconsistent with other FHWA requirements or vague, the WSBIS coding guide needs to clearly identify the issue and describe how the field should be coded into WSBIS.

3. Optional fields must be clearly identified.
4. Every field must clearly state what structure type or types it applies to, and clearly define how it should be coded for these various structure types. The current list of structure types are:
   - Structures and culverts carrying public roadways
   - Pedestrian, railroad, and other non-vehicular structures over public roadways. Private roads over public roadways are also included in this structure type.
   - Tunnels carrying public roadways within

   Structures not associated with any public roadway are not specifically included in this list, but when a field must be coded for these structures the coding guide will simply state "All structure records".
5. In cases where multiple routes interact with a structure, a "secondary" record is needed to maintain route information – usually an "undercrossing record". Every field that must be populated for secondary records will be clearly identified.

2-3.1 *WSBIS Inventory and Data*

The WSBIS needs to be understood clearly in two ways – which structures are included in the inventory and what data associated with these structures is maintained. Each of these categories has both mandated and optional components.

Beginning in October 2014 there is a requirement, from MAP-21, to collect National Bridge Element data for bridges carrying NHS routes. WSDOT is meeting this mandate by requiring these bridges to have BMS elements in WSBIS, which in turn will be translated into National Bridge Elements for submittal. See Appendix 2-E for the WSDOT BMS to NBE translation specifications. See www.fhwa.dot.gov/map21 for more information about MAP-21.

2-3.1.A Mandated Bridges and Culverts in the WSBIS – Reported to the NBI

In general, these are structures that conform to the NBIS definition of a bridge and must be reported to the NBI when the structure meets all of the following:

- Carries highway traffic.
- Is owned by a public agency or built on public right of way for a public agency. Bridges owned by road associations or individual property owners on private right of way do not qualify.
- Is open to the public. Bridges posted "no trespassing" or otherwise clearly identified that they are privately owned or restricted to authorized users are not considered public. Bridges behind locked gates are also not considered public.
- Has a clear span along centerline of roadway greater than 20 feet.

Utility and Detention Vaults – Based on an agreement between Washington State and FHWA, vaults under roadways are considered subject to the NBIS when the span length along the centerline of the roadway exceeds 20 feet AND is wider than 12 feet. The span length is measured from inside face to inside face of exterior walls for multicell structures or minimum clear span for single cell structures. This includes any structure with any portion directly under a lane or shoulder.

There are a few special circumstances that affect whether or not a bridge is subject to the NBIS and reported to the NBI not mentioned above (see Section 2-3.5).

Undercrossings - Structures over federal aid or STRAHNET highways must include an "under" record(s) in the WSBIS and be reported to the NBI.

SNBI – Starting in 2026, the 2022 Specifications for the National Bridge Inventory (SNBI) will determine the NBI data reported to FHWA. These new specifications will replace the existing 1995 Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges. WSBIS will adapt to the SNBI specifications in phases between 2023 and 2026. See Section 2-3.1.G below.

2-3.1.B Mandated Tunnels in the WSBIS – Reported to the NTI

In general, a tunnel that is subject to the NTIS and must be reported to the NTI when it meets all of the following:

- Carries highway traffic inside the tunnel.
- Is owned by a public agency or built on public right of way for a public agency. Bridges owned by railroads or other owners on private right of way do not qualify. Also tunnels under public roadways that do not carry traffic inside the tunnel do not qualify.
- Is open to the public. Tunnels posted "no trespassing" or otherwise clearly identified that they are privately owned or restricted to authorized users are not considered public. Tunnels behind locked gates are also not considered public.

NBI and NTI cannot inventory the same structure twice – There are cases where a structure has features that make it possible to consider either a bridge or a tunnel. In these cases, the owning agency can make the determination, but a structure that is coded as a bridge cannot be reported to the NTI, and similarly a structure that is coded as a tunnel cannot be reported to the NBI.

2-3.1.C Optional Structures in the WSBIS – Not reported to the NBI or NTI

Optional structures include any structure that the state or local agency manages as part of their structure inventory, but which do not qualify for reporting to the NBI or NTI. Typically this will include bridges with span lengths less than 20 feet (short spans), pedestrian structures that do not cross over or under a highway, "under" records for a route that is neither federal aid nor STRAHNET, and pedestrian or railroad tunnels under public roadways.

Note: Local agency structures on WSDOT right of way have special requirements as noted in Section 2-3.4.

2-3.1.D Mandated Data in the WSBIS

All data fields defined in the FHWA Coding Guide are required in the WSBIS. In cases where structures are maintained in WSBIS but not reported to the NBI, it is still required to complete all these fields in some consistent manner as defined in the coding guide.

2-3.1.E National Bridge Element (NBE) Data

All bridges subject to the NBIS and carrying NHS routes are required to include WSDOT Bridge Management System (BMS) elements and translated to National Bridge Elements and included with the annual NBI data submittal. See Appendix 2-E for detailed information on the translation process.

Starting in 2026, NBE data will be submitted to FHWA as part of the SNBI.

2-3.1.F Optional Data in the WSBIS

All other data, including BMS elements for bridges not on NHS routes, condition states, repairs, notes, and electronic photos and documents are not required in the WSBIS, and are not reported to the NBI.

2-3.1.G Specifications for the National Bridge Inventory (SNBI) Data

Starting in 2023, selected fields from the March 2022 SNBI will be available within the WSBIS for data entry. With three exceptions, all fields are optional for inspection and coding in 2023. The three exceptions are:

Inspection Begin Date (formerly the Inspection date)

Inspection Completion Date (new in 2023)

Inspection Interval (formerly the Inspection Frequency)

Appendix 2-D has the SNBI coding guide for these selected fields.

In 2024, 2025 and 2026, all remaining SNBI fields will be phased into the WSBIS. Starting in 2026, all SNBI fields must be entered for SNBI reportable structures when the SNBI inspection is completed, though of course agencies can enter this data earlier. All SNBI data for all SNBI reportable structures must be entered by January 2028.

Background information on these new specifications, including the complete March 2022 SNBI coding guide are available here: https://www.fhwa.dot.gov/bridge/nbis2022.cfm

2-3.2 *New Bridge Inventory in the WSBIS*

Newly built bridges must be added to the bridge inventory (WSBIS) and the inventory data entered within 90 days after the bridge is opened to public traffic in the anticipated final configuration as per 23 CFR 650.315(c).

New bridges to the inventory must have a unique Structure Identifier Item 1001 (Federal Coding Guide Item 8) in the WSBIS. In particular, when a bridge is replaced – either temporarily or permanently – with a new structure, this new structure must have a new Structure Identifier. The same Bridge Number and Bridge Name can be used.

Individuals who create new inventory records in the WSBIS need to be familiar with a wide variety of information sources. In preparation for creating a new inventory record, the following information should be available:

- Bridge plans
- Load rating calculations, or summary information to correctly code selected fields
- Scour calculations, or summary information to correctly code selected fields when bridge is over water
- Route information, including current State and/or Local Agency Linear Referencing System (LRS) data
- GIS location information
- Traffic information

Additional specific information may be required in many cases, including but not limited to maintenance agreements, navigable waterway permits, replacement cost estimates, and historical significance.

Individuals who create new inventory records need to coordinate closely with the inspectors who perform the initial routine/inventory inspection to ensure that all the data is collected. See Chapter 3 for inspection procedures and policies.

Temporary bridges that carry public traffic for less than 90 days or which are less than 20 feet in length do not need to be inventoried or inspected in accordance with the NBIS. In **all** other circumstances temporary bridges carrying public traffic must be inventoried and inspected in accordance with the NBIS, including:

- Temporary bridges installed either as an emergency response by agency staff or as a stand-alone contract without any other substantial work performed in the immediate vicinity of the bridge site.
- Temporary bridges that are an integral part of a larger construction project, located within that project, and maintained by a contractor.

2-3.3 *Deleting (Obsoleting) Bridges in the WSBIS*

WSBIS is designed to retain historical data indefinitely, including files of bridges that have been removed from service and are no longer part of the current bridge inventory. These bridges are called “obsolete” in the WSBIS and are called “dead” in the paper files (see Section 2-2.2).

WSDOT policy guides the requirements for deleting (obsoleting) structures in the WSBIS, and applies to all bridges in the WSBIS.

Structure records are obsoleted by the SPM or Local Programs DPM, but updating the electronic record in WSBIS must be performed by the Superuser account under the direct control of the SPM. This is intended to ensure that adequate documentation for these obsoletions are in place. Obsoleting structure records shall include the following steps:

- Create a new informational report describing the circumstances of the removal and the replacement structure information if appropriate. This informational shall include the completed and signed Record Change Form, see Appendix 2-B.
- The informational report is signed by the Statewide Program Manager (SPM).
- The paper bridge file (record), including the last signed informational report documenting removal from the bridge inventory, shall be retained for a minimum of five years.

See Section 2-2.2 for more information on maintaining “dead” bridge files.

2-3.4 *Bridges with Multi-Agency Responsibility in the WSBIS*

There are several ways in which a single bridge can have more than one agency responsible for the bridge inventory data. This section describes four cases where the responsibility is shared between WSDOT and a local agency, and where either WSDOT or a local agency shares responsibility with another state.

2-3.4.A Shared Responsibility between WSDOT and Local Agencies

There are the four cases of shared responsibility between WSDOT and a local agency, based on the principle of assigning data responsibility to the agency in the best position to maintain and report the data. These cases are WSDOT policy for all structures on WSDOT right of way. However, they can apply equally to any two agencies (a county and a city, for example). Regardless of how local agencies address these cases, it is a requirement that all bridge data in WSBIS that is reported to the NBI must be complete, accurate and current. This WSDOT

policy is superseded by any written agreement between two agencies regarding bridge inventory record keeping.

Case 1: WSDOT-Owned Bridges on WSDOT Right of Way – WSDOT will be responsible for maintaining all bridge inventory data and federal reporting in this situation.

Note: This situation applies to any combination of "on" and "under" records, route owners, and federal reporting status. However, WSDOT will ask local agencies for specific data regarding local agency route and traffic, both for routes "on" and "under" the bridge as applicable.

Case 2: Local Agency-Owned Bridges Carrying Highway Traffic Over State Routes – This situation assumes that the bridge must have a federally reported "on" record and at least one federally reported "under" record. The "on" record shall be maintained by the local agency and the "under" record(s) shall be maintained by WSDOT.

Case 3: Local Agency-Owned Pedestrian Bridges Over State Routes – This addresses all situations in which there is no federally reported "on" record, and assumes that there is a federally reported "under" record, and possibly additional "under" records for the *Bridge List* M 23-09. The "under" record(s) shall be maintained by WSDOT. If the local agency chooses to maintain a record, it cannot be federally reported.

Case 4: Local Agency-Owned Bridges on State Right of Way Adjacent to a State Route – This addresses all situations in which a local agency owns a structure (usually a pedestrian bridge) on state right of way that does not cross over or under any routes, and is deemed appropriate by WSDOT for inclusion in the bridge inventory. In this case, no records are federally reported

In all situations where there is shared responsibility between WSDOT and a local agency, the structure records in WSBIS must be shared, using the same structure identifier Item 1001 (Federal Coding Guide Item 8). Any situations that do not fit into these four cases listed above shall be considered on a case-by-case basis by the program managers involved and should address the following questions:

- Does the bridge record include a federally reported "on" record? These are bridges that are subject to the NBIS.
- Does the bridge record include one or more federally reported "under" records? These are bridges with federal aid or STRAHNET routes under the bridge.
- Is this a bridge that doesn't qualify for either an "on" or "under" record? These are pedestrian or other bridges that are not subject to the NBIS, and do not cross over a highway.
- Who owns the bridge?
- What agency owns the route on the bridge, if applicable? It is relatively common for a state owned structure to carry a local agency route, usually over a state route.
- What agency owns the route (or routes) under the bridge, if applicable?
- Does either agency need to maintain "on" or "under" records that are not federally reported? WSDOT often maintains "under" records that are not reported to hold data for the *Bridge List* M 23-09.
- Are there any interagency agreements relevant to inspection and reporting responsibility?

Any interagency agreement should address these questions, and clearly assign bridge inspection and inventory responsibilities.

2-3.4.B Shared Responsibility with Other States

WSDOT shares bridge recordkeeping and FHWA reporting responsibility for all bridges that cross state lines. For all but one bridge this shared responsibility also extends to bridge ownership and maintenance. For all bridges, responsibility to perform inspections is assigned to one state agency as established by agreement.

One local agency bridge crosses the state line between Washington and Idaho. Inspection, FHWA reporting, ownership, and maintenance responsibility is established by agreement.

See Appendix 2-F for bridge specific information.

2-3.5 *Reporting WSBIS Data to the NBI – Special Circumstances*

Section 2-3.1 outlined requirements for bridges subject to the NBIS and reported to the NBI. However, there are several special circumstances that warrant additional discussion.

Bridges Owned by Public Agencies That Are Not Open to the Public – Public agencies can own bridges that are not part of the public right of way, intended only for access by agency staff or other authorized personnel. In general, these bridges should not be reported to the NBI, and these bridges should be signed or gated so the public either does not have access to the bridge or is clearly warned that the bridge is not part of the public way. WSDOT bridges are posted "No Trespassing" at the entrance to the bridge if they are not gated.

Bridges Owned by Public Agencies That Are Closed – Bridges that are permanently closed to highway traffic but still in place may be retained in the WSBIS, but cannot be reported to the NBI. Bridges that are closed but the agency plans to either re-open or replace with a new structure can be federally reported for up to five years.

Privately-Owned Bridges – These bridges may belong to individuals, community road associations, railroads, or corporations, and may be open to the public. One relatively common example is a bridge in a shopping mall parking lot. FHWA and WSDOT promote the incorporation of these bridges in the WSBIS and recommend they be reported to the NBI if they qualify, but there is no federal or state requirement that they be inventoried.

Public Transit Bridges – Bridges carrying public transit buses in service (carrying passengers) are subject to the NBIS, even if these bridges are restricted to only public transit vehicles. Bridges carrying light rail public transit rolling stock without any vehicular or bus traffic are not currently subject to the NBIS.

Whenever a special circumstance affects the reporting of a structure, a brief explanation of the reporting status shall be kept in the electronic bridge record for all bridges inventoried in the WSBIS.

In any situation where it is unclear if a bridge should be included in the WSBIS and reported to the NBI, please consult with the SPM.

2-3.6 *Washington State Bridge List M 23-09*

The WSBIS is the source of data for the *Bridge List* M 23-09 published by the Bridge and Structures Office. It is a list of structures carrying or intersecting Washington State highways, and structures for which WSDOT has a maintenance responsibility. Data specific to this list is maintained for nearly all structures on WSDOT right of way, including local agency owned structures.

For more information on the data maintained for the *Bridge List* M 23-09, see the Washington State Bridge Inventory System Coding Guide in Appendix 2-C.

2-4 FHWA Data Submittal Process

The WSDOT Bridge Preservation Office extracts data from the WSBIS and submits it to FHWA for inclusion in the NBI and NBE once per year. Submittals may also happen at other times at the request of the Washington Division of the FHWA. The scheduled submittal is March 15 or the first work day following this date. The data submitted includes all the data defined by the NBI federal coding guide, the NBE specifications, and the NTI specifications, and is provided in a very specific format also defined by these documents. This submittal is performed by the Bridge Preservation Office and submitted to the FHWA User Profile and Access Control System (UPACS) under the authority of the SPM.

Data drawn for submittal to the NBI, NBE and NTI is taken only from the most current "released" data from WSBIS, meaning that each structure record has been through the quality control process described in Chapter 7, including acceptance by the BPO and LP data stewards. However, in addition to this quality control process, prior to the scheduled FHWA submittal both the BPO and LP data stewards run systemic checks of the data to identify and correct data errors. In particular, these checks are intended to ensure the following:

- Structures added to the inventory are reviewed to determine if they should be reported to FHWA.
- Structures removed from the inventory are reviewed to determine if they should be reported to FHWA and to ensure the electronic records accurately and sufficiently document the obsolete record.
- Structures that are transferred between agencies are reviewed to ensure the electronic records accurately document the transfer.
- Structures with shared responsibility are reviewed to ensure the electronic records are complete and accurate.

The intent is to submit error free data each submittal. In cases when errors are found but cannot be corrected because a field visit is required, the intent is that these errors will be corrected at the next regularly scheduled inspection.

Data submitted to FHWA is used for performance measurements after the submittal, both by FHWA and WSDOT. Verifying timely inspections for the federally reported inspection types is a primary focus of these performance measures. For the March 15 data submittal, all inspection work due through December 31 of the previous year must be "released" into WSBIS prior to March 15.

2-5 Responding to FHWA

Information Requests – FHWA requests bridge inspection information from WSDOT on a periodic basis. The information requested can be in response to national technical advisories, FHWA's oversight of the NBIS program in Washington State, or based on the WSDOT/FHWA Stewardship Agreement.

The bridge inspection requests for information from FHWA will typically be in the form of an email request with an assigned completion date based on the specific request, but can be in any format. The FHWA Division Bridge Engineer will submit the information request to the SPM. The SPM will review the FHWA information request and forward/disseminate the request to the necessary individuals for response. All information will be provided back to the SPM who will then forward the requested information to the Washington FHWA Division Bridge Engineer by the deadline in the original request.

Communication Between FHWA and WSDOT – Appendix 2-H identifies the standard communication protocol for normal operations. There is no protocol for urgent or emergency situations. The Washington SPM will be included in all written and email communications to or from FHWA regarding any bridge inspection, bridge emergency, or critical finding issues within the state of Washington. The WSDOT LP DPM and the Washington SPM will be included in all written and email communications to or from FHWA where local agency bridges are involved.

Annual NBIS Program Review – FHWA conducts an annual review of the bridge inspection organization within the state of Washington. The purpose of this review is to assure compliance with the NBIS. The review examines all facets of the inspection program – the effectiveness of the overall organization, delegated functions, inspection personnel, inspection procedures, bridge records and files, and the inventory of bridge data. It is intended to identify and correct any weaknesses while building upon existing strengths. In addition, site reviews of bridge inspections and interviews of inspection personnel are conducted. FHWA also conducts reviews of NBI data that is submitted for Washington by WSDOT.

Additional information on the NBI and NBIS can be found on the FHWA Office of Bridges and Structures website at www.fhwa.dot.gov/bridge/nbis.htm.

2-6 Appendices

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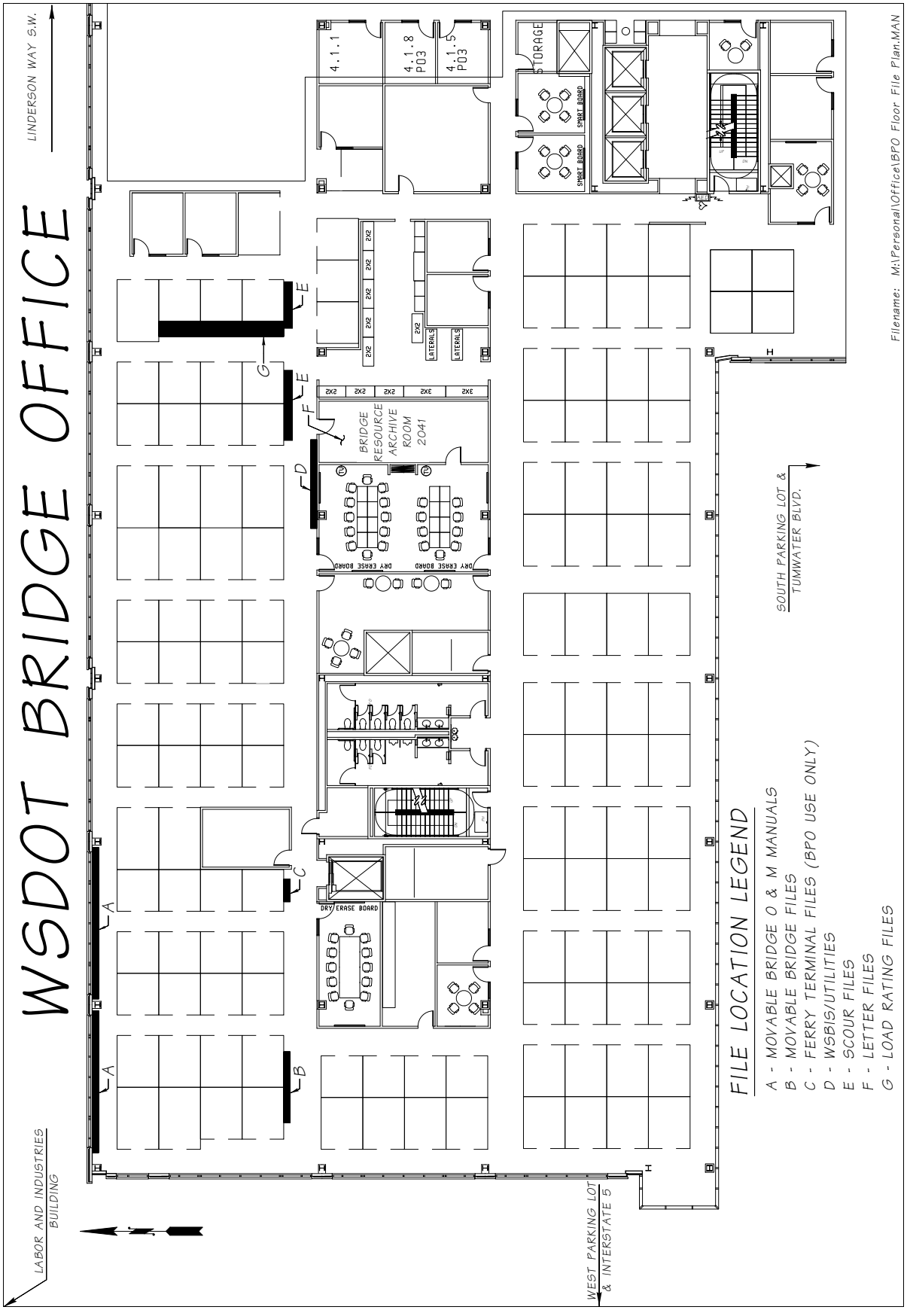
Appendix 2-A WSDOT BPO Floor Plan with File Locations



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Appendix 2-B Record Change Form

Washington State Department of Transportation

Record Change Form

Record change requiring Statewide Program Manager (SPM) approval

Structure Identifier	Structure Number
Structure Name	Date of Record Change
Requesting Agency	Contact
Structure Obsoleted ☐ Yes ☐ No	Ownership Transfer ☐ Yes ☐ No
If replaced with new structure, provide new structure identifier, number and name	
Describe reason for requested change	
Ownership Transfer from _____ to _____	

_____ _____

Delegated Program Manager, if local agency record obsoleted — Date

_____ _____

Statewide Program Manager — Date

WSDOT Form 220-033
Revised 01/2021

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Appendix 2-C Washington State Bridge Inventory System Coding Guide

Table 1 - WSBIS Items by Name and Tab Order

WSBIS Item No.	WSBIS Item Name	NBI Item No.	SNBI Item No.	NTI Item No.	Page No.
Coding Guide Instructions					2-C-19
Report Types Tab					
BIE01	Report Types	-	B.IE.01	D.2-D.6	2-C-25
WIE01	Report Subtypes	-	B.IE.01	D.2-D.6	2-C-25
BIE05	Inspection Interval	-	B.IE.05	D.3	2-C-30
BIE02	Inspection Begin Date	-	B.IE.02	D.2	2-C-30
BIE03	Inspection Completion Date	-	B.IE.03	D.2	2-C-31
BIE06	Inspection Due Date	-	-	-	2-C-31
WIE02	Inspection Due Date Override	-	-	-	2-C-32
BIE11	Report Type Notes	-	B.IE.11	-	2-C-33
TD1	Target Inspection Date - SNTI	-	-	D.1	2-C-33
BIE07	Risk-Based Inspection Interval Method	-	B.IE.07	-	2-C-34
BIE04	Nationally Certified Bridge/Tunnel Inspector	-	B.IE.04	-	2-C-35
2654	Co-Inspector Initials	-	-	-	2-C-35
2642	Inspection Hours	-	-	-	2-C-35
2643	Inspection Overtime Hours	-	-	-	2-C-35
2900	Late Inspection Explanation	-	-	-	2-C-36
2901	Program Manager Response Date	-	-	-	2-C-36
2902	Program Manager Approval	-	-	-	2-C-36
BIE08	Inspection Quality Control Date	-	B.IE.08	-	2-C-37
7644	Inspection Report Hours	-	-	-	2-C-37
Critical Findings Tab					
WCF01	Critical Finding Number	-	-	-	CH6
WCF02	Type of Critical Finding	-	-	-	CH6
WCF03	Entry Type	-	-	-	CH6
WCF04	Date of Finding or Entry Date	-	-	-	CH6
WCF05	Bridge Status	-	-	-	CH6
WCF06	Estimated Resolution Date	-	-	-	CH6
WCF07	Description	-	-	-	CH6
WCF08	Reported By	-	-	-	CH6
WCF09	Associated Repair	-	-	-	CH6
SNBI Tab					
Component Condition Ratings					
BC12	Overall Condition Classification		B.C.12		2-C-41
BC01	Deck Overall Rating	-	B.C.01	-	2-C-42
BC05	Bridge Railings	-	B.C.05		2-C-44
BC06	Bridge Railing Transitions	-	B.C.06	-	2-C-45
BC08	Bridge Joints	-	B.C.08	-	2-C-46
BC02	Superstructure Overall	-	B.C.02	-	2-C-48
BC14	NSTM Inspection	-	B.C.14		2-C-49
BC07	Bridge Bearings	-	B.C.07	-	2-C-50
BC03	Substructure Overall	-	B.C.03	-	2-C-52

Table 1 - WSBIS Items by Name and Tab Order					
WSBIS Item No.	**WSBIS Item Name**	**NBI Item No.**	**SNBI Item No.**	**NTI Item No.**	**Page No.**
BC15	Underwater Inspection	-	B.C.15	-	2-C-54
BC04	Culvert Overall	-	B.C.04	-	2-C-55
BC11	Scour Condition - SNBI	-	B.C.11	-	2-C-58
BC09	Channel Condition	-	B.C.09	-	2-C-62
BC10	Channel Protection	-	B.C.10	-	2-C-64
1677	Channel Protection Condition - NBI	61	-	-	2-C-66
1679	Pier/Abutment Protection - NBI	111	-	-	2-C-67
Appraisals					
1680	Scour Critical - NBI	113	-	-	2-C-68
BAP03	Scour Vulnerability	-	B.AP.03	-	2-C-70
BAP04	Scour Plan of Action	-	B.AP.04	-	2-C-71
1662	Waterway - NBI	71	-	-	2-C-72
BAP02	Overtopping Likelihood	-	B.AP.02	-	2-C-73
1661	Alignment - NBI	72	-	-	2-C-74
BAP01	Approach Roadway Alignment - SNBI	-	B.AP.01	-	2-C-75
BIR02	Fatigue Details	-	B.IR.02	-	2-C-76
BAP05	Seismic Vulnerability	-	B.AP.05	-	2-C-77
1293	Open, Closed or Posted	41	-	L.4	2-C-78
1660	Operating Level - NBI	70	-	-	2-C-78
2613	NBIS Risk Category	-	-	-	2-C-79
Miscellaneous Fields					
BW01	Year Built	-	B.W.01	A.1	2-C-81
TA2	Year Rebuilt	106	-	A.2	2-C-81
2610	Asphalt Depth	-	-	-	2-C-82
2611	Design Curb Height	-	-	-	2-C-82
2612	Bridge Vehicle Rail Height	-	-	-	2-C-82
2675	Number of Utilities	-	-	-	2-C-82
2614	Subject to NBIS Flag	-	-	-	2-C-83
BIE09	Inspection Quality Assurance Date	-	B.IE.09	-	2-C-84
Inspection Flags					
2693	Soundings Flag	-	-	-	2-C-84
2694	Clearance Flag	-	-	-	2-C-84
2688	Revise Rating Flag	-	-	-	2-C-85
2691	Photos Flag	-	-	-	2-C-85
2695	QA Flag	-	-	-	2-C-85
Local Agency Appraisals					
7664	Drain Condition	-	-	-	2-C-87
7665	Drain Status	-	-	-	2-C-87
7666	Deck Scaling	-	-	-	2-C-87
7667	Deck Scaling Percent	-	-	-	2-C-88
7669	Deck Rutting	-	-	-	2-C-88
7670	Deck Exposed Rebar	-	-	-	2-C-88
7672	Curb Condition	-	-	-	2-C-89
7673	Sidewalk Condition	-	-	-	2-C-89
7674	Paint Condition	-	-	-	2-C-89
7681	Approach Condition	-	-	-	2-C-90

Table 1 - WSBIS Items by Name and Tab Order

WSBIS Item No.	WSBIS Item Name	NBI Item No.	SNBI Item No.	NTI Item No.	Page No.
7682	Retaining Wall Condition	-	-	-	2-C-90
7683	Pier Protection Condition	-	-	-	2-C-91
Bridge ID Tab					
BID01	Structure ID	-	B.ID.01	I.1	2-C-93
BID03	Previous Structure ID	-	B.ID.03	-	2-C-94
WID01	Structure Type	-	-	-	2-C-94
WID02	Bridge Number	-	-	-	2-C-95
WID03	Bridge Sort Number	-	-	-	2-C-96
BID02	Bridge Name	-	B.ID.02	I.2	2-C-96
1232	Features Intersected - NBI	6	-	-	2-C-97
1256	Facilities Carried - NBI	7	-	I.10	2-C-97
WID06	Program Manager	-	-	-	2-C-97
1286	Custodian - NBI	21	-	C.2	2-C-99
1019	Owner - NBI	22	-	C.1	2-C-99
BCL01	Owner - SNBI	-	B.CL.01	-	2-C-100
BCL02	Maintenance Responsibility	-	B.CL.02	-	2-C-101
BL02	County Code	-	B.L.02	I.4	2-C-102
BL03	Place Code	-	B.L.03	I.5	2-C-103
BL04	Highway Agency District	-	B.L.04	I.6	2-C-106
BL12	Metropolitan Planning Organization	-	B.L.12	-	2-C-107
WL05	City	-	-	-	2-C-108
WL06	Section	-	-	-	2-C-108
WL07	Township	-	-	-	2-C-108
WL08	Range	-	-	-	2-C-108
1285	Toll Code - NBI	20	-	C.4	2-C-109
BCL05	Toll - SNBI	-	B.CL.05	-	2-C-110
1289	Temporary Structure - NBI	103	-	-	2-C-111
1292	Historical Significance (NRHP) - NBI	37	-	-	2-C-112
BCL04	Historic Significance (NRHP) - SNBI	-	B.CL.04	-	2-C-113
WCL04	Historical Significance - HAER	-	-	-	2-C-114
7296	Historical Significance - Local Agency	-	-	-	2-C-114
7281	Legislative District 1	-	-	-	2-C-115
7283	Legislative District 2	-	-	-	2-C-115
2615	Special Structures Flag	-	-	-	2-C-115
2930	Obsolete Structure Flag	-	-	-	2-C-115
BL07	Border Structure ID	-	B.L.07	-	2-C-116
BL08	Border State or Country Code	-	B.L.08	-	2-C-116
1588	Border Bridge Percent - NBI	98B	-	-	2-C-116
BL09	Border Bridge Inspection Responsibility	-	B.L.09	-	2-C-117
BL10	Border Bridge Designated Lead State	-	B.L.10	-	2-C-118
Geometry Tab					
BG01	NBIS Bridge Length	-	B.G.01	-	2-C-119
BG02	Total Bridge Length	-	B.G.02	-	2-C-122
TG1	Tunnel Length - SNTI	-	-	G.1	2-C-126
BG04	Minimum Span Length	-	B.G.04	-	2-C-127
BG03	Maximum Span Length	-	B.G.03	-	2-C-129

Table 1 - WSBIS Items by Name and Tab Order

WSBIS Item No.	WSBIS Item Name	NBI Item No.	SNBI Item No.	NTI Item No.	Page No.
1360	Out-to-Out Deck Width - NBI	52	-	-	2-C-131
BG05	Out-to-Out Deck Width - SNBI	-	B.G.05	-	2-C-132
1356	Curb-to-Curb Width - NBI	51	-	-	2-C-135
BG06	Curb-to-Curb Width - SNBI	-	B.G.06	-	2-C-138
TG3	Curb-to-Curb Width - SNTI	-	-	G.3	2-C-141
BG07	Left Curb or Sidewalk Width	-	B.G.07	G.4	2-C-142
BG08	Right Curb or Sidewalk Width	-	B.G.08	G.5	2-C-144
TA8	Service in Tunnel - SNTI	-	-	A.8	2-C-146
1397	Approach Roadway Width	32	-	-	2-C-147
1291	Median Code - NBI	33	-	-	2-C-148
BG10	Median Code - SNBI	-	B.G.10	-	2-C-150
1310	Skew Angle - NBI	34	-	-	2-C-152
BG11	Skew Angle - SNBI	-	B.G.11	-	2-C-153
BG12	Curved Bridge	-	B.G.12	-	2-C-154
BG13	Maximum Bridge Height	-	B.G.13	-	2-C-156
BG14	Sidehill Bridge	-	B.G.14	-	2-C-157
BG15	Irregular Deck Area	-	B.G.15	-	2-C-158
BG16	Calculated Deck Area	-	B.G.16	-	2-C-159
1370	Minimum Vertical Clearance Over Deck - NBI	53	-	-	2-C-159
1374	Minimum Vertical Clearance Under Bridge - NBI	54B	-	-	2-C-160
TG2	Minimum Vertical Clearance Over Tunnel Roadway - SNTI	-	-	G.2	2-C-162
TS1	Number of Bores - SNTI	-	-	S.1	2-C-163
TS2	Tunnel Shape - SNTI	-	-	S.2	2-C-164
TS3	Portal Shape - SNTI	-	-	S.3	2-C-165
TS4	Ground Conditions - SNTI	-	-	S.4	2-C-165
TS5	Complex Tunnel - SNTI	-	-	S.5	2-C-166
TL10	Height Restrictions - SNTI	-	-	L.10	2-C-166
TL11	Hazardous Material Restriction - SNTI	-	-	L.11	2-C-167
TL12	Other Restrictions - SNTI	-	-	L.12	2-C-167
Crossing Tab					
2000	Main Listing Code	-	-	-	2-C-169
1432	On/Under Code	5A	-	-	2-C-169
2402	Crossing Description	-	-	-	2-C-170
BF03	Feature Name	-	B.F.03	-	2-D-16
BL11	Bridge Location	-	B.L.11	-	2-C-170
WF01	Feature Type Code	-	-	-	-
BF01	Feature Type	-	B.F.01	-	2-D-13
BF02	Feature Location	-	B.F.02	-	2-D-15
WF02	Crossing Manager	-	-	-	2-C-170
BL05	Latitude - SNBI	-	B.L.05	I.13	2-C-171
BL06	Longitude - SNBI	-	B.L.06	I.14	2-C-171
BH18	Crossing Structure ID	-	B.H.18	-	-
WH18	Crossing Feature Type	-	-	-	-
BRT01	Route Designation	-	B.RT.01	-	2-D-17
BRT02	Route Number - SNBI	-	B.RT.02	-	2-D-18
WRT02	Milepost - SNBI	-	-	-	-

Table 1 - WSBIS Items by Name and Tab Order					
WSBIS Item No.	**WSBIS Item Name**	**NBI Item No.**	**SNBI Item No.**	**NTI Item No.**	**Page No.**
BRT03	Route Direction - SNBI	-	B.RT.03	-	2-D-19
BRT04	Route Type - SNBI	-	B.RT.04	-	2-D-20
BRT05	Service Type - SNBI	-	B.RT.05	-	2-D-21
1435	Route - NBI	5D	-	I.7	2-C-172
2440	Milepost - NBI	-	-	-	2-C-172
1433	Highway Class - NBI	5B	-	I.9	2-C-173
1434	Service Level - NBI	5C	-	-	2-C-173
BH06	LRS Route ID	13A	B.H.06	I.11	2-C-174
BH07	LRS Milepost	11	B.H.07	I.12	2-C-174
WH07	LRS Milepost End	-	-	-	-
WH23	Directional Indicator	-	-	-	2-C-175
WH21	Ahead/Back Indicator	-	-	-	2-C-175
WH22	Ahead/Back Indicator End	-	-	-	-
WH19	LRS ARM	-	-	-	-
WH20	LRS ARM End	-	-	-	-
WH06	LRS Date	-	-	-	-
WA09	Speed Limit	-	-	-	2-C-176
BH08	Lanes On Highway - SNBI	-	B.H.08	-	2-D-29
TA3	Total Number of Lanes - SNTI	-	-	A3	SNTI 2-28
TC3	Direction of Traffic - SNTI	-	-	-	SNTI 2-39
1490	Lane Use Direction - NBI	102	-	C.3	2-C-176
BH03	NHS Designation - SNBI	-	B.H.03	-	2-D-24
1483	National Highway System - NBI	104	-	C.5	2-C-176
BH05	STRAHNET - SNBI	-	B.H.05	-	2-D-26
1485	STRAHNET - NBI	100	-	C.6	2-C-177
BH04	National Truck Freight Network	110	B.H.04	-	2-C-178
1487	Functional Classification - NBI	26	-	C.7	2-C-179
BH01	Functional Classification - SNBI	-	B.H.01	-	2-D-22
BH02	Urban Code - SNBI	-	B.H.02	C.8	2-C-180
BCL06	Emergency Evacuation Designation	-	B.CL.06	-	2-C-182
BCL03	Federal or Tribal Land Access	-	B.CL.03	-	2-C-183
BH11	AADT Year	30	B.H.11	A.6	2-C-184
BH09	AADT	29	B.H.09	A.4	2-C-184
BH10	Annual Average Daily Truck Traffic	-	B.H.10	A.5	2-C-185
1451	AADT Truck Percentage - NBI	109	-	A.5	2-C-185
BH17	Bypass Detour Length	19	B.H.17	A.7	2-C-186
BH12	Maximum Vertical Clearance Route	10	B.H.12	-	2-C-187
2501	Maximum Vertical Clearance Reverse Route	10	-	-	2-C-187
BH13	Minimum Vertical Clearance Route	-	B.H.13	-	2-C-189
2502	Minimum Vertical Clearance, Reverse Route	-	-	-	2-C-189
BH14	Minimum Horizontal Clearance Left	-	B.H.14	-	2-D-37
BH15	Minimum Horizontal Clearance Right	-	B.H.15	-	2-D-40
1491	Horizontal Clearance Route	47	-	-	2-C-189
BRR01	Railroad Service Type	-	B.RR.01	-	2-D-48
BRR02	Railroad Minimum Vertical Clearance	-	B.RR.02	-	2-D-50
BRR03	Railroad Minimum Horizontal Offset	-	B.RR.03	-	2-D-52

Table 1 - WSBIS Items by Name and Tab Order					
WSBIS Item No.	**WSBIS Item Name**	**NBI Item No.**	**SNBI Item No.**	**NTI Item No.**	**Page No.**
BN01	Navigable Waterway	-	B.N.01	-	2-D-54
BN02	Navigable Minimum Vertical Clearance	-	B.N.02	-	2-D-55
BN03	Movable Bridge Maximum Navigable Vertical Clearance	-	B.N.03	-	2-D-57
BN04	Navigation Channel Width	-	B.N.04	-	2-D-58
BN05	Navigable Channel Minimum Horizontal Clearance	-	B.N.05	-	2-D-60
BN06	Substructure Navigable Protection	-	B.N.06	-	2-C-190
WH24	NBI Reportable Flag	-	-	-	2-C-190
WH25	SNBI Reportable Flag	-	-	-	2-C-191
WH26	SNTI Reportable Flag	-	-	-	2-C-191
WH27	Bridge List	-	-	-	2-C-191
Crossing Tab Discontinued - Effective January 2026					
1354	Lanes Under	28B	-	A.3	2-C-192
1457	Future ADT	114	-	-	2-C-192
1463	Future ADT Year	115	-	-	2-C-192
1477	Linear Sub Route	-	-	-	2-C-193
1484	Base Highway Network	12	-	-	2-C-193
1486	Federal Lands Highway - NBI	105	-	-	2-C-193
1495	Horizontal Clearance, Reverse Direction	47	-	-	2-C-194
2368	Minimum Vertical Clearance Over Deck Override	-	-	-	2-C-195
2412	Maximum Vertical Clearance Override	-	-	-	-
2436	Route Sequencer	-	-	-	2-C-195
2437	Bridge List Override	-	-	-	2-C-196
2438	Milepost Sequencer	-	-	-	2-C-196
7479	Federal Aid Route Number	-	-	-	2-C-196
Materials & Types Tab					
1532	Main Span Material - NBI	43A	-	-	2-C-197
1533	Main Span Design - NBI	43B	-	-	2-C-197
1538	Number of Main Spans - NBI	45	-	-	2-C-198
1535	Approach Span Material - NBI	44A	-	-	2-C-198
1536	Approach Span Design - NBI	44B	-	-	2-C-199
1541	Number of Approach Spans - NBI	46	-	-	2-C-199
1546	Deck type - NBI	107	-	-	2-C-199
1547	Wearing Surface - NBI	108A	-	-	2-C-200
1548	Membrane - NBI	108B	-	-	2-C-200
1549	Deck Protection - NBI	108C	-	-	2-C-201
BSP01	Superstructure Configuration Designation	-	B.SP.01	-	2-C-201
WSP01	Superstructure Configuration Code	-	-	-	2-C-202
WSP02	Span Description	-	-	-	2-C-203
BSP02	Number of Spans	-	B.SP.02	-	2-C-204
BSP03	Number of Beam Lines	-	B.SP.03	-	2-C-205
BSP04	Span Material	-	B.SP.04	-	2-C-206
BSP05	Span Continuity	-	B.SP.05	-	2-C-208
BSP06	Span Type	-	B.SP.06	-	2-C-209
BSP07	Span Protective System	-	B.SP.07	-	2-C-211
BSP08	Deck Interaction	-	B.SP.08	-	2-C-213
BSP09	Deck Material & Type	-	B.SP.09	-	2-C-214

Table 1 - WSBIS Items by Name and Tab Order					
WSBIS Item No.	**WSBIS Item Name**	**NBI Item No.**	**SNBI Item No.**	**NTI Item No.**	**Page No.**
BSP10	Wearing Surface	-	B.SP.10	-	2-C-215
BSP11	Deck Protective System	-	B.SP.11	-	2-C-216
BSP12	Deck Reinforcing Protective System	-	B.SP.12	-	2-C-217
BSP13	Deck Stay-In-Place Forms	-	B.SP.13	-	2-C-218
BSB01	Substructure Configuration Designation	-	B.SB.01	-	2-C-219
WSB01	Substructure Configuration Code	-	-	-	2-C-219
WSB02	Pier Description	-	-	-	2-C-221
BSB02	Number of Substructure Units	-	B.SB.02	-	2-C-221
BSB03	Substructure Material	-	B.SB.03	-	2-C-222
BSB04	Substructure Type	-	B.SB.04	-	2-C-223
BSB05	Substructure Protective System	-	B.SB.05	-	2-C-225
BSB06	Foundation Type	-	B.SB.06	-	2-C-226
BSB07	Foundation Protective System	-	B.SB.07	-	2-C-228
Roadside Hardware					
BRH01	Bridge Rail Crash Test	-	B.RH.01	-	2-C-231
WRH01	BRCT Document Year (YYYY)	-	-	-	2-C-232
BRH02	Bridge Rail Transition Crash Test	-	B.RH.02	-	2-C-232
WRH02	BRTCT Document Year (YYYY)	-	-	-	2-C-234
Load Rating Tab					
Rating					
2580	Reference Inspection Date	-	-	-	2-C-235
1550	Design Load - NBI	31	-	-	2-C-235
BLR01	Design Load - SNBI	-	B.LR.01	-	2-C-236
BLR02	Design Method	-	B.LR.02	-	2-C-237
BLR03	Load Rating Date	-	B.LR.03	-	2-C-238
2582	Rated By	-	-	-	2-C-238
1660	Operating Level - NBI	-	-	-	2-C-239
BLR08	Routine Permit Loads	-	B.LR.08	-	2-C-240
7557	Design Exception Date	-	-	-	2-C-240
NBI Loads					
1551	Operating Rating Method	63	-	-	2-C-241
1552	Operating Rating Tons	64	-	-	2-C-242
1553	Operating Rating Factor	64	-	L.3	2-C-243
1554	Inventory Rating Method	65	-	L.1	2-C-241
1555	Inventory Rating Tons	66	-	-	2-C-242
1556	Inventory Rating Factor	66	-	L.2	2-C-243
Legal Loads					
2587	Type 3 Rating Factor	-	-	-	2-C-243
2588	Type 3S2 Rating Factor	-	-	-	2-C-243
2589	Type 3-3 Rating Factor	-	-	-	2-C-243
2590	Notional Rating Load (NRL) Rating Factor	-	-	-	2-C-243
2591	Single Unit 4 (SU4) Rating Factor	-	-	-	2-C-243
2592	Single Unit 5 (SU5) Rating Factor	-	-	-	2-C-243
2593	Single Unit 6 (SU6) Rating Factor	-	-	-	2-C-243
2594	Single Unit 7 (SU7) Rating Factor	-	-	-	2-C-243
2598	Emergency Vehicle 2 (EV2) Rating Factor	-	-	-	2-C-244

Table 1 - WSBIS Items by Name and Tab Order					
WSBIS Item No.	**WSBIS Item Name**	**NBI Item No.**	**SNBI Item No.**	**NTI Item No.**	**Page No.**
2599	Emergency Vehicle 3 (EV3) Rating Factor	-	-	-	2-C-244
Permit Loads					
2596	Overload 1 (OL-1) Rating Factor	-	-	-	2-C-244
2597	Overload 2 (OL-2) Rating Factor	-	-	-	2-C-244
Posted Loads					
TL5	Posted Load – Gross - SNTI	-	TL5	L.5	2-C-246
TL6	Posted Load – Axle - SNTI	-	TL6	L.6	2-C-247
TL7	Posted Load – Type 3 - SNTI	-	TL7	L.7	2-C-248
TL8	Posted Load – Type 3S2 - SNTI	-	TL8	L.8	2-C-249
TL9	Posted Load – Type 3-3 - SNTI	-	TL9	L.9	2-C-250
Waterway Tab					
7832	Water Type	-	-	-	2-C-251
7833	Flood Plain Intrusion	-	-	-	2-C-251
7834	Flood Control	-	-	-	2-C-251
7835	Scour History	-	-	-	2-C-252
7836	Streambed Material Type	-	-	-	2-C-252
7837	Substructure Stability	-	-	-	2-C-252
7838	Waterway Obstruction	-	-	-	2-C-253
7839	Streambed Stability	-	-	-	2-C-253
7840	Streambed Anabranch	-	-	-	2-C-253
7841	Piers in Water	-	-	-	2-C-254
Discontinued Tab - Effective January 2026					
Proposed Improvements					
2883	Proposed Improvement Calculation	-	-	-	2-C-255
1844	Proposed Improvement Work Type	75A	-	-	2-C-255
1846	Proposed Improvement Work Method	75B	-	-	2-C-256
1847	Proposed Improvement Structure Length	76	-	-	2-C-256
2853	Proposed Improvement Roadway Width	-	-	-	2-C-256
2860	Proposed Improvement Cost Per SF of Deck	-	-	-	2-C-256
1867	Proposed Improvement Structure Cost	94	-	-	2-C-257
1873	Proposed Improvement Roadway Cost	95	-	-	2-C-257
2870	Proposed Improvement Eng. and Misc. Cost	-	-	-	2-C-257
1861	Proposed Improvement Total Cost	96	-	-	2-C-257
1879	Proposed Improvement Estimate Year	97	-	-	2-C-258
Other Discontinued					
1022	Urban Code - SNTI	-	-	-	2-C-258
1188	Latitude - NBI	16	-	-	2-C-258
1196	Longitude - NBI	17	-	-	2-C-258
1288	Parallel Structure	101	-	-	2-C-259
1312	Flared Flag	-	-	-	2-C-259
1336	Year Built - NBI	27	-	-	2-C-259
1352	Lanes On - NBI	28A	-	-	2-C-260
1378	Vertical Underclearance Code - NBI	54A	-	-	2-C-260
1379	Minimum Lateral Underclearance Right	55B	-	-	2-C-260
1382	Lateral Underclearance Code	55A	-	-	2-C-263
1383	Minimum Lateral Underclearance Left	56	-	-	2-C-263

Table 1 - WSBIS Items by Name and Tab Order					
WSBIS Item No.	**WSBIS Item Name**	**NBI Item No.**	**SNBI Item No.**	**NTI Item No.**	**Page No.**
1386	Navigation Control Code	38	-	-	2-C-264
1387	Navigation Vertical Clearance	39	-	-	2-C-264
1390	Navigation Horizontal Clearance	40	-	-	2-C-265
1394	Vertical Lift Minimum Clearance - NBI	116	-	-	2-C-265
1544	Service On	42A	-	-	2-C-265
1545	Service Under	42B	-	-	2-C-266
1657	Structural Evaluation	67	-	-	2-C-266
1658	Deck Geometry	68	-	-	2-C-267
1659	Underclearances	69	-	-	2-C-271
1684	Bridge Rails	36A	-	-	2-C-273
1685	Transitions	36B	-	-	2-C-275
1686	Guardrails	36C	-	-	2-C-276
1687	Terminals	36D	-	-	2-C-276
2537	Alpha Span Type	-	-	-	2-C-276
7710	Sufficiency Rating	-	-	-	2-C-278
7711	Structurally Deficient/Functionally Obsolete (SD/FO)	-	-	-	2-C-278
1436	Tunnel Route Direction	-	-	I.8	2-C-279
Auto-Generated Fields Section					
1	State Code	1	B.L.01	I.3	2-C-281
5E	Route Directional Suffix	5E	-	-	2-C-281
112	NBIS Bridge Length	112	-	-	2-C-281
I.15-I.18	Border Tunnel Data	-	-	I.15-I.18	2-C-281
N.1-N.3	Navigable Waterway Data	-	-	N.1-N.3	2-C-281
BIR01	NSTM inspection Required	-	-	-	2-C-282
BIE02	NSTM Inspection Date	93A	B.IE.02	-	-
BIE02	Underwater Inspection Date	93B	B.IE.02	-	-
BIE02	Special Feature Inspection Date	93C	B.IE.02	-	-
BIE05	Fracture Critical Inspection Interval	92A	B.IE.05	-	-
BIE05	Underwater Inspection Interval	92B	B.IE.05	-	-
BIE05	Special Feature Inspection Interval	92C	B.IE.05	-	-
BIE10	Inspection Data Update Date	-	B.IE.10	-	2-C-283
BIR03	Underwater Inspection Required	-	B.IR.03	-	2-C-283
BIR04	Complex Feature - SNBI	-	B.IR.04	-	2-C-284
BC13	Lowest Condition Rating Code	-	B.C.13	-	2-C-284
BIE09	Inspection QA Date	-	B.IE.09	-	2-C-285

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1019	Owner - NBI	Bridge ID Tab	2-C-99
1022	Urban Code - SNTI	Discontinued Tab	2-C-258
1188	Latitude - NBI	Discontinued Tab	2-C-258
1196	Longitude - NBI	Discontinued Tab	2-C-258
1232	Features Intersected - NBI	Bridge ID Tab	2-C-97
1256	Facilities Carried - NBI	Bridge ID Tab	2-C-97
1285	Toll Code - NBI	Bridge ID Tab	2-C-109
1286	Custodian - NBI	Bridge ID Tab	2-C-99
1288	Parallel Structure	Discontinued Tab	2-C-259
1289	Temporary Structure - NBI	Bridge ID Tab	2-C-111
1291	Median Code - NBI	Geometry Tab	2-C-148
1292	Historical Significance (NRHP) - NBI	Bridge ID Tab	2-C-112
1293	Open, Closed or Posted	SNBI Tab	2-C-78
1310	Skew Angle - NBI	Geometry Tab	2-C-152
1312	Flared Flag	Discontinued Tab	2-C-259
1336	Year Built - NBI	Discontinued Tab	2-C-259
1352	Lanes On - NBI	Discontinued Tab	2-C-260
1354	Lanes Under	Crossing Tab	2-C-192
1356	Curb-to-Curb Width - NBI	Geometry Tab	2-C-135
1360	Out-to-Out Deck Width - NBI	Geometry Tab	2-C-131
1370	Minimum Vertical Clearance Over Deck - NBI	Geometry Tab	2-C-159
1374	Minimum Vertical Clearance Under Bridge - NBI	Geometry Tab	2-C-160
1378	Vertical Underclearance Code - NBI	Discontinued Tab	2-C-260
1379	Minimum Lateral Underclearance Right	Discontinued Tab	2-C-260
1382	Lateral Underclearance Code	Discontinued Tab	2-C-263
1383	Minimum Lateral Underclearance Left	Discontinued Tab	2-C-263
1386	Navigation Control Code	Discontinued Tab	2-C-264
1387	Navigation Vertical Clearance	Discontinued Tab	2-C-264
1390	Navigation Horizontal Clearance	Discontinued Tab	2-C-265
1394	Vertical Lift Minimum Clearance - NBI	Discontinued Tab	2-C-265
1397	Approach Roadway Width	Geometry Tab	2-C-147
1432	On/Under Code	Crossing Tab	2-C-169
1433	Highway Class - NBI	Crossing Tab	2-C-173
1434	Service Level - NBI	Crossing Tab	2-C-173
1435	Route - NBI	Crossing Tab	2-C-172
1436	Tunnel Route Direction	Discontinued Tab	2-C-279
1451	AADT Truck Percentage - NBI	Crossing Tab	2-C-185
1457	Future ADT	Crossing Tab	2-C-192
1463	Future ADT Year	Crossing Tab	2-C-192
1477	Linear Sub Route	Crossing Tab	2-C-193
1483	National Highway System - NBI	Crossing Tab	2-C-176
1484	Base Highway Network	Crossing Tab	2-C-193
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1491	Horizontal Clearance Route	Crossing Tab	2-C-189
1495	Horizontal Clearance, Reverse Direction	Crossing Tab	2-C-194
1532	Main Span Material - NBI	Materials & Types Tab	2-C-197
1533	Main Span Design - NBI	Materials & Types Tab	2-C-197
1535	Approach Span Material - NBI	Materials & Types Tab	2-C-198
1536	Approach Span Design - NBI	Materials & Types Tab	2-C-199
1538	Number of Main Spans - NBI	Materials & Types Tab	2-C-198
1541	Number of Approach Spans - NBI	Materials & Types Tab	2-C-199
1544	Service On	Discontinued Tab	2-C-265
1545	Service Under	Discontinued Tab	2-C-266
1546	Deck type - NBI	Materials & Types Tab	2-C-199
1547	Wearing Surface - NBI	Materials & Types Tab	2-C-200
1548	Membrane - NBI	Materials & Types Tab	2-C-200
1549	Deck Protection - NBI	Materials & Types Tab	2-C-201
1550	Design Load - NBI	Load Rating Tab	2-C-235
1551	Operating Rating Method	Load Rating Tab	2-C-241
1552	Operating Rating Tons	Load Rating Tab	2-C-242
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1554	Inventory Rating Method	Load Rating Tab	2-C-241
1555	Inventory Rating Tons	Load Rating Tab	2-C-242
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1657	Structural Evaluation	Discontinued Tab	2-C-266
1658	Deck Geometry	Discontinued Tab	2-C-267
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1661	Alignment - NBI	SNBI Tab	2-C-74
1662	Waterway - NBI	SNBI Tab	2-C-72
1677	Channel Protection Condition - NBI	SNBI Tab	2-C-66
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1684	Bridge Rails	Discontinued Tab	2-C-273
1685	Transitions	Discontinued Tab	2-C-275
1686	Guardrails	Discontinued Tab	2-C-276
1687	Terminals	Discontinued Tab	2-C-276
1844	Proposed Improvement Work Type	Discontinued Tab	2-C-255
1846	Proposed Improvement Work Method	Discontinued Tab	2-C-256
1847	Proposed Improvement Structure Length	Discontinued Tab	2-C-256
1861	Proposed Improvement Total Cost	Discontinued Tab	2-C-257
1867	Proposed Improvement Structure Cost	Discontinued Tab	2-C-257
1873	Proposed Improvement Roadway Cost	Discontinued Tab	2-C-257
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2412	Maximum Vertical Clearance Override	-	-
2436	Route Sequencer	Crossing Tab	2-C-195
2437	Bridge List Override	Crossing Tab	2-C-196
2438	Milepost Sequencer	Crossing Tab	2-C-196
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2501	Maximum Vertical Clearance Reverse Route	Crossing Tab	2-C-187
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2537	Alpha Span Type	Discontinued Tab	2-C-276
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2582	Rated By	Load Rating Tab	2-C-238
2587	Type 3 Rating Factor	Load Rating Tab	2-C-243
2588	Type 3S2 Rating Factor	Load Rating Tab	2-C-243
2589	Type 3-3 Rating Factor	Load Rating Tab	2-C-243
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2591	Single Unit 4 (SU4) Rating Factor	Load Rating Tab	2-C-243
2592	Single Unit 5 (SU5) Rating Factor	Load Rating Tab	2-C-243
2593	Single Unit 6 (SU6) Rating Factor	Load Rating Tab	2-C-243
2594	Single Unit 7 (SU7) Rating Factor	Load Rating Tab	2-C-243
2596	Overload 1 (OL-1) Rating Factor	Load Rating Tab	2-C-244
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2598	Emergency Vehicle 2 (EV2) Rating Factor	Load Rating Tab	2-C-244
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2610	Asphalt Depth	SNBI Tab	2-C-82
2611	Design Curb Height	SNBI Tab	2-C-82
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2613	NBIS Risk Category	SNBI Tab	2-C-79
2614	Subject to NBIS Flag	SNBI Tab	2-C-83
2615	Special Structures Flag	Bridge ID Tab	2-C-115
2642	Inspection Hours	Report Type Tab	2-C-35
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2691	Photos Flag	SNBI Tab	2-C-85
2693	Soundings Flag	SNBI Tab	2-C-84
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2695	QA Flag	SNBI Tab	2-C-85
2853	Proposed Improvement Roadway Width	Discontinued Tab	2-C-256
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2883	Proposed Improvement Calculation	Discontinued Tab	2-C-255
2900	Late Inspection Explanation	Report Type Tab	2-C-36
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7479	Federal Aid Route Number	Crossing Tab	2-C-196
7557	Design Exception Date	Load Rating Tab	2-C-240
7644	Inspection Report Hours	Report Type Tab	2-C-37
7664	Drain Condition	SNBI Tab	2-C-87
7665	Drain Status	SNBI Tab	2-C-87
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7667	Deck Scaling Percent	SNBI Tab	2-C-88
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7673	Sidewalk Condition	SNBI Tab	2-C-89
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7832	Water Type	Waterway Tab	2-C-251
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7834	Flood Control	Waterway Tab	2-C-251
7835	Scour History	Waterway Tab	2-C-252
7836	Streambed Material Type	Waterway Tab	2-C-252
7837	Substructure Stability	Waterway Tab	2-C-252
7838	Waterway Obstruction	Waterway Tab	2-C-253
7839	Streambed Stability	Waterway Tab	2-C-253
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BCL02	Maintenance Responsibility	Bridge ID Tab	2-C-101
BCL03	Federal or Tribal Land Access	Crossing Tab	2-C-183
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BIE02	Inspection Begin Date	Report Type Tab	2-C-30
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BIE02	Underwater Inspection Date	Auto-Generated Section	-
BIE02	Special Feature Inspection Date	Auto-Generated Section	-
BIE03	Inspection Completion Date	Report Type Tab	2-C-31
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BIE05	Special Feature Inspection Interval	Auto-Generated Section	-
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BIE07	Risk-Based Inspection Interval Method	Report Type Tab	2-C-34
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BIE11	Report Type Notes	Report Type Tab	2-C-33
BIR01	NSTM inspection Required	Auto-Generated Section	2-C-282
BIR02	Fatigue Details	SNBI Tab	2-C-76
BIR03	Underwater Inspection Required	Auto-Generated Section	2-C-283
BIR04	Complex Feature - SNBI	Auto-Generated Section	2-C-284
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BL12	Metropolitan Planning Organization	Bridge ID Tab	2-C-107
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BLR02	Design Method	Load Rating Tab	2-C-237
BLR03	Load Rating Date	Load Rating Tab	2-C-238
BLR08	Routine Permit Loads	Load Rating Tab	2-C-240
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BN04	Navigation Channel Width	Appendix 2D	2-D-58
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BRR02	Railroad Minimum Vertical Clearance	Appendix 2D	2-D-50
BRR03	Railroad Minimum Horizontal Offset	Appendix 2D	2-D-52
BRT01	Route Designation	Appendix 2D	2-D-17
BRT02	Route Number - SNBI	Appendix 2D	2-D-18
BRT03	Route Direction - SNBI	Appendix 2D	2-D-19
BRT04	Route Type - SNBI	Appendix 2D	2-D-20
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BSB01	Substructure Configuration Designation	Materials & Types Tab	2-C-219
BSB02	Number of Substructure Units	Materials & Types Tab	2-C-221
BSB03	Substructure Material	Materials & Types Tab	2-C-222
BSB04	Substructure Type	Materials & Types Tab	2-C-223
BSB05	Substructure Protective System	Materials & Types Tab	2-C-225
BSB06	Foundation Type	Materials & Types Tab	2-C-226
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WL07	Township	Bridge ID Tab	2-C-108
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Table 2 - WSBIS Item Numbers by Sequence			
WSBIS Item No.	**WSBIS Item Name**	**WSBIS Application Tab**	**Page No.**
WRT02	Milepost - SNBI	-	-
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WSB02	Pier Description	Materials & Types Tab	2-C-221
WSP01	Superstructure Configuration Code	Materials & Types Tab	2-C-202
WSP02	Span Description	Materials & Types Tab	2-C-203

Coding Guide Instructions

This coding guide is intended as a companion to the BridgeWorks application, and provides more detailed definitions for many of the data entry fields visible in BridgeWorks. Those fields defined herein have the associated WSBIS Item Number in blue parentheses next to the data entry field. BridgeWorks users who need more information about how to code a field should click on these item numbers, which will take them to the relevant section in this coding guide.

This coding guide also identifies data fields that are reported to the NBI, SNBI (starting in 2026) and/or SNTI. Some WSBIS field definitions vary from the NBI or SNTI, and are automatically translated when submitted to FHWA. This coding guide identifies all translated fields. In some cases, NBI field definitions have been updated by memorandum or are subject to interpretation. These issues are addressed in the NBI Commentary subsection of each field definition when they occur.

I. Item Format

Item formats are migrating tothe SNBI standard, though modified somewhat for WSDOT use. Some fields, generally those which will be discontinued in 2026, follow the old format as shown here:

The **WSBIS Item (with units)** includes the 4 digit item number and item name. In some cases units are not applicable, and therefore not shown. The leading digit of the item numbers has the following significance:

- 1xxx item numbers are reported to the FHWA, either to the NBI, NTI, or both.
- 2xxx item numbers are not reported to the FHWA and are maintained by WSDOT Bridge Preservation Office.
- 7xxx item numbers are not reported to the FHWA and are maintained by WSDOT Local Programs.

The **FHWA Items, if applicable**, identify the equivalent FHWA items in the Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges (aka the NBI coding guide) or the Specifications for the National Tunnel Inventory (aka the NTI coding guide).

The **WSBIS Item Data Format** describes the data type and size limitations for data entry into BridgeWorks, using the following codes:

N(x,y)	Numeric, with x identifying the total number of characters and y identifying the number of decimal places. This data format requires a decimal place and only allows numbers. For example N(4,1) would allow a number of 0.0 through 999.9.
AN(x)	Alphanumeric, with x identifying the total number of characters. This data format allows virtually any character to be placed in this field, either letters, numbers, dashes, spaces, etc.
Pulldown	Populated by using a pulldown menu of pre-selected options.
Date	Populated with a pop-up calendar or user data entry in mm/dd/yyyy format

Check Box Clicking on the box adds a check mark, activating feature in BridgeWorks

Calculated A calculated field, no direct data entry by user.

Integer These fields are populated only by whole numbers, no decimals allowed.

The new SNBI format with WSDOT modifications will generally be used for fields that are either retained, added, or modified for reporting to the SNBI and SNTI, with this format:

Section Name *(Old Item ####)*					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
Applicable Structure Types					
Specification			**Commentary**		
Requirements for reporting the data item.			Expanded guidance on the specification.		
Specification Continued, Commentary Continued, or Exampes					
Additional space for Specification or Commentary, if needed. Examples are presented to further clarify the specification. Each item typically has brief examples. A more comprehensive example can be found at the end of each section or subsection.					

II. **Structure Types**

WSBIS currently maintains records for 4 structure types:

Type 1 - Bridges and culverts carrying public roadways

Type 2 - Pedestrian, railroad and other non-vehicular bridges over public roadways

Type 3 - Tunnels carrying roadways within

Type 4 - Structures that do not cross over or under a public roadway

See "Structure Type" Item WID01 for more details.

III. **Establishing the Inventory Record**

The original inventory record needs to be established only once and is required when:

- A new structure has been built (usually before it is placed in service).
- An existing bridge has been replaced with a new structure **(the existing record and it's SID be obsoleted before a new record for the structure is established with a new unique SID)**.
- A detour structure has been built and remains in service for more than three years or beyond the life of the contract under which it was built.
- An existing structure not previously inventoried is added to the statewide inventory.

A structure's original inventory record can be established by the following steps.

1. In BridgeWorks, select the “Create Structure” icon from the Operation menu at the top of the main page. A new window will pop up with ten data entry fields. Two of these fields are automatically filled in by the BridgeWorks application. First, the Provisional (or temporary) SID will be assigned. Second, the “Sort Bridge Number” will be created when you fill the “Bridge Number” field. The last two digits of the

Provisional SID are for sequencing the creation of multiple new records (i.e., "01", 02). The permanent SID is assigned by WSDOT when the new record is released to the WSBIS. Enter valid data in all of the other fields.

After completing all fields, click the "Create Structure" button to close the window and add the new record to your inventory list. You can then choose the new record off the bridge list and continue adding the required inventory information.

2. Enter appropriate values in the data entry fields on the application forms (tabs).
3. A copy of this Inventory Report shall be kept in the bridge file.

IV. **Reestablishing the Inventory Record**

If an Inventory record for a bridge has been mistakenly deleted or obsoleted (as sometimes happens when a bridge has changed ownership), it can be recovered by emailing a request to the Local Agency Bridge Inventory Engineer for local agency bridges or to the BPO Bridge Inventory Engineer for State owned bridges. In the request, be sure to provide correct control field information.

Once the record has been recovered, it must be reviewed for errors and corrected. Submit the updated data in the manner described for updating the inventory.

V. **Updating the Inventory**

The original bridge inventory record needs to be updated whenever new data must be added or whenever changes must be made to the existing record.

Updates to the original inventory data may be required as a result of damage to the bridge, changed conditions noted during an inspection, safety improvements or rehabilitation, when new computations or measurements are made, or when the bridge changes ownership. Updates to a bridges' inventory record must be reported to the Local Agency Bridge Inventory Engineer or the BPO Bridge Inventory Engineer within 90 days. Updates that have not been Released to the bridge inventory will not be included in any submittals and reports prepared using that data.

To start the update process, select the bridge record from the Bridge List you want to change. Be sure the latest Master Control Data (MCD) in the Control Data Grid is highlighted and then click "Edit Control Data" from the Control Data menu to create an updatable copy. This new copy will be in a state of "Work" and is called an Update Control Data (UCD). To complete an update, this procedure will be followed.

1. Review the data displayed in the BridgeWorks forms (tabs). All of the forms except BMS, Notes, Repairs, Photos, Files, and Letters are arranged with two data fields after the field name. The left side data field will display existing information. The right side data field is for entering update information.
2. Enter new coding values in each Data Entry Field that must be updated. Make sure your entry is complete. Pressing F9 on your keyboard or clicking the "Inspector Data Check" icon on the Control Data menu will run a limited data check process for the selected Control Data (CD). Pressing F11 or clicking the "In-Depth Data Check" icon will run a full data check process. BridgeWorks will then provide you with a list of errors or will let you know that no errors were found. This process can be run on UCD's or MCD's.

- If you are entering new data, simply enter the appropriate values in the field.
- If you are making a change to existing data, the entire field must be re coded. For example, if the name shown in Item 1232 - Features Intersected, has been misspelled, the entire name must be reentered, not just one or two letters corrected.
- If you want to blank out an entire field, type an asterisk (*) in the update field. The existing data contained in that field will be erased and the field will be blank after the record is processed. Some fields cannot be blank, in which case the asterisk will not be processed.

3. When all updates are complete to the satisfaction of the Team Leader responsible for the bridge inspection, the report is submitted to the state of "Lock." At this point, and depending on the procedures of the bridge owner, the inspection report and the inventory data is given to the Team Leader's Program Manager or supervisor for their review. This internal review falls under the heading of Quality Control (QC) and is an important step in the release process. Once the Program Manager or supervisor is satisfied with the report, the UCD is sent to either the Local Agency or BPO Bridge Inventory Engineer for final review of the inventory data and subsequent release to the bridge inventory.
4. WSDOT Team Leaders typically submit paper copies of approved inspection reports to the BPO Bridge Inventory Engineer for review and release. See Chapter 7 for details on WSDOT procedures.

   Local agency Team Leaders and/or consultants should create a Selection Set of approved UCD's which can be sent to the Local Agency Bridge Inventory Engineer for review.

   The UCD's are reviewed to ensure correctness and consistency before the data is released to the Inventory.

   Any errors found will be noted and returned to the bridge owner or Team Leader for corrections. Once the corrections are made, the UCD is again submitted for review. Once the Inventory Engineer is satisfied with the correctness of the UCD it is released to the Bridge Inventory. At this point, the UCD becomes an MCD and can no longer be changed. An MCD is a permanent part of the bridge record history and further changes must be made through the UCD process.
5. After release for wet signature, the Bridge Inspection Report and the WSBIS Bridge Inventory Report are printed. The final validation of the inspection report is completed when the Bridge Inspection Team members sign the report. The report is then added to the inspection history in the official bridge file and the previous WSBIS Inventory Report is replaced with the current report. After release for digital signature, the inspectors will be notified by email to review and digitally sign the inspection report. Once signed, the completed inspection report will be available in the Records tab, Inspection Report subtab. Printout is optional for agency records.

   This process must be completed within 90 days of the inspection date but it is recommended that the release is done as soon as possible. The quality of the inspection report tends to degrade through an extended review. Instead, complete the release process on the UCD and make any later corrections through an Informational UCD.

VI. Deleting/Transferring the Inventory Record

When an inventory record becomes obsolete, it needs to be changed from "Active" to "Inactive" status in the WSBIS database. The reasons a record may become obsolete include:

- A structure has been bypassed and is no longer in use, or
- A structure has been demolished, or
- A structure has been permanently closed to traffic.

If a new structure replaces an existing structure, the agency must obsolete the old record and establish a new inventory record.

To obsolete the inventory record of a local agency sturcture, the bridge owner should send an email listing the control data for each bridge to be deleted to either the WSDOT Local Agency Bridge Engineer or the Local Agency Bridge Inventory Engineer. This email shall include the Structure Identification Number and Bridge Name along with instructions that the record is to be deleted. The Local Agency Bridge Engineer will request that the record be obsoleted under the procedures defined in Chapter 2 Section 2-3.4.

If the jurisdiction of a bridge is being transferred from one agency to another, the bridge record shall not be obsoleted.

Instead, the Owner Code, Custodian Code and, if necessary, the City Code shall be updated by the original owner prior to sending the bridge records to the new owner. For example:

> The city of Selah has expanded its boundaries and annexed a bridge from Yakima County.

Yakima County would update the Owner Code from 02 to 04, the Custodian Code the same if appropriate, and the City Code from 0000 to 1155 prior to the data being submitted for update. Selah would then be responsible to correct the Bridge Number and all other data for the Inventory record.

This will ensure that a given structure retains its unique Structure Identifier throughout the life of the bridge. See Chapter 2 Section 2-2.1 for additional information on structure ownership transfers.

A sample of the entire WSBIS Inventory Report is shown in the Chapter 2 Section 3-5.

Report Types Tab

Report Types *(Old Item 2920)* **and Report Subtypes** *(Old Item 2922)*					
Format Checkbox/ Pulldown	**Translation** AN (1)	**Frequency** EI	**WSBIS Item ID** BIE01, WIE01	**SNBI Item ID** B.IE.01	**SNTI Item ID** D.2,D.4,D.5,D.6

Applicable Structure Types
- **All structure records**

Specification	Commentary
Every structure in WSBIS must include at least one core report type and may also include additional supplemental report types as listed in Tables BIE01a, b and c. For more detailed information on these report types, refer to WSBIM Chapter 3. For Damage and Complex Feature supplemental report types WIE01, subtypes must also be coded as shown in Table BIE01a. WSBIS report types are translated for SNBI and SNTI submittals as indicated in Table BIE01a. Digital signature, lead inspector certification, and interval requirements are outlined in Table BIE01a.	**Editing Report Types**. A check is required in the Include in Report box on at least one Report Type every time you create an update. This check mark is reflected to the right of the Report Type label as a Green Check Mark indicating that this Report Type is the focus of the current update. Other Report Types not checked are not the current focus but should not be removed from the update in order to retain the continuity of the Structure record except under specific circumstances described below. **Adding and Removing Report Types**. Under most circumstances the assigned report type(s) never change for the life of the structure. Occasionally users may need to add or remove a report type based on changed circumstances or simply to update the record with information not collected as part of a field inspection. Report types are added and removed using the "Select Report Types button in the lower right corner of the input form. Users must clearly understand how inspection reports should be used before modifying the report types associated with a structure. Please refer to Tables BIE01a through c and Chapter 3 for more information.

Table BIE01a summarizes all the Report Types and Inspection Types, and how these fields relate to the SNBI and SNTI.

Table BIE01a - Report Types and Subtypes

WSBIS Report Type	SNBI Inspection Type	SNTI Report Type	Subtype Code	WSBIS Report Subtype	Digital Signature	Cert Required	Interval
Initial[1]	1-Initial	-	-		Yes	Yes	No
Routine (Disc)							
Routine Bridge[1]	2-Routine	-	-		Yes	Yes	Yes
Routine Tunnel[1]	-	Routine	-		Yes	Yes	Yes
Short Span	-	-	-		Yes	No	Yes
Condition	-	-	-		Yes	No	Yes
NSTM[1]	4-NSTM	-	-		Yes	Yes	Yes
Underwater[1]	3-Underwater	-	-		No	Yes	Yes
Damage	5-Damage	Damage	A	Overheight	Yes	Yes	No
			B	Lateral Damage to Vertical Member	Yes	Yes	No
			E	Flood	Yes	Yes	No
			G	Earthquake	Yes	Yes	No
			H	Bridge Rail	Yes	Yes	No
			O	Other	Yes	Yes	No
			S	Reported by Others - Overheight	No[3]	No	No
			T	Reported by Others - Lateral	No[3]	No	No
			U	Reported by Others - Bridge Rail	No[3]	No	No
			V	Reported by Others - Other Misc.	No[3]	No	No
Special Feature[1] (Disc)			Not shown		Yes	Yes	Yes
Complex Feature[1]	6-In Depth	In Depth	1	Movable	Yes	Yes	Yes
			2	Floating	Yes	Yes	Yes
			3	Suspension	Yes	Yes	Yes
			4	Redundant Pin and Hanger	Yes	Yes	Yes
			5	Segmental	Yes	Yes	Yes
			6	Ferry Terminal	Yes	Yes	Yes
			7	High Strength Steel	Yes	Yes	Yes
			8	Structure with Temporary Support	Yes	Yes	Yes
			9	Cable Stayed	Yes	Yes	Yes
			0	Other	Yes	Yes	Yes

Table BIE01a - Report Types and Subtypes

WSBIS Report Type	SNBI Inspection Type	SNTI Report Type	Subtype Code	WSBIS Report Subtype	Digital Signature	Cert Required	Interval
In-Depth	7-Special	Special	-		Yes	Yes	No
Interim	7-Special	Special	-		Yes	Yes	Yes
UW Interim	7-Special	Special	-		No	Yes	Yes
Primary Safety (Disc)							
WSDOT Safety	-	-	-		Yes	No	Yes
Secondary Safety (Disc)							
Local Agency Safety	-	-	-		Yes	No	Yes
Routine Mechanical[2]	-	-	-		No	Yes	Yes
Routine Electrical[2]	-	-	-		No	Yes	Yes
Geometric	-	-	-		No[3]	No	Yes
Inventory	-	-	-		No	No	No
Feature (Disc)	-	-	-		No	No	No
Equipment (Disc)	-	-	-		No[3]	No	Yes
2 Man UBIT (Disc)	-	-	-		No[3]	No	Yes
Informational	-	-	-		No[3]	No	No
Signed Informational	-	-	-		Yes	Yes	No
Scour Monitoring	9-Scour Monitoring	-	-		No[3]	No	No

1. These report types are used only for structures subject to the NBIS or NTIS. If a structure does not meet this criteria, another report type must be used (usually Short Span, WSDOT/Local Agency Safety or Condition report types). Refer to Chapter 3 for more detailed descriptions of report types.
2. Mechanical and Electrical report types created automatically by the Complex Structures system.
3. Digital signatures not normally used for these report types, but if associated with another report type that does use digital signature, all report types will be digitally signed.

Table BIE01b identifies four “core” report types. Every structure in WSBIS must have one of these report types, and except when structures have multi-agency inspections, only one of these core reports should be associated with each structure. Their usage is summarized in this table but more detailed guidance is provided in Chapter 3.

Table BIE01b - Core Report Types

Report Type	Structure Characteristics	Typical Examples
Initial	Structures subject to the NBIS	Highway bridges over 20 feet long receiving their first inspection after construction or significant rebuild.
Routine Bridge	Structures subject to the NBIS	Highway bridges over 20 feet long that do not need an Inital inspection.
Routine Tunnel	Structures subject to the NTIS	Tunnels carrying highways within

Table BIE01b - Core Report Types

Short Span	Structures not subject to the NBIS or NTIS and carry public roadways	Highway bridges 20 feet or less in length
Condition	Structures not subject to the NBIS or NTIS and don't carry public roadways	Pedestrian bridges based on owner defined need
WSDOT Safety	Structure has a state highway undercrossing and is not owned/ maintained by WSDOT	Railroad bridges over state highway OR multi-agency inspection responsibility1
Local Agency Safety	Structure has a local agency highway undercrossing and is not owned/ maintained by the local agency.	Railroad bridges over local agency highway OR multi-agency inspection responsibility1

1. Multi-agency bridges are only case where more than one core report type can be associated with a structure.

Table BIE01c identifies supplemental report types that can be added to a structure record in addition to one of the core report types. Their usage is summarized in this table but more detailed guidance is provided in Chapter 3.

Table BIE01c - Supplemental Report Types

Supplemental Report Type	Associated Core Report Type	Structure Characteristics	Typical Examples
NSTM	Routine Bridge	Use for bridges subject to the NBIS with non-redundant steel tension members (NSTM).	Steel Truss bridges.
Underwater	Routine Bridge	Use for bridges subject to the NBIS when piers or abutments are permanently underwater exceeding wading depths.	Bridges with foundations in deep water.
Special Feature (Disc)	Routine	Discontinued in 2024, replaced by Complex Feature	Suspension bridges, pin & hanger components
Complex Feature	Routine Bridge	Use for bridges subject to the NBIS with complex features.	Suspension bridges, pin & hanger components.
Damage	Any	Use when structure has sustained damage from a specific event, as opposed to environmental degradation or wear.	Earthquakes, floods, vehicle hits affecting bridges or tunnels.
In-Depth	Any	Use when a structure needs a one-time targeted inspection for any reason.	Preparing a detailed condition assessment for a repair or rehabilitation contract.
Interim	Routine Bridge/ Tunnel, Condition	Use when some structure components need more frequent inspection. Dovetail inspection date and frequency with associated report type.	Monitoring of localized deficiencies such as decayed timber, cracked steel components, structural movement, or scour accessible by wading.
UW Interim	Underwater	Use when some underwater structure components need more frequent inspections. Dovetail inspection date and frequency with Underwater report type.	Monitoring of localized deficiencies in underwater components such as decay, structural damage, or scour not accessible by wading.
Routine Mechanical	Routine Bridge/ Tunnel	Generated automatically when a mechanical inspection report is completed in the Complex Structures system.	Tunnels and movable bridges with mechanical components.

Table BIE01c - Supplemental Report Types

Supplemental Report Type	Associated Core Report Type	Structure Characteristics	Typical Examples
Routine Electrical	Routine Bridge/ Tunnel	Generated automatically when a electrical inspection report is completed in the Complex Structures system.	Tunnels and movable bridges with electrical components.
Geometric	Any	Use to document collection of vertical and horizontal clearance data	Bridges with highway and/or railroad undercrossings; through trusses or arches with superstructure over the deck.
Inventory	Any	Use when creating a new structure record or when an existing structure is significantly modified.	Adding a new structure to the inventory. Whenever a bridge is rehabilitated, widened, seismically retrofitted, or otherwise significantly modified.
Feature (Disc)	Any	Discontinued in 2024.	
Primary Safety	-	Discontinued in 2024. Replaced by WSDOT Safety	
Equipment (Disc)	-	Discontinued in 2024. Use Inspection Resources in appropriate inspection report type.	-
2 Man UBIT (Disc)	-	Discontinued in 2024. Use Inspection Resources in appropriate inspection report type.	-
Informational	Any	Use to update a structure record with information not generally collected during a field inspection.	Updating route data, including ADT, functional classification, and NHS designation. Also used for ownership transfers and obsoleting structures.
Signed Informational	Any	Use to update a structure record with information normally collected during a field inspection.	Updating mistakes in a field inspection, generally done by that inspector. Updating condition information based on completed contracts (deck rehabs, etc)
Scour Monitoring	Any	Use to update a structure record with information from Scour POA monitoring during flood events.	When scour POA's are activated, use to record findings from POA monitoring work. Expect one report for each POA event.

Inspection Interval *(Old Item 1991)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(3,0)	N(2,0)	EI	BIE05	B.IE.05	D.3

Applicable Structure Types
- **All structure records**

Specification	Commentary
For report types with intervals as noted in Table BIE01a, code the planned interval in months between the current and next scheduled inspection. For report types without intervals as noted in Table BIE01a, code 0.	The intent of this item is to record the planned interval at which the bridge is to be inspected per the NBIS and agency policies and procedures. This interval should be evaluated after each inspection, and adjusted as necessary based on the Risk-Based Inspection Interval BIE07. When the intent is to simply adjust the next inspection date for scheduling purposes, do not adjust the interval, but instead use the Inspection Due Override Date WIE06. For tunnels, also adjust the Routine Inspection Target Date TD1. See Chapter 3 for more information on inspection intervals associated with each report type.

Inspection Begin Date *(Old Item 1990)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BIE02	B.IE.02	D.2

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the date for the report type performed. For multiple day inspections, record the first day that field inspection begins. Begin Date Tolerances: When initiating a current inspection, the begin date can be later than the inspection due date within a tolerance window that varies based on report type. See Chapter 3 for details. When initiating a current inspection before the scheduled due date, the begin date tolerance will be adjusted to the new begin date.	The intent of this item is to record the inspection begin dates for the report types in Item BIE01, since the previous data submittal to FHWA. If multiple site visits occur for scour monitoring inspections, for a triggering storm event, report the first site visit date for that storm event.

Inspection Completion Date *(Old Item 1993)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BIE03	B.IE.03	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the completion date for the report type performed. For single day inspections, report the same date that field inspection begins.	The intent of this item is to record the field inspection completion dates for all inspections. If multiple site visits occur for scour monitoring inspections, for a triggering storm event, report the last site visit date for that storm event.

Examples

A Routine Bridge and NSTM inspection started on August 1, 2020. The Routine inspection was completed on August 2, 2020, and the NSTM inspection was completed on August 4, 2020.

- Report 8/2/2024 for the Routine inspection.
- Report 8/4/2024 for the NSTM inspection.

An Underwater inspection started on August 31, 2020 and completed on September 1, 2020. Report 9/1/2024.

Inspection Due Date *(Old Item 2922)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Calculated	-	EI	BIE06	B.IE.06	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
This field is automatically calculated based on the inspection begin date BIE02 and interval BIE05. When an inspection begins after the scheduled due date, this calculation will restore the next due date to the original due date in the next scheduled due year.	The intent of this item is to provide the inspection due date for the report types defined in the BIE01 (Report Type) where applicable. This item is only caslculated for report types which have an inspection interval.

Inspection Due Date Override *(Old Item 2923)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	WIE02	W.IE.02	-

Applicable Structure Types
- **All structure records**

Specification / Commentary

This field should remain blank under most circumstances. However, in cases where the calculated inspection due date BIE06 needs to be adjusted, insert the desired next inspection date in this field.

In cases where the override date is earlier than the next calculated inspection due date, no further action is required.

In cases where the override date is later than the next calculated inspection due date, the following report types require explanation and approval:

- Routine Bridge
- Routine Tunnel
- NSTM
- Underwater
- Interim
- UW Interim

See items WIE10, WIE11 and WIE12 for details on the late inspection and approval process.

Report Type Notes *(Old Item 2924)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN (unlimited)	AN (300)	EI	BIE11	B.IE.11	-

Applicable Structure Types
- **All structure records**

Specification / Commentary

Briefly summarize the purpose and Spans/ Piers inspected for the following report types:

- NSTM
- Underwater
- Special Feature
- Damage
- In-Depth
- Service
- Interim
- UW Interim
- Signed Informational
- Scour Monitoring

This field can also be used as needed for any report type and other purposes, including but not limited to:

- Recording time on site and weather conditions.
- Acknowledging incorporation of QA inspection reports
- Summarize updated fields in informational reports
- Identify construction contracts in inventory reports

Target Inspection Date - SNTI *(Old Item 1992)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	TD1	-	D.1

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record the routine inspection target date. Note that this date establishes the target month for all future inspections, but the actual future inspection days will fluctuate as needed for inspection scheduling and the actual future inspection years will advance as needed.	Initially, the target date is set by the program manager and should not be modified without prior notification to the FHWA Division Office. This date is intended to provide the baseline for scheduling future routine tunnel inspections. Actual inspection begin date tolerances are allowed, see Chapter 3 for details.

Risk Based Inspection Interval Method *(Old Item 1994)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(1)	-	EI	BIE07	B.IE.07	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the risk-based inspection interval method using one of the following codes. **Code** **Description** N Not Applicable 1 Method 1 2 Method 2 - Not used by WSDOT	The intent of this item is to record the risk- based inspection interval method, described in the NBIS, for determining the inspection interval. Method 1, as described in the NBIS, is when inspection intervals are determined by a simplified assessment of risk to classify each bridge into one of three risk levels with an inspection interval not to exceed 12, 24, 48, or 60 months. Method 2, as described in the NBIS, is when inspection intervals are determined by a more rigorous assessment of risk to classify each bridge, or a group of bridges, into one of four risk levels with an inspection interval not to exceed 12, 24, 48, or 72 months. As of January 1, 2024, enter 1 indicating Method 1 for the following report types: • Routine Bridge (48 month max interval) • NSTM (24 month max interval) • Underwater (60 month max interval) For all other report and structure types, enter N indicating not applicable.

Nationally Certified Bridge/Tunnel Inspector *(Old Item 2646 and 2649)*					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
Pulldown	-	EI	BIE04	B.IE.04	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the unique code identifying the Nationally Certified Bridge Inspector (team leader) responsible for the report type performed.	The intent of this item is to indicate the Nationally Certified Bridge Inspector (team leader) present at the inspection, for each report type required by the NBIS and/or WSDOT. In WSBIS, the team leader certification number is selected by using the pulldown of inspector initials. In cases where multiple team leaders have the same initials, a separate pop-up window will display a full list of names associated with this initial, which the team leader will use to select the correct name. Some report types do not require a Nationally Certified Bridge Inspector to lead an inspection. See Table BIE01a.

WSBIS Item 2654 – Co-Inspector Initials — Pulldown

Applicable Structure Types

- **All structure records**

Select the co-inspector initials from the pulldown menu who either assisted the lead inspector in performing an inspections or updated the bridge record using one of the reports types that doesn't require a lead inspector. See Table BIE01a.

In cases where there is no co-inspector, or the co-inspector is not listed in the pulldown menu, use the N/A inspector in the pulldown menu.

WSBIS Item 2642 – Inspection Hours — N(4,1)
WSBIS Item 2643 – Inspection Overtime Hours — N(4,1)

Applicable Structure Types

- **All structure records**

This is the total number of field inspection hours (to the nearest half hour) that the inspection team spent on the bridge while performing an inspection of the designated report type. When multiple inspection teams are needed for an inspection, code the cumulative hours for each team.

Leave blank for report types that are not field based (Informational, for example).

WSBIS Item 2900 – Late Inspection Explanation	**AN(500)**
WSBIS Item 2901 – Program Manager Response Date	**Pulldown**
WSBIS Item 2902 – Program Manager Approval	**Pulldown**

Applicable Structure Types

- **All structures subject to the NBIS or NTIS**

The Program Manager Oversight information is made up of the following three fields:

1. **Late Inspection Explanation**

   For any SNBI or SNTI reportable inspection type, when an inspection is or will be performed later than the tolerance window as defined in Chapter 3, an explanation must be provided for the delinquency. Commonly acceptable explanations include:

   - Inspection performed on a week split between two months and the inspection was performed in the "late" month.
   - Severe weather (describe weather condition)
   - Inspector safety (describe safety issue)

   Other explanations will be considered on a case by case basis by the PM or DPM in coordination with FHWA.

2. **Program Manager Response Date**

   Enter the date of the Program Manager's response to the Late Inspection Explanation. This field can only be edited using the Inventory Management managed operation and as directed by the PM or DPM.

3. **Program Manager Approval**

   Enter a Y – Approved or N – Disapproved to indicate the Program Manager's response. This field can only be edited using the Inventory Management managed operation and as directed by the PM or DPM. If Washington State is under an active Plan of Corrective Action (PCA) then approval falls to the FHWA Washington Division Bridge Engineer.

Inspection Quality Control Date *(Old Item 1995)*					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
Calculated	-	EI	BIE08	B.IE.08	-
Applicable Structure Types • **All structure records**					
Specification			**Commentary**		
This field is automatically generated, and is the same as Inspection Data Update Date B.IE.10.			Every inspection is reviewed by a Data Steward prior to release into the permanent record. This review is the lowest level of quality control and applies to every report type. Some reports receive additional reviews by inspection supervisors, following WSDOT and local agency procedures.		

WSBIS Item 7644 – Inspection Report Hours (LP view only) N(4,1)

Applicable Structure Types

- **Optional for all local agency structures**

This is the total number of hours that the inspection team spent on creating or updating the inspection report within BridgeWorks. This field is only used by local agency owners or their consultants.

Critical Findings Tab

Critical Findings					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
-	-	-	-	-	-

Applicable Structure Types
- **All structure records**

Specification / Commentary

See Chapter 6 for all critical findings descriptions for the fields noted below:

Code	Field Name
WCF01	Critical Finding Number
WCF02	Type of Critical Finding
WCF03	Entry Type
WCF04	Date of Finding or Entry Date
WCF05	Bridge Status
WCF06	Estimated Resolution Date
WCF07	Description
WCF08	Reported By
WCF09	Associated Repair

SNBI Tab

Component Condition Ratings

Overall Condition Classification					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
Calculated	-	C	BC12	B.C.12	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
This item is calculated using the following codes: **Code** / **Condition** / **Lowest Condition Rating** G / Good / 7, or 8 F / Fair / 5 or 6 P / Poor / 4, 3, 2, 1, or 0	For the purposes of national performance measures, the method of assessment to determine the classification of a bridge is the minimum (i.e. lowest) condition rating code from the following items: B.C.01 (*Deck Condition Rating*), B.C.02 (*Superstructure Condition Rating*), B.C.03 (*Substructure Condition Rating*), and B.C.04 (*Culvert Condition Rating*).

Table 20. Condition codes with descriptions for BC01 through BC07, BC14 and BC15 condition ratings.

Table 20 Condition codes

Code	Condition	Description
N	NOT APPLICABLE	Component does not exist.
8	VERY GOOD	Isolated or some inherent defects.
7	GOOD	Some minor defects.
6	SATISFACTORY	Widespread minor or isolated moderate defects.
5	FAIR	Some moderate defects; strength and performance of the component are not affected.
4	POOR	Widespread moderate or isolated major defects; strength and/or performance of the component is affected.
3	SERIOUS	Major defects; strength and/or performance of the component is seriously affected. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2	CRITICAL	Major defects; component is severely compromised. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the bridge open.
1	IMMINENT FAILURE	Bridge is closed to traffic due to component condition. Repair or rehabilitation may return the bridge to service.
0	FAILED	Bridge is closed due to component condition, and is beyond corrective action. Replacement is required to restore service.

Deck Overall Rating *(Old Item 1663)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC01	B.C.01	-

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the deck component condition rating using one of the codes in Table 20. Report N when Item B.SP.09 (*Deck Material and Type*) is 0. Deck condition ratings are also associated with deck BMS elements as shown in Chapter 4. If the inspector determines a deck code should be different from that indicated in Chapter 4 guidance, an explanation for this difference should be noted in the inspection report.	This item represents the condition of the deck as determined from the inspection of all deck surfaces (top, underside, and edges). Visual assessments may be supplemented with non-destructive or destructive testing results.

Commentary Continued

Use destructive or non-destructive testing results or visual condition indicators of materials covering the surfaces being assessed when top, underside or both surfaces are not visible for assessment. Past inspection reports and repair records may also provide supplemental information to aid in the determination of the condition rating.

Do not consider the condition of non-monolithic wearing surfaces (i.e. overlays), stay-in-place deck forms, joint assemblies, expansion devices, bridge rails, or scuppers when determining the condition rating code for this item, except insofar as they indicate the condition of the deck itself.

Consider the condition of a joint header only when the deck serves as a joint header.

For bridges with integral decks/top flanges (e.g. rigid frames, decked girders or tee beams, voided slab beams, box girders, etc.), the deck condition may affect the superstructure condition rating; however, the superstructure condition does not affect the deck condition rating.

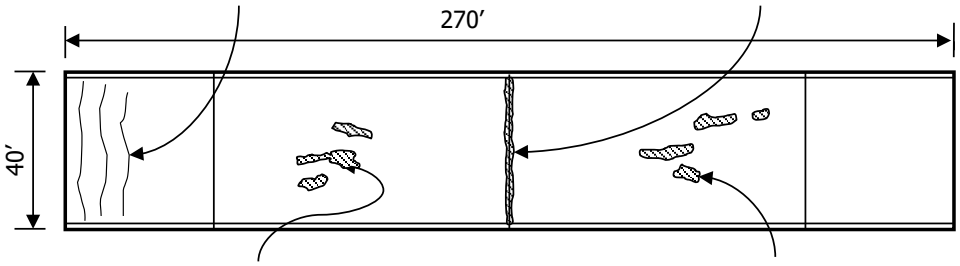
The deck and superstructure condition ratings are the same for slab bridges.

Example - Deck Overall Rating

Reinforced concrete (RC) bridge deck approximately 270′ long x 40′ wide with the following noted defects.

Location 1: Full width transverse cracks, 0.010″ wide, spaced at 3′ to 5′ for full length of deck.

Location 2: Spalls >1″ deep along full length of expansion joint *(Figure 132)*. ~40 ft^2 total area.



Location 3: Spalls up to 24″x18″ and >1″ deep with exposed rebar (no section loss) and patched areas that are unsound. ~100 ft^2 total area.

Location 4: Spalls up to 24″x12″ and >1″ deep with exposed rebar (no section loss) and patched areas that are unsound. ~130 ft^2 total area.

Figure 131. Deck plan view showing defects.

Figure 132. Deck spalling along joint. Location 2.

Figure 133. Typical deck spall with exposed rebar. Locations 3 and 4.

Bridge Railings *(Old Item 1664)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC05	B.C.05	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the bridge railing (traffic barrier) condition rating using one of the codes in Table 20. Report N when there are no bridge railings present	This item addresses the condition of all types and shapes of bridge railings (parapets, median barriers, or structure mounted) located on the bridge or that cross over buried structures. The condition assessment includes the portions of the railings, posts, blocking, and curbs that are part of the bridge railing system.

Commentary Continued

Do not consider pedestrian railings when coding this item, except to the extent that the pedestrian railing is integral to the traffic barrier.

Inspection report comments required when the condition code is 5 or less.

Do not consider the condition of protective coatings and other protection systems when determining the condition rating code for this item, except to the extent that problems with the protective coating system are indicative of problems with the underlying railing material.

Steel W-beam bridge railing on both sides of a 300′ long bridge. The following defect is noted:

Description: Damage-induced distortion of the rail for a length of 25′. Three posts are no longer connected to the deck. No other defects.

Defect: Distortion
Severity: Major
Extent: 25′ of the railing (isolated)

Figure 143. Collision-induced distortion of bridge railing.

Results: The railing is best characterized as having "isolated major defects." Report 4.

Bridge Railing Transitions *(Old Item 1665)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC06	B.C.06	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the bridge railing (traffic barrier) transitions condition rating using one of the codes in Table 20. Report N when there are no bridge railing transitions present.	This item addresses the condition of the transition from the bridge railing to the approach guardrail. The condition assessment includes the portions of the railings, posts, blocking, and curbs that are part of the bridge railing transitions. Inspection report comments required when the condition code is 5 or less. Do not consider the condition of protective coatings and other protection systems when determining the condition rating code for this item, except to the extent that problems with the protective coating system are indicative of problems with the underlying railing transition

Bridge Joints *(Old Item 1667)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC08	B.C.08	-

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification

Report the bridge deck joint condition using one of the following codes. The entire code description must be satisfied for the code to apply.

Code	Condition	Description
N	NOT APPLICABLE	Bridge does not have deck joints.
8	VERY GOOD	Isolated or some inherent defects.
7	GOOD	Some minor defects.
6	SATISFACTORY	Widespread minor or isolated moderate defects.
5	FAIR	Some moderate defects.
4	POOR	Widespread moderate or isolated major defects.
3	SERIOUS	Some major defects.
2	CRITICAL	Widespread major defects.
1	IMMINENT FAILURE	Joints have failed and are ineffective.
0	FAILED	Joints have failed and present a safety hazard.

Commentary

This item addresses the condition of all types and shapes of bridge deck joints. The condition assessment includes all aspects of the joints such as any seals, headers (metal or concrete), connections, and other metal members.

When a joint is designed as an open joint, leakage or lack of a seal is not considered a defect.

Do not consider the condition of protective coatings and other protection systems when determining the condition rating code for this item, except to the extent that problems with the protective coating system are indicative of problems with the underlying joint material.

In cases where the joint is not visible, the condition can be assessed based on other indirect indicators of the condition. Inspection report comments required when the condition code is 5 or less.

Example - Bridge Joints

Description: All compression seal joints are partially filled with debris, but are still free to move. Seals are intact.

Defect: Debris impaction
Severity: Minor
Extent: All joints (widespread)

Figure 147. Joint partially filled with debris.

Results: The joints are best characterized as having "widespread minor defects." Report 6.

Description: Strip seal joint 44' long at each end of a bridge. 3" deep x 12" wide x 6' long spall with exposed rebar in deck adjacent to joint header. Joint is loose, but functioning. Strip seal is intact. No other defects.

Defect: Adjacent deck or header
Severity: Moderate
Extent: 6' of one joint (isolated)

Figure 148. Spall in joint header. (Source: Colorado DOT)

Results: The joints are best characterized as having "isolated moderate defects." Report 6.

Superstructure Overall *(Old Item 1671)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC02	B.C.02	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the superstructure component condition rating using one of the codes in Table 20. Report N when M, A, or W is not reported for Item B.SP.01 (*Span Configuration Designation*).	This item represents the condition of the superstructure as determined from the inspection of all superstructure members. Inspection report comments required when the condition code is 5 or less.

Commentary Continued

Consider primary load carrying members when determining the condition rating code for this item, which includes cross-frames and diaphragms for curved girder bridges. Consider secondary members only if they adversely impact the primary members. Visual assessments may be supplemented with non-destructive or destructive testing results.

The superstructure includes:
- members above the bearings for bridges with non-integral superstructure and substructure;
- girders/beams for integral superstructures;
- members above the spring line for arch bridges;
- slabs of concrete rigid frame bridges; and
- legs, knees and girders for concrete and steel rigid K-Frame or Delta-Frame bridges.

Consider the condition of integral headwalls and wingwalls to the first expansion joint.

Do not consider the condition of bearings when determining the condition rating code for this item except to the extent that the bearings are causing distress in the superstructure.

Do not consider the condition of protective coating systems when determining the condition rating code for this item except to the extent that problems with the protective coating system are indicative of problems with the underlying superstructure material. A well-formed patina on weathering steel is considered a protective coating and is not considered a defect.

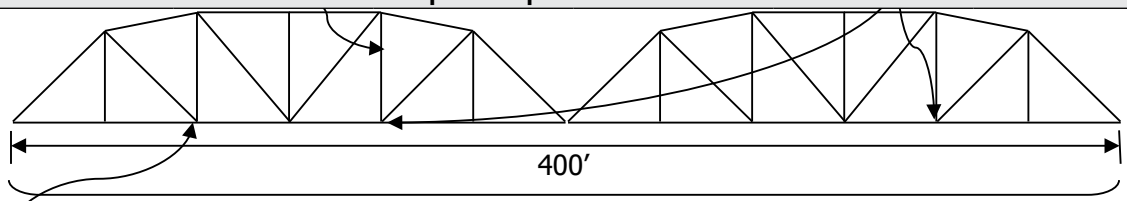
Do not consider the presence of drift, debris, and soil accumulation when determining the condition rating code for this item, except to the extent that these items are causing distress in the superstructure.

Superstructure types without substructures may be affected by scour. When observed conditions are not consistent with the scour design or the assumptions used in the scour appraisal, scour is considered when reporting the code for this item. In this case, observed conditions also indicate a need to reevaluate Item B.AP.03 (Scour Vulnerability). Observed scour that is less than the tolerable limit determined in the scour appraisal does not affect this item.

For structures with integral decks/top flanges (e.g. rigid frames, decked girders or tee beams, voided slab beams, box girders, etc.), the deck condition may affect the superstructure condition rating; however, the superstructure condition does not affect the deck condition rating.

The deck and superstructure condition ratings are the same for slab bridges.

Example - Superstructure Overall



Location 3: Freckled rust throughout trusses, floor beams, and stringers.

Location 4: Broken and missing rivets in 8 stringer-to-floor-beam connections. Structural review determined that strength has been affected, but does not necessitate more frequent monitoring, corrective actions, or load restrictions *(Figure 136)*.

Figure 134. Elevation view of a truss bridge showing superstructure defect locations.

Figure 135. Distortion in truss vertical. Location 1. (Source: Colorado DOT)

NSTM Inspection *(Old Item 1672)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC14	B.C.14	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the condition rating of the Non-Redundant Steel Tension Members (NSTM) using one of the codes in Table 20. Do not report this item when Item B.IR.01 (NSTM Inspection Required) is N. Report N when there is no NSTM report. This field will not be reported to FHWA when there is no NSTM report.	This item represents the condition of NSTM(s) identified to be inspected in the NSTM inspection procedures, and incorporated into the superstructure or substructure condition rating. Inspection report comments required when the condition code is 5 or less. For a bridge with NSTM(s) in both the superstructure and substructure, report only the lower of the two condition values for the condition of the NSTM(s).

Bridge Bearings *(Old Item 1666)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC07	B.C.07	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the bridge bearing condition rating using one of the codes in Table 20. Report N for bridges without bearings.	This item addresses the condition of all types and shapes of bridge bearings. Do not consider the condition of protective coatings and other protection systems when determining the condition rating code for this item, except to the extent that problems with the protective coating system are indicative of problems with the underlying bearing material. In cases where the bearing device is not visible, the condition can be assessed based on alignment, grade across the joint, or other indirect indicators of the condition.

Example - Bridge Bearings

Description: 5 of 25 bearings have 10% bearing area loss.

Defect: Loss of bearing area
Severity: Moderate
Extent: 20% of bearings (some)

Figure 144. Loss of bearing area for elastomeric bearing. (Source: Oregon DOT)

Results: The bearings are best characterized as having "some moderate defects." Report 5.

Example - Bridge Bearings Continued

Description: 8 of 20 bearings are rotated beyond performance limits. The anchor bolts at these locations are bent and the nuts are loose. Surface rust is present on all bearings.

Defect: Alignment and connection
Severity: Major
Extent: 8 bearings (widespread)

Defect: Corrosion
Severity: Minor
Extent: All bearings

Figure 145. Misaligned rocker bearing. (Source: Alaska DOT)

Results: The bearings can best be characterized as having "major defects" affecting performance. Condition necessitates more frequent monitoring or corrective actions. Report 3.

Description: 20 of 20 bearings have surface rust with no section loss. Bearings are free to move and alignment is as expected for temperature conditions.

Defect: Corrosion
Severity: Minor
Extent: All bearings

Figure 146. Surface rust on moveable bearing.

Results: The bearings are best characterized as having "widespread minor defects." Report 6.

Substructure Overall *(Old Item 1676)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC03	B.C.03	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the substructure component condition rating using one of the codes in Table 20. Report N when only C and/or V is reported for Item B.SP.01 (Span Configuration Designation).	This item addresses the condition of piers, abutments, piles, footings, and other substructure members. Inspection report comments required when the condition code is 5 or less.

Commentary Continued

For bridges that have substructures not visible for inspection, use appropriate visual condition indicators from the superstructure or surrounding foundation materials to determine the applicable code. Visual assessments may be supplemented with non-destructive or destructive testing results.

Consider the condition of integral abutment wingwalls to the first construction or expansion joint when determining the condition rating code for this item.

Do not consider the condition of protective coatings, fenders and other substructure protection systems when determining the condition rating code for this item, except to the extent that these items indicate distress of the substructure, or adversely affect its condition.

Do not consider the presence of drift, debris, and soil accumulation when determining the condition rating code for this item, except to the extent that these items are causing distress in the substructure.

The substructure includes:
- backwalls and the members below the bearings for bridges with non-integral superstructure and substructure;
- members below the girders/beams for integral superstructures;
- thrust blocks and other members below the spring line for arch bridges;
- legs of concrete rigid frame bridges;
- abutments and footings/foundations below the leg bearings for concrete and steel rigid K-Frame or Delta-Frame bridges; and
- foundation piles exposed by erosion or scour.

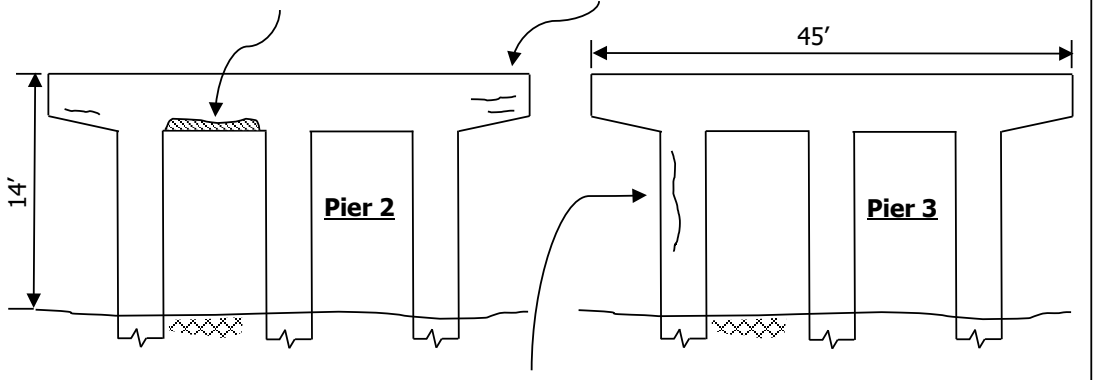
When observed conditions are not consistent with the scour design or the assumptions used in the scour appraisal, scour is considered in the coding of this item. In this case, observed conditions also indicate a need to reevaluate Item B.AP.03 (Scour Vulnerability). Observed scour that is less than the tolerable limit determined in the scour appraisal does not affect this item.

Example - Substructure Overall

Four span prestressed concrete bridge with reinforced concrete abutments and piers. No defects at the abutments or at Pier 1. The following defects are noted at the other piers:

Location 1: Spall 12′ long x 2″ deep with exposed rebar and rust staining *(Figure 138)*.

Location 2: Cracks 3′ long x 0.04″ wide with rust staining, both cantilevers.



Location 3: Previously noted crack 11′ long x 3/16″ wide *(Figure 139)*. Structural review determined that crack does not affect strength or performance.

Figure 137. Elevation view of two concrete column piers showing substructure defect locations.

Figure 138. Spall in Pier 2 cap beam. Location 1.

Figure 139. Crack in Pier 3 column. Location 3.

Summary of Findings:

Location	Defect(s)	Severity	Extent
1	Spall with exposed rebar; rust staining	Moderate	12′ of one cap beam (isolated)
2	Cracking with rust staining	Moderate	6′ of one cap beam (isolated)
3	Cracking	Moderate	11′ crack in one column (isolated)

Results: There are several areas of isolated moderate defects that can best be characterized together as "some moderate defects." Strength and performance of the component are not affected. Report 5.

Underwater Inspection *(Old Item 1673)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC15	B.C.15	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the condition rating of the underwater members of the substructure based on the underwater inspection using one of the codes in Table 20. Report N when there is no Underwater Inspection report. This field will not be reported to FHWA when there is no Underwater Inspection report.	This item represents the condition of underwater members identified to be inspected in the underwater inspection procedures, and incorporated into the substructure condition rating. Inspection report comments required when the condition code is 5 or less. If this item has previously been reported because an underwater inspection is generally required, it should continue to be reported even for instances of unusually low flow where all portions of the substructure can be inspected by wading and probing, and an underwater inspection is not required. This applies only if the low flow condition is truly unusual and is not likely to reoccur during the next inspection interval. The requirement to report this item may change in the rare circumstance where long-term environmental conditions change for inspection access to underwater portions of the substructure.

Culvert Overall (*Old Item 1678)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC04	B.C.04	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the culvert component condition rating using one of the codes in Table 20. Report N when C or V is not reported for Item B.SP.01 (Span Configuration Designation). Water Detention Vaults shall be coded as culverts When inspecting culverts, document the depth of the fill on both ends of the culvert. For cases where there is a significant amount of fill compared to the span length of the culvert, or total length of culverts where there are multiple barrels, estimate and document the depth of fill. Culverts with structure lengths greater than 20 feet are NBI reportable regardless of fill depth. Culverts with structure lengths less than or equal to 20 feet are inventoried and coded in accordance with short span inspection requirements.	This item addresses the condition of culverts. The condition assessment includes footings, piles, and other foundation members when present. Inspection report comments required when the condition code is 5 or less.

Culvert Overall - Commentary Continued

For culverts that have components not visible for inspection, use appropriate visual condition indicators from the roadway or surrounding foundation materials to determine the applicable code. Visual assessments may be supplemented with non-destructive or destructive testing results.

Consider the condition of integral wingwalls and headwalls to the first construction or expansion joint when determining the condition rating code for this item.

Do not consider the condition of protective coatings and other culvert protection systems when determining the condition rating code for this item, except to the extent that these items indicate distress of the culvert, or adversely affect its condition.

Do not consider the presence of drift, debris, and soil accumulation when determining the condition rating code for this item, except to the extent that these items are causing distress in the culvert.

The culvert includes:
- buried pipe or box;
- footings below the walls of a 3-sided box; and
- foundation piles exposed by erosion or scour.

When observed conditions are not consistent with the scour design or the assumptions used in the scour appraisal, scour is considered in the coding of this item. In this case, observed conditions also indicate a need to reevaluate Item B.AP.03 (Scour Vulnerability). Observed scour that is less than the tolerable limit determined in the scour appraisal does not affect this item.

Example - Culvert Overall

Three-span corrugated metal pipe culvert. Each pipe is 8′ in diameter and 100′ long. The pipes are spaced 4′ apart. The following defects are noted.

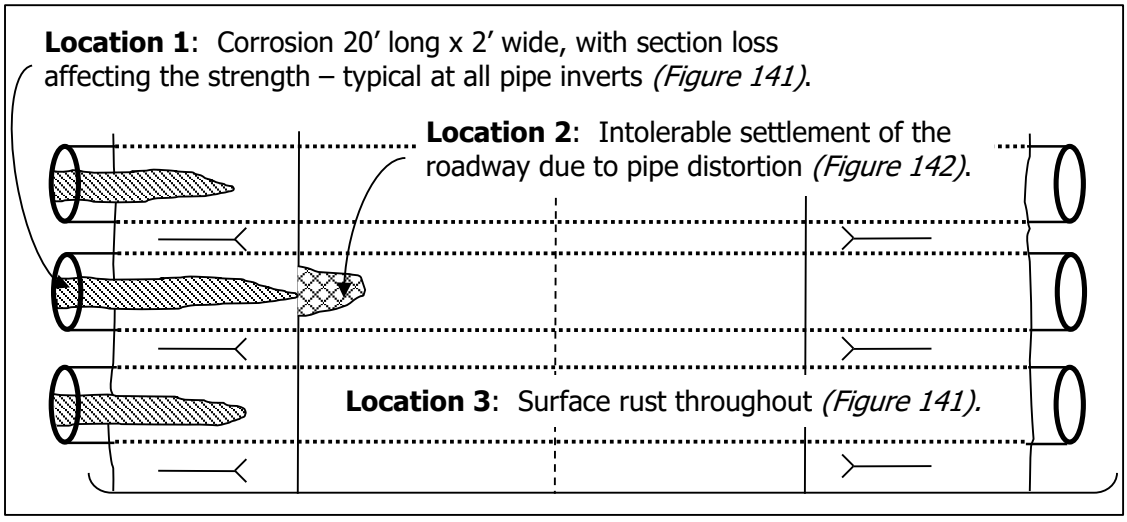


Figure 140. Plan view of pipe culvert showing defects.

Example - Culvert Overall Continued

Figure 141. Corroded pipe culvert invert. Location 1 and 3. (Source: Alaska DOT)

Figure 142. Roadway settlement over pipe culvert. Location 2. (Source: Alaska DOT)

Results: The culvert has major defects that, together, seriously affect strength and performance. The condition necessitates more frequent monitoring or corrective actions. Report 3.

Scour Condition - SNBI

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC11	B.C.11	-

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification

Report the scour condition that represents the observed or measured scour using one of the following codes. The entire code description must be satisfied for the code to apply.

Code	Condition Description
N	Bridge does not cross over water.
8	No scour or insignificant scour.
7	Some minor scour.
6	Widespread minor or isolated moderate scour.
5	Moderate scour; strength and stability of the bridge are not affected.
4	Widespread moderate or isolated major scour; strength and/or stability of the bridge is affected.
3	Major scour; strength and/or stability of the bridge is seriously affected. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2	Major scour; strength and/or stability of the bridge is severely compromised. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions to keep the bridge open.
1	Bridge is closed to traffic due to scour condition. Channel rehabilitation may return the bridge to service.
0	Bridge is closed due to scour condition, and is beyond corrective action. Bridge replacement is needed to restore service.

Commentary Continued

Refer to Item B.AP.03 (Scour Vulnerability) to verify if the bridge has been determined to be stable or unstable for appraised scour conditions.

Consider design scour depth and critical scour depth, commonly found in hydraulic designs, scour evaluations, and POAs, when determining the scour condition ratings.

When observed conditions are not consistent with the scour design or the assumptions used in the scour appraisal, this indicates a need to reevaluate Item B.AP.03 (Scour Vulnerability).

Example - Scour Condition - SNBI

Description: Three span scour critical bridge founded on spread footings not on bedrock. The scour elevation for three spread footings at Pier 2 is at the bottom of the footings with one footing having one foot of undermining at one corner. Agency plans to monitor more frequently to keep the bridge open until repairs are completed.

Severity: Major
Extent: 3 of 6 pier footings

Figure 153. Exposed column footing in stream.

Results: The scour condition is best characterized as "major scour" that necessitates more frequent monitoring. Bridge is seriously affected. Report 3.

Description: Scour critical bridge. Critical scour limit was established in the Plan of Action. Inspectors measured the following streambed cross-section *(Figure 154)*.

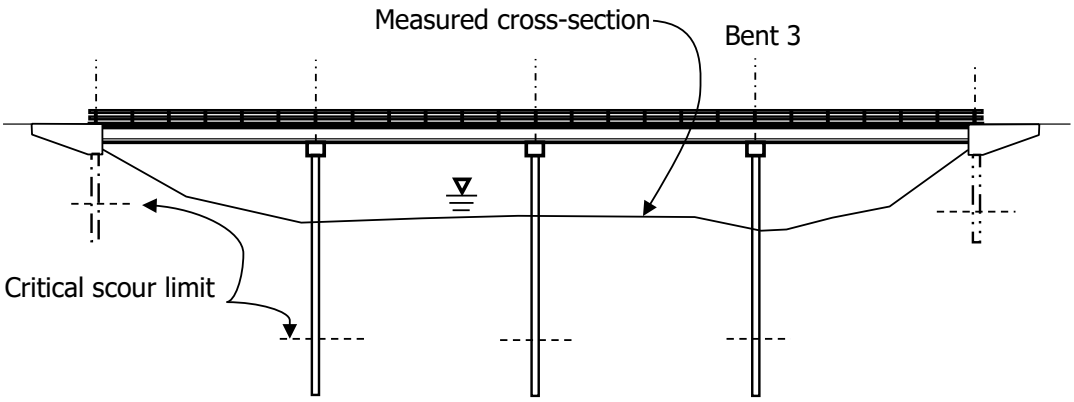


Figure 154. Elevation view showing scour elevations and stream cross-section for a bridge.

Severity: Minor (scour at Bent 3, does not exceed tolerable limit)
Extent: One of five substructure units (Isolated).

Results: The scour condition is best characterized as "isolated minor scour." Report 7.

Example - Scour Condition - SNBI Continued

Description: Scour critical bridge. Critical scour limit was established in the Plan of Action. Inspectors measured the following streambed cross-section *(Figure 155)*, which indicates a scour depth at one bent that is below the critical scour elevation.

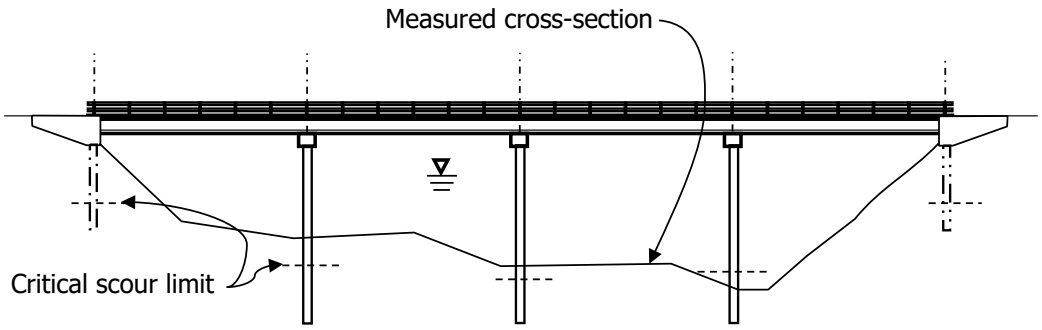


Figure 155. Elevation view showing critical scour limits and stream cross-section for a bridge.

Severity: Moderate
Extent: 2 of 5 substructure units (some)

Severity: Major
Extent: 1 of 5 substructure units (isolated)

Results: The scour condition is best characterized as "major scour". The bridge is closed until corrective actions are completed. Report 1.

Example - Scour Condition - SNBI Continued

Description: Bridge was appraised for scour vulnerability and not considered scour critical. No scour calculations and no structural stability analysis were performed. Piles are end bearing on rock. Inspectors measured the following streambed cross-section, which indicates a scour depth at two piers that is not consistent with the scour assessment assumptions.

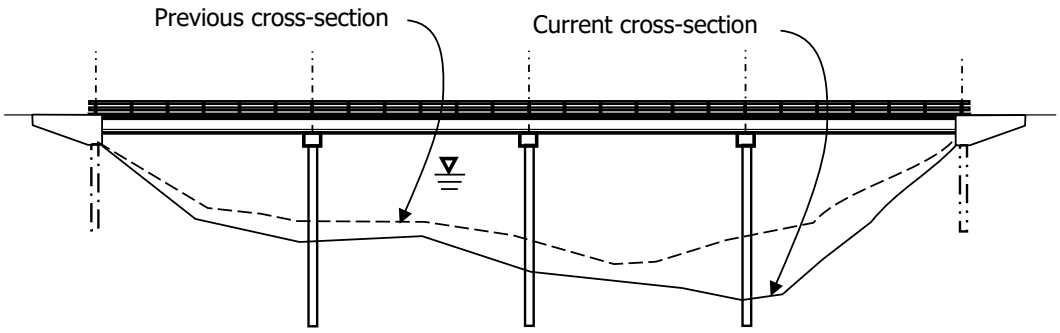


Figure 156. Elevation view showing current cross-section and previous cross-section for a bridge over water.

Severity: Moderate
Extent: 1 of 5 substructure units (isolated)

Severity: Major
Extent: 1 of 5 substructure units (isolated)

Results: The scour condition is best characterized as "isolated major scour". The defects warrant a structural and/or hydraulic review to determine the effect on strength and/or stability of the bridge. Report 4.

Since observed conditions are not consistent with the scour appraisal assumptions, then scour is considered in the coding of B.C.03 *(Substructure Condition Rating)*. In this case, observed conditions also indicate a need to reevaluate Item B.AP.03 (*Scour Vulnerability*).

Channel Condition *(Old Item 1674)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC09	B.C.09	-

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification

Report the channel condition using one of the following codes. The entire code description must be satisfied for the code to apply.

Code	Condition	Description
N	NOT APPLICABLE	Bridge does not cross over water.
8	VERY GOOD	No defects or inherent defects only.
7	GOOD	Some minor defects.
6	SATISFACTORY	Widespread minor or isolated moderate defects.
5	FAIR	Moderate defects; bridge and approach roadway are not threatened.
4	POOR	Widespread moderate or isolated major defects; bridge and/or approach roadway is threatened.
3	SERIOUS	Major defects; bridge or approach roadway is seriously threatened. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2	CRITICAL	Major defects. Bridge or approach roadway is severely threatened. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the bridge open.
1	IMMINENT FAILURE	Bridge is closed to traffic due to channel condition. Channel rehabilitation may return the bridge to service.
0	FAILED	Bridge is closed due to channel condition, and is beyond corrective action. Bridge location or design can no longer accommodate the channel, and bridge replacement is needed to restore service.

Commentary

This item is used to provide a condition rating for the channel at the bridge. Consider the channel upstream and downstream only insofar as it threatens the bridge and approach roadway.

Inspection report comments required when the condition code is 5 or less.

The condition of channel protection devices is addressed under a separate item. Refer to Item B.C.10 (Channel Protection Condition Rating).

For concrete lined channels, channel defects typically do not apply, except for Aggradation and Debris. The condition of the channel lining would be addressed by Item B.C.10 (Channel Protection Condition Rating).

Examples - Channel Condition

Single span bridge. Channel is aggrading and requires periodic excavation to maintain a tolerable hydraulic opening. The thalweg has migrated such that flow is directed at one abutment (*Figure 150*) and threatens the approach roadway. However, a structural and hydraulic review has determined that the stability of the bridge is not impacted.

Defects: Aggradation and migration
Severity: Moderate
Extent: Widespread

Figure 150. Bridge elevation view of channel condition. (Source: Alaska DOT)

Figure 151. Looking downstream from bridge at excavated material. (Source: Alaska DOT)

Results: The channel can best be characterized as having "widespread moderate defects." Report 4.

Channel Protection *(Old Item 1675)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BC10	B.C.10	-

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification

Report the condition of the channel protection device(s) using one of the following codes. The entire code description must be satisfied for the code to apply.

Code	Condition	Description
N	NOT APPLICABLE	Bridge does not cross over water or channel protection devices do not exist.
8	VERY GOOD	Isolated or some inherent defects.
7	GOOD	Some minor defects.
6	SATISFACTORY	Widespread minor or isolated moderate defects.
5	FAIR	Some moderate defects; performance of the channel protection is not affected.
4	POOR	Widespread moderate or isolated major defects; performance of channel protection is affected.
3	SERIOUS	Major defects; performance of channel protection is seriously affected. Condition typically necessitates more frequent monitoring or corrective actions.
2	CRITICAL	Major defects; channel protection is severely compromised. Condition typically necessitates more frequent monitoring or corrective actions.
1	IMMINENT FAILURE	Channel protection has failed, but corrective action could restore it to working condition.
0	FAILED	Channel protection is beyond repair and must be replaced.

Channel Protection - Commentary

This item is used to provide a condition rating for channel protection devices.

Inspection report comments required when the condition code is 5 or less.

Evaluate the condition and effectiveness of channel protection devices installed on banks or in the stream to mitigate channel issues that may impact the bridge. When reporting this item, consider erosion and scour, damage (unraveling, displacement, separation, and sagging), and material defects (scaling, abrasion, spalling, corrosion, cracking, splitting, and decay).

Channel protection devices are considered countermeasures that control, inhibit, delay, or minimize stream instability and scour problems, including river training and armoring countermeasures.

River training countermeasures may include: spurs, bendway weirs, guide banks, drop structures, and check dams. Additional river training countermeasures can be found in HEC-23 and elsewhere.

Armoring countermeasures may include: rock riprap, grouted riprap, concrete slope paving, articulating concrete blocks, gabion mattresses, and grout-filled mats. Additional armoring countermeasures can be found in HEC-23 and elsewhere.

For bridges that have countermeasures not visible for inspection, use appropriate visual condition indicators to determine the applicable code. These may include measurements taken at the bridge face(s) during every inspection to help determine degree of degradation, aggradation, and/or channel migration.

For this item, a minor defect does not limit the effectiveness of the channel protection, while a moderate defect may limit its effectiveness. A major defect indicates that the channel protection is missing or is no longer effective as determined by a hydraulic review.

Example – Channel Protection

Description: Some stones are missing and revetment has limited effectiveness. Streambed is scouring and undermining the remaining riprap and culvert.

Defects: Scour and damage
Severity: Moderate
Extent: Widespread

Figure 152. Scour and missing riprap at concrete box culvert outlet.

Results: The channel can best be characterized as having "widespread moderate defects." Performance of the channel protection is affected. Report 4.

WSBIS Item 1677 – Channel Protection Condition - NBI **Pulldown**
NBI Item 61

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways***

This item describes the physical conditions associated with the flow of water through the bridge such as stream stability and the condition of the channel, riprap, slope protection, or stream control devices including spur dikes. The inspector should be particularly concerned with visible signs of excessive water velocity which may affect undermining of slope protection, erosion of banks, and realignment of the stream. Accumulation of drift and debris on the superstructure and substructure should be noted on the inspection form but not included in the condition rating.

Inspection report comments are required when the condition is coded 7 or less.

Note: A bridge with no scour potential (piles founded or on bedrock) can have a very low channel rating based on a threat to the approach fill. In this situation this code is the only way to flag the problem. Also note that roadway embankment erosion due to bridge or roadway runoff is NOT included in this field. These issues are addressed in the abutment BMS field.

'* Pedestrian, RR, and other non-vehicular bridges over public roadways do not require condition codes. WSDOT policy for WSDOT owned structures is to provide condition codes when the Condition Report type is used.

Rate and code the condition in accordance with the following descriptive codes:

Table 1677 Channel Protection Condition Rating - NBI

WSBIS Code	Description
9	Not applicable. Use when bridge is not over a waterway (channel).
8	There are no noticeable or noteworthy deficiencies. Banks are protected or well vegetated. River control devices such as spur dikes and embankment protection are not required or are in a stable condition.
7	Bank protection is in need of minor repairs. River control devices and embankment protection have a little minor damage. Banks and/or channel have minor amounts of drift.
6	Bank is beginning to slump. River control devices and embankment protection have widespread minor damage. There is minor stream bed movement evident. Debris is restricting the channel slightly.
5	Bank protection is being eroded. River control devices and/or embankment have major damage. Trees and brush restrict the channel.
4	Bank and embankment protection is severely undermined. River control devices have severe damage. Large deposits of debris are in the channel.
3	Bank protection has failed. River control devices have been destroyed. Stream bed aggradation, degradation or lateral movement has changed the channel to now threaten the bridge and/or approach roadway.
2	The channel has changed to the extent the bridge is near a state of collapse.
1	Bridge closed because of channel failure. Corrective action may put back in light service.
0	Bridge closed because of channel failure. Replacement necessary.

WSBIS Item 1679 – Pier/Abutment Protection - NBI **Pulldown**
NBI Item 111

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

If WSBIS Item 1386 – Navigation Control has been coded 1, use the codes 1 through 5 below to indicate the presence and adequacy of pier or abutment protection features such as fenders, dolphins, etc. The condition of the protection devices may be a factor in the overall evaluation of WSBIS Item 1676 – Substructure.

If WSBIS Item 1386 is coded 0, code N for this field.

Table 1679 Pier/Abutment Protection Rating - NBI

WSBIS Code	NBI Code	Description
1	1	Navigation protection not required
2	2	In place and functioning
3	3	In place but in a deteriorated condition
4	4	In place but reevaluation of design suggested
5	5	None present but reevaluation suggested
N	null	Not applicable, not a navigable waterway

NBI Commentary:

WSDOT codes N where the NBI codes a blank. This field is translated in the NBI text file.

Appraisals

The items in the appraisal section are used to evaluate bridges and culverts carrying public roadways in relation to the level of service which it provides on the highway system of which it is a part. The structure will be compared to a new one which is built to current standards for that particular type of road as further defined in this section except for WSBIS Item 1661 – Approach Roadway Alignment. See WSBIS Item 1661 for special criteria for rating that item.

WSBIS Items 1657, 1658, 1659, 1661, and 1662 will be coded with a 1-digit code that indicates the appraisal rating for the item. The ratings and codes are as follows:

Table 4 Adequacy Appraisal Ratings - NBI

WSBIS Code	NBI Code	Description
9	N	Not applicable
8	9	Superior to present desirable criteria
8	8	Equal to present desirable criteria
7	7	Better than present minimum criteria
6	6	Equal to present minimum criteria
5	5	Better than minimum tolerable limits
4	4	Meets minimum tolerable limits to be left in place as is
3	3	Basically intolerable requiring high priority corrective action
2	2	Basically intolerable requiring high priority replacement
1	1	This value of rating code not used
0	0	Bridge closed

WSBIS Items 1657, 1658, and 1659 are calculated automatically based on other coded items.

Completed bridges not yet opened to traffic, if rated, shall be appraised as if open to traffic. Design values, for example ADT, shall be used for the evaluation. The data provided will include a code of G for WSBIS Item 1293 – Structure Open, Posted, or Closed to Traffic.

NBI Commentary:

WSBIS uses the 9 code to indicate "Not applicable," which is translated to N when reported to the NBI. WSBIS uses code 8 for "Superior or equal to present desirable criteria," which is a combination of NBI codes 8 and 9. (WSBIS does not submit a code 9 to the NBI.)

WSBIS Item 1680 – Scour Critical - NBI **Pulldown**
NBI Item 113

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code as indicated below to identify the current status of the bridge regarding its vulnerability to scour:

Table 1680 Scour Critical Rating - NBI

WSBIS Code	Description
N	Bridge not over waterway.
U	Bridge with unknown foundation that has not been evaluated for scour. Until risk can be determined, a plan of action should be developed and implemented to reduce the risk to users from a bridge failure during or immediately after a flood event (see HEC 23).
T	Bridge over tidal waters that has not been evaluated for scour, but considered low risk. Bridge will be monitored with regular inspection cycle and with appropriate underwater inspections. (Unknown foundations in tidal waters should be coded U.)
9	Bridge foundations (including piles) on dry land well above flood water elevations.
8	Bridge foundations determined to be stable for the assessed or calculated scour conditions. Scour is determined to be above top of footing or drilled shaft (Example A) by: • assessment (e.g., bridge foundations are on rock formations that have been determined to resist scour within the service life of the bridge), or • calculation (exposed drilled shafts may be included by calculations), or • installation of properly designed countermeasures (see HEC 23).
7	Countermeasures have been installed to mitigate an existing problem with scour and to reduce the risk of bridge failure during a flood event. Instructions contained in a plan of action have been implemented to reduce the risk to users from a bridge failure during or immediately after a flood event.
6	Scour calculation/evaluation has not been made.
5	Bridge foundations determined to be stable for assessed or calculated scour conditions. Scour is determined to be within the limits of footing or piles, including open pile bents, or drilled shafts (Example B) by: • assessment (e.g., bridge foundations are on rock formations that have been determined to resist scour within the service life of the bridge), or • calculations, or • installation of properly designed countermeasures (see HEC 23).
4	Bridge foundations determined to be stable for assessed or calculated scour conditions; field review indicates action is required to protect exposed foundations (see HEC 23).
3	Bridge is scour critical; bridge foundations determined to be unstable for assessed or calculated scour conditions: • Scour within limits of footing or piles, or drilled shafts (Example B) • Scour below spread-footing base or pile tips, or base of shafts (Example C)

Table 1680 Scour Critical Rating - NBI

2	Bridge is scour critical; field review indicates that extensive scour has occurred at bridge foundations, which are determined to be unstable by: • a comparison of calculated scour and observed scour during the bridge inspection, or • an engineering evaluation of the observed scour condition reported by the bridge inspector in WSBIS Item 1676 – Substructure.
1	Bridge is scour critical; field review indicates that failure of piers/abutments is imminent. Bridge is closed to traffic. Failure is imminent based on: • a comparison of calculated and observed scour during the bridge inspection, or • an engineering evaluation of the observed scour condition reported by the bridge inspector in WSBIS Item 1676 – Substructure.
0	Bridge is scour critical. Bridge has failed and is closed to traffic.

Scour Vulnerability *(Old Item 1681)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	I	BAP03	B.AP.03	-

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification

Report the scour vulnerability of the bridge using one of the following codes.

Code	Description
N	Not applicable, no waterway.
0	Scour appraisal has not been completed.
A	Scour appraisal completed. Bridge determined to be stable for scour.
B	Scour appraisal completed. Bridge determined to be stable for scour, dependent upon designed, and functioning countermeasures.
C	Scour appraisal completed. Bridge could become unstable for scour. Temporary (not designed) countermeasure installed to mitigate scour. Bridge is scour critical.
D	Scour appraisal completed. Bridge is, or may become, unstable for scour. Bridge is scour critical.
E	Scour appraisal has not been completed. Temporary (not designed) countermeasure installed to mitigate scour.
U	Scour appraisal has not been completed due to unknown foundations.

If the bridge does not cross over a waterway as indicated in Item BF.01 (Feature Type), Code N.

If coded N, this field will not be reported to FHWA

Commentary

The intent of this item is to report the status and vulnerability determination from scour appraisals required by the NBIS.

The codes for this item are based on the appraised scour vulnerability as described in HEC-18, Evaluating Scour at Bridges; HEC-23, Bridge Scour and Stream Instability Countermeasures; and HEC-20, Stream Stability at Highway Structures.

Scour appraisals are typically performed by a multidisciplinary team of hydraulic, geotechnical, and structural engineers (Scour Appraisal Team).

FHWA Hydraulic Technical Advisories, and manuals, and software can be found at: https://www.fhwa.dot.gov/engineering/hydraulics/

Refer to item B.C.11 (Scour Condition Rating) in the Component Condition Ratings subsection to address field observed scour conditions and the effect on bridge components.

Use code B when designed, installed, and functioning countermeasures are used to address potential scour and to maintain bridge stability for new or existing bridges, or bridges with unknown foundations.

Use code B when the Scour Appraisal Team determines that the in-place, non-designed countermeasures are fully functioning and are appropriate to mitigate the risk of scour.

Use code C for bridges that could become unstable for the potential scour, and temporary countermeasures are installed that were not designed.

Scour Plan of Action

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	I	BAP04	B.AP.04	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification

Report whether the bridge has a scour plan of action (POA) implemented using one of the following codes.

Code	Description
0	A scour POA is not required, or is not applicable (no waterway).
N	A scour POA is required, but not implemented.
Y	A scour POA is required and implemented.

This item not reported to FHWA if the bridge does not cross over a waterway as indicated in Item B.F.01 (Feature Type).

Commentary

The NBIS requires a scour POA for bridges over water that are determined to be scour critical or have unknown foundations.

More information on scour POA can be found at the FHWA Hydraulics Engineering website: www.fhwa.dot.gov/engineering/hydraulics/bridgehyd/poa.cfm.

Use code 0 if a bridge was considered scour critical, but now has designed, installed, and fully functional scour countermeasures.

Code 0 also if structure does not pass over a waterway, and a scour plan of action is not applicable.

A scour POA is a document that addresses, based on risk, a schedule for repair or installation of scour countermeasures, and/or the monitoring, inspection, closing, and opening a bridge to traffic during and after flood events to protect the traveling public.

A scour POA is implemented when those responsible for actions under the plan are aware of their responsibilities, and are exercising them when called for during or after a triggering event.

A bridge should have a scour POA when it could become unstable for scour, and temporary countermeasures are installed that were not designed.

WSBIS Item 1662 – Waterway - NBI **Pulldown**
NBI Item 71

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This item appraises the waterway opening with respect to passage of flow through the bridge. Site conditions may warrant somewhat higher or lower ratings than indicated by the table (e.g., flooding of an urban area due to a restricted bridge opening).

Where overtopping frequency information is available, the descriptions given in the table for chance of overtopping mean the following:

Remote – greater than 100 years
Occasional – 3 to 10 years
Slight – 11 to 100 years
Frequent – less than 3 years

Adjectives describing traffic delays mean the following:

Insignificant – Minor inconvenience. Highway passable within hours.

Significant – Traffic delays of up to several days.

Severe – Long term delays to traffic.

Table 1662 Waterway Adequacy Appraisal Rating - NBI

WSBIS Item 1487 – Functional Class			Description
01, 11, 12	02, 06, 07, 14, 16, 17	08, 09, 18, 19	
Waterway Adequacy Appraisal Rating			
9	9	9	Bridge not over a waterway.
8	8	8	Bridge deck and roadway approaches above flood water elevations. Remote chance of overtopping OR bridge deck above roadway approaches. Slight chance of overtopping roadway approaches.
6	6	7	Slight chance of overtopping bridge deck and roadway approaches.
4	5	6	Bridge deck above roadway approaches. Occasional overtopping of roadway approaches with insignificant traffic delays.
3	4	5	Bridge deck above roadway approaches. Occasional overtopping of roadway approaches with significant traffic delays.
2	3	4	Occasional overtopping of bridge deck and roadway approaches with significant traffic delays.
2	2	3	Frequent overtopping of bridge deck and roadway approaches with significant traffic delays.
2	2	2	Occasional or frequent overtopping of bridge deck and roadway approaches with severe traffic delays.
0	0	0	Bridge closed.

BPO Specific Instructions:

Bridges with scour records maintained by BPO must code this field as directed by the BPO Scour Engineer.

NBI Commentary:

WSBIS uses the 9 code to indicate “Not applicable,” which is translated to N when reported to the NBI.

Overtopping Likelihood

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BAP02	B.AP.02	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification

Report the scour vulnerability of the bridge using one of the following codes.

Code	Description
0	Never
1	Remote – once every 100 years or less frequently
2	Very low – once every 51 to 99 years
3	Low – once every 26 to 50 years
4	Moderate – once every 11 to 25 years
5	High – once every 3 to 10 years
6	Very High – once every 2 years or more frequently

Do not report this item if the bridge does not cross over a waterway as indicated in Item B.F.01 (Feature Type).

Commentary

An overtopping occurrence is when the waterway overtops the riding surface carried on the bridge.

Bridge overtopping likelihood, since the year built (B.W.01), is typically determined from historical bridge inspection or maintenance records, hydraulic studies, local residents/landowners, and/or site indicators including highwater marks on the bridge or its surroundings, debris remains on bridge upper members, etc.

For newer bridges with limited historical inspection or maintenance information, hydraulic design information can be used to establish an overtopping likelihood.

This item does not apply to the likelihood of the waterway overtopping approach roadways.

WSBIS Item 1661 – Alignment - NBI **Pulldown**
NBI Item 72

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code the rating based on the adequacy of the approach roadway alignment. This item identifies those bridges which do not function properly or adequately due to the alignment of the approaches. It is not intended that the approach roadway alignment be compared to current standards but rather to the existing highway alignment. This concept differs from other appraisal evaluations. The establishment of set criteria to be used at all bridge sites is not appropriate for this item. The basic criteria is how the alignment of the roadway approaches to the bridge relate to the general highway alignment for the section of highway the bridge is on.

Speed reductions necessary because of structure width and not alignment shall not be considered in evaluating this item.

This field should be blank for tunnels and pedestrian, RR and other non-vehicular structures over public roadways.

Table 1661 - Approach Roadway Alignment Appraisal Rating - NBI

WSBIS Code	Description
8	No reduction in speed required for vehicle as it approaches the bridge.
6	Minor reduction in speed required for vehicle (less than 10 mph) as it approaches the bridge.
3	Substantial reduction in the speed of vehicle (10 mph or greater) as it approaches the bridge.

Approach Roadway Alignment - SNBI

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	EI	BAP01	B.AP.01	D3

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the operating speed reduction at the bridge using one of the following codes. **Code** **Description** G Good F Fair P Poor	This item identifies bridges that do not function adequately due to the horizontal or vertical alignment of the bridge and approach roadway. It is not intended that the alignment be compared to current standards, but rather to the existing roadway alignment. The basic criterion is how the alignment of the bridge and approach roadway relates to the general highway alignment for the section of highway the bridge carries.

Examples

Do not consider speed reductions due to the bridge width or intersecting highways when reporting this item.

The operating speed reduction is in comparison to the posted speed limit for the highway segment.

Use code G when the operating speed is no different at the bridge than the rest of the highway segment that crosses the bridge.

Use code F when the operating speed is noticeably different at the bridge than the rest of the highway segment that crosses the bridge.

Use code P when the operating speed is substantially different at the bridge than the rest of the highway segment that crosses the bridge.

Fatigue Details

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	I	BIR02	B.IR.02	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report whether the bridge has AASHTO fatigue category E or E' details using one of the following codes. **Code** **Description** N No E/E details Y E/E details are present Do not report this item for bridges that do not have steel members as indicated in Items B.SP.04 (Span Material) and B.SB.03 (Substructure Material).	This item provides data to identify bridges that have details most prone to fatigue. Refer to the BIRM or AASHTO LRFD Bridge Design Specifications for fatigue categories.

Seismic Vulnerability

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	I	BAP05	B.AP.05	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification

Report the seismic vulnerability of the bridge using one of the following codes.

Code	Description
0	Seismic evaluation not completed.
N	Bridge does not require seismic evaluation due to low anticipated ground motion or agency prioritization.
A	Seismic evaluation completed. Bridge determined to meet the agency's performance criteria established for the evaluation without need for retrofit.
B	Seismic evaluation completed. Satisfactory performance is dependent upon a designed, installed, and functioning retrofit. Retrofit is in place.
C	Seismic evaluation completed. Satisfactory performance is dependent upon a designed, installed, and functioning retrofit. Partial retrofit is in place.
D	Seismic evaluation completed. Satisfactory performance is dependent upon a designed, installed, and functioning retrofit. Retrofit is not in place.

Commentary

This item provides available information resulting from seismic evaluation and retrofit programs that an agency may have performed of their own volition. The codes allow for a broad interpretation based on the reporting agency's methods and evaluation criteria.

In lieu of agency-developed evaluation criteria, refer to the FHWA Seismic Retrofitting Manual for Highway Structures: Part 1 – Bridges, Publication No. FHWA-HRT-06-032, January 2006, for guidance on assessing the vulnerability of highway structures to the effects of earthquakes, and implementing retrofit measures to improve performance.

Use code A when bridge is designed to meet applicable performance criteria established by the design specifications in effect at the time of construction and bridge would be expected to meet current agency established performance criteria.

Use code C when only certain portions of the bridge have been retrofitted but not all portions of the bridge have been retrofitted to meet agency performance criteria.

WSBIS Item 1293 – Open, Closed or Posted - NBI **Pulldown**
NBI Item 41
NTI Item L.4

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

This item provides information about the actual operational status of a structure. One of the following codes shall be used:

Table 1293 - Open, Closed, Posted Code - NBI

WSBIS Code	Description
A	Open, no restriction to legal loads (see Table 1660a) and no physical posting sign at the bridge
B	Open, posting recommended but not legally implemented (all signs not in place or not correctly implemented)
D	Open, would be posted or closed except for temporary shoring, etc., to allow for unrestricted traffic
E	Open, temporary structure in place to carry legal loads while original structure is closed and awaiting replacement or rehabilitation
G	New structure not yet open to traffic
K	Structure closed to all traffic
P	Posted for load (may include other restrictions such as temporary structures which are load posted). Requires a physical posted sign at the bridge.
R	Posted for other load-capacity restriction (speed, number of vehicles on structure, etc.). Requires a physical posted sign at the bridge.

WSBIS Item 1660 – Operating Level - NBI **Pulldown**
NBI Item 70

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

The National Bridge Inspection Standards require the posting of load limits if the operating rating factor (RF) for any of the legal load configurations in the State is less than 1 based on the Load Factor Method (LFR) or the Allowable Stress Method (ASR); and less than 1 based on the Load and Resistance Factor Method. If the load capacity is such that posting is required, this item shall be coded 4 or less. If no posting is required at the operating rating, this item shall be coded 5.

This item evaluates the load capacity of a bridge in comparison to the State legal loads.

Although posting a bridge for load-carrying capacity is required only when the RF for any of the legal loads is less than 1, highway agencies may choose to post at a lower level. This posting practice may appear to produce conflicting coding when WSBIS Item 1293 – Structure Open, Posted or Closed to Traffic is coded to show the bridge as actually posted at the site and WSBIS Item 1660 – Bridge Posting is coded as bridge posting is not required. Since different criteria are used for coding these 2 items, this coding is acceptable and correct.

The use or presence of a temporary bridge affects the coding. The actual operating rating of the temporary bridge should be used to determine this item. However, the highway agency may choose to post at a lower level. This also applies to bridges shored up or repaired on a temporary basis.

The coding shall be based on the lowest rating factor of the legal loads.

The following are Washington State maximum legal load configurations and tonnages:

Table 1660a Legal Loads - NBI

Configuration	Tonnage
AASHTO Type 3	25 Tons
AASHTO Type 3-2	36 Tons
AASHTO Type 3-3	40 Tons
SU4	27 Tons
SU5	31 Tons
SU6	34.7 Tons
SU7	38.7 Tons
EV2	28.7 Tons
EV3	43 Tons

See the *Bridge Design Manual* Chapter 13 for more information.

For WSDOT owned structures, the BPO Load Rating Engineer shall make the change to the code, and not the field inspector.

Table 1660b Operating Level Code - NBI

WSBIS Code	Operating Legal Load Rating Factors based on LFR or ASR Methods or Legal Load Rating Factors based on LRFR
5	RF ≥ 1
4	1 > RF > 0.9
3	0.9 ≥ RF > 0.8
2	0.8 ≥ RF > 0.7
1	0.7 ≥ RF > 0.6
0	0.6 ≥ RF
N	No rating analysis performed (bridge does not carry traffic)

NBI Commentary:

WSDOT added code N to address structures which do not carry traffic.

Text supplemented to explicitly list Washington State legal loads and tonnages.

WSBIS Item 2613 – NBIS Risk Category — Calculated

Applicable Structure Types

- **All structure records**

The NBIS risk category is based on the FHWA Metrics for the Oversight of the National Bridge Inspection Program, also called the “23 metrics”: https://www.fhwa.dot.gov/bridge/NBIP_Compliance_Review_Manual_03212019_FY22-003.pdf

High risk structures are considered more vulnerable to failure and therefore are held to a higher standard of NBIS compliance in the 23 metrics, and applies only to Routine report types as defined in Table 2613.

Table 2613 FHWA Risk Category for Routine Bridge & Underwater Inspections

WSBIS Item	Risk Criteria
H	High risk based on any ONE of the following criteria:
	1. Low superstructure, substructure or culvert condition codes WSBIS Items 1671, 1676 or 1678 < 5
	2. Legal load posting required WSBIS Item 1660 < 5
	3. No load rating AND posting not required AND posting recommended or implemented WSBIS Item 1551=5 and WSBIS Item 1660=5 and WSBIS Item 1293=B, P, or R
	4. Scour critical or scour vulnerability unknown WSBIS Item 1680 = 0, 1, 2, 3, 6, T or U
L	Low risk, does not meet high risk criteria
N	Does not apply, no routine bridge inspection report type

Bridges that also have Underwater report types are separately identified as high risk in the 23 metrics based on criteria 1 without the superstructure code and criteria 4 as described in Table 2613.

These codes are generally determined based on scour analyses made by hydraulic, geotechnical, or structural engineers. However, bridge inspectors play a key role in determining selected scour codes:

- Scour code 4 can be determined by the bridge inspector regardless of any previous higher scour code, based on observed conditions.
- For scour codes of 2 or less, the WSBIS Item 1676 – Substructure code must have a matching code.
- For WSDOT bridges, all changes to the 1680 Scour Code must be reviewed and approved by the BPO Sour Engineer.

NBI Commentary:

This item has been modified based on an April 27, 2001 FHWA memo regarding FHWA Items 60 and 113 (WSBIS Items 1676 and 1680). This memo is available at https://www.fhwa.dot.gov/engineering/hydraulics/policymemo/revguide.cfm

Miscellaneous Fields

Year Built *(Old Item 1332)*					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
N(3,0)	-	I	BW01	B.W.01	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the year in which original construction was completed and the bridge was able to carry traffic. For phased construction, report the year in which the first phase was completed and the bridge was able to carry traffic.	This date reflects the date when construction was completed, regardless of when the bridge was opened to traffic. Rehabilitation and/or widening of a bridge does not change the year built. If any portion of the bridge remains, the year built does not change. Provide a best estimate when the year built is unknown; do not assign a default value.

WSBIS Item 1336 – Year Rebuilt **N(4,0)**
NBI Item 106
NTI Item A.2

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Code the year of the last major rehabilitation of the structure. Code all four digits of the year in which reconstruction was completed. If there has been no reconstruction, code 0.

For a structure to be defined as rebuilt, the type of work performed, whether or not it meets current minimum standards, must have been eligible for funding under any of the federal aid funding categories. The eligibility criteria would apply to the work performed regardless of whether all state or local funds or federal aid funds were used.

Some types of work to be considered as rebuilt are widenings and retrofits designed to increase the original structural capacity.

Some types of eligible work **not** to be considered as rebuilt are:

- Safety feature replacement or upgrading (for example, bridge rail, approach guardrail or impact attenuators).
- Painting of structural steel.
- Overlay of bridge deck.
- Utility work.

- Emergency repair to restore structural integrity to the previous status following an accident.
- Retrofitting to correct a deficiency which does not substantially alter physical geometry or increase the load-carrying capacity.
- Work performed to keep a structure operational while plans for complete rehabilitation or replacement are under preparation (for example, adding a substructure element or extra girder).

WSBIS Item 2610 – Asphalt Depth (inches) N(5,2)

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code the average depth of asphalt in inches on the deck as observed from field measurements, or as determined from comparing the design curb height against the measured curb height from the top of asphalt. In cases where there is ballast, such as on timber decks, enter the full thickness of ballast and asphalt.

Code 0 when:

There is no asphalt on the deck.

When the structure does not have a deck, including when asphalt pavement is placed on fill over a culvert.

WSBIS Item 2611 – Design Curb Height (inches) N(5,2)

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code the curb height shown on current bridge plans in inches. Code 0 when there is no curb.

WSBIS Item 2612 – Bridge Vehicle Rail Height (inches) N(5,2)

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code the vehicle rail height as measured in the field, from the top of the rail system to the bridge deck.

WSBIS Item 2675 – Number of Utilities Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This field indicates the number of franchise utilities attached to the bridge. Utilities include, but are not limited to, water pipes, sewer lines, telephone lines, power lines, and gas lines. Conduit for electricity used on the bridge is not considered a utility. A conduit cluster (e.g., a telephone cluster) is considered one utility. This field is not used to evaluate the condition of utilities on the bridge, only the number of utilities present. If more than nine utilities are attached to the bridge, code 9. If there are no utilities, code 0.

WSBIS Item 2614 – Subject to NBIS Flag — Pulldown

Applicable Structure Types

- **All structure records**

This field identifies whether or not the bridge is subject to the National Bridge Inspection Standards (NBIS).

Y Bridge is subject to the NBIS
N Bridge is not subject to the NBIS.

This field is based on 23 CFR 650.305, found at https://www.fhwa.dot.gov/legsregs/directives/fapg/cfr0650c.htm, and the Questions and Answers paragraphs Q303-1 through Q303-6, found at https://www.fhwa.dot.gov/bridge/nbis/index.cfm. Structures subject to the NBIS include all publicly owned highway structures carrying public roads over a depression or obstruction and having an opening measured along the center of the roadway of more than 20 feet between one of the following:

- Undercopings of abutments
- Spring lines of arches
- Extreme ends of openings for multiple box culverts
- Extreme ends of openings for multiple pipe culverts where the clear distance between pipes is less than half of the smaller contiguous pipe

Structures not subject to the NBIS include:

- Sign support structures
- High mast lighting
- Retaining walls
- Noise barrier structures
- Overhead traffic signs
- Tunnels
- Structures carrying only pedestrians
- Structures carrying only railroad

Ownership and access are also important factors. To be subject to the NBIS, a structure must be both publicly owned and publicly accessible. Structures not subject to the NBIS include:

- Privately owned structures accessible to the public (e.g., road association structures)
- Publicly owned bridges that are not accessible to the public (e.g., structures behind gates used to access dams for agency employees and contractors)

Inspection Quality Assurance Date *(Old Item 1999)*					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
Pulldown	-	EI	BIE09	B.IE.09	-
Applicable Structure Types • **All structure records**					
Specification			**Commentary**		
Report the date that the QA review was completed. This field is not reported to the FHWA when a QA review was not performed.			The intent of this item is to identify inspections that have had independent QA reviews to measure or verify the overall quality of the inspection program. Agency QA procedures often vary in the definition of a review period and number of inspections reviewed. Bridge inspections might be randomly selected for agency QA reviews or selected based on representative bridge type, region, district, or other agency defined bridge populations.		

Inspection Flags

WSBIS Item 2693 – Soundings Flag **Pulldown**

Applicable Structure Types

- Bridges & Culverts carrying public roadways

This code indicates whether or not soundings of the streambed (streambed cross sections at the bridge) are required.

Y Soundings need to be taken.
* Null field, soundings are not required

This field is coded as part of the inspection planning process, and instructs the inspector to take soundings. When soundings are taken, the flag should be changed to null.

Note: Pedestrian bridges over waterways are managed for soundings and may be coded Y as appropriate.

WSBIS Item 2694 – Clearance Flag — Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

This field indicates that an inspection team should collect clearance data.

C Measure horizontal/lateral and vertical clearances.
* Null field, measurements are not required, or were just collected.

This field is coded as part of the inspection planning process, and instructs the inspector to collect and record clearance measurements in accordance with WSDOT policy (see Chapter 3) and as indicated in the 2694 inspection note. Note that all vertical clearances in, on and under the structure need to be collected unless otherwise noted.

After measurements are collected and documents given to a Geometric Engineer for processing, change this code from C to * (null).

WSBIS Item 2688 – Revise Rating Flag — Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

This code indicates whether or not the structure should be reviewed for a revised rating based on field conditions. A note shall be added by the inspector identifying the reason/ condition that prompts reevaluation of the load rating.

Y Yes, review rating
* Null field, rating review is not required

See Section 5-2.

WSBIS Item 2691 – Photos Flag — Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

This code indicates whether or not the structure needs photos taken.

D Deck photo needed
E Elevation or tunnel portal photo needed
P Deck and Elevation photos needed
* Null field, photos are not required

WSBIS Item 2695 – QA Flag **Pulldown**

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

This code indicates whether or not a quality assurance report was created for this structure.

Y Quality assurance report on file.
* Null field

Local Agency Appraisals

WSBIS Item 7664 – Drain Condition — Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This is the condition rating of the drains in the bridge deck.A rating of 5 should be used to indicate the drains are completely plugged with dirt and debris. Use Table WB76-64 Condition Rating for Secondary Bridge Members (Drains).

Table WB76-64 Condition Rating for Secondary Bridge Members (Drains)

WSBIS Code	Description
9	Not Applicable.
8	Very Good Condition. No problems noted.
7	Good Condition. Some minor problems.
6	Satisfactory Condition. Structural elements show some minor deterioration.
5	Fair Condition. All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling, or scour.
4	Poor Condition. Advanced deficiencies such as section loss, deterioration, cracking, spalling, or scour.

WSBIS Item 7665 – Drain Status — Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This code describes the present status of the drains on the bridge.

Table WB76-65

WSBIS Code	Description
9	Drains status is unknown
4	Drains have been disconnected
3	Drains have been replaced by another type
2	Drains have been permanently blocked
1	Drains exist as built
0	Drains do not exist

WSBIS Item 7666 – Deck Scaling — Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This code describes the severity of any deck scaling present.

The amount and type of deterioration present in the top surface of concrete bridge decks is to be rated. If the bridge does not have a concrete deck (for example, it has an asphalt overlay or a steel or timber deck), code N.

N None
L Light (scaling up to ¼″ deep)
M Moderate (scaling up to ½″ deep)
H Heavy (scaling or spalls up to 1″ deep)
S Severe (over 1″ deep)

WSBIS Item 7667 – Deck Scaling Percent — N(2,0)

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This value is the percentage of the total deck area where scaling and/or spalling are present. It includes any areas which have been patched.

In scaled areas of more than 1 percent, estimate the percentage at 5 percent increments. The amount and type of deterioration present in the top surface of concrete bridge decks is to be calculated. If the bridge does not have a concrete deck (for example, it has an asphalt overlay or a steel or timber deck), code 00.

WSBIS Item 7669 – Deck Rutting — Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

The amount and type of deterioration present in the top surface of concrete bridge decks is to be rated using the following codes. If the bridge does not have a concrete deck (i.e., it has an asphalt overlay or a steel or timber deck), code 0.

Table WB76-69 Condition Rating for Deck Rutting

WSBIS Code	Description
8	No wear
7	Exposed aggregate
5	Visible wheel track rutting
3	Wheel track rutting has exposed reinforcing steel
0	Not applicable

WSBIS Item 7670 – Deck Exposed Rebar Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This code describes the degree to which the deck area shows exposed reinforcing steel.

The amount and type of deterioration present in the top surface of concrete bridge decks is to be rated. If the bridge does not have a concrete deck (for example, it has an asphalt overlay or a steel or timber deck), code 0.

Table WB76-70 Condition Rating for Deck Exposed Rebar

WSBIS Code	Description
8	None
7	Some cracking in deck over reinforcing steel
5	0 to 5 percent of deck area shows exposed reinforcing steel
3	More than 5 percent of deck area shows exposed reinforcing steel
0	Not applicable

WSBIS Item 7672 – Curb Condition Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This is the condition rating of any curbs located on the bridge. Use Table WB7672 Condition Rating for Secondary Bridge Members (Curbs).

Table WB76-72 Condition Rating for Secondary Bridge Members (Curbs)

WSBIS Code	Description
9	Not Applicable.
8	Very Good Condition. No problems noted.
7	Good Condition. Some minor problems.
6	Satisfactory Condition. Structural elements show some minor deterioration.
5	Fair Condition. All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling, or scour.
4	Poor Condition. Advanced deficiencies such as section loss, deterioration, cracking, spalling, or scour.

WSBIS Item 7673 – Sidewalk Condition Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This is the condition rating of any sidewalks which are an integral part of or are attached to the bridge. This rating considers the condition of any structural members (i.e., stringers) which may support the sidewalk.

To be considered a sidewalk, the member must be greater than or equal to three feet in width. Use Table WB76-73 Condition Rating for Secondary Bridge Members (Sidewalk).

Table WB76-73 Condition Rating for Secondary Bridge Members (Sidewalk)

WSBIS Code	Description
9	Not Applicable.
8	Very Good Condition. No problems noted.
7	Good Condition. Some minor problems.
6	Satisfactory Condition. Structural elements show some minor deterioration.
5	Fair Condition. All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling, or scour.
4	Poor Condition. Advanced deficiencies such as section loss, deterioration, cracking or spalling.

WSBIS Item 7674 – Paint Condition Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This field contains the condition rating of any paint applied to the bridge to protect the primary structural steel members.

If paint has been applied only on secondary members such as bridge rails or light posts, code 9 in this field.

WB76-74 Condition Rating for Paint

WSBIS Code	Description
9	Not applicable.
8	Bridge has recently been painted.
7	Paint is in good condition with only minor weathering.
6	Bridge needs to be painted within five years.
5	Bridge needs to be painted within three years.
4	Bridge needs to be painted within two years.

A paint code of ‘5’ or ‘4’ needs to have at least one paint inspection form completed as part of the inspection report in the bridge file. The bridge is also a candidate for paint testing.

WSBIS Item 7681 – Approach Condition — Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This is the general physical condition rating of the approach roadway. This evaluation takes into consideration visible signs of wear, cracking, spalling, etc., but does not consider the alignment or width of this roadway.

WB76-81 Condition Rating for Approach Roadway

WSBIS Code	Description
9	Not applicable.
8	Smooth approach onto the bridge structure.
6	Less than 1″ of settlement of the approach roadway causing minor bouncing and load impact onto the bridge. Monitor the settlement.
3	More than 1″ of settlement of the approach roadway causing bouncing and load impact onto the bridge. Needs to be ACP feather repaired to provide a smooth transition onto the bridge.

Note: Code 6 for well maintained gravel roads. Code 3 for gravel roads in rough condition.

WSBIS Item 7682 – Retaining Wall Condition — Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This field contains the general condition rating of any retaining walls associated with the bridge. This evaluation should take into consideration whether movement, cracking, or settling has occurred.

Wingwalls and curtain walls should not be considered under this code as they are considered part of the abutment. Use Table WB76-82 Condition Rating for Retaining Walls.

Table WB76-82 Condition Rating for Retaining Walls

WSBIS Code	Description
9	Not Applicable.
8	Very Good Condition. No problems noted.
7	Good Condition. Some minor problems.
6	Satisfactory Condition. Structural elements show some minor deterioration.
5	Fair Condition. All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling, or scour.
4	Poor Condition. Advanced deficiencies such as section loss, deterioration, cracking, spalling, or scour.
3	Serious Condition. Loss of section, deterioration, spalling, or scour have seriously affected primary structural components. Local failures are possible. Fatigue cracks in steel or shear cracks in concrete may be present.
2	Critical Condition. Advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete maybe present or scour may have removed substructure support. Unless closely monitored, it may be necessary to close the bridge until corrective action is taken.
1	Imminent Failure Condition. Major deterioration or section loss present in critical structural components or obvious vertical or horizontal movement affecting structure stability. Bridge is closed to traffic but corrective action may put back in light service.
0	Failed Condition. Out of service. Beyond corrective action.

WSBIS Item 7683 – Pier Protection Condition — Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This rating describes the general condition rating of any pier and/or abutment protection features (i.e., fenders and dolphins) which have been put in place to protect the bridge against collisions from vessels or objects in tow.

This field is used for rating the general condition of the bridge's pier protection features and does not evaluate the adequacy of those features.

If no pier protection exists, code 9. Use Table WB76-83 Condition Rating for Secondary Bridge Members (Pier Protection).

Table WB76-83 Condition Rating for Secondary Bridge Members (Pier Protection)

WSBIS Code	Description
9	Not Applicable.
8	Very Good Condition. No problems noted.
7	Good Condition. Some minor problems.
6	Satisfactory Condition. Structural elements show some minor deterioration.
5	Fair Condition. All primary structural elements are sound but may have deficiencies such as minor section loss, deterioration, cracking, spalling, or scour.
4	Poor Condition. Advanced deficiencies such as section loss, deterioration, cracking, spalling, or scour.

Bridge ID Tab

Structure ID *(Old Item 1001)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(8)	AN(15)	I	BID01	B.ID.01	I.1

Applicable Structure Types
- **All structure records**

Specification	Commentary
WSBIS data stewards assign Structure Identifier (SID) numbers to all structures that qualify for inclusion in the Washington State Bridge Inventory System (WSBIS). See Chapter 2 for more details. Do not change the SID once it has been assigned and recorded. There may be exceedingly rare circumstances (none so far in WSBIS history) that require a one-time change. In that event, report the previous SID under BID03. Except in cases where elevated ramps merge or split, report all spans from abutment to abutment as one bridge.	This field must be unique for every structure in the Washington State Bridge Inventory. When a new structure replaces an old structure, a new unique SID must be coded. The old SID cannot be recycled. When any portion of the existing bridge is retained for a rehabilitated or partially replaced bridge, it is preferable to retain the existing SID. The BPO and LP Data Stewards assign SID when the original structure inventory record is processed. When initially creating a new structure in BridgeWorks, a temporary structure ID is generated with an X as the first character. This temporary structure ID will be changed when the record is “released” into the database.

Commentary Continued

It is preferable that any bridge or bridges with a closed median, where the area between the two roadways on the bridge is bridged over and can support traffic, be reported as one bridge. Closed medians may have either mountable or non-mountable curbs or barriers.

It is preferable that separate superstructures with an open median (not meeting the closed median criteria above) sharing a common substructure unit or units be reported as two bridges.

It is preferable that separate bridge numbers be reported for each mainline bridge and the ramp that connects to the mainline bridge, when the ramp has at least one distinct abutment and is greater than 20 feet in length. It is also preferable that separate bridge numbers be reported for a bridge that divides into two or more separate bridges, or two or more bridges that merge into one single bridge. In both cases, the separating point between bridges should be the closest deck joint, or substructure unit to the separating point, or other logical and reasonable location as determined by the bridge owner.

Double deck bridges may be reported as one or two bridges. However, all related data items need to be compatible with the method selected.

Consult with the local FHWA division office contact for questions concerning assigning bridge numbers to unique or complex bridges.

Previous Structure ID

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(15)	-	I	BID03	B.ID.03	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the bridge number previously associated with the bridge that has been replaced by the inventoried bridge, or when the inventoried bridge number has changed. Report 0 if no previous bridge number.	The purpose of this item is to retain a link to data for previous bridge numbers associated with this bridge in the NBI.

Structure Type

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	I	WID01	-	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
WSBIS currently maintains records for 4 structure types: **Code** — **Description** 1 — Bridges and culverts carrying public roadways 2 — Pedestrian, railroad and other non-vehicular bridges over public roadways 3 — Tunnels carrying public roadways within 4 — Structures that do not cross over or under a public roadway Each structure in WSBIS can only be one structure type. Public Roadways are Functionally Classified roadways as defined in BH01.	Type 1 structures may or may not be reportable to FHWA, but must always carry vehicular traffic, and almost always carry public roadways. There are occasions where Type 1 structures carry private or restricted roadways when these structures are connected to the public roadway system, and separated only by an "authorized use only" sign or a gate that is not permanently closed. Type 2 structures may or may not be reportable to FHWA through 2025. Starting in 2026, none will be reported to FHWA. These structures do not carry vehicular traffic, except for maintenance vehicles on bike paths and other non-vehicular routes not connected to the public roadway system. These structures must carry public highways under the structure. Type 3 structures are tunnels that carry vehicular traffic on public roadways within, and are reportable to FHWA. Railroad and pedestrian structures under public roadways that are structurally considered tunnels are coded as type 1 structures. Type 4 structures do not cross over or under a public roadway. These structures are not reported to FHWA, and are maintained in WSBIS at the structure owners convenience. WSDOT maintains these records for pedestrian or utility bridges on WSDOT right of way.

WSBIS Item WID02 – Bridge Number *(Old Item 2009)* AN(13)

Applicable Structure Types

- **All structure records**

This is a unique (to the owner agency) alphanumeric code assigned by the owner of the structure. This field does not require all spaces to be filled; however, the field cannot be left blank.

WSDOT owned structure numbers are formatted as follows:

[route number] / [alphanumeric character string]

WSDOT structure numbers follow several rules:

1. The forward slash (/) is always in the 4th position, with leading blanks as needed. For example, structures on I-5 are coded with two leading blanks followed by a 5 and a forward slash. Structures on US 395 have no leading blanks.
2. In general, every structure must have a unique structure number. The exception is when structures are replaced the structure number usually doesn't change. In this case, the obsoleted structure will have the same structure number.
3. The alphanumeric character string following the forward slash is numerically sequenced by increasing route milepoint, and is often followed by letter characters:

   Characters providing route-related information:

E	east structure of a pair on a divided south-north route
W	west structure of a pair on a divided south-north route
N	north structure of a pair on a divided west-east route
S	south structure of a pair on a divided west-east route
E-N	ramp carrying from eastbound to northbound (vary as needed)
ECD	eastbound collector distributor (vary as needed)
A	structure not on mainline
F	structure on frontage road
ALT	structure on alternate route mainline
SP	structure on spur route

   Characters providing structure design type information:

C	culvert
P	pedestrian bridge
DV	detention vault
LID	structure intended to reconnect severed residential areas

   Examples:

90/43S	Eastbound I-90 bridge at Mercer Slough in South Bellevue
5/26N-N	Ramp carrying northbound I-5 traffic to northbound 139th St.
5/313P	Pedestrian bridge over I-5 in Tumwater

4. Short span structure numbers are followed by a decimal point and a two digit number, e.g. 5/300.25.
5. The second portion of WSDOT structure numbers range from 1 to 99 within the first county in which the route occurs, 100 to 199 in the second county, 200 to 299 in the third county, and so on.

WSBIS Item WID03 – Bridge Sort Number *(Old Item 2010)* AN(20)

Applicable Structure Types

- **All structure records**

This field is used for sorting structure numbers within the application and in various database queries. This field is maintained for tunnels and culverts.

The Structure Sort Number uses three digits for the route number and three digits for the structure number, with leading zeroes as necessary. Any following alpha characters are included. A total of 20 characters can be used.

When a decimal place is used in the Structure number, the character z is used in the structure sort number. This facilitates correct sorting.

Many local agency Structure Sort Numbers begin with a 99 and a space.

Examples:

Structure Number	Structure Sort Number
97/140W	097140W
97/285.6C	097285z6C
5/344S-E	005344S-E
241/2	241002
1135-2	99 1135-2

For state owned structures, this item is coded by the BPO Information Group and is visible in the BridgeWorks Inventory Management mode.

Bridge Name *(Old Item 2132)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(50)	AN(300)	I	BID02	B.ID.02	I.2

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the commonly known name(s) for the bridge. For more than one name, report all names with the most common name first. Report multiple names separated by pipe (|) delimiters.	This is the name of the structure, either as determined by legislative action or as determined by the structure owner. If the structure name is more than one word, separate words with a blank space. If the name of the structure exceeds the 50 character limit, use abbreviations to shorten it.

WSBIS Item 1232 – Features Intersected - NBI **AN(24)**
NBI Item 6

Applicable Structure Types

- **All structure records**

This item contains a description of the features intersected by the structure. When the structure is a bridge, the feature will always describe something under the bridge. When the structure is a tunnel, it will always describe something on top of the tunnel. The data in this segment shall be left justified and is limited to 24 characters. When one of the features intersected is another highway, the signed number or name of the highway shall appear first in the field. The names of any other features shall follow, separated by a comma.

Examples:

SR 99, BLUE R, RR
I-405 N-E & N-W RAMPS
GOOSE CREEK
SR 524 SPUR/44TH AVE W
TERRAIN

NBI Commentary:

The NBI coding guide separates this field into two segments (6A with 24 characters and 6B with 1 character). However, it's also stated that 6B is not used. The WSBIS coding guide eliminates any reference to 6B, but a blank space is created automatically in the NBI text file.

WSBIS Item 1256 – Facilities Carried - NBI **AN(18)**
NBI Item 7
NTI Item I.10

Applicable Structure Types

- **All structure records**

The facility being carried by the structure shall be recorded and coded. For all bridges this item describes the use on the structure, and for all tunnels this describes the use in the tunnel. This item shall be left justified and is limited to 18 characters.

Examples:

US 12
RAILROAD
MAIN STREET
PEDESTRIANS
ISRAEL RD

WSBIS Item WID06 – Program Manager *(Old Item 2400)* **Pulldown**

Applicable Structure Types

- **All structure records**

This field identifies the individual responsible for bridge and tunnel inspection and reporting as described in the National Bridge Inspection Standards Title 23 CFR 650.307 and the National Tunnel Inspection Standards Title 23 CFR 650. 507. Both the NBI/NTI program manager and delegated program managers are listed in this field as appropriate.

In cases when the bridge is not subject to the NBIS or NTIS, this field identifies who is responsible for inspecting the structure and maintaining the structure records in accordance with WSDOT policies.

This field is set during record creation. After the record has been created this field can only be changed by the Super User Account.

WSBIS Item 1286 – Custodian - NBI **Pulldown**
NBI Item 21
NTI Item C.2
WSBIS Item 1019 – Owner - NBI **Pulldown**
NBI Item 22
NTI Item C.1

Applicable Structure Types

- **All structure records**

The actual name of the owner and custodian of the structure shall be recorded on the inspection form. In most cases the owner and custodian will be the same agency, but if they are different the two agencies should have an agreement. This agreement should be part of the bridge record if it's available. If more than one agency has equal ownership or shares custodianship, code one agency in the hierarchy of State, Federal, county, city, railroad, and other private.

Table 1286 Custodian and Owner Codes - NBI

WSBIS Code	NBI Code	NTI Code	Description
1	001	001	State Highway Agency
2	002	002	County Highway Agency
4	004	004	City or Municipal Highway Agency
11	011	011	State Park, Forest, or Reservation Agency
12	012	012	County Park, Forest, or Reservation Agency
13	012	012	City Park, Forest, or Reservation Agency
21	021	021	Other State Agencies
22	001	001	Washington State Ferries
24	025	025	Other County Agency
25	025	025	Other City or Local Agencies
26	026	026	Private (other than railroad)
27	027	027	Railroad
28	027	027	Light Rail
31	031	031	State Toll Authority
32	032	032	County Toll Authority
33	032	032	City or Other Toll Authority
60	060	060	Other Federal Agencies (not listed below)
61	061	061	Indian Tribal Government
62	062	062	Bureau of Indian Affairs
63	063	063	Bureau of Fish and Wildlife
64	064	064	U.S. Forest Service
66	066	066	National Park Service
68	068	068	Bureau of Land Management
69	069	069	Bureau of Reclamation
70	070	070	Corps of Engineers (Civil)
71	071	070	Corps of Engineers (Military)
72	072	072	Air Force
73	073	073	Navy/Marines
74	074	074	Army
80	080	080	Unknown
92	001	001	Idaho maintenance responsibility
93	001	001	Oregon maintenance responsibility

NBI and NTI Commentary:

Selected codes have been eliminated because they are not used by any structures in Washington State (NSA, Pentagon, etc.). Selected codes were added, generally to differentiate county agencies from other local agencies, provide a unique code for Washington State Ferries, and codes for Oregon and Idaho border bridges maintained by these other state agencies.

Owner - SNBI

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(4)	-	I	BCL01	B.CL.01	-

Applicable Structure Types
- **All structure records**

Specification

Report the agency that has ownership of the bridge using one of the following codes.

Code	Description
S01	State transportation department
S02	State park, forest, or reservation agency
S03	State toll authority
SX	Other State agency
L01	County highway agency
L02	Town or township highway agency
L03	City or municipal highway agency
L04	Local park, forest, or reservation agency
L05	Local toll authority
LX	Other local agency
F01	Agriculture Research Service (ARS)
F02	Department of Energy (DOE)
F03	General Services Administration (GSA)
F04	National Aeronautics and Space Administration (NASA)
F05	Smithsonian – National Zoo
F06	Tennessee Valley Authority (TVA)
F07	U.S. Department of Veterans Affairs
F08	Federal Emergency Management Agency (FEMA)
F09	International Boundary and Water Commission, United States Section (USIBWC)
FX	Other Federal agency

Specification Continued

continued...

Code	Description
FL01	Bureau of Indian Affairs (BIA)
FL02	Bureau of Land Management (BLM)
FL03	Bureau of Reclamation (USBR)
FL04	U.S. Fish and Wildlife Service (FWS)
FL05	National Park Service (NPS)
FL06	U.S. Army Corps of Engineers (USACE)
FL07	U.S. Forest Service (USFS)
FL0X	Other Federal Lands Management Agency
I	Indian Tribal Government
D01	Air Force
D02	Army
D03	Navy/Marines
D04	Pentagon
D05	National Security Agency (NSA)
DX	Other Department of Defense
T	Transit agency/authority
P	Private
R	Railroad
U	Unknown
X	Other

Owner - SNBI - Commentary
Use the hierarchy of State, Federal, county, city, railroad, transit, and other private entity for multiple owners of a bridge. Use codes FL01 through FLX for Federal Lands Management agencies identified at the following FHWA website: https://highways.dot.gov/federal-lands/programs/transportation Use codes D01 through DX for bridges owned by the Department of Defense. Use code T for transit agency or authority for air, bus, light rail, and port regardless of whether the entity is considered State, local, or private. Use code P for private owners other than railroad or transit. Use code R for highway bridges owned by railroad entities that are not considered a transit agency or authority.

Maintenance Responsibility

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(4)	-	I	BCL02	B.CL.02	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the agency that has primary maintenance responsibility for the bridge using one of the codes listed in Item B.CL.01 (Owner).	Use the hierarchy of State, Federal, county, city, railroad, and other private entity for determining primary responsibility for maintenance of a bridge. Use codes FL01 through FLX for Federal Lands Management agencies identified at the following FHWA website https://flh.fhwa.dot.gov/programs/fltp/. Use codes D01 through DX for bridges maintained by the Department of Defense. Use code T for transit agency or authority for air, bus, light rail, and port regardless of whether the entity is considered State, local, or private. Use code P for private entities other than railroad or transit. Use code R for highway bridges maintained by railroad entities that are not considered a transit agency or authority.

County Code *(Old Item 1021)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(3,0)	-	I	BL02	B.L.02	I.4

Applicable Structure Types
- **All structure records**

Specification

This code identifies the county in which the structure is located. If this is a jointly owned structure, the county that is responsible for reporting the data to the inventory should be entered here. For WSDOT structures, the county at the beginning of bridge is coded.

A map of county limits is available at https://www.wsdot.wa.gov/data/tools/geoportal/.

Table BL02 County Code

WSBIS Code	NBI/ NTI Code	County Name	WSBIS Code	NBI/ NTI Code	County Name
1	001	Adams	21	041	Lewis
2	003	Asotin	22	043	Lincoln
3	005	Benton	23	045	Mason
4	007	Chelan	24	047	Okanogan
5	009	Clallam	25	049	Pacific
6	011	Clark	26	051	Pend Oreille
7	013	Columbia	27	053	Pierce
8	015	Cowlitz	28	055	San Juan
9	017	Douglas	29	057	Skagit
10	019	Ferry	30	059	Skamania
11	021	Franklin	31	061	Snohomish
12	023	Garfield	32	063	Spokane
13	025	Grant	33	065	Stevens
14	027	Grays Harbor	34	067	Thurston
15	029	Island	35	069	Wahkiakum
16	031	Jefferson	36	071	Walla Walla
17	033	King	37	073	Whatcom
18	035	Kitsap	38	075	Whitman
19	037	Kittitas	39	077	Yakima
20	039	Klickitat			

Place Code *(Old Item 1276)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(5)	N(5,0)	I	BL03	B.L.03	I.5

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Specification	Commentary
Report the FIPS place code for the city, town, township, village, and other census-designated place where the bridge is located. See Table BL03 below. Report 0 if there is no FIPS place code where the bridge is located NBI and NTI Commentary: Federal Information Processing Standards were withdrawn by the National Institute of Standards and Technology on January 1, 2006, with the intent to replace them with the Geographic Names Information System (GNIS). On this basis, WSDOT has chosen not to maintain FIPS codes. See the following links for more information: https://www.usgs.gov/us-board-on-geographic-names https://www.usgs.gov/national-hydrography/national-hydrography-dataset	Use the FIPS codes in the current version of the Census of Population and Housing - Geographic Identification Code Scheme to determine the city, town, township, village, or other census-designated place code, regardless of ownership.

Table BL03 Place Code

City/Town/ Village	Place Code	City/Town/ Village	Place Code	City/Town/ Village	Place Code
UNINCORPORATED = 0		Granite Falls	27995	Port Orchard	55785
Aberdeen	00100	Hamilton	29255	Port Townsend	55855
Airway Heights	00905	Harrah	29710	Poulsbo	55995
Albion	01010	Harrington	29745	Prescott	56240
Algona	01290	Hartline	29920	Prosser	56450
Almira	01500	Hatton	30060	Pullman	56625
Anacortes	01990	Hoquiam	32300	Puyallup	56695
Arlington	02585	Hunts Point	32755	Quincy	57115
Asotin	03075	Ilwaco	33000	Rainier	57220
Auburn	03180	Index	33175	Raymond	57430
Bainbridge Island	03736	Ione	33560	Reardan	57465
Battle Ground	04475	Issaquah	33805	Redmond	57535
Beaux Arts Village	04895	Kahlotus	34575	Renton	57745

Table BL03 Place Code

City/Town/ Village	Place Code	City/Town/ Village	Place Code	City/Town/ Village	Place Code
Bellevue	05210	Kalama	34645	Republic	57850
Bellingham	05280	Kelso	35065	Richland	58235
Benton City	05560	Kenmore	35170	Ridgefield	58410
Bingen	06085	Kennewick	35275	Ritzville	58725
Black Diamond	06330	Kent	35415	Riverside	58795
Blaine	06505	Kettle Falls	35485	Rock Island	59180
Bonney Lake	07170	Kirkland	35940	Rockford	59145
Bothell	07380	Kittitas	36045	Rosalia	59775
Bremerton	07695	Krupp	36395	Roslyn	60055
Brewster	07835	La Center	36710	Roy	60160
Bridgeport	07870	La Conner	36780	Royal City	60230
Brier	07940	Lacey	36745	Ruston	60510
Buckley	08570	LaCrosse	36850	Sammamish	61115
Bucoda	08605	Lake Forest Park	37270	SeaTac	62288
Burien	08850	Lake Stevens	37900	Seattle	63000
Burlington	08920	Lakewood	38038	Sedro-Woolley	63210
Camas	09480	Lamont	38215	Selah	63280
Carbonado	09970	Langley	38355	Sequim	63385
Carnation	10215	Latah	38495	Shelton	63735
Cashmere	10495	Leavenworth	38845	Shoreline	63960
Castle Rock	10565	Liberty Lake	39335	Skykomish	64855
Cathlamet	10635	Lind	39510	Snohomish	65170
Centralia	11160	Long Beach	40070	Snoqualmie	65205
Chehalis	11475	Longview	40245	Soap Lake	65345
Chelan	11615	Lyman	40770	South Bend	65625
Cheney	11825	Lynden	40805	South Cle Elum	65765
Chewelah	12140	Lynnwood	40840	South Prairie	66045
Clarkston	12630	Mabton	40980	Spangle	66290
Cle Elum	12945	Malden	42275	Spokane	67000
Clyde Hill	13365	Mansfield	42800	Spokane Valley	67167
Colfax	13785	Maple Valley	43150	Sprague	67175
College Place	13855	Marcus	43395	Springdale	67210
Colton	13890	Marysville	43955	St. John	60860
Colville	14170	Mattawa	44165	Stanwood	67455
Conconully	14310	McCleary	41225	Starbuck	67490
Concrete	14380	Medical Lake	44690	Steilacoom	67770
Connell	14485	Medina	44725	Stevenson	67875
Cosmopolis	14870	Mercer Island	45005	Sultan	68260
Coulee City	15080	Mesa	45180	Sumas	68330
Coulee Dam	15115	Metaline	45285	Sumner	68435
Coupeville	15185	Metaline Falls	45320	Sunnyside	68750
Covington	15290	Mill Creek	45865	Tacoma	70000
Creston	15710	Millwood	45985	Tekoa	70560

Table BL03 Place Code

City/Town/ Village	Place Code	City/Town/ Village	Place Code	City/Town/ Village	Place Code
Cusick	16340	Milton	46020	Tenino	70630
Darrington	16690	Monroe	46685	Tieton	71400
Davenport	16795	Montesano	46895	Toledo	71785
Dayton	16970	Morton	47175	Tonasket	71890
Deer Park	17320	Moses Lake	47245	Toppenish	71960
Des Moines	17635	Mossyrock	47315	Tukwila	72625
DuPont	18965	Mount Vernon	47560	Tumwater	72905
Duvall	19035	Mountlake Terrace	47490	Twisp	73080
East Wenatchee	20155	Moxee	47665	Union Gap	73290
Eatonville	20260	Mukilteo	47735	Uniontown	73360
Edgewood	20645	Naches	47805	University Place	73465
Edmonds	20750	Napavine	47980	Vader	73780
Electric City	21030	Nespelem	48540	Vancouver	74060
Ellensburg	21240	Newcastle	48645	Waitsburg	75565
Elma	21450	Newport	48820	Walla Walla	75775
Elmer City	21485	Nooksack	49275	Wapato	76125
Endicott	21730	Normandy Park	49415	Warden	76160
Entiat	22010	North Bend	49485	Washougal	76405
Enumclaw	22045	North Bonneville	49555	Washtucna	76440
Ephrata	22080	Northport	50045	Waterville	76510
Everett	22640	Oak Harbor	50360	Waverly	76720
Everson	22745	Oakesdale	50325	Wenatchee	77105
Fairfield	22990	Oakville	50430	West Richland	77665
Farmington	23340	Ocean Shores	50570	Westport	77630
Federal Way	23515	Odessa	50745	White Salmon	78330
Ferndale	23620	Okanogan	50920	Wilbur	78680
Fife	23795	Olympia	51300	Wilkeson	78925
Fircrest	23970	Omak	51340	Wilson Creek	79135
Forks	24810	Oroville	51970	Winlock	79275
Friday Harbor	25615	Orting	52005	Winthrop	79380
Garfield	26140	Othello	52215	Woodinville	79590
George	26455	Pacific	52495	Woodland	79625
Gig Harbor	26735	Palouse	52950	Woodway	79835
Gold Bar	27365	Pasco	53545	Yacolt	79975
Goldendale	27435	Pateros	53720	Yakima	80010
Grand Coulee	27855	Pe Ell	53930	Yarrow Point	80150
Grandview	27925	Pomeroy	55120	Yelm	80220
Granger	27960	Port Angeles	55365	Zillah	80500

Highway Agency District *(Old Item 1274)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	I	BL04	B.L.04	I.6

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Specification	Commentary

This is the WSDOT region in which the bridge is located.

Table BL04 Highway Agency District - Region Code

WSBIS Code	NBI Code	NTI Code	Region Name
NW	1	NW	Northwest Region
NC	2	NC	North Central Region
OL	3	OL	Olympic Region
SW	4	SW	Southwest Region
SC	5	SC	South Central Region
EA	6	EA	Eastern Region

A region boundary map can be found at: https://www.wsdot.wa.gov/data/tools/geoportal/.

NBI and NTI Commentary:
This field is translated as shown in the table above for the NBI, but is not translated for the NTI.

Metropolitan Planning Organization *(Old Item 1024)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	AN(300)	I	BL12	B.L.12	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Specification	Commentary
Report the name(s) of the Metropolitan Planning Organization(s) in which the bridge is located, regardless of bridge owner or maintenance responsibility. Report each MPO when the bridge is located on a boundary between MPOs. Report multiple MPOs separated by pipe (|) delimiters. Report N if Bridge is not located in an MPO.	MPO maps are available here: https://www.wsdot.wa.gov/data/tools/geoportal/ Note that this field does not apply to Regional Transportation Planning Organizations (RTPO's).

WSBIS Item WL05 – City *(Old Item 2023)* **Pulldown**

Applicable Structure Types

- **All structure records**

This is the 1990 federal census place code, updated by OFM.

If the bridge is not in a city, code 0 - Unincorporated.

A map of city limits is available at https://www.wsdot.wa.gov/data/tools/geoportal/.

WSBIS Item WL06 – Section *(Old Item 2181)* **N(2)**
WSBIS Item WL07 – Township *(Old Item 2183)* **N(2)**
WSBIS Item WL08 – Range *(Old Item 2185)* **AN(3)**

Applicable Structure Types

- **All structure records**

Section, township, and range numbers are location markers established by survey mapping. If the structure runs along a section, township, or range line, use the smaller of the two numbers. If a structure crosses any line, use the number at the beginning of the structure.

WSBIS Item WL06 **– Section**

This is the number of the section in which the structure is located. Enter a numeric code from 01 to 36.

WSBIS Item WL07 **– Township**

This is the number of the township in which the structure is located. Enter a numeric code from 01 to 41. Township designations carry a directional suffix (north or south); however, since all townships in Washington are north, this directional indicator need not be entered.

WSBIS Item WL08 **– Range**

This is the number of the range in which this structure is located. There are two parts to this field. In the first two places, enter the number of the range in which the structure is located. Valid ranges are:

01 through 47 if the third column is E
01 through 16 if the third column is W.

In the third place, enter the directional suffix which indicates the position of the range in relation to the Willamette Meridian. Enter one of the following codes:

E	East
W	West

A map of section, township and range information is available at https://www.wsdot.wa.gov/data/tools/geoportal/.

WSBIS Item 1285 – Toll Code - NBI **Pulldown**
FHWA Item 20 – Toll
NTI Item C.4 - Toll

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

The toll status of the structure is indicated by this item. Interstate toll segments under Secretarial Agreement (Title 23 - United States Code - Highways Section 129 as amended by 1991 ISTEA and prior legislation) shall be identified separately. Use one of the following codes:

Table 1285 Toll Code - NBI

WSBIS Code	NBI Code	NTI Code	Description
1	1	1	Toll bridge. Tolls are paid specifically to use the structure.
2	2	2	On toll road. The structure carries a toll road, that is, tolls are paid to use the facility, which includes both the highway and the structure.
3	3	0	On free road. The structure is toll free and carries a toll free highway.
4	4	2	On Interstate toll segment under Secretarial Agreement. Structure functions as a part of the toll segment.
5	5	2	Toll bridge is a segment under Secretarial Agreement. Structure is separate agreement from highway segment.

NTI Commentary:

Toll codes translated for the NTI as shown in the table above.

Toll - SNBI

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	I	BCL05	B.CL.05	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Specification

Report the inspection type or scour monitoring performed using one of the following codes.

Code	Description
1	Toll bridge not under FHWA Toll Agreement
2	Toll bridge under FHWA Toll Agreement
3	Bridge carries a toll road not under FHWA Toll Agreement
4	Bridge carries a toll road under FHWA Toll Agreement
N	Bridge does not carry a tool road and is not a toll bridge

Structures are considered tolled if only a portion of the bridge is tolled such as if an HOV Toll (HOT) lane is on the same bridge as a freeway.

Commentary

More tolling program information related to 23 U.S.C. 129 can be found at: https://www.fhwa.dot.gov/ipd/tolling_and_pricing/ and in the FHWA Informational Memorandum - Federal Tolling Programs under the Moving Ahead for Progress in the 21st Century Act.

WSBIS Item 1289 – Temporary Structure - NBI **Pulldown**
NBI Item 103

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

Code this item to indicate situations where a temporary structure or conditions exist.

Table 1289 Temporary Structure Code - NBI

WSBIS Code	Description
T	Temporary structure or conditions exist.
null	No temporary structure or conditions

A temporary structure or conditions are those which are required to facilitate traffic flow. This may occur either before or during the modification or replacement of a structure found to be deficient. Such conditions include the following:

- Bridges shored up, including additional temporary supports.
- Temporary repairs made to keep a bridge open.
- Temporary structures, temporary runarounds or bypasses.
- Other temporary measures, such as barricaded traffic lanes to keep the bridge open.

Any repaired structure or replacement structure which is expected to remain in place without further project activity, other than maintenance, for more than 5 years shall not be considered temporary. Under such conditions, that structure, regardless of its type, shall be considered the minimum adequate to remain in place and evaluated accordingly.

If this item is coded T, then all data recorded for the structure shall be for the condition of the structure without temporary measures, except for the following items which shall be for the temporary structure:

WSBIS Item 1499 – Inventory Route, Minimum Vertical Clearance
1293 – Structure Open, Posted, or Closed to Traffic
1491 – Inventory Route, Total Horizontal Clearance
1370 – Minimum Vertical Clearance Over Bridge Roadway
1374 – Minimum Vertical Underclearance
1379 – Minimum Lateral Underclearance on Right
1383 – Minimum Lateral Underclearance on Left
1660 – Bridge Posting

NBI Commentary:

WSDOT has defined a 5 year time period for which temporary structures or conditions can be in place and still considered temporary. The NBI coding guide refers to “a significant period of time.”

WSBIS Item 1292 – Historical Significance (NRHP) - NBI **Pulldown**
NBI Item 37

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

This item identifies historical significance based on a criteria established by the National Register of Historic Places (NRHP). Generally the Washington State Department of Archaeology and Historic Preservation (DAHP) performs a review based on this criteria.

Use one of the following codes:

Table 1292 Historical Significance (NRHP) - NBI

WSBIS Code	NBI Code	Description
1	1	Structure is on the NRHP.
2	2	Structure is eligible for the NRHP.
3	3	Structure is possibly eligible for the NRHP but requires further investigation before determination can be made. Alternately, structure is on a State or local historic register.
4	4	Historical significance has not been determined at this time. (This code should be used for all new structures.)
5	5	Structure is not eligible for the NRHP – reviewed by the DAHP.
6	5	Structure is not eligible for the NRHP – reviewed by agency other than the DAHP.

Historic Significance (NRHP) - SNBI

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(1)	-	EI	BCL04	B.CL.04	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Specification

Report the inspection type or scour monitoring performed using one of the following codes.

Code	Description
1	Bridge is on the National Register
2	Bridge is eligible for the National Register
3	Bridge is in a historic district that is on or eligible for the National Register, and contributes to the eligibility of the district
4	Bridge is in a historic district that is on or eligible for the National Register, but does not contribute to the eligibility of the district
5	Bridge is potentially eligible for the National Register, or potentially contributes to a historic district, but has not been evaluated according to the criteria for listing
6	Bridge is on a State or local historic register, but is not eligible for the National Register
7	Historic significance of the bridge has not been determined
N	Bridge is not eligible for the National Register, and is not in a historic district eligible for the National Register or when other codes do not apply.

Commentary

This item is used to report the historic significance of bridges. Bridges that are historically significant are subject to Section 106 of the National Historic Preservation Act of 1966, and 36 CFR 800 (Protection of Historic Properties). 36 CFR 800 governs the Section 106 process, and outlines how agencies are to consult with various parties, identify historic properties, and assess the effects of undertakings to properties.

Undertakings to historically significant bridges or their surroundings are also subject to Section 4(f) of the Department of Transportation Act of 1966, and 23 CFR Part 774 (Parks, Recreation Areas, Wildlife and Waterfowl Refuges, and Historic Sites). 23 CFR Part 774 governs the Section 4(f) process, considers how the property is used as a resource, and outlines the project approval process when undertakings are proposed.

36 CFR Part 70 (National Register of Historic Places) identifies the attributes that may make a property historically significant, and prescribes the evaluation criteria and procedures for listing properties on the National Register.

Determinations of eligibility are generally not made with the purpose of eventual listing on the National Register of Historic Places. Rather, the evaluation criteria for listing is used to assess historical significance with the purpose of assessing the effects of undertakings, and to fulfill the goals of 23 USC 144(g) Historic Bridges. Determinations of eligibility are normally made by the relevant federal agency, typically FHWA for highway bridges, and can change when circumstances or conditions change, such as age or bridge integrity. As such, the eligibility status and reported code can change with time.

Historic Significance (NRHP) - SNBI Commentary Continued
Use code 2 when the bridge has been determined to be eligible for listing on the National Register even though the nomination and listing process have not concluded or are not being pursued. Use code 5 when the bridge has attributes that may make it historically significant as indicated by the National Register criteria for evaluation and listing. This code may also apply when a bridge was previously evaluated but requires reevaluation because its current attributes, such as age, may make it historically significant. Use code 6 when a bridge has local historic value, but has been determined to be not eligible for the National Register. Undertakings may be subject to the Section 4(f) process, but without the same level of consultation as prescribed by Section 106. Use code N when the other codes do not apply.

WSBIS Item WCL04 – Historical Significance – HAER *(Old Item 2295)* Pulldown

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

This item identifies historical significance based on a criteria established by the Historic American Engineering Record (HAER).

Use one of the following codes:

Table WCL04 Historical Significance - HAER

WSBIS Code	Description
1	Structure is on the HAER.
2	Structure is eligible for the HAER.
3	Structure is possibly eligible for the HAER but requires further investigation before determination can be made. Alternately, structure is on a State or local historic register.
4	Historical significance has not been determined at this time. (This code should be used for all new structures.)
5	Structure is not eligible for the HAER – reviewed by the DAHP.
6	Structure is not eligible for the NRHP – reviewed by agency other than the DAHP.

WSBIS Item 7296 – Historical Significance – Local Agency (LP view only) Pulldown

Applicable Structure Types

- **All structure records owned by local agencies**

This item identifies historical significance using a criteria established by the local agency that owns the structure.

Use one of the following codes:

Table 7296 Historical Significance - Local Agency

WSBIS Code	Description
0	Neither bridge nor crossing is on the local agencies registry or a determination has not been made.
1	Bridge is on the local agency registry.
2	Crossing is on the local agency registry.

WSBIS Item 7281 – Legislative District 1 (LP view only) N(2,0)

Applicable Structure Types

- **All structure records owned by local agencies**

This field identifies the first or only State Legislative District in which the bridge is located. If the legislative district is followed by a letter (District 19A, for example), disregard the letter and enter the 2 digit number only.

WSBIS Item 7283 – Legislative District 2 (LP view only) N(2,0)

Applicable Structure Types

- **All structure records owned by local agencies**

For bridges which span a State Legislative District dividing line, use this field to identify the second State Legislative District number. Use both this and the Legislative District 1 field to enter the two separate district numbers.

WSBIS Item 2615 – Special Structures Flag (Inv MO only) Pulldown

Applicable Structure Types

- **All structure records**

This code flags structures that are inspected by the BPO Special Structures group.

Y Yes, structure inspected by the BPO Special Structures group.
* Null, structure not inspected by the BPO Special Structures group.

WSBIS Item 2930 – Obsolete Structure Flag (Inv MO only) **Check Box**

Applicable Structure Types

- **All structure records**

This check box can only be edited in the Inventory Managed Operation, and is used to "obsolete" a structure record. See Sections 2.02.02 and 2.03.04 for more information.

Border Structure ID *(Old Item 1590)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(15)	-	I	BL07	B.L.07	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the neighboring State's exact bridge number as used in their Item B.ID.01 (SID). Report N when the bridge does not cross a border with another State or Country. Report 0 when the bordering country does not have a bridge number.	For the purposes of the NBI, only bridges that cross a State or international border are considered border bridges. The Neighboring State reports this item as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Border State or Country Code *(Old Item 1585)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	AN (2)	I	BL08	B.L.08	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Use one of the following codes: **Code** **Description** 410 Oregon 160 Idaho Leave blank if structure does not cross a border.	See WSBIM Appendix 2-F for a listing of border bridges on the Washington State inventory.

WSBIS Item 1588 – Border Bridge Percent - NBI **N(2,0)**
NBI Item 98B

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code a 2-digit number specifying the percentage of total deck area of the existing bridge that the neighboring State is responsible for funding.

Leave blank if the structure does not cross a state border.

Border Bridge Inspection Responsibility *(Old Item 1591)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(1)	-	I	BL09	B.L.09	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the border bridge inspection responsibility for any entity within the State geographical boundaries, regardless of ownership, using one of the following codes. . **Code** **Description** 0 No responsibility 1 Shared responsibility with border State or country 2 Full responsibility Leave blank if structure does not cross a border.	Agency inspection responsibility must be documented in interagency agreements or memorandums of understanding and included as part of the bridge file or record.

Border Bridge Designated Lead State *(Old Item 1592)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	N(2,0)	I	BL10	B.L.10	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Use one of the following codes: **Code** **Description** 530 Washington 410 Oregon 160 Idaho Leave blank if structure does not cross a border	If Washington is the designated lead state, all inventory data will be reported to the SNBI. If another state is designated, then WSDOT will only report the following fields, which must match the data reported by the border state:

Commentary Continued

Item ID	Data Item
B.ID.01	Bridge Number
B.ID.03	Previous Bridge Number
B.L.01	State Code
B.L.02	County Code
B.L.03	Place Code
B.L.04	Highway Agency District
B.L.07	Border Bridge Number
B.L.08	Border Bridge State or Country Code
B.L.09	Border Bridge Inspection Responsibility
B.L.10	Border Bridge Designated Lead State
B.L.12	Metropolitan Planning Organization
B.F.01	Feature Type
B.F.02	Feature Location
B.F.03	Feature Name
B.RT.01	Route Designation
B.RT.02	Route Number
B.RT.03	Route Direction
B.RT.04	Route Type
B.RT.05	Service Type
B.H.03	NHS Designation
B.H.06	LRS Route ID
B.H.07	LRS Mile Point
B.H.18	Crossing Bridge Number

Geometry Tab

NBIS Bridge Length *(Old Item 2346)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(7,1)	-	I	BG01	B.G.01	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the NBIS bridge length to the nearest tenth of a foot measured along the roadway centerline between undercopings of abutments or spring lines of arches. For filled or closed spandrel arches, measure along the roadway centerline from inside faces of exterior spring lines. For other bridges under fill, measure along the roadway centerline from inside faces of exterior walls; this includes multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening. Vaulted abutments and enclosed spans or sections are included in the NBIS bridge length. Report the field measured NBIS bridge length when Item B.G.02 (Total Bridge Length) is less than 30 ft.	Structures that meet the NBIS bridge definition, and NBIS applicability in 23 CFR 650.303, are reported to FHWA. The roadway centerline is the physical center of the portion of the roadway for the movement of vehicles, regardless of striping, and exclusive of shoulders. The total bridge length for curved bridges is measured along the curved centerline. When item B.G.02 (Total Bridge Length) is greater than 30.0 feet the value for this item may be estimated.

Examples – NBIS Bridge Length

Report measurement A.

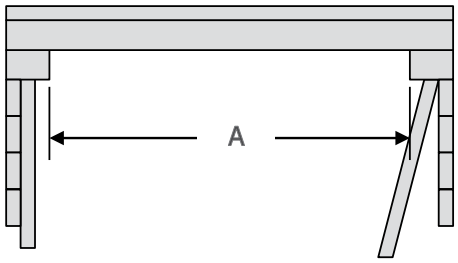


Figure 14. Profile view of a single span bridge with pile bent abutments.

Report measurement A.

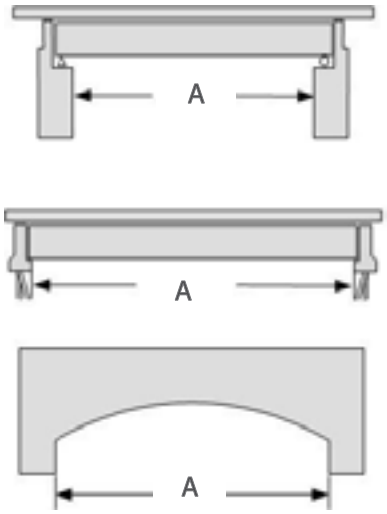


Figure 15. Profile views of various single span bridges.

Report measurement A.

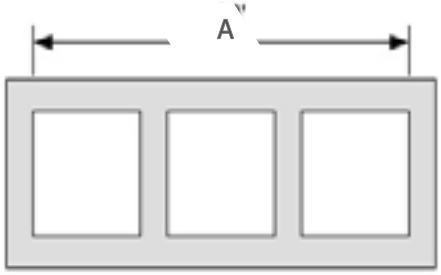


Figure 16. Profile view of a four-sided, multi-cell culvert under fill.

Report measurement A.

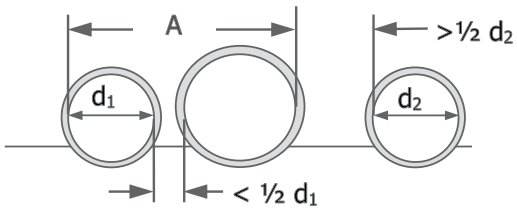


Figure 17. Profile view of a multi-pipe culvert under fill.

Examples - NBIS Bridge Length Continued

Skewed multi-pipe bridge under highway has an opening of 20.85 ft measured along the center of the roadway. Report 20.9.

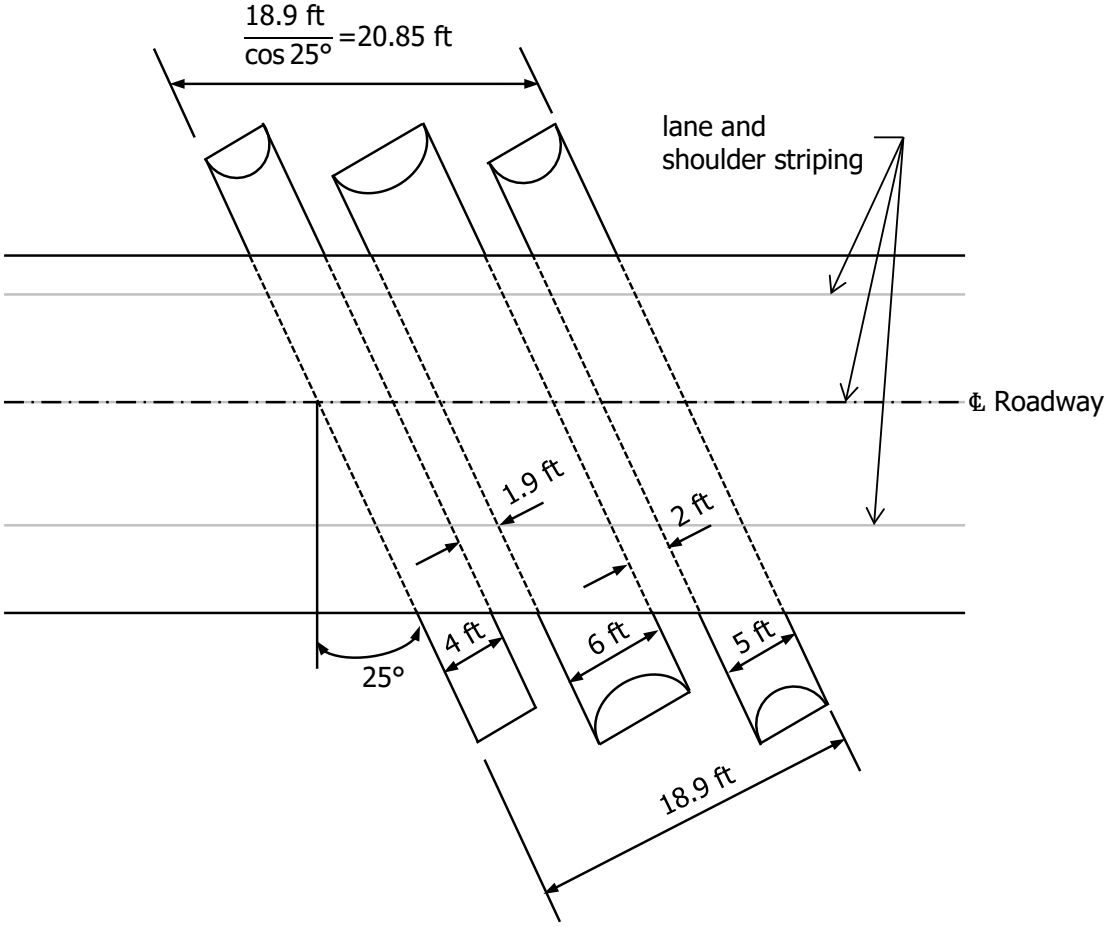


Figure 18. Plan view of a skewed, multi-pipe culvert under fill.

Total Bridge Length *(Old Item 1340)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(7,1)	-	I	BG02	B.G.02	-

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the total length of the bridge to the nearest tenth of a foot measured along the roadway centerline from back- to-back of backwalls or from paving notch to paving notch at abutments. For filled or closed spandrel arches, measure along the roadway centerline from inside faces of exterior spring lines when well-defined backwalls or paving notches do not exist. For other bridges under fill, measure along the roadway centerline from inside faces of exterior walls. For bridges with vaulted abutments and enclosed spans or sections, measure from back-to-back of backwalls or from paving notch to paving notch inclusive of the vaulted abutments and enclosed spans.	The total bridge length measurement can be used with the bridge width out-to-out to calculate an estimated deck area. The roadway centerline is the physical center of the portion of the roadway for the movement of vehicles, regardless of striping, and exclusive of shoulders. The total bridge length for curved bridges is measured along the curved centerline. For pedestrian RR and other non-vehicular structures, code this field when the owning agency performs Condition Inspections. The intent is to provide deck square footages associated with structure condition codes.

Examples – Total Bridge Length

Report measurement A.

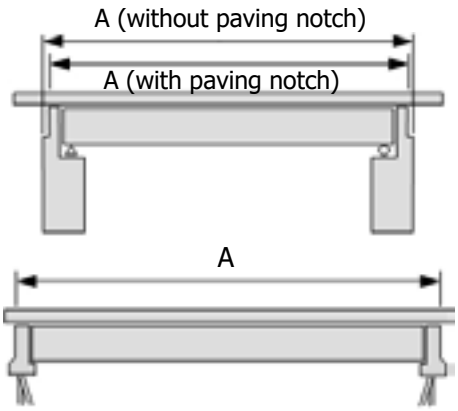


Figure 19. Profile views of various single span bridges.

Report measurement A.

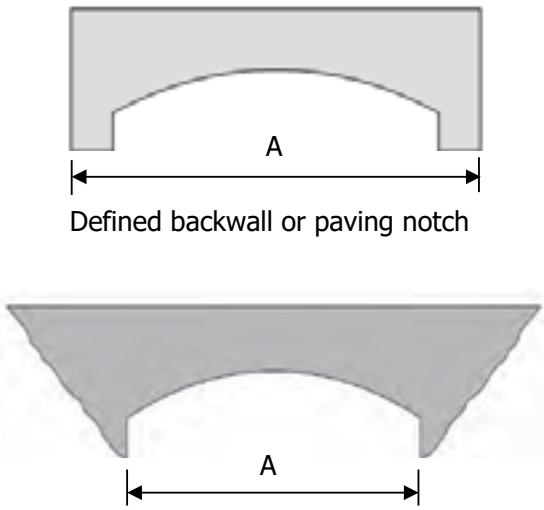


Figure 20. Profile views of various spandrel arches.

Report measurement A.

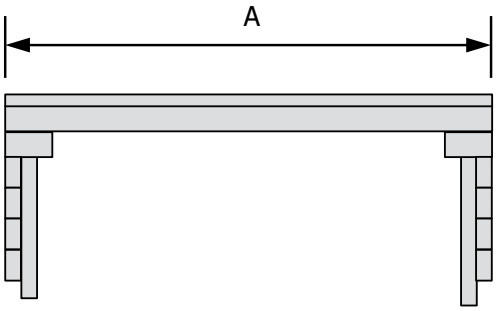


Figure 21. Profile view of a single span bridge with pile bent abutments.

Examples - Total Bridge Length Continued

Report measurement A.

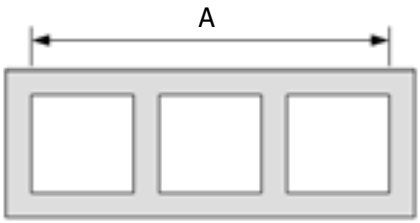


Figure 22. Profile view of a four-sided, multi-cell culvert under fill.

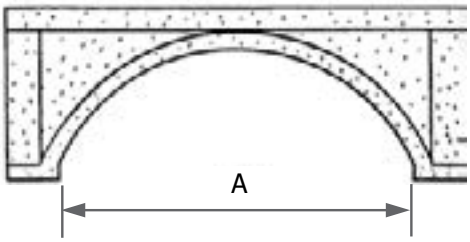


Figure 23. Profile view of a culvert under fill.

Report measurement A.

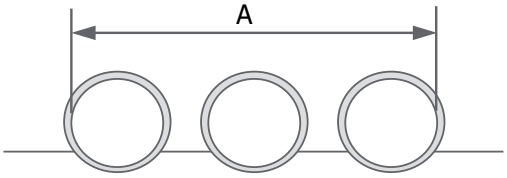


Figure 24. Profile view of a multi-pipe culvert under fill.

Four span bridge with variable skews. Total bridge length is measured along the roadway centerline from back-to-back of backwalls at abutments. Report 477.6.

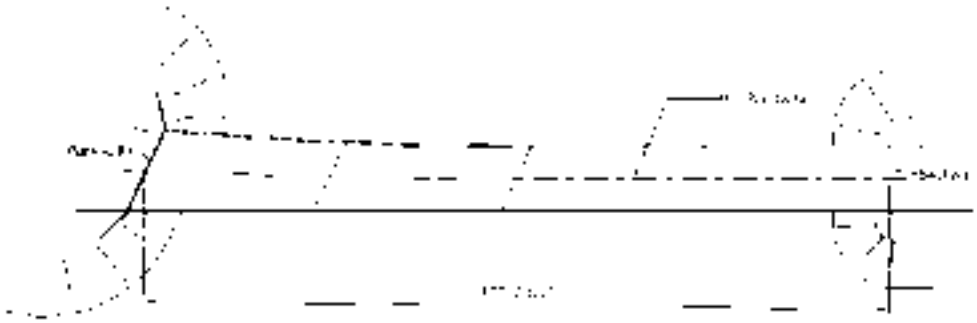


Figure 25. Plan view of a four-span bridge with variable skews.

Examples - Total Bridge Length Continued

Three span curved bridge. Total bridge length is measured along the roadway centerline from back-to-back of backwalls at abutments. Report 504.0.

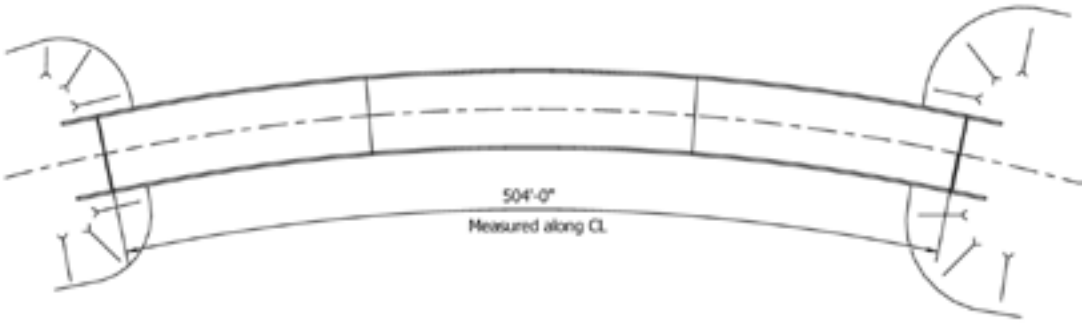


Figure 26. Plan view of a three-span curved bridge.

Skewed pipe bridge under a highway has an opening of 20.85 ft measured along the roadway centerline. Report 20.9.

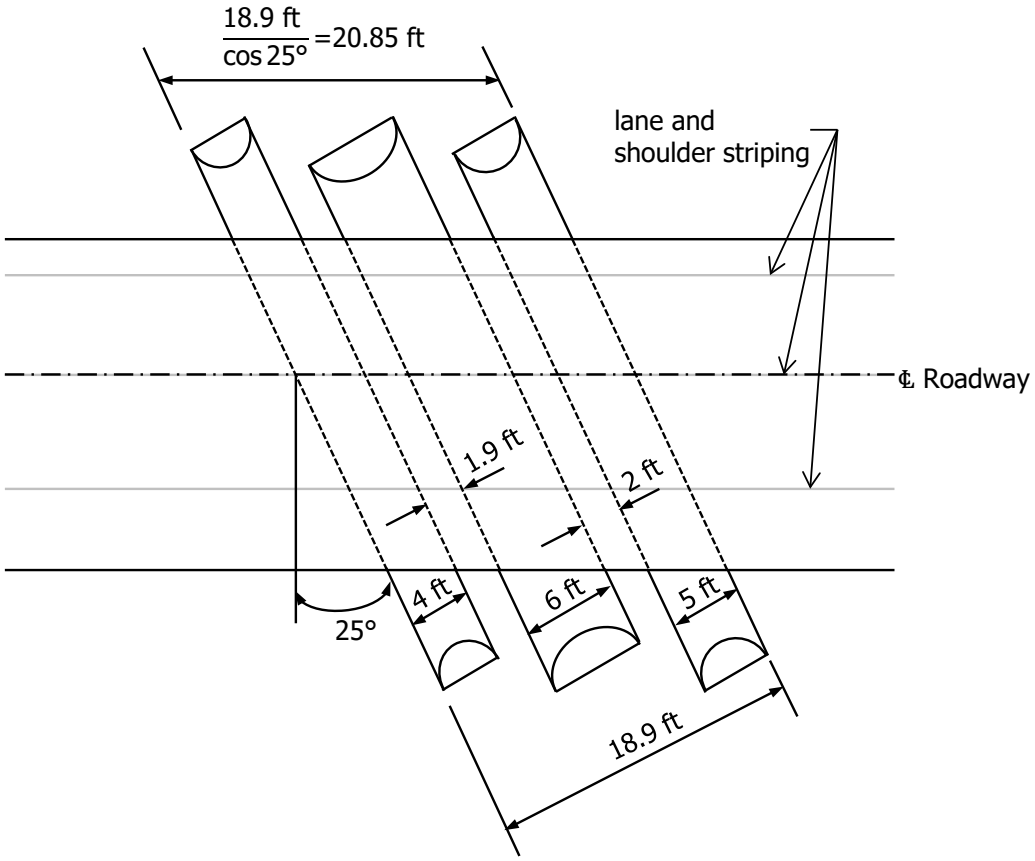


Figure 27. Plan view of a skewed, multi-pipe culvert under fill.

Tunnel Length - SNTI *(Old Item 1349)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(6,0)	-	EI	TG1	-	G.1

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record the length of the tunnel to the nearest foot. The length shall be measured along the centerline of the roadway.	When a tunnel is divided into segments, record the length of the segment. For example: if a 1000 foot tunnel is divided into 4- 250 foot segments, each segment will have a Tunnel Length of 250 feet. When multiple bores are reported as a single tunnel, record the length of the longest bore.

Example - Tunnel Length - SNTI

Tunnel Length	Code
860.4 feet	860
2,400	2400

Minimum Span Length *(Old Item 1347)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(5,1)	-	I	BG04	B.G.04	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the length of the minimum span to the nearest tenth of foot, measured from centerline of bearing to centerline of bearing, along the roadway centerline.	For rigid frames, arches, pipes, integral abutments, or similar type bridges where there is not a clear centerline of bearing, use the clear open distance between piers, bents, or abutments.

Examples - Minimum Span Length

Report measurement A.

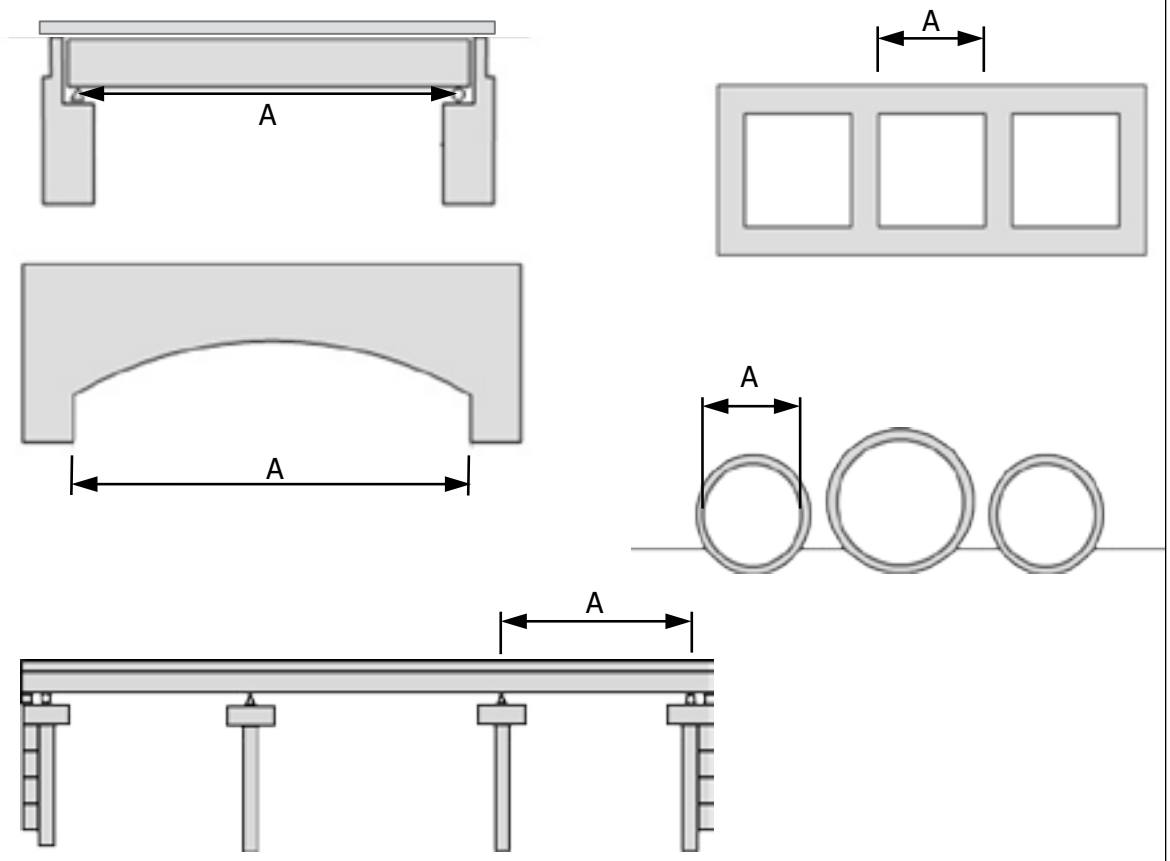


Figure 31. Profile views of various bridge types.

Examples - Minimum Span Length Continued

Four span bridge with variable skews. Span lengths are measured from centerline of bearing to centerline of bearing along the roadway centerline. Report 116.3.

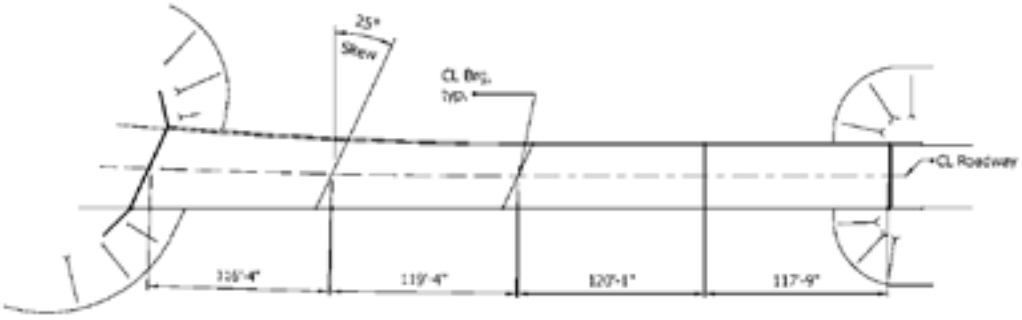


Figure 32. Plan view of a four-span bridge with variable skews.

Three span curved bridge. Span lengths are measured from centerline of bearing to centerline of bearing along the curved roadway centerline. Report 155.0.

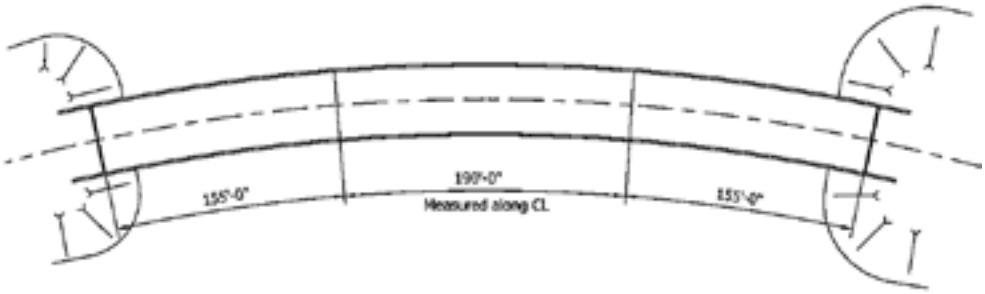


Figure 33. Plan view of a three-span curved bridge.

Maximum Span Length *(Old Item 1348)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(5,1)	-	I	BG03	B.G.03	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the length of the maximum span to the nearest tenth of foot, measured from centerline of bearing to centerline of bearing, along the roadway centerline	For rigid frames, arches, pipes, integral abutments, or similar type bridges where there is not a clear centerline of bearing, use the clear open distance between piers, bents, walls, or abutments. The roadway centerline is the physical center of the portion of the roadway for the movement of vehicles, regardless of striping, and exclusive of shoulders. The length for curved bridges would be measured along the curved centerline. For bridges with single spans this item has the same value as B.G.04 (Minimum Span Length).

Examples - Maximum Span Length

Report measurement A.

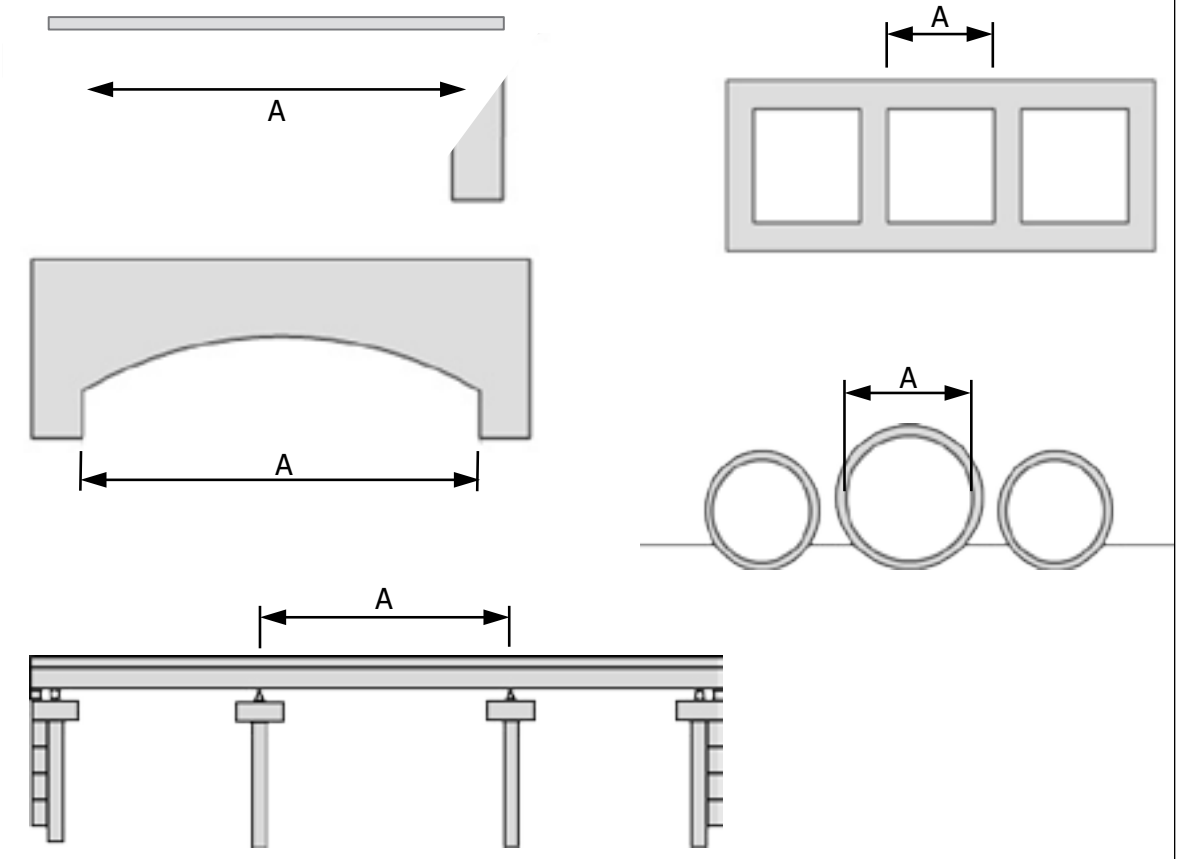


Figure 28. Profile views of various bridge types.

Examples - Maximum Span Length Continued

Four span bridge with variable skews. Span lengths are measured from centerline of bearing to centerline of bearing along the roadway centerline. Report 120.1.

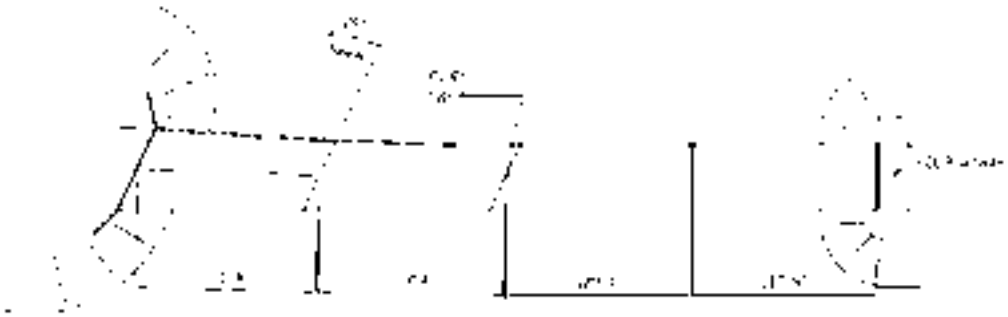


Figure 29. Plan view of a four-span bridge with variable skews.

Three span curved bridge. Span lengths are measured from centerline of bearing to centerline of bearing along the curved roadway centerline. Report 190.0.

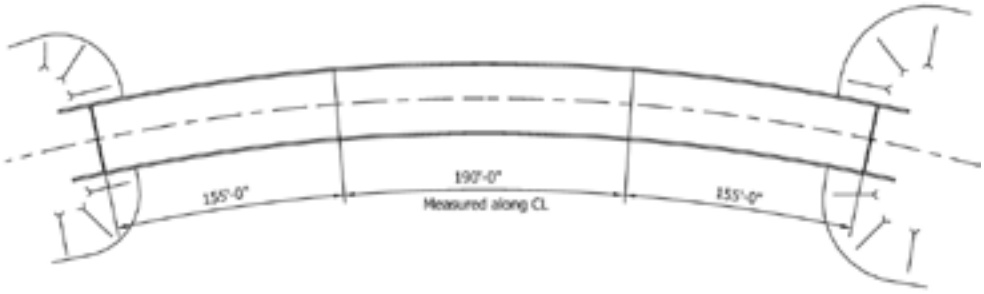


Figure 30. Plan view of a three-span curved bridge.

WSBIS Item 1360 – Out-to-Out Deck Width (feet) - NBI **N(4,1)**
NBI Item 52

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code the out-to-out width to the nearest tenth of a foot. If the structure is a through structure, the number to be coded will represent the lateral clearance between superstructure members. See example in Figure WSBIS 1364a.

The measurement will be the most representative out-to-out width on the bridge, and should be exclusive of flared areas for ramps. See examples in Figures WSBIS 1356a and 1364b.

Where traffic runs directly on the top slab (or wearing surface) of the culvert (e.g., an R/C box without fill) code the actual width (out-to-out). This will also apply where the fill is minimal and the culvert headwalls affect the flow of traffic. However, for sidehill viaduct structures code the actual out-to-out structure width. See Figure WSBIS 1356b.

Where the roadway is on a fill carried across a pipe or box culvert and the culvert headwalls do not affect the flow of traffic, code 0. This is considered proper inasmuch as a filled section over a culvert simply maintains the roadway cross-section.

SNBI measurements for Out_to_Out Deck Widths are enough different from this field that a separate field was created. This field can be used to populate the SNBI field in many cases, but thru trusses, thru arches, culverts, and cantilevered sidewalks are measured differently. See Appendix D, WSBIS Item 1361 for more details.

Bridge Width Out to Out - SNBI *(Old Item 1361)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(4,1)	-	I	BG05	B.G.05	-

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the minimum out-to-out width measured perpendicular to the centerline of the roadway to the nearest tenth of a foot. For multiple (double) deck bridges that are inventoried as one bridge, measure all levels, and report the sum of the measurements to account for the total width carried on the bridge. For bridges under fill, measure the width from out-to-out of the headwalls or barrel ends. For sidehill bridges, measure the out-to-out structure width. For bridges that carry multiple types of service, for example highway, pedestrian, and railroad, measure the out-to-out width that encompasses all service types.	For bridges under fill, the reported value can be limited to the width of the roadway section over the bridge for unusual situations where the bridge continues far beyond the roadway cross-section, and a lesser width would likely be constructed for a replacement project. For bridges under fill, in which the features that define the out-to-out width are not parallel, report the minimum out-to-out width. For pedestrian RR and other non-vehicular structures, code this field when the owning agency performs Condition Inspections. The intent is to provide deck square footages associated with structure condition codes.

Examples - Bridge Width Out to Out - SNBI

Report measurement A.

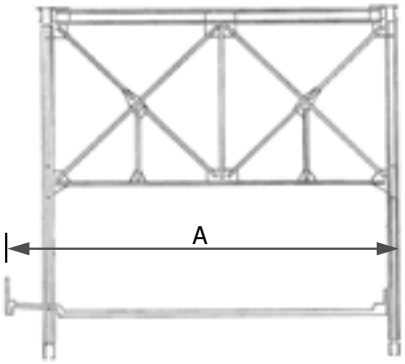


Figure 34. Cross-section view of a through truss bridge.

Examples - Bridge Width Out to Out - SNBI Continued

Report measurement A.

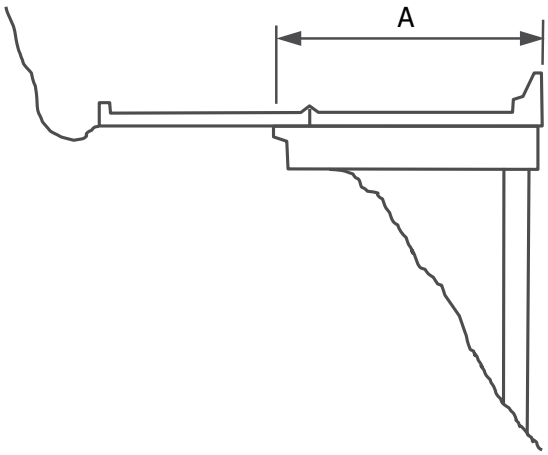


Figure 35. Cross-section view of a sidehill bridge.

Report measurement A.

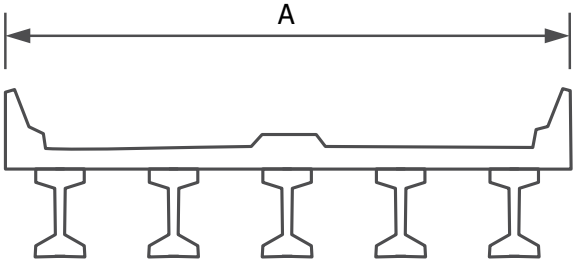


Figure 36. Cross-section view of a multi-girder bridge.

Report measurement A.

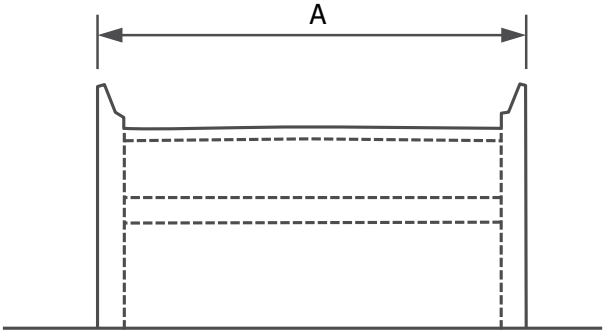


Figure 37. Cross-section view of a filled arch bridge or culvert under fill with headwalls.

Examples - Bridge Width Out to Out - SNBI Continued

Report measurement A.

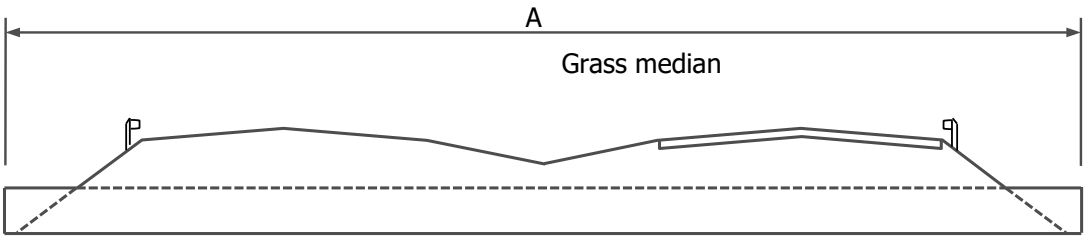


Figure 38. Cross-section view of a pipe culvert under fill.

Report measurement A.

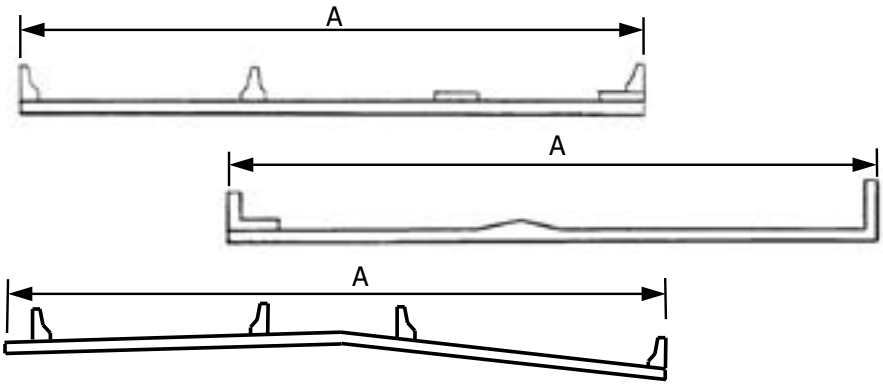


Figure 39. Cross-section views of various bridge decks with medians.

Report measurement A.

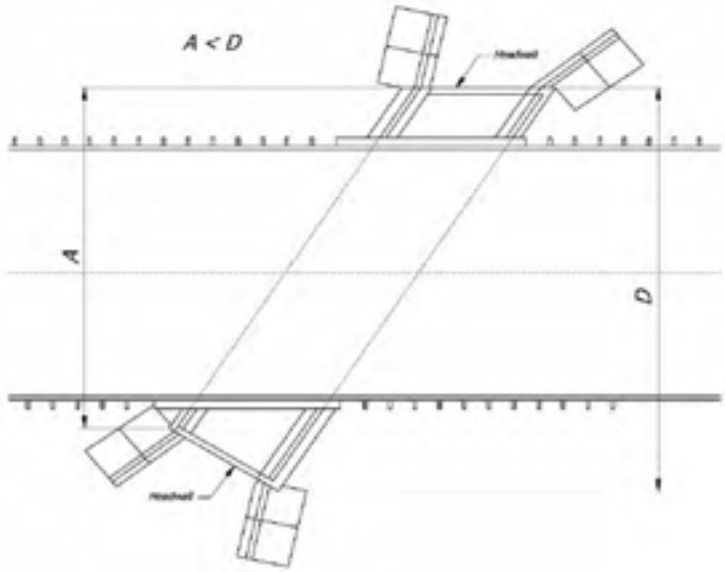


Figure 40. Plan view of a bridge with non-parallel fascias.

Examples - Bridge Width Out to Out - SNBI Continued

Report measurement A.

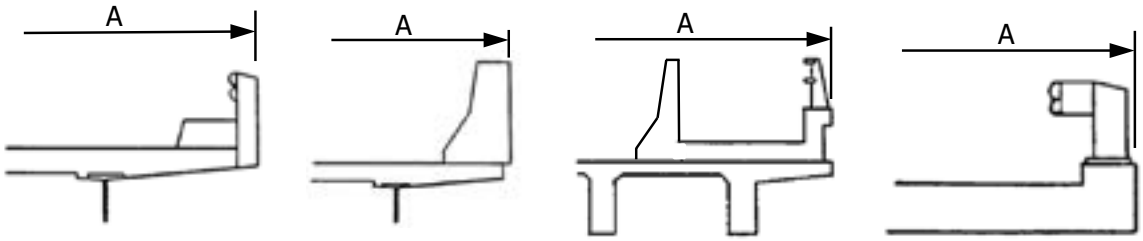


Figure 41. Partial cross-section views of various bridge decks with railings.

Report measurement A.

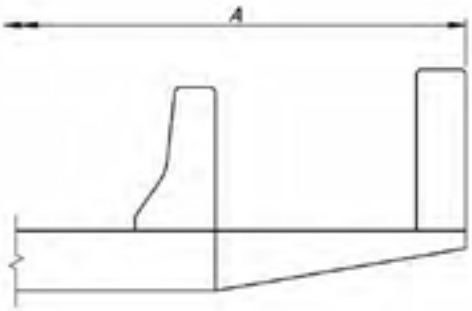


Figure 42. Cross-section view of a sidewalk retrofit.

WSBIS Item 1356 – Curb-to-Curb Width (feet) – NBI **N(4,1)**
NBI Item 51

Applicable Structure Types

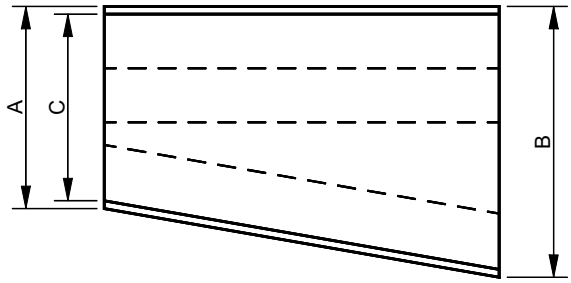
- **Bridges & culverts carrying public roadways**

Code the curb-to-curb width to the nearest tenth of a foot. The information to be recorded is the most restrictive minimum distance between curbs or rails on the structure roadway. The measurement should be exclusive of flared areas for ramps.

For structures with closed medians and usually for double decked structures, coded data will be the sum of the most restrictive minimum distances for all roadways carried by the structure*. The data recorded for this item must be compatible with other related route and structure data (e.g., Lanes On, Lanes Under, ADT, etc.). See examples in WSBIS Items 1364 and 1367.

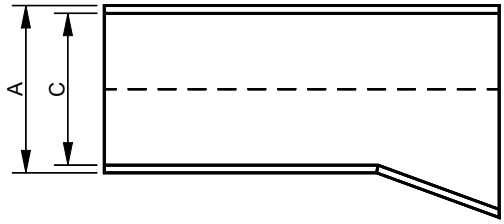
SNBI measurements for Curb_to_Curb Widths are enough different from this field that a separate field was created. This field can be used to populate the SNBI field in many cases, but thru trusses, thru arches, culverts, and cantilevered sidewalks are measured differently. See Appendix D, WSBIS Item 1358 for more details.

Figure WSBIS 1356a



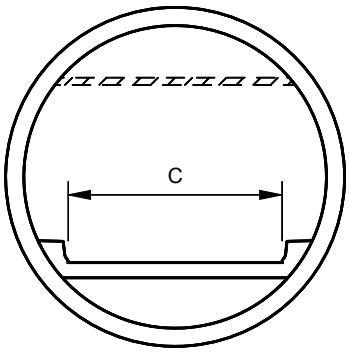
OUT TO OUT = (A + B) / 2
CURB TO CURB = C

EXAMPLE 1



OUT TO OUT = A
CURB TO CURB = C

EXAMPLE 2



CURB TO CURB = C
OUT TO OUT DOES NOT APPLY

EXAMPLE 3 (TUNNEL)

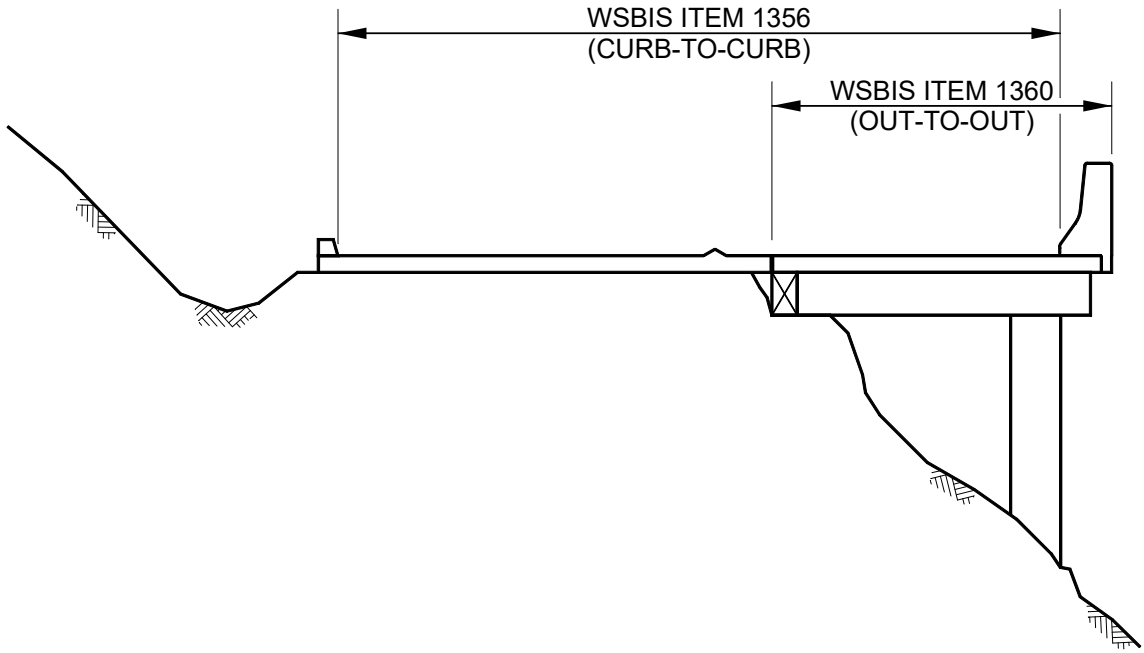
Where traffic runs directly on the top slab (or wearing surface) of a culvert-type structure (e.g., an R/C box without fill), code the actual roadway width (curb-to-curb or rail-to-rail).

Where the roadway is on fill carried across a structure and the headwalls or parapets do not affect the flow of traffic, code 0. This is considered proper inasmuch as a filled section simply maintains the roadway cross section.

*Raised or non-mountable medians, open medians, and barrier widths are to be excluded from the summation along with barrier-protected bicycle and equestrian lanes.

Coding a sidehill viaduct (half bridge):

Figure WSBIS 1356a



Bridge Width Curb to Curb - SNBI *(Old Item 1358)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(4,1)	-	I	BG06	B.G.06	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the sum of the most restrictive minimum usable distances for all roadways carried by the bridge. Measure the distance perpendicular to the centerline of the roadway between curbs or rails to the nearest tenth of a foot. Exclude from the usable distance measurement non-mountable medians, sidewalks, structurally inadequate shoulders, and other non-mountable areas. The measurement for this item shall be compatible with the measurements used for Item B.H.08 (Lanes On Highway), Item B.G.09 (Approach Roadway Width), and Item B.H.09 (Annual Average Daily Traffic). For multiple (double) deck bridges that are inventoried as one bridge, measure all levels, and report the sum of the most restrictive minimum usable distances carried by the bridge. For sidehill bridges measure the actual full curb-to-curb roadway width. For bridges that carry multiple types of service, for example highway, pedestrian, and railroad, report the usable distance that serves the highway service as denoted by curb or barrier separation, or other delineation that separates the service types.	Usable roadway width includes the width of traffic lanes and the widths of shoulders. Shoulders must be contiguous with the traveled way and must be structurally adequate for all weather and traffic conditions consistent with the facility carried. Unstabilized grass or dirt, with no base course, flush with and beside the traffic lane is not to be considered a shoulder for this item. For bridges under fill, the usable roadway width crossing the bridge is commonly the same value reported for Item B.G.09 (Approach Roadway Width). A barrier or curb greater than 6 inches high may be considered non-mountable for these specifications.

Examples - Bridge Width Curb to Curb - SNBI

Report measurement A.

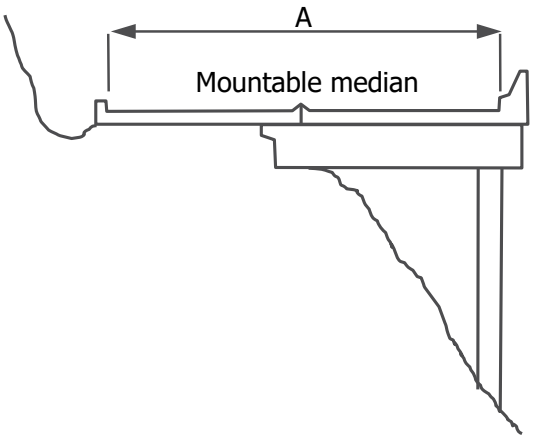


Figure 43. Cross-section view of a sidehill bridge.

Report measurement A.

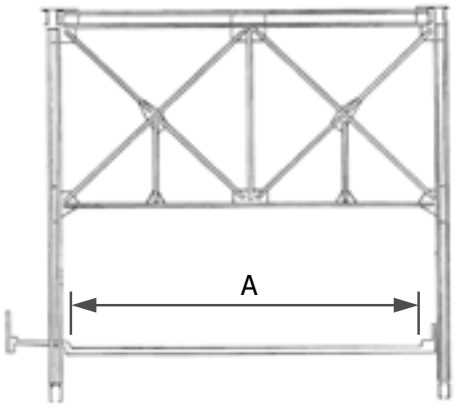


Figure 44. Cross-section view of a through truss bridge.

Report measurement A.

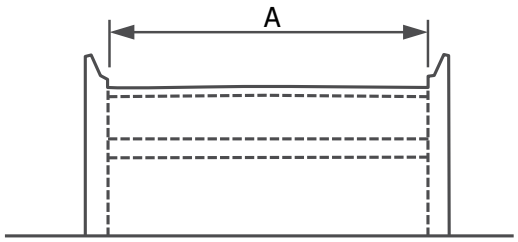


Figure 45. Cross-section view of a filled arch bridge or culvert under fill with headwalls.

Report measurement A.

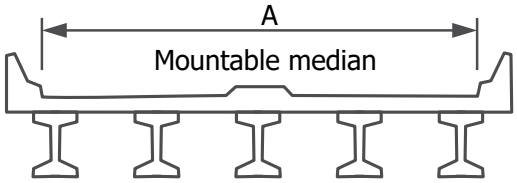


Figure 46. Cross-section view of a multi-girder bridge.

Report the sum of A+B.

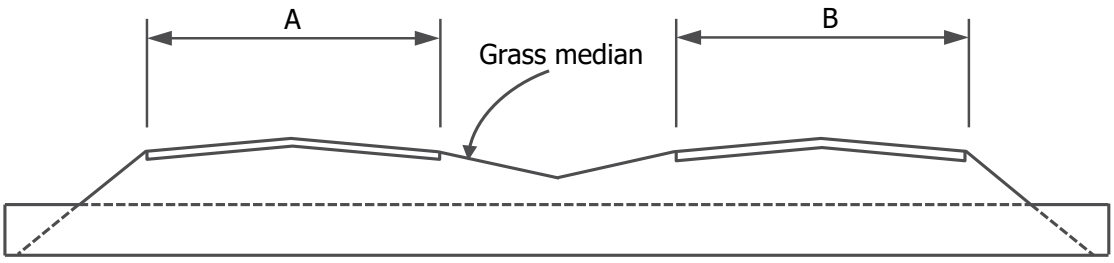


Figure 47. Cross-section view of a pipe culvert under fill.

Examples - Bridge Width Curb to Curb - SNBI Continued

Report measurement A.

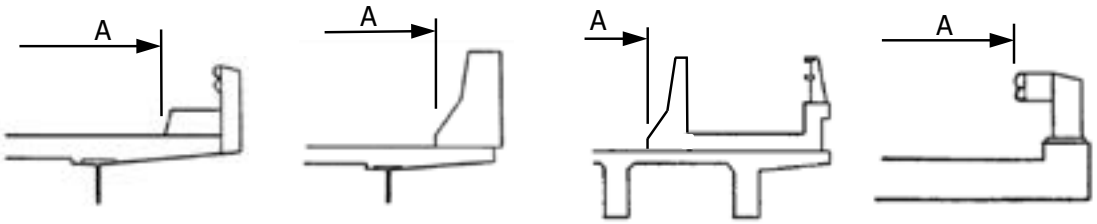


Figure 48. Partial cross-section views of various bridge decks with railings.

Report measurement A.

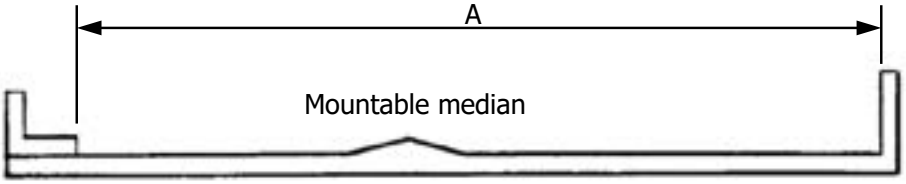


Figure 49. Cross-section view of a bridge deck with mountable median.

Report the sum of A+B+C.

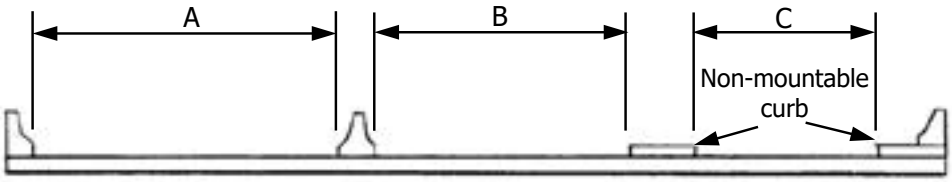


Figure 50. Cross-section view of a bridge deck with non-mountable curb and median barrier.

Report the sum of A+B.

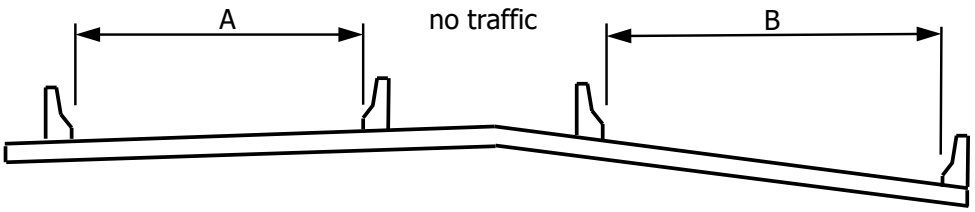


Figure 51. Cross-section view of a bridge deck with multiple median barriers.

Roadway Width Curb to Curb - SNTI *(Old Item 1357)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(4,1)	-	I	TG3	-	G.3

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record the most restrictive minimum distance between curbs or rails on the mainline tunnel roadway.	Ramps should be excluded when included as part of a tunnel system. The intent is to determine the restrictions of the primary route of the tunnel. Raised or non-mountable medians, and barrier widths are to be excluded from the summation.

Commentary Continued

Roadway Width, Curb to Curb	Code
24.00 feet	24.0
30.43 feet	30.4

Example - Roadway Width Curb to Curb - SNTI

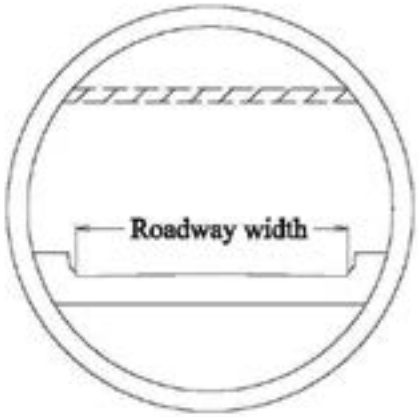


Figure 2.6.2 - Drawing of Width

Left Curb or Sidewalk Width *(Old Item 1364)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(3,1)	-	I	BG07	B.G.07	G.4

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Specification	Commentary
Report the minimum width of the left curb or sidewalk to the nearest tenth of a foot from the face of bridge rail to the face of curb. Measure the width perpendicular to the centerline of the roadway. Report 0.0 when the face of the curb does not extend beyond the face of the bridge rail. Report 0.0 when there is no left curb or sidewalk.	Left and right are determined based on the direction of the inventoried route carried by the bridge, commonly west to east or south to north. When a defined longitudinal joint exists between the curb and the sidewalk, such as a granite curb and concrete sidewalk, measure the width from the face of bridge rail to the face of the granite curb.

Examples - Left Curb or Sidewalk Width

Report measurement C.

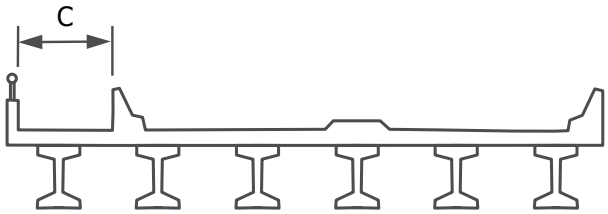


Figure 52. Cross-section view of a multi-girder bridge.

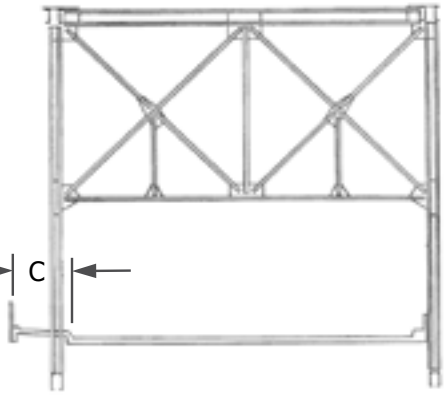


Figure 53. Cross-section view of a through truss bridge.

Report measurement C.

Figure 54. Cross-section view of a slab bridge.

Examples - Left Curb or Sidewalk Width Continued

Report measurement C.

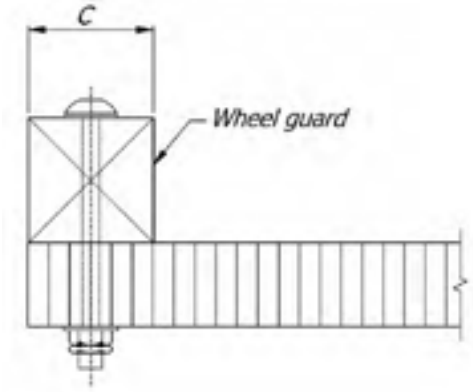


Figure 55. Cross-section view of a timber wheel guard.

Report measurement C.

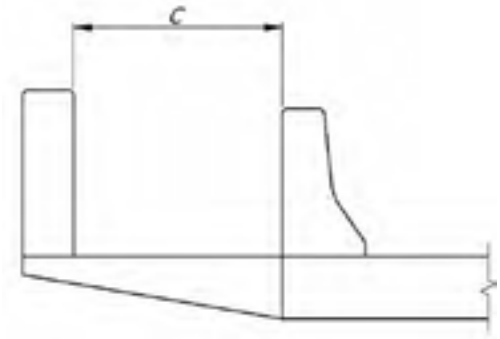


Figure 56. Cross-section view of a sidewalk retrofit.

Report measurement C.

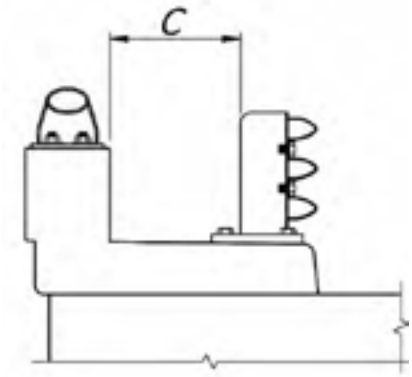


Figure 57. Cross-section view of a sidewalk retrofit.

Right Curb or Sidewalk Width *(Old Item 1367)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(3,1)	-	I	BG08	B.G.08	G.5

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Specification	Commentary
Report the minimum width of the right curb or sidewalk to the nearest tenth of a foot from the face of bridge rail to the face of curb. Measure the width perpendicular to the centerline of the roadway. Report 0.0 when the face of the curb does not extend beyond the face of the bridge rail. Report 0.0 when there is no right curb or sidewalk.	Right and left is determined based on the direction of the inventoried route carried by the bridge, commonly west to east or south to north. When a defined longitudinal joint exists between the curb and the sidewalk, such as a granite curb and concrete sidewalk, measure the width from the face of bridge rail to the face of the granite curb.

Examples - Right Curb or Sidewalk Width

Report measurement C.

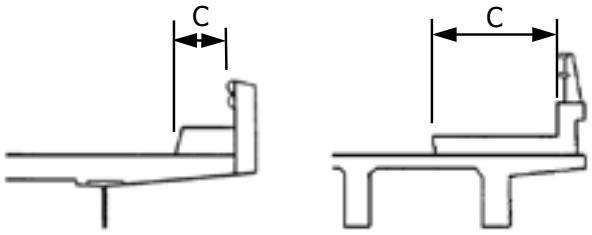


Figure 58. Partial cross-section views of various bridge decks with railings.

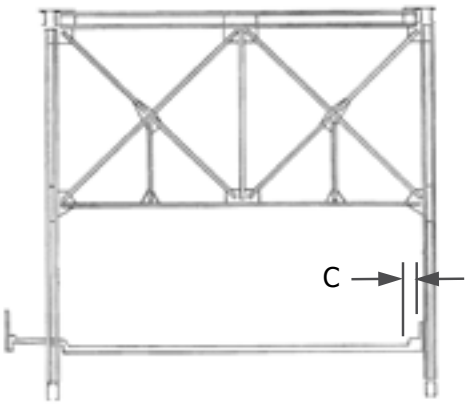


Figure 59. Cross-section view of a through truss bridge.

Figure 60. Cross-section view of a slab bridge with various medians.

Examples - Right Curb or Sidewalk Width Continued

Report measurement C.

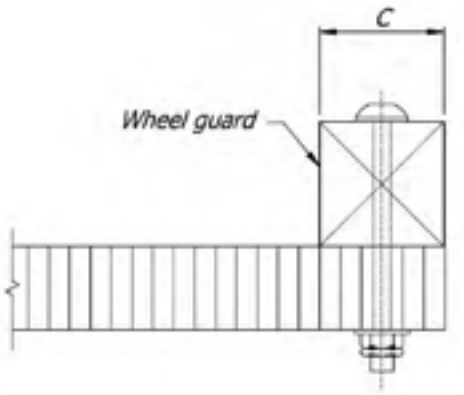


Figure 61. Cross-section view of a timber wheel guard.

Report measurement C.

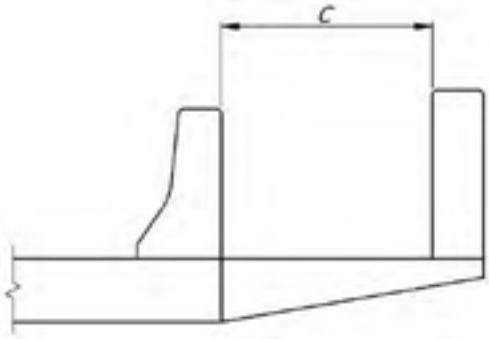


Figure 62. Cross-section view of a sidewalk retrofit.

Report measurement C.

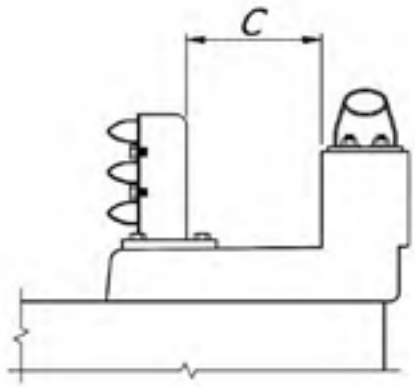


Figure 63. Cross-section view of a sidewalk retrofit.

WSBIS Item TA8 – Service In Tunnel - SNTI *(Old Item 1543)* **Pulldown**
NTI Item A.8

Applicable Structure Types

- **Tunnels carrying public roadways within**

Record the type of service for the route in the tunnel using one of the following codes:

Table 1543 Service In Tunnel Code - SNTI

WSBIS Code	Description
1	Highway
2	Highway and Railroad
3	Highway and Pedestrian
4	Highway, Railroad, and Pedestrian
5	Other

Approach Roadway Width *(Old Item 1397)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(4,1)	-	I	BG09	B.G.09	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the minimum usable approach roadway width measured to the nearest tenth of a foot. Measure the distance perpendicular to the centerline of the roadway between curbs or rails that is representative of the approach roadway within 100 feet of the bridge. Exclude from the usable distance measurement: non-mountable medians, sidewalks, and other protected areas with non- mountable curbs or barriers. Report the lesser of the two approach roadway widths for bridges that carry two-way traffic. Report the width at the approach end for bridges that carry one-way traffic. For double decked structures, this item should be coded as the sum of the usable roadway widths for the approach roadway. If a ramp is adjacent to the through lanes approaching the structure, it shall be included in the approach roadway width.	Usable roadway width includes the width of traffic lanes and the width of shoulders. Shoulders must be contiguous with the traveled way and must be structurally adequate for all weather and traffic conditions consistent with the facility carried. Unstabilized grass or dirt, with no base course, flush with and beside the traffic lane is not to be considered a shoulder for this item. A curb greater than 6 inches high may be considered non-mountable for these specifications.

Examples - Approach Roadway Width

Both roadways are carried on one bridge. Report the sum of measurements A and B.

Figure 64. Cross-section view of two approach roadways that are carried across one bridge.

Examples - Approach Roadway Width Continued

Mainline and Ramp are both carried on one bridge. Report the sum of measurements A and B.

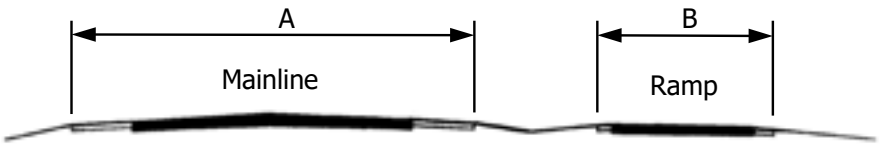


Figure 65. Approach roadway cross-section view for a mainline and a ramp that are carried across one bridge.

Mainline and Ramp are carried on separate bridges.

- Report measurement A for the Mainline bridge.
- Report measurement B for the Ramp bridge.

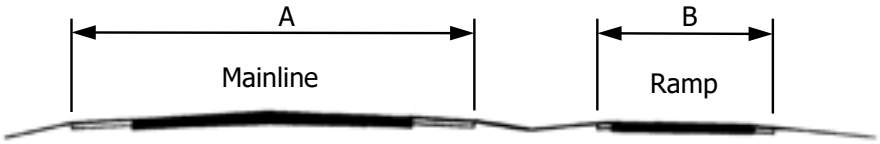


Figure 66. Approach roadway cross-section view for a mainline and a ramp that are carried across separate bridges.

Code the normal width of usable roadway approaching the structure measured to the nearest foot. Usable roadway width will include the width of traffic lanes and the widths of shoulders where shoulders are defined as follows:

Shoulders must be constructed and normally maintained flush with the adjacent traffic lane, and must be structurally adequate for all weather and traffic conditions consistent with the facility carried. Unstabilized grass or dirt, with no base course, flush with and beside the traffic lane, is not to be considered a shoulder for this item.

For structures with medians of any type and double decked structures, this item should be coded as the sum of the usable roadway widths for the approach roadways (i.e., all median widths which do not qualify as shoulders should not be included in this dimension). When there is a variation between the approaches at either end of the structure, code the most restrictive of the approach conditions.

If a ramp is adjacent to the through lanes approaching the structure, it shall be included in the approach roadway width.

WSBIS Item 1291 – Median Code - NBI **Pulldown**
NBI Item 33

Applicable Structure Types

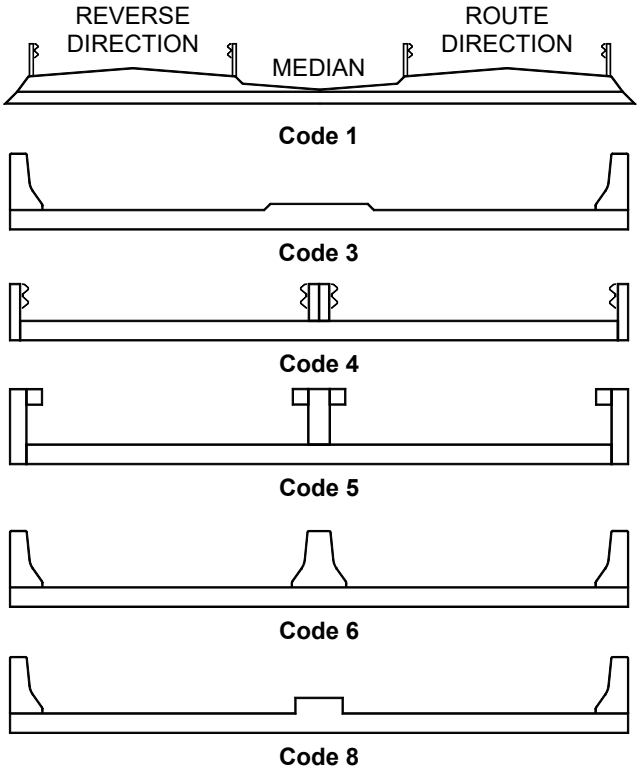
- **Bridges & culverts carrying public roadways**

Indicate with a 1-digit code if the median is nonexistent, open or closed. The median is closed when the area between the 2 roadways at the structure is bridged over and is capable of supporting traffic. All bridges that carry either 1-way traffic or 2-way traffic separated only by a centerline will be coded 0 for no median.

Table 1291 Median Code - NBI

WSBIS Code	NBI Code	Description
0	0	No median (undivided highway)
1	1	Open median
2	2	Closed median – painted only
3	2	Closed median – mountable curb (<6" vertical surface, or sloped surface)
4	3	Closed median – flex or thrie beam
5	3	Closed median – box beam guardrail
6	3	Closed median – concrete barrier
8	3	Closed median – non-mountable curb (6" or greater vertical surface)
9	3	Other median

Figure WSBIS 1291 Median Code - NBI



NBI Commentary:

This coding guide split out various types of medians that are translated to the NBI coding guide as described above.

Median Code - SNBI

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(1)	-	I	BG10	B.G.10	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the type of bridge median using one of the following codes. **Code** **Description** 0 No median 1 Open median 2 Closed median (mountable) 3 Closed median (non-mountable) Parallel bridges carrying a single divided route (usually interstates) are coded 0 unless there is a median on the bridge deck itself. Parallel bridges with divided or undivided routes separated only by a longitudinal deck joint are coded 1 when traffic cannot safely traverse the joint width. If the joint width is safely traversable, use one of the remaining codes. Joint condition does not affect the coding of this item. Adjacent bridges carrying separate routes are coded 0 unless there is a median on the bridge deck itself.	Code 0 when traffic either has no centerline or has traffic separated only by a centerline stripe. Code 1 for structures that pass continuously under separated roadways on fill without any barriers in place – usually culverts. Code 2 for mountable medians, including painted medians with no curbs, curbs less than 6” high, or sloped curbs. Code 3 for non-mountable medians, including medians separated with vertical curbs 6” high or greater, guardrails, or concrete rails.

Example - Median Code SNBI

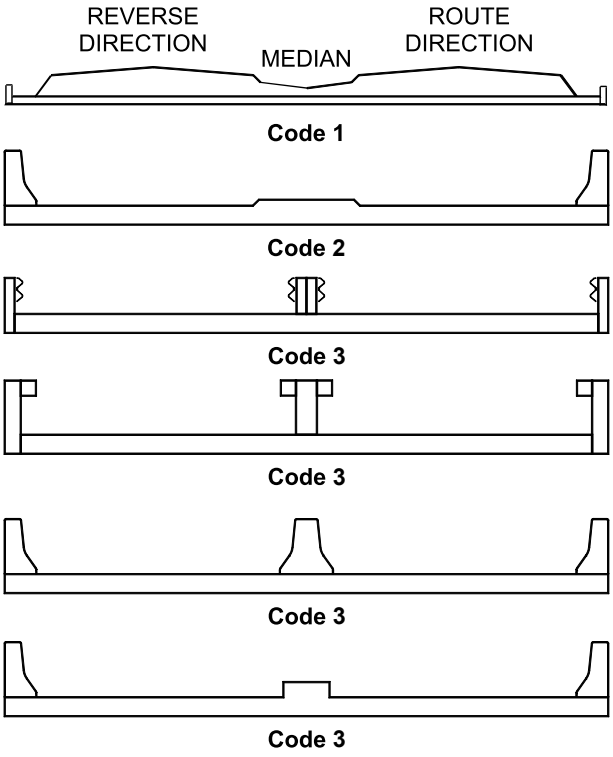


Figure BG10.

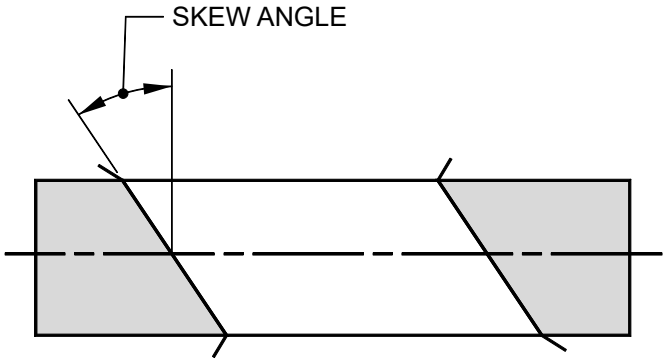
WSBIS Item 1310 - Skew Angle (degrees) - NBI **N(2,0)**
NBI Item 34

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

The skew angle is the angle between the centerline of a pier and a line normal to the roadway centerline. When plans are available, the skew angle can be taken directly from the plans. If no plans are available, the angle is to be field measured if possible. Record the skew angle to the nearest degree. If the bridge piers are perpendicular to roadway centerline, code 0. When the structure is on a curve or if the skew varies for some other reason, the average skew should be recorded, if reasonable. Otherwise, record 99 to indicate a major variation in skews of substructure units.

Figure WSBIS 1310



Skew Angle - SNBI

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(2,0)		I	BG11	B.G.11	

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the skew angle to the nearest degree. Measure the skew angle between the centerline of a substructure unit and a line perpendicular to the roadway centerline. Report the maximum skew when skews vary amongst substructure units. Report 0 if there is no skew.	The skew angle can be taken directly from the plans, if available, or measured in the field.

Example - Skew Angle - SNBI

Report the skew as the result of $Sin^{-1}(A/C)$, $Cos^{-1}(B/C)$ or Tan^{-1} (A/B).

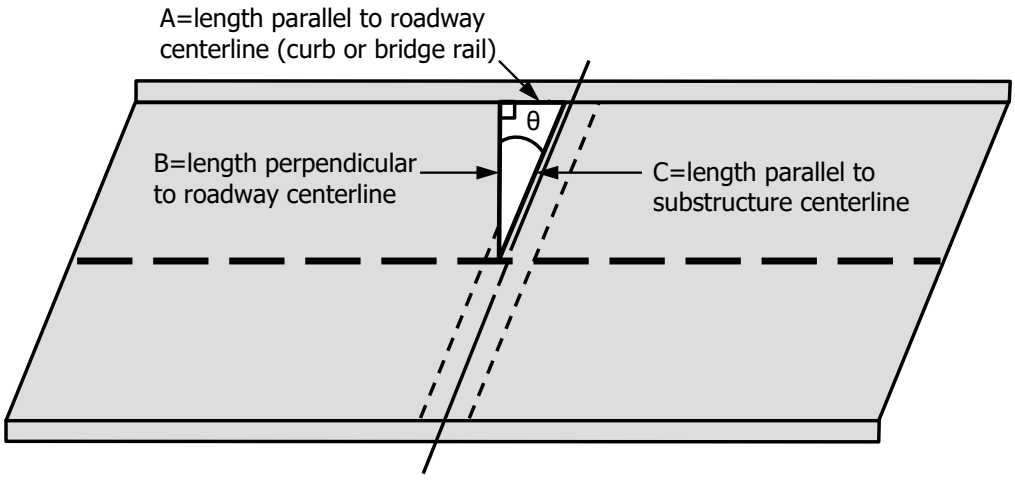


Figure 70. Plan view of a bridge deck indicating skew determination.

Curved Bridge *(Old Item 1313)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(2)	-	I	BG12	B.G.12	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report whether the bridge is horizontally curved using one of the following codes. **Code** **Description** CU Curved girder(s) CP Piecewise straight girders CK Kinked girder(s) N Not curved	A bridge is considered horizontally curved when at least one girder line forms a curve using either a curved girder(s), piecewise straight girders forming a segmented/chorded curve, or a kinked girder(s). For this specification, a piecewise straight girder line is comprised of girders with a longitudinal axis that changes orientation at one or more supports. The girder line may be simply supported or continuous at supports. A kinked girder is a girder with a longitudinal axis that changes orientation at a location(s) along the girder length excluding at the supports. Diaphragm and cross-frame members in horizontally curved bridges are primary members. Use code N for bridges that have curved deck geometry, or may be striped as curved, but the girders do not form a curve.

Examples - Curved Bridge

Report CU.

Figure 71. Curved bridge with curved girders. (Source: Alaska DOT)

Examples - Curved Bridge Continued

Report CP.

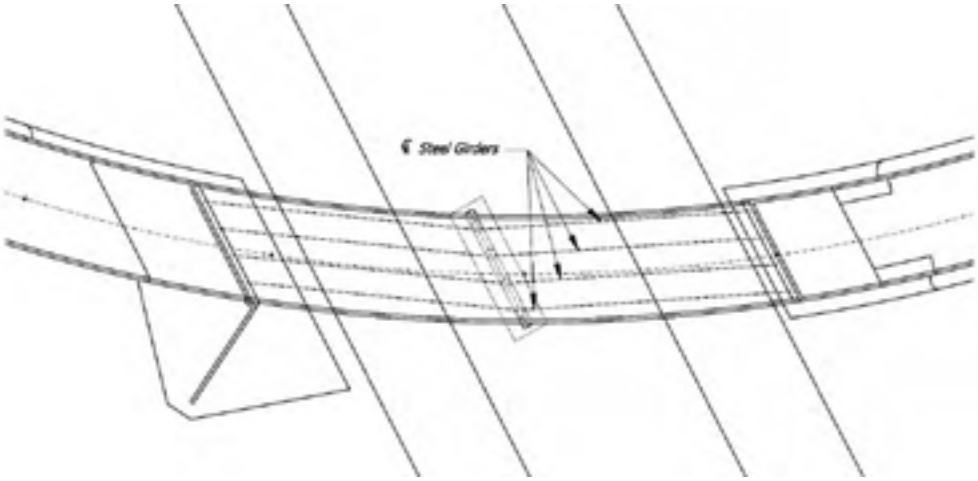


Figure 72. Plan view of a curved bridge with piecewise straight girders.

Report CK.

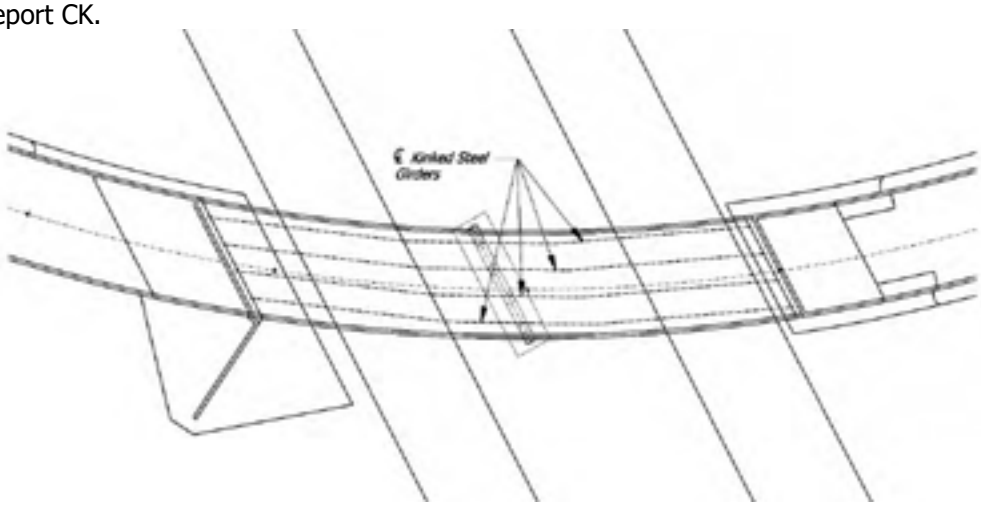


Figure 73. Plan view of a curved bridge with kinked girders.

Maximum Bridge Height *(Old Item 1314)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(4,0)	-	I	BG13	B.G.13	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Record the maximum height from top of deck to ground line or water surface elevation, whichever yield the largest value, rounded to the nearest foot.	For double-deck bridges inventoried as one bridge, measure from top of deck of the lower deck. For double-deck bridges inventoried as two bridges, measure from the top of deck of the inventoried bridge. Ground line represents dry terrain, pavement, or waterway bottom. Use the water surface elevation at the time the value for this item is established. This item may be estimated by field observation or from plans when it is not practical or is infeasible to measure, or height is more than 30 ft. This item does not need to be updated due to fluctuations in water surface elevation.

Examples

Bridge carries SR170 over Felix Creek and County Trail. Report 27.

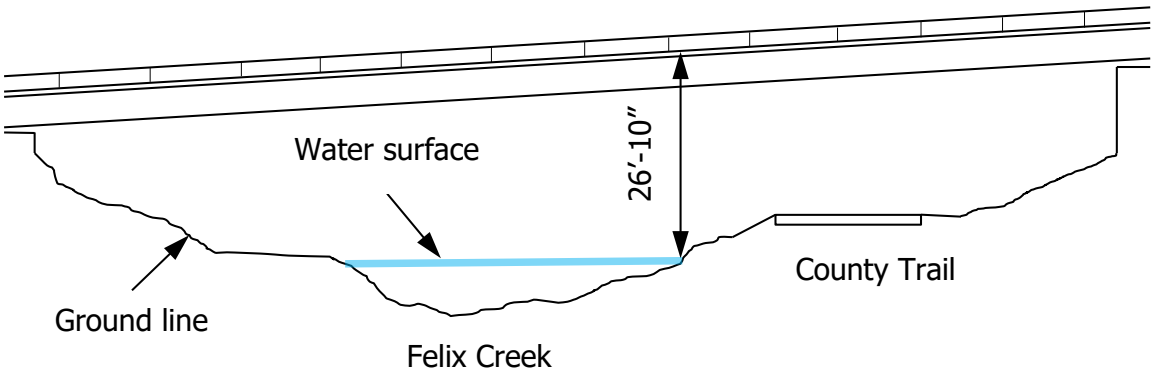


Figure 74. Profile view of a bridge over a creek and trail.

Sidehill Bridge *(Old Item 1315)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(1)	-	I	BG14	B.G.14	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the inspection type or scour monitoring performed using one of the following codes. **Code** **Description** N Not a sidehill bridge Y Is a sidehill bridge	A sidehill bridge is a structure built onto the side of terrain or earth material with the roadway centerline running nearly parallel to the face of the terrain or material. The roadway is carried partially on structure and partially on terrain that has been modified by cutting or filling to form the required roadway subgrade elevation. For sidehill bridges, Item B.G.06 (Bridge Width Curb-to-Curb) is typically larger than Item B.G.05 (Bridge Width Out-to-Out). For sidehill bridges with irregular geometry, reporting the actual deck area in Item B.G.15 (Irregular Deck Area) provides a more accurate value than using the default calculation described for that item. Use code N when no portion of the bridge is a sidehill structure.

Examples

A bridge is built onto the side of a hill with the roadway partially on ground and partially on structure. Report Y.

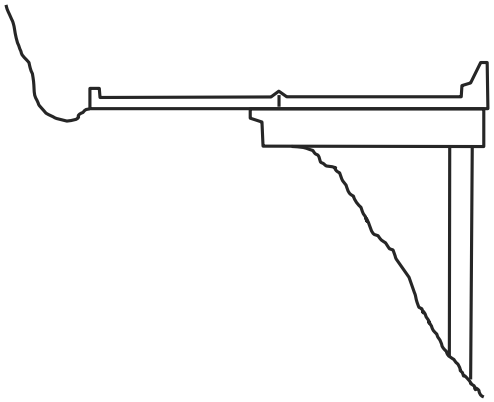


Figure 75. Cross-section view of a sidehill bridge.

Irregular Deck Area *(Old Item 1316)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(10,1)	-	I	BG15	B.G.15	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the total deck area rounded to the nearest tenth of a square foot. Only report this item when the actual area is obtained from plans or measurement of bridges with irregular geometry. The limits of measurement shall be in accordance with Items B.G.05 (Bridge Width Out-to-Out) and B.G.02 (Total Bridge Length). For bridges that carry multiple types of service, for example highway and railroad, report the deck area that encompasses all service types.	Reporting the deck area calculated from plans may more accurately reflect the deck area for bridges with unusual geometry (e.g. flared, sidehill, or bifurcated structures), or through structures with cantilevered sidewalks. This item can improve the accuracy of national performance measure computations, estimating cost, etc.

Calculated Deck Area *(Old Item 1317)*					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
Calculated		I	BG16	B.G.16	

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
The default calculation for bridges is the value reported in Item B.G.05 (Bridge Width Out-to-Out) multiplied by the value reported in Item B.G.02 (Total Bridge Length) rounded to the nearest tenth of a square foot.	This default deck area will be used for national bridge performance measures unless the Irregular Deck Area BG15 is coded.

WSBIS Item 1370 – Min. Vert. Clearance Over Deck (ft & in) - NBI N(4,0)

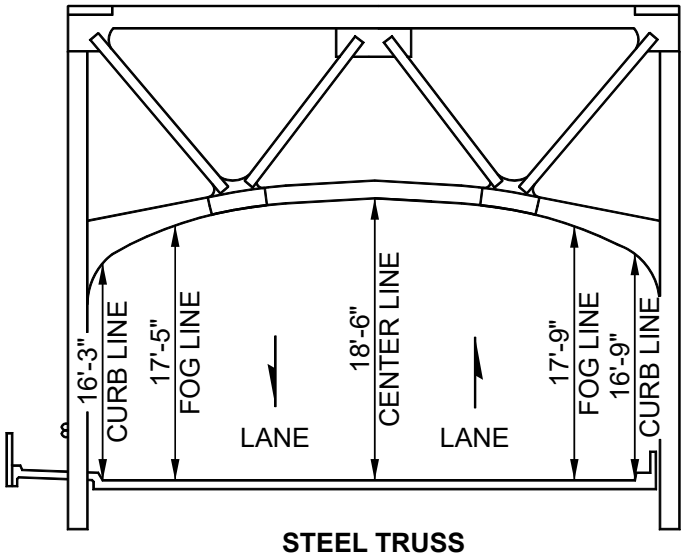
NBI Item 53

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

The information to be recorded for this item is the actual minimum vertical clearance over the bridge roadway, including shoulders, to any superstructure restriction, in feet and inches, rounded to the lesser inch (e.g., 16′ 3¾″ is to be coded 1603). For double decked structures code the minimum, regardless whether it is pertaining to the top or bottom deck. When no superstructure restriction exists above the bridge roadway code 9999. When a restriction is 100 feet or greater code 9912.

Figure WSBIS 1370



STEEL TRUSS

CODE: **1603**

WSBIS Item 1374 – Min. Vert. Clearance Under Bridge (ft & in) - NBI **N(4,0)**
NBI Item 54B

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

Code the minimum vertical clearance from the roadway (travel lanes only)* or railroad track beneath the structure to the underside of the superstructure.

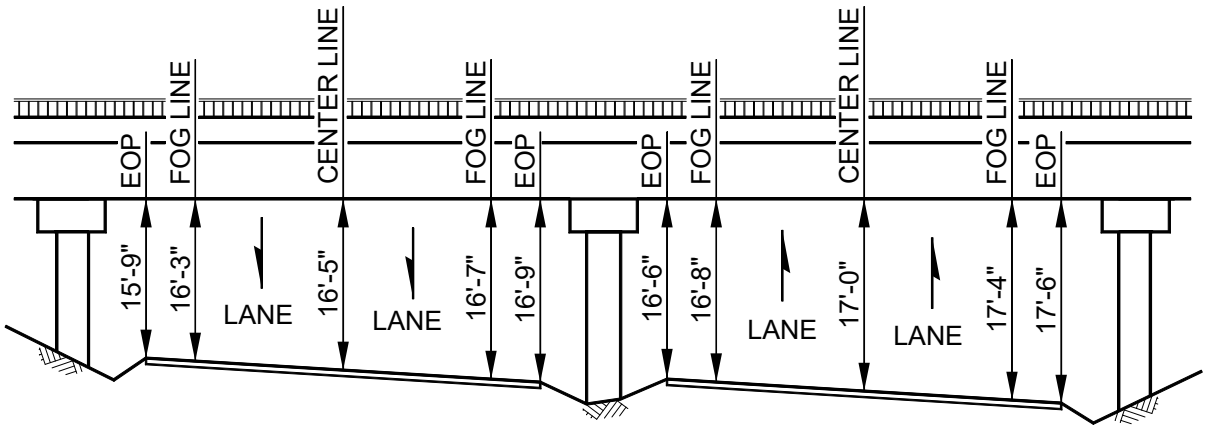
If the bridge crosses both a highway and a railroad, code the highway clearance UNLESS the railroad has a substandard clearance based on current design criteria and the roadway is NOT substandard. Roadway standard minimum clearance is 16' - 6" and RR standard minimum clearance is 22' - 6".

The information to be recorded is the actual minimum vertical clearance over the traveled way to the structure, in feet and inches, rounded to the lesser inch (e.g., 16′ 3¾″ is to be coded 1603). When a restriction is 100 feet or greater, code 9912.

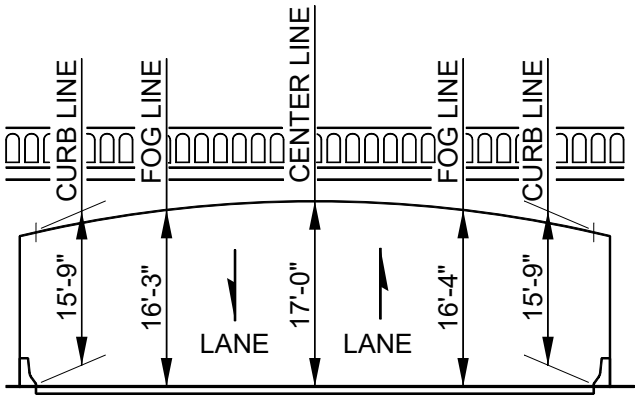
If the feature is not a highway or railroad, code the minimum vertical clearance 0. A highway is to be considered any functionally classified, public road. Private roads are not to be included.

* Traveled way, or travel lanes, is between fog lines and excludes shoulders or gore areas. In cases where there are no fog lines, judgement shall be used to determine edges of traveled way.

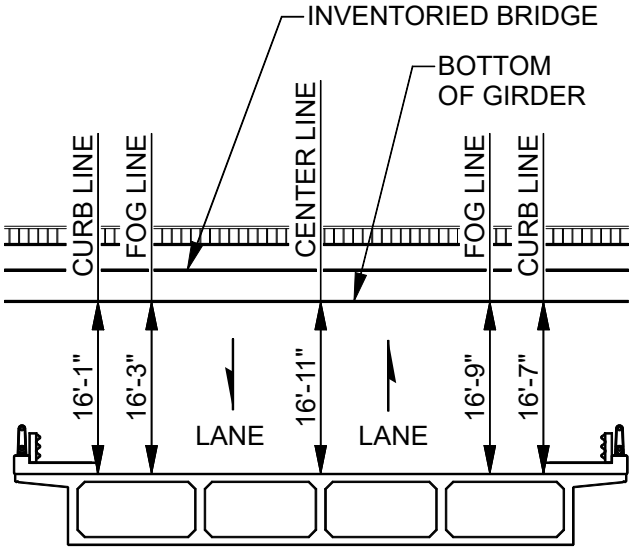
Figure WSBIS 1374



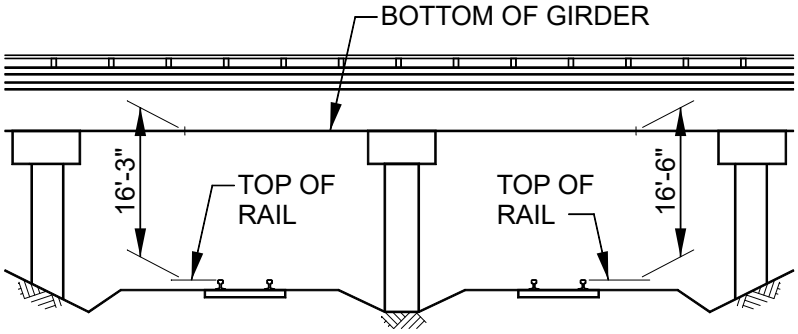
DIVIDED HIGHWAY (Fig. 1374a)
CODE: **1603**



UNDIVIDED HIGHWAY (Fig. 1374b)
CODE: **1603**



BRIDGE OVER BRIDGE (Fig. 1374c)
CODE: **1603**



RAILROAD (Fig. 1374d)
CODE: **1603**

WSBIS Item 1401 – Minimum Vertical Clearance Over Tunnel Roadway (ft) - SNTI N(5,1)
NTI Item G.2

Applicable Structure Types

- **Tunnels carrying public roadways within**

Record the minimum vertical clearance between the mainline tunnel roadway surface and any overhead restriction, i.e. tunnel ceiling, overhead signs, lighting, etc. The roadway surface includes any surface on which a vehicle can travel, including shoulders. Ramps should be excluded when included as part of a tunnel system. The intent is to determine the restrictions of the primary route of the tunnel.

Figure WSBIS 1401a

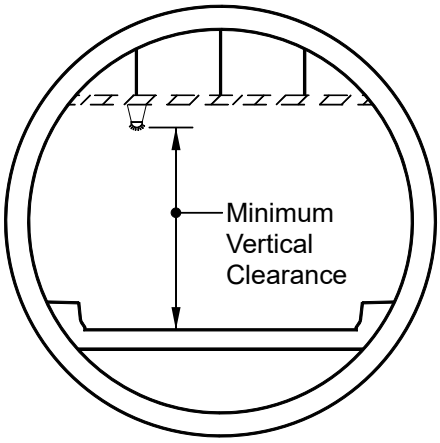
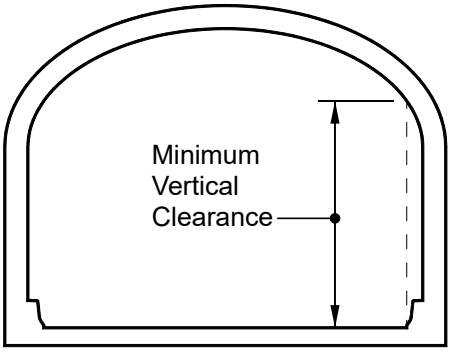


Figure WSBIS 1401b



Number of Bores - SNTI *(Old Item 1510)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-		TS1	-	S.1

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record the one digit number defining the number of bores in a tunnel. When recording and coding for this item, use the number of bores associated with Item ID I. - Tunnel Number.	Definition of a Tunnel Bore - an underground passageway for vehicles that pass under a mountain, waterway, or an urban area. A ramp should not be counted as a bore unless it is being coded as a separate tunnel.

Examples - Number of Bores - SNTI

Figure WSBIS TS1a Two Bores

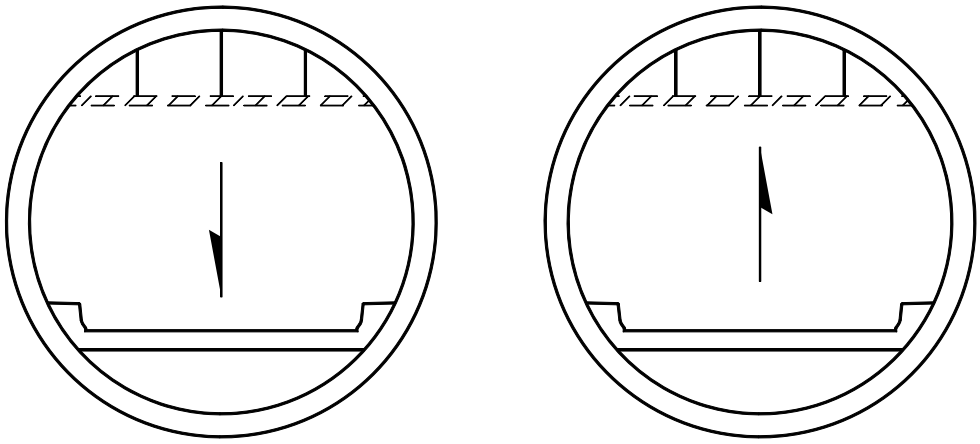
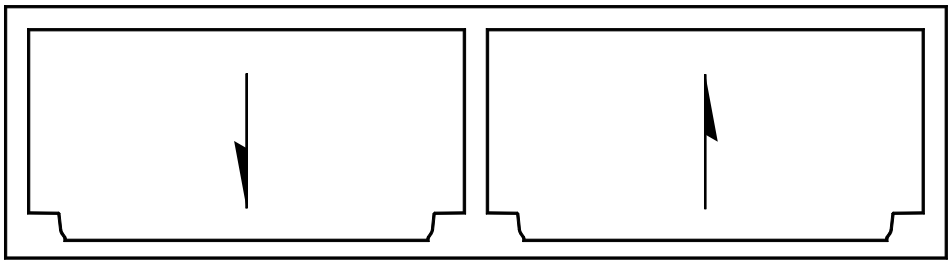


Figure WSBIS TS1b One Bore



Tunnel Shape - SNTI *(Old Item 1511)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-		TS2	-	S.2

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record the type of tunnel shape.	Definition of a Tunnel Bore - an underground passageway for vehicles that pass under a mountain, waterway, or an urban area. A ramp should not be counted as a bore unless it is being coded as a separate tunnel.

Code	Description
1	Oval
2	Horseshoe
3	Rectangular
4	Circular

Examples - Tunnel Shape - SNTI

Figure WSBIS TS2a Circular Tunnel

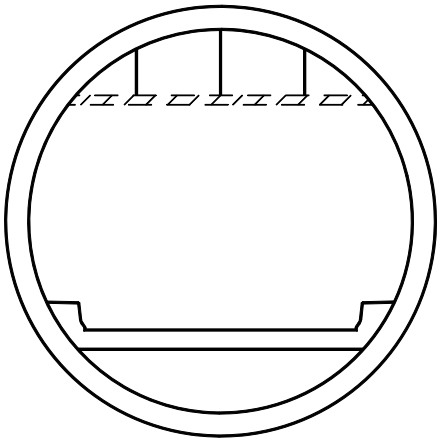


Figure WSBIS TS2b Horseshoe Tunnel

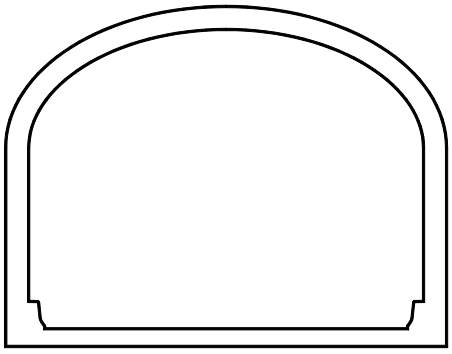


Figure WSBIS TS2c Rectangular Tunnel

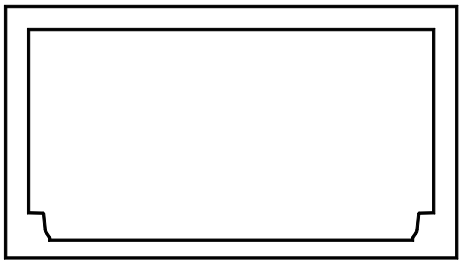
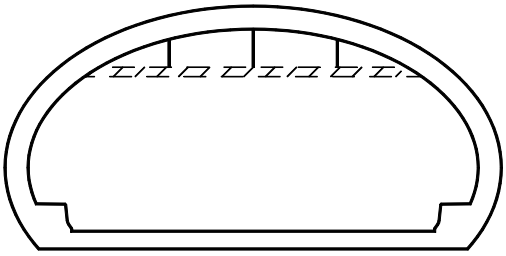


Figure WSBIS TS2d Oval Tunnel



Portal Shape - SNTI *(Old Item 1512)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-		TS3	-	S.3

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification

Record the type of portal shape.

Code	Description
1	Oval
2	Horseshoe
3	Rectangular
4	Circular
5	Other

Commentary

See example shapes shown for Item ID TS2 - Tunnel Shape - SNTI: Figures TS2a, TS2b, TS2c, TS2d

Ground Conditions - SNTI *(Old Item 1513)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-		TS4	-	S.4

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification

Record the type of ground conditions.

Code	Description
1	Soil
2	Rock
3	Mixed Face

Commentary

Definitions:

Soil is used to define ground conditions consisting primarily of clay, silt, sand, gravel or a mixture.

Rock is used to define ground conditions consisting primarily of material that has rock structure in weathered to sound condition.

The term mixed face usually refers to a situation where the soil conditions vary along the length and/or height of the tunnel.

Complex Tunnel - SNTI *(Old Item 1514)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown		I	TS5		S5

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record whether the tunnel is complex using one of the following codes: **Code** **Description** 0 The tunnel is not complex 1 The tunnel is complex Do not report this item for bridges that do not have steel members as indicated in Items B.SP.04 (Span Material) and B.SB.03 (Substructure Material).	A complex tunnel is characterized by advanced or unique structural elements or functional systems. Complex tunnels may include mechanical or fire suppression equipment to ventilate exhaust from the tunnel or provide protection against tunnel fires. A non-complex tunnel in contrast is typically of a shorter length, not requiring any ventilation, and may or may not have lighting installed

Height Restrictions - SNTI *(Old Item 1402)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-		TL10	-	L.10

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record whether the tunnel has a height restriction using one of the following codes: **Code** **Description** 1 Yes, there is a height restriction, with measured clearance < 14’-4” 0 No, there is no height restriction, with measured clearance => 14’-4”	

Hazardous Material Restriction - SNTI *(Old Item 1408)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-		TL11	-	L.11

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record whether the tunnel has a hazardous material restriction using one of the following codes	

Code	Description
1	Yes, there is a hazardous material restriction
0	No, there is no hazardous material restriction

Other Restrictions - SNTI *(Old Item 1409)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-		TL12	-	L.12

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record whether the tunnel has a restriction other than load posting, height or hazardous material using one of the following codes:	Other restrictions could include width restrictions or requirements for police escorts for permit vehicles.

Code	Description
1	Yes, there are other restrictions
0	No, there are no other restrictions

Crossing Tab

WSBIS Item 2000 – Main Listing Code **Pulldown**

Applicable Structure Types

- **All structure records**

See Coding Guide Clarifications for a description of the Main Listing Flag.

This item is visible in the BridgeWorks Inventory Management mode.

WSBIS Item 1432 – On/Under Code **Pulldown**
NBI Item 5A

Applicable Structure Types

- **All structure records**

There are three types of WSBIS records: On, Under, and neither on or under. There are two types of NBI records: On and Under. The NTI makes no distinction for tunnels, and WSBIS treats all tunnel records as Under records.

Table 1432 On/Under Code

WSBIS Code	NBI Code	NTI Code	Description
1	1	n/a	Route carried on a bridge (not used for routes over a tunnel)
2	2	n/a	Single route goes under a bridge or through a tunnel
3 - 9	-	-	Route carried above bridge (FOR BPO USE ONLY IN 2024)
A – Z	A – Z	n/a	Multiple routes go under a bridge (no provision to code multiple routes through a tunnel)
0	n/a	n/a	No route on or under a structure

On signifies that the inventory route is carried on a bridge, but not over a tunnel. All of the NBI data items must be coded, unless specifically exceptive, with respect to the bridge and the inventory route on it.

Under signifies that the inventory route goes under the structure if it's a bridge, and through a structure if it's a tunnel. If an inventory route beneath a bridge is a Federal-aid highway, is a STRAHNET route or connector or is otherwise important, it must be reported to the NBI. The type code must be 2 or an alphabetic letter A through Z as follows:

- If a single route goes under a bridge or the structure is a tunnel, code 2 whether or not this undercrossing is NBI or NTI reportable.
- If two or more routes go under a bridge and only one undercrossing is NBI reportable, code 2, B, C, D, etc., consecutively for multiple routes on separate roadways under the same structure, and NBI reportable routes shall be listed as the "2" code.
- If two or more routes go under a bridge and multiple undercrossings are NBI reportable, code A, B, C, D etc. again prioritizing reportable routes at the beginning of the sequence.

When this item is coded 2 or A through Z for bridges, only selected items are coded, as specified in the item descriptions and in the list in Table 2.

It cannot be overemphasized that all route-oriented data must agree with the coding as to whether the inventory route is on or under a bridge.

There are situations of a route under a bridge, where the bridge does not carry a highway, but may carry a railroad, pedestrian traffic, or even a building. These are coded the same as any other Under record and no On record shall be coded.

For additional clarification of On and Under records, refer to Section II of the Appendix 2C Coding Guide Instructions.

NBI Commentary:

WSDOT created code 0 to indicate the bridge does not carry nor cross over a highway. An example would be a pedestrian structure over a waterway. These are not NBI bridges but may be included in the WSBIS inventory at each agency's discretion.

WSBIS Item 2402 – Crossing Description AN(50)

Applicable Structure Types

- **All structure records maintained by WSDOT Bridge Preservation**

This item describes the bridge crossing from the perspective of the inventory route. When a bridge both carries a state route and crosses over another state route, each crossing record will have a separate crossing description:

Main listing On Record crossing description: SR 512 OVER I-5
Secondary listing Under Record crossing description: I-5 UNDER SR 512

For state owned structures, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

Bridge Location *(Old Item 1156)*					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
AN(25)		EI	BL11	B.L.11	
Applicable Structure Types • **All structure records**					
Specification / Commentary					
This item contains a narrative description of the structure location for the inventory route. Descriptions should be oriented ahead on station whenever possible. Do not use city limits, as these boundaries may move. This item shall be left justified.					
Examples					
• 19.3 E JCT SR 203 • 14.7 E MASON CO					

WSBIS Item WF02 – Crossing Manager *(Old Item 2401)* **Pulldown**

Applicable Structure Types

- **All structure records**

The Crossing Manager is the Program Manager responsible for the route identified in WSBIS Item 1435, whether that route is on or under the structure.

For state owned structures, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

Latitude - SNBI *(Old Item 1470)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(9,6)	Yes	I	BL05	B.L.05	I.13

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the latitude of the bridge in decimal degrees. Report the latitude at the same location as the LRS mile point reported for Item B.H.07 (LRS Mile Point). If the location of the LRS mile point is not known, report the latitude at the location of the bridge following agency procedures.	Values reported are assumed to be for the appropriate hemisphere and are to be consistent with LRS data that uses the North American Datum of 1983. When available, HPMS data should be used to update NBI items values.

Examples

Latitude is 50° 10’ 00.00” N. Report 50.166667. Latitude is 53° 52.457' N. Report 53.874285. Latitude is 14.291368° S. Report -14.291368.

Longitude - SNBI *(Old Item 1471)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(9,6)	Yes	I	BL06	B.L.06	I.14

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the longitude of the bridge in decimal degrees. Report the longitude at the same location as the LRS mile point reported for Item B.H.07 (LRS Mile Point). If the location of the LRS mile point is not known, report the longitude at the location of the bridge following agency procedures.	Values reported are assumed to be for the appropriate hemisphere and are to be consistent with LRS data that uses the North American Datum of 1983. When available, HPMS data should be used to update NBI items values.

Examples

Longitude is 125° 10’ 00.00” W. Report -125.166667. Longitude is 166° 32.784333' W. Report -166.546406. Longitude is 144.677519° E. Report 144.677519.

WSBIS Items 1432, 1435, 1433, and 1434
NBI Items 5A, 5B, 5C, 5D

The inventory route is composed of 4 segments.

Table 7 Inventory Route Items

WSBIS Item	NBI Item	NTI Item	Description
1432	5A	n/a	Record Type
1435	5D	I.7	Route Number
1433	5B	I.9	Route Signing Prefix
1434	5C	n/a	Designated Level of Service

WSBIS Item 1435 – Route - NBI **AN(5)**
NBI Item 5D
NTI Item I.7

Applicable Structure Types

- **All structure records**

Code the route number of the inventory route. This value shall be a five digit number, right justified with leading zeroes filled in.

If concurrent routes are of the same hierarchy level, denoted by the highway class, the lowest numbered route shall be coded. Code 00000 for structures on roads without route numbers.

Local agency bridge owners are encouraged to use one of the following methods to develop a route number where one has not already been assigned:

1. Federal Aid road will have a Federal Aid route number that can be used and padded with zeroes as needed.
2. City streets are often identified by the city number and padded with zeroes as needed.
3. The number of the route used to access the path to the structure can be used.
4. A unique (to the agency) number can be assigned.

Note for local agency users: While this item is identified as alpha-numeric, the use of alphabetic characters in a route number will cause the record to not import into Mobility for the bridge item comparison module.

WSBIS Item 2440 – Milepost (miles) - NBI **N(5,2)**

Applicable Structure Types

- **All structure records**

The milepost is displayed on the inspection report header with the associated route (WSBIS Item 1435). Both are intended to provide information about the location of the structure on the primary route used for inspection access, and should represent the structure milepost relative to nearby milepost signs or other permanent feature. The use of a zero milepost is undesirable and should be avoided when possible.

WSBIS Item 1433 – Highway Class - NBI **Pulldown**
NBI Item 5B
NTI Item I.9

Applicable Structure Types

- **All structure records**

Identify the highway class for the LRS inventory route identified in Item 1467 using one of the following codes:

Table 1433 Highway Class - NBI

WSBIS Code	Description
1	Interstate highway
2	U.S. numbered highway
3	State highway
4	County road
5	City street
6	Federal lands road
7	State lands road
8	Other (include toll roads not otherwise identifiable above) OR when there is no inventory route

Code 8 when there is no inventory route.

When 2 or more routes are concurrent, the highest class of route will be used. The hierarchy is in the order listed above.

WSBIS Item 1434 – Service Level - NBI **Pulldown**
NBI Item 5C

Applicable Structure Types

- **All structure records**

Identify the service level for the inventory route using one of the following codes, including tunnels:

Table 1434 Service Level - NBI

WSBIS Code	Description
1	Mainline (includes reversible routes)
2	Alternate
3	Bypass
4	Spur
6	Business
7	Ramp, Wye, Connector, etc.
8	Service and/or unclassified frontage road
0	None of the above OR when there is no inventory route

WSBIS Item BH06 – LRS Route ID *(Old Item 1467)* **AN(12)**
NBI Item 13A
NTI Item I.11

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

The linear referencing system (LRS) route is used to establish the location of the structure on the Base Highway Network (see WSBIS Item 1484). It must be from the same LRS route and milepost system as reported in the Highway Performance Monitoring System (HPMS).

Linear Reference is coded to correspond to the location of the crossing as it relates to the WSDOT standard Linear Referencing System (LRS), which must be used and is reported by our state's Highway Performance Monitoring System (HPMS). The HPMS reported LRS consists of both the Local Agency Public Roads (LAPR) LRS and the State Route LRS.

State Route LRS Examples:

599S500035
529SPEVERET (reported to NBI as 529SPEVERE)
005
005LX10130

LAPR Route LRS Examples

760000270 (Israel Road Over I-5)
460000700 (Taneum Creek Road Over I-90

NBI and NTI Commentary:

WSDOT maintains a 12 character, alphanumeric LRS route number, but the NBI receives only 10 digits. In most cases WSDOT does not use the 11th or 12th character. For the NBI submittal, any additional characters to the right of the 10th character are trimmed. Route numbers with fewer than 10 characters get reported with no additional leading zeroes added.

WSDOT codes LRS route numbers for all crossing records, but only routes on the Base Highway Network are submitted to the NBI.

The NTI allows up to 120 characters for this field, so complete data is submitted to the NTI.

WSBIS Item BH07 – LRS Milepost (miles) *(Old Item 1469)* **N(5,2)**
NBI Item 11
NTI Item I.12

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

The linear referencing system (LRS) milepost is used to establish the location of the structure on the Base Highway Network (see WSBIS Item 1484). It must be from the same LRS route and milepost system as reported in the Highway Performance Monitoring System (HPMS). The milepost coded in this item directly relates to WSBIS Item 1467 – LRS Route. For local agencies, this field generally matches Milepost Item 2440.

This item records the milepost at the beginning of the structure where typically both the LRS and the structure are oriented in the same direction (the lowest milepost on the structure is the beginning of the structure). In cases where the LRS and the structure are oriented in opposing directions, record the milepost from the end of the structure instead of the beginning. When the LRS Route goes under the structure (WSBIS Item 1432 coded 2 or A-Z), then code the milepost on the under passing route where the structure is first encountered.

Code to two decimal places. Code all zeroes in this field if the milepost is not available.

WSBIS Item WH23 – Directional Indicator *(Old Item 2468)* **Pulldown**

Applicable Structure Types

- **All structure records maintained by WSDOT Bridge Preservation**

The directional indicator specifies if the inventory route carries traffic in the direction of increasing mileposts, decreasing mileposts or both.

Table WH23 - Directional Indicator

WSBIS Code	Description
I	Increasing direction
D	Decreasing direction
B	Both directions
*	Null, no inventory route on or under structure

For state owned structures, or structures with crossings managed by the Statewide Program Manager, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

WSBIS Item WH21 – Ahead/Back Indicator *(Old Item 2470)* Pulldown

Applicable Structure Types

- **All structure records maintained by WSDOT Bridge Preservation**

The ahead/back indicator specifies whether a milepost value is the 'back' (B) duplicate of a milepost value 'ahead' on the route.

Table WH21 - Ahead/Back Indicator

WSBIS Code	Description
B	Back milepost
*	Null, either an Ahead milepost or does not apply

For state owned structures, or structures with crossings managed by the Statewide Program Manager, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

Speed Limit *(Old Item 7441)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Integer		EI	WA09	-	

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**
- **Local Agency Pedestrian, RR and other non-vehicular structures over public roadways**
- **Local Agency Tunnels carrying public roadways within**

Specification / Commentary

Code the speed limit in miles per hour for the inventory route at the bridge site.

WSBIS Item 1490 – Lane Use Direction - NBI **Pulldown**
NBI Item 102
NTI Item C.3

Applicable Structure Types

- **All Structure Records**

Code the direction of traffic of the inventory route identified in LRS Route WSBIS Item 1467 as a 1-digit number using one of the codes below. This item must be compatible with other traffic-related items such as WSBIS Item 1352 – Lanes on the Structure, WSBIS Item 1445 – Average Daily Traffic, WSBIS Item 1491 – Total Horizontal Clearance and WSBIS Item 1356 – Curb-to-Curb.

Table 1490 Lane Use Direction Code

WSBIS Code	NBI Code	NTI Code	Description
0	0	0	No public roadway on or under structure.
1	1	1	1 way traffic on inventory route
2	2	2	2 way traffic on inventory route
3	2	3	2 way and reversible traffic on inventory route
4	1	3	Reversible traffic only on inventory route
5	3	4	2 way traffic on 1 lane bridge (curb-to-curb must be <16 ft.)

NBI and NTI Commentary:

WSDOT provides additional codes to address reversible traffic lanes, which are translated to NBI and NTI codes as shown above.

WSBIS Item 1483 – National Highway System (NHS) - NBI **Pulldown**
NBI Item 104
NTI Item C.5

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

For the inventory route identified in WSBIS Item 1435, indicate whether the route is on the National Highway System (NHS) or not on that system. Ramps associated with NHS routes are included as NHS routes. Use one of the following codes:

Table 1483 National Highway System Code (NHS) - NBI

WSBIS Code	Description
0	Inventory Route is not on the NHS
1	Inventory Route is on the NHS

Maps identifying NHS routes are available at: https://hepgis.fhwa.dot.gov/fhwagis/.

NBI and NTI Commentary:

WSDOT codes ramps as NHS routes when the associated mainline route is also NHS, in accordance with the NBI federal coding guide, and applied to both bridges and tunnels. However, in accordance with the FHWA Highway Performance Monitoring System (HPMS), ramps are coded 0. The NTI coding guide doesn't specify how ramps in tunnels are coded.

WSBIS Item 1485 – STRAHNET Highway - NBI **Pulldown**
NBI Item 100
NTI Item C.6

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

This item shall be coded for all records in the inventory that are designated as part of the Strategic Highway Network. For the purposes of this item, the STRAHNET Connectors are considered included in the term STRAHNET. For the inventory route identified in WSBIS Item 1435, indicate STRAHNET highway conditions using one of the following codes:

Table 1485 STRAHNET Highway Code - NBI

WSBIS Code	NTI Code	Description
0	0	The inventory route is not a STRAHNET route
1	1	The inventory route is on an Interstate STRAHNET route
2	1	The inventory route is on a Non-Interstate STRAHNET route
3	1	The inventory route is on a STRAHNET connector route

Maps identifying NHS routes are available at: https://hepgis.fhwa.dot.gov/fhwagis/#

NTI Commentary:
Codes translated for the NTI as shown in the table above.

National Truck Freight Network *(Old Item 1156)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown		EI	BH04	B.H.04	

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Specification / Commentary

The national network for trucks includes most of the Interstate System and those portions of Federal-aid highways identified in the Code of Federal Regulations (23 CFR 658). The national network for trucks is available for use by commercial motor vehicles of the dimensions and configurations described in these regulations. For the inventory route identified in WSBIS Item 1435, indicate conditions using one of the following codes:

Table BH04 National Truck Freight Network Code

WSBIS Code	NBI Code	Description
N	0	The inventory route is not part of the national network for trucks
Y	1	The inventory route is part of the national network for trucks

WSBIS Item 1487 – Functional Classification - NBI **Pulldown**
NBI Item 26
NTI Item C.7

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

For the inventory route, code the functional classification using one of the following codes:

Table 1487 Functional Classification Code - NBI

WSDOT Code	NBI Code	NTI Code	Description
1	1	1	Rural Principal Arterial – Interstate
5	2	2	Rural Principal Arterial - Other Freeways or Expressways
2	2	3	Rural Principal Arterial – Other
6	6	4	Rural Minor Arterial
7	7	5	Rural Major Collector
8	8	6	Rural Minor Collector
9	9	7	Rural Local
11	11	1	Urban Principal Arterial – Interstate
12	12	2	Urban Principal Arterial – Other Freeways or Expressways
14	14	3	Urban Principal Arterial - Other
16	16	4	Urban Minor Arterial
17	17	5	Urban Major Collector
18	17	6	Urban Minor Collector
19	19	7	Urban Local

The structure shall be coded rural if not inside a designated urban area. The urban or rural designation shall be determined by the structure location and not the character of the roadway. The WSDOT Functional Classification Map is available at https://www.wsdot.wa.gov/data/tools/geoportal/?config=functionalclass

NBI and NTI Commentary:

Functional Classification codes are translated for the NBI and NTI as shown in the table above.

Urban Code - SNBI *(Old Item 1022)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(5)	N(5,0)	I	BH02	B.H.02	C.8

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the urbanized area code consistent with the State's HPMS urban boundaries for the highway feature reported in Item B.F.01 (Feature Type) at the bridge.	Urban codes can be found at: https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html. For bridges outside urbanized areas, use code 99999 for rural areas with population less than 5,000 and use code 99998 for small urban areas with population 5,000 to 49,999 in accordance with the HPMS Field Manual. FHWA approves adjusted urban boundaries submitted by State DOT planning offices. State's HPMS urban boundaries are based on the FHWA-approved adjusted urban boundaries. State maps of the unadjusted U.S. Census urban boundaries with highways (map layers: Labels, Transportation, and Urban Areas checked) can be found at: https://tigerweb.geo.census.gov.

Example

U.S. 13/113A over Saint Jones River. Report 24580.

Figure 80. TIGERweb screen shot for the bridge in Delaware. (Source: US Census Bureau)

Table BH02 Urban Code - SNBI

WSBIS Code	Urban Area Name
Urban Areas with Populations of 50,000 or more as of 2017	
06652	Bellingham-Ferndale
09946	Bremerton-Port Orchard-Bainbridge Island
44479	Kennewick-Pasco-Richland
49312	Lewiston-Clarkston
51283	Longview-Kelso
55333	Marysville-Tulalip
60490	Mount Vernon-Burlingto-Sedro-Woolley
65242	Olympia-Lacey-Tumwater
80389	Seattle-Tacoma-Everett
83764	Spokane-Spokane Valley
71317	Vancouver-Camas-Battle Ground
91405	Walla Walla-Milton-Freewater
93862	Wenatchee-East Wenatchee
97507	Yakima-Selah-Union Gap
Urban Areas with Populations of 5,000 - 49,000 as of 2017	
99998	Aberdeen-Hoquiam
99998	Anacortes
99998	Birch Bay-Blaine
99998	Camano Island
99998	Centralia-Chehalis
99998	Chelan-Manson
99998	Cheney
99998	Ellensburg
99998	Ephrata
99998	Grandview
99998	Granite Falls
99998	Indianola-Kingston
99998	Lynden
99998	Montesano-Elma
99998	Moses Lake
99998	Oak Harbor
99998	Ocean Shores
99998	Omak-Okanogan
99998	Othello
99998	Port Angeles
99998	Port Townsend
99998	Pullman
99998	Quincy
99998	Sequim
99998	Shelton
99998	Snoqualmie-North Bend
99998	Stanwood
99998	Sultan-Gold Bar
99998	Sunnyside
99998	Toppenish-Zillah
99998	Wapato
99998	Woodland
99998	Yelm
All Other Locations	
99999	Non Urbanized area

Emergency Evacuation Designation *(Old Item 1437)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(1)	-	I	BCL06	B.CL.06	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report whether the route carried on the bridge is an emergency evacuation route using one of the following codes. **Code** — **Description** N — Not an Emergency evacuation route Y — Emergency evacuation route	This item is used by FHWA with other items, as per 23 U.S.C. 144(b), to classify bridges according to serviceability, safety, and essentiality for public use and considers the potential impacts to emergency evacuation routes and to regional and national freight and passenger mobility if the serviceability of the bridge is restricted or diminished. Emergency evacuation routes may be designated for various events such as hurricanes, earthquakes, tsunami, dam failure, and other hazardous events. Refer to the State Emergency Management Agency for designated emergency evacuation routes.

Federal or Tribal Land Access *(Old Item 1488)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(30)	-	I	BCL03	B.CL.03	-

Applicable Structure Types
- **All structure records**

Specification

Report the Federally managed and/or Indian Tribal Government lands using one or more of the following codes, for the bridge owned by a State or local agency and carrying a highway that leads to or traverses through the Federal or Tribal lands.

Report multiple codes separated by pipe (|) delimiters.

Code	Description
N	Not applicable
BIA	Indian Tribal Government or Bureau of Indian Affairs
BLM	Bureau of Land Management
NPS	National Park Service
USACE	U.S. Army Corps of Engineers
USBR	Bureau of Reclamation
USFS	U.S. Forest Service
USFWS	U.S. Fish & Wildlife Service
X	Other

Report N when the highway carried by the bridge is not owned by a State or local agency and/or does not lead to or traverse through Federal or Tribal lands.

Commentary

This item is used to identify bridges owned by State or local agencies on highways that lead to and/or traverse through any Federally managed land or Tribal government property. These bridges may be eligible to receive funding from the Federal Lands Access Program under 23 U.S.C. 204.

Consider those bridges that are located on the identified highway to the nearest intersecting highway owned by a State or local agency.

For assistance in locating Federal properties, contact Federal Lands Highway at: https://highways.dot.gov/federal-lands/about/contacts.

AADT Year *(Old Item 1453)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(4,0)		I	BH11	B.H.11	A.6

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Specification / Commentary

Record the year represented by the AADT in WSBIS Item BH09. Code all four digits of the year.

AADT Year information is available at the link in WSBIS Item BH09.

AADT *(Old Item 1445)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(6,0)		I	BH09	B.H.09	A.4

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Specification / Commentary

Code the average daily traffic (ADT) volume for the inventory route. Code the most recent ADT counts available. Included in this item are the trucks referred to in WSBIS Item 1451 – Average Daily Truck Traffic. If the structure is closed, code the actual ADT from before the closure occurred.

The ADT must be compatible with the other items coded for the structure. For example, parallel bridges with an open median are coded as follows: if WSBIS Item 1352 – Lanes On the Structure and WSBIS Item 1356 – Curb-to-Curb are coded for each bridge separately, then the ADT must be coded for each bridge separately (not the total ADT for the route).

ADT information for Washington State routes is available at
https://www.wsdot.wa.gov/data/tools/geoportal/?config=traffic

Annual Average Daily Truck Traffic					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
N(6,0)		I	BH10	B.H.10	

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Specification	Commentary
Report the Average Annual Daily Truck Traffic (AADTT) from the most recent count for the highway feature reported in Item B.F.01 (Feature Type). The AADTT must be compatible with the other items reported for the highway feature. Report the design AADTT for a newly inventoried highway feature when actual AADTT information is not yet available. Report the last open AADTT for a highway feature that is temporarily closed until repair or replacement can be completed.	The AADTT should be updated at intervals in accordance with the standards for the HPMS and standards/policies within the State. When HPMS or other planning data are not available, use a best estimate based on site familiarity or functional classification in accordance with State standards and policies. Do not include vans, pickup trucks, and other light delivery trucks in the AADTT. The AADTT represents vehicle classes 4-13 as described in FHWA's Traffic Monitoring Guide at: https://www.fhwa.dot.gov/policyinformation/tmguide/.

WSBIS Item 1451 – AADT Truck Percentage - NBI **N(2,0)**
NBI Item 109
NTI Item A.6

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Code the percentage of WSBIS Item 1445 – Average Daily Traffic that is truck traffic on the inventory route. Do not include vans, pickup trucks and other light delivery trucks in this percentage.

NBI Commentary:

The NBI does not require data for Average Daily Truck Traffic if WSBIS Item 1445, ADT, is less than 100. WSDOT requires this data for all routes, regardless of ADT.

NTI Commentary:

The NTI maintains an average daily truck count, not a percentage. WSBIS translates the percentage to a total count using the following formula: ADT x ADT Truck Percentage = ADT Count

Bypass Detour Length *(Old Item 1413)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(2,0)		I	BH17	B.H.17	A.7

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Specification / Commentary

Indicate the actual length to the nearest mile of the detour length, which is considered the additional travel needed to return to the original route if the structure is closed.

If a ground level bypass is available at the structure site for the inventory route (ramps at a diamond interchange, for example), code the detour length as 0. If the detour exceeds 99 miles, code 99. If the bridge is one of twin bridges and is not at an interchange, code 1 where the other twin bridge can be used as a temporary bypass with a reasonable amount of crossover grading.

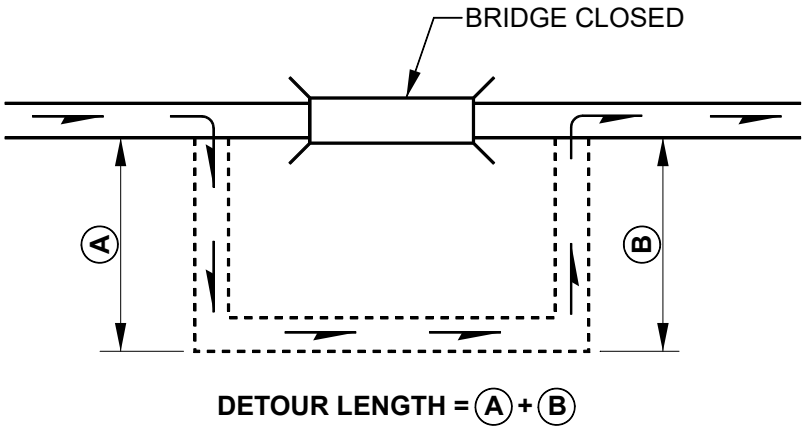
Code 0 for routes under a bridge, on the basis that a failed bridge over the route can be removed to allow passage. Routes through tunnels should be the actual detour length.

To the extent practical, the detour route should match the capacity and functionality of the original route. When this is not possible the following minimum standards shall apply:

1.The detour route cannot have weight restrictions lower than the original route.

2.The detour route cannot have vertical clearance limits over the roadway lanes less than 14 feet 3 inches (as measured) unless the original route also has vertical clearance restrictions, in which case the detour cannot further restrict clearances.

Figure BH17



NBI Commentary:

This coding guide provides additional direction on how to code routes under the structure, and additional criteria for determining acceptable detour routes.

WSBIS Item BH12 – Maximum Vertical Clearance Route (ft & in) *(Old Item 1499)* **N(4,0)**
WSBIS Item 2501 – Maximum Vertical Clearance Reverse (ft & in) *(Old Item 2501)* **N(4,0)**
NBI Item 10

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Code the practical maximum vertical clearance over the inventory route identified in WSBIS Item 1435 (travel lanes only)*, in the direction of increasing mileposts, whether the route is on the structure or under the structure. This field identifies the minimum vertical clearance for the lane that will carry the highest load. When no vertical clearance restriction exists leave this item blank.

To accurately code this field, all vertical clearance measurements for the inventory route must be collected over all lane stripes and at edges of pavement, recorded in a vertical clearance card, and kept on file.

When the entire undivided inventory route passes on or under a structure, code WSBIS Item 1499 as measured and WSBIS Item 2501 is blank.

When the divided inventory route passes on or under a structure, code WSBIS Item 1499 and WSBIS Item 2501 as measured in each direction.

When the inventory route consists of two parallel bridges carrying a divided route, for the bridge carrying the increasing route direction code WSBIS Item 1499 as measured and WSBIS Item 2501 is blank. For the bridge carrying the decreasing route direction, WSBIS Item 1499 is blank and code WSBIS Item 2501 as measured.

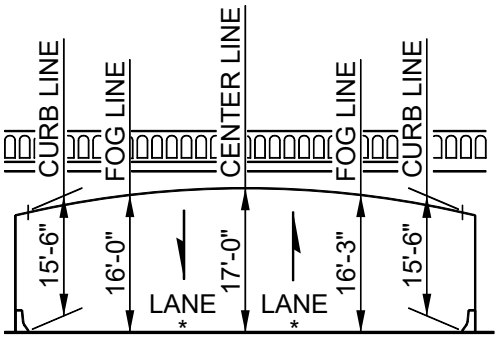
When a restriction is 100 feet or greater, code 9912.

* Traveled way, or travel lanes, is between fog lines and excludes shoulders or gore areas. In cases where there are no fog lines, judgement shall be used to determine edges of traveled way.

NBI Commentary:

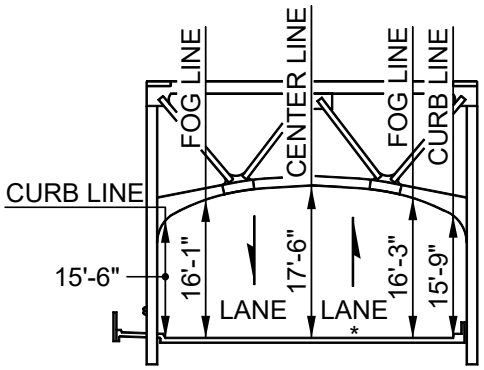
The maximum vertical clearance for each route is reported to the NBI, regardless of route direction.

Figure BH12



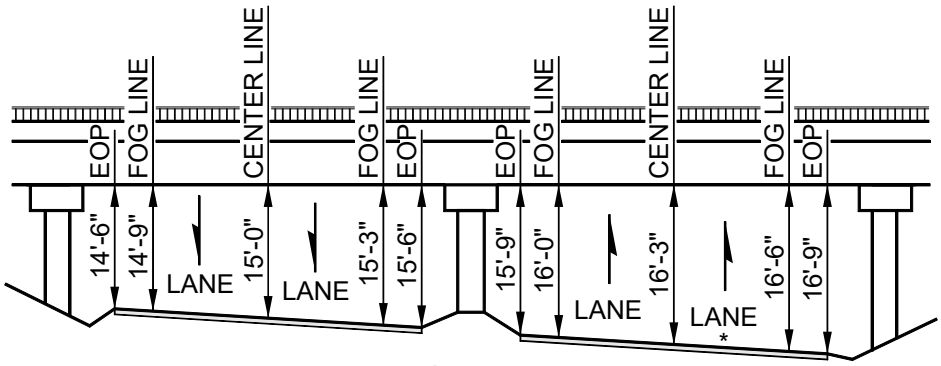
UNDIVIDED HIGHWAY EXAMPLE

Figure 1499a



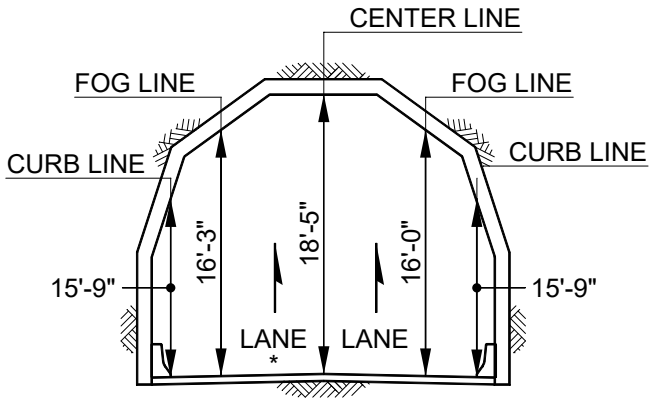
STEEL TRUSS EXAMPLE

Figure 1499b



DIVIDED HIGHWAY EXAMPLE

Figure 1499c



TUNNEL

Figure 1499d

Code "1603": THE MAXIMUM VERTICAL HEIGHT ALLOWED IN ANY 10 FOOT ROADWAY WIDTH IS THE LEAST VERTICAL CLEARANCE IN THE LANE OF ROADWAY WITH THE MAXIMUM VERTICAL CLEARANCE.

***** CONTROLLING LANE.

NBI Commentary:

The NBI coding guide indicates that this measurement should be the minimum clearance for a 10 foot width of pavement or travelled part of the roadway. However, from a practical perspective this has been interpreted in this coding guide as the clearance for the lane that will pass the tallest load. The lanes are defined by striping.

Null and 9912 data in WSBIS are translated to 9999 for the NBI submittal.

The NBI requires coding only the maximum vertical clearance for divided highways. WSBIS has two fields. When the NBI submittal is prepared, the largest dimension is selected and reported.

WSBIS Item BH13 – Minimum Vertical Clearance Route (feet & inches)	**N(4,0)**
WSBIS Item 2502 – Minimum Vertical Clearance Reverse (feet & inches)	**N(4,0)**

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Code the practical minimum vertical clearance over the inventory route identified in WSBIS Item 1435, in the direction of increasing mileposts, whether the route is on the structure or under the structure.

For state owned structures, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

Horizontal Route Clearance *(Old Item 1491)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(4,0)		I	BH16	B.H.16	

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Specification / Commentary

WSBIS has two fields. When the NBI submittal is prepared, the largest dimension is selected and reported.

Substructure Navigable Protection)

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	I	BN06	B.N.06	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways when Condition Report type is part of the record**

Specification	Commentary
Report the presence and adequacy of substructure navigation protection for the waterway feature reported in Item B.F.01 (Feature Type), using one of the following codes. **Code** — **Description** 0 — Navigation protection not required; bridge has been designed or assessed to have adequate capacity to resist anticipated impact loads without collapse. 1 — Navigation protection not required; assessment of navigation opening and vessel traffic has determined that there is a low probability that an errant vessel could impact the bridge. 2 — Protective system in place and functioning. 3 — Protective system in place, but damage or deterioration impacts ability to protect. 4 — Protective system in place, but reevaluation of design suggested. 5 — No protective system in place, but reevaluation of the need for a protective system is recommended. Report this item only when Item B.N.01 (Navigable Waterway) is Y.	Substructure navigation protection systems can be fender systems, dolphins, or other systems that either prevent the substructure from being impacted or adequately reduce the impact load that is transferred into the substructure. Use codes 0 and 1 to indicate that an assessment of vessel traffic characteristics and/or bridge capacity has determined that navigation protection is not required. AASHTO's Guide Specifications and Commentary for Vessel Collision Design of Highway Bridges provides a method for assessing an existing bridge's vulnerability to vessel collision. Codes 0 and 1 should not be assigned based on field observation. Use codes 4 and 5 to indicate that observed conditions necessitate a review of vessel traffic characteristics, bridge capacity, and protective system capability to determine whether the bridge is adequately protected from vessel collision.

WSBIS Item WH24 – NBI Reportable Flag *(Old Item 2410)* Pulldown

Applicable Structure Types

- **All structure records**

Indicate if the crossing record is to be included in the National Bridge Inventory data submittal or not. Records required to be reported include all structures subject to the NBIS and all undercrossings identified as a Federal Aid Route. Other undercrossings can be reported at the owner's discretion.

For state owned structures, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

WSBIS Item WH25 – SNBI Reportable Flag *(Old Item 2408)* **Pulldown**

Applicable Structure Types

- **All structure records**

Indicate if the crossing record is to be included in the National Bridge Inventory data submittal or not. Records required to be reported include all structures subject to the NBIS and all undercrossings identified as a Federal Aid Route. Other undercrossings can be reported at the owner's discretion.

For state owned structures, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

WSBIS Item WH26 – SNTI Reportable Flag *(Old Item 2409)* **Pulldown**

Applicable Structure Types

- **All structure records**

Indicate if the crossing record is to be included in the National Tunnel Inventory data submittal or not.

For state owned structures, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

WSBIS Item WH27– Bridge List *(Old Item 2411)* **Pulldown**

Applicable Structure Types

- **All structure records maintained by WSDOT Bridge Preservation**

Indicate if the crossing record is to be included or not in the Bridge List M 23-09.

For state owned structures, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

Table WH27 Bridge List Code

WSBIS Code	Description
1	The crossing record is included in the Bridge List.
2	The crossing record is NOT included in the Bridge List.

Crossing Tab Discontinued Fields - Effective Jan 2026

The fields in this section will be fully discontinued in 2026. Until then, they still need to be maintained for FHWA submittal.

WSBIS Item 1354 – Lanes Under **N(2,0)**
NBI Item 28B
NTI Item A.3

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Code the number of lanes under the structure.

For On records, code WSBIS Item 1354 for all lanes under the bridge for all routes that are functionally classified (see WSBIS Item 1487).

For Under records, code WSBIS Item 1354 for only the lanes associated with the inventory route under.

For Tunnels, code all the lanes in the tunnel.

WSBIS Item 1457 – Future ADT **N(6,0)**
NBI Item 114

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

For On records, code WSBIS Item 1354 for all lanes under the bridge for all routes that are functionally classified (see WSBIS Item 1487).

Code the forecasted average daily traffic (ADT) for the inventory route. This shall be projected at least 17 years but no more than 22 years from the last year of routine inspection. If planning data is not available, use the best estimate based on site familiarity. The future ADT must be compatible with the other items coded for the structure. For example, parallel bridges with an open median are coded as follows: if WSBIS Item 1352 – Lanes On the Structure and WSBIS Item 1356 – Curb-to-Curb are coded for each bridge separately, then the future ADT must be coded for each bridge separately (not the total for the route).

WSBIS Item 1463 – Future ADT Year **N(6,0)**
NBI Item 115

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Code the forecasted average daily traffic (ADT) for the inventory route. This shall be projected at least 17 years but no more than 22 years from the last year of routine inspection. If planning data is not available, use the best estimate based on site familiarity. The future ADT must be compatible with the other items coded for the structure. For example, parallel bridges with an open median are coded as follows: if WSBIS Item 1352 – Lanes On the Structure and WSBIS Item 1356 – Curb-to-Curb are coded for each bridge separately, then the future ADT must be coded for each bridge separately (not the total for the route).

WSBIS Item 1477 – Linear Sub Route **N(2,0)**
NBI Item 13B

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

The LRS subroute number is always coded 00.

NBI Commentary:

WSDOT codes LRS subroute numbers for all crossing records, but only routes on the Base Highway Network are submitted to the NBI.

WSBIS Item 1484 - Base Highway Network **Pulldown**
NBI Item 12

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

The Base Highway Network includes the mainline portions of the NHS (WSBIS Item 1483 is coded 1), rural/urban principal arterial system and rural minor arterial system. Ramps, frontage roads and other roadways are not included in the Base Network. For the inventory route identified in WSBIS Item 1435 – Inventory Route, use one of the following codes:

Table 1484 Base Highway Network Code

Table 1484 Base Highway Network Code

WSBIS Code	Description
0	Inventory Route is not on Base Network
1	Inventory Route is on the Base Network

WSBIS Item 1486 – Federal Lands Highways - NBI **Pulldown**
NBI Item 105

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

This code identifies bridges on roads which lead to and traverse federal lands. These bridges may be eligible to receive funding from the Federal Lands Highway Program.

Washington State Forest Highways can be found in the Emergency Relief chapter of the Local Agency Guidelines (LAG) manual.

As of January 1, 2000, there are three Land Management Highway Systems (LMHS). There are two in Douglas County and one in Lincoln County.

0 Not applicable
1 Indian Reservation Road (IRR)
2 Forest Highway (FH)
3 Land Management Highway System (LMHS)
4 Both IRR and FH
5 Both IRR and LMHS
6 Both FH and LMHS
9 Combined IRR, FH and LMHS

For existing data in WSBIS, do not alter codes. For new records, code zero unless a data source is available.

NBI Commentary:
WSDOT has not been able to identify a source for this data, and will code zeroes for new records until an information source is identified.

WSBIS Item 1495 – Horizontal Clearance, Reverse Direction (feet & inches) **N(4,0)**
NBI Item 47

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

The horizontal clearance for the inventory route should be measured and recorded for each opening between restrictive features – curbs, rails, guardrails, walls, piers, slopes, or other structural features limiting the roadway (surface and shoulders).

The purpose of this item is to give the largest available clearance for the movement of wide loads. Flush and mountable medians are not considered to be restrictions. This clearance is defined in two ways:

1. Clear distance between restrictions of the inventory route either on or under the structure.
2. Edges of roadway surface including shoulders when there are no other restrictions.

When the entire undivided inventory route passes on or under a structure, code WSBIS Item 1491 as measured and WSBIS Item 1495 is blank.

When the divided inventory route passes on or under a structure, code WSBIS Item 1491 and WSBIS Item 1495 as measured in each direction. Note that when a bridge pier separates a single route, it is always considered divided.

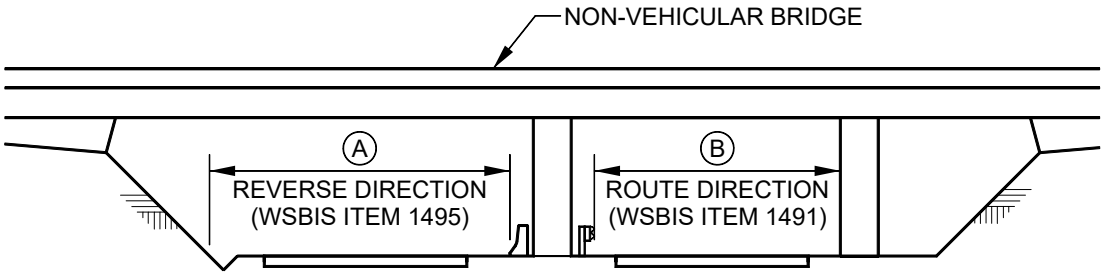
When the inventory route consists of two parallel bridges carrying a divided route, for the bridge carrying the increasing route direction code WSBIS Item 1491 as measured and WSBIS Item 1495 is blank. For the bridge carrying the decreasing route direction, WSBIS Item 1491 is blank and code WSBIS Item 1495 as measured.

When a restriction is 100 feet or greater, code 9912.

NBI Commentary:

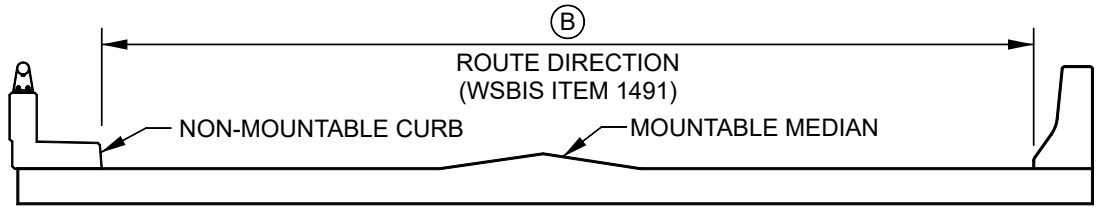
The minimum horizontal clearance for each route is reported to the NBI, regardless of route direction.

Figure 1495



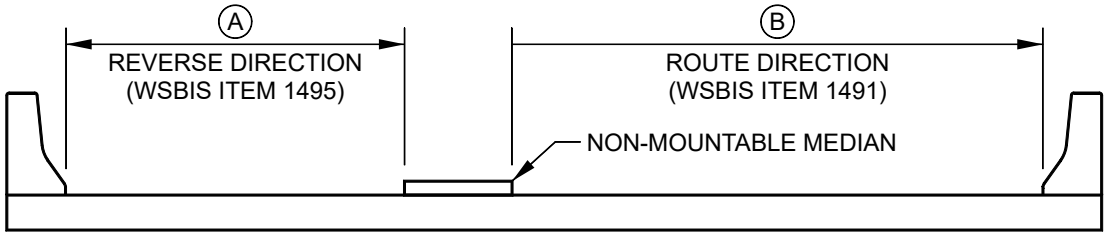
IF CLEARANCE (A) > (B), CODE WSBIS ITEM 1495 = (A) & WSBIS ITEM 1491 = Blank

Figure 1



NO MEDIAN OR FLUSH OR MOUNTABLE MEDIAN

Figure 2



RAISED MEDIAN OR NON-MOUNTABLE MEDIAN

IF CLEARANCE (B) > (A), CODE WSBIS ITEM 1491 = (B) & WSBIS ITEM 1495 = Blank

Figure 3

WSBIS Item 2368 – Min. Vert. Clrnc. Over Deck Override (ft & in.) N(4,0)

Applicable Structure Types

- Bridges & culverts carrying public roadways for records maintained by BPO

When a bridge is located underneath one or more bridges (stacked bridges), code the actual minimum vertical clearance over the bridge roadway, including shoulders, to the superstructure restriction caused by the controlling overhead bridge, in feet and inches, rounded to the lesser inch (e.g., 16’ 3¾” is to be coded 1603).

WSBIS Item 2436 – Route Sequencer — Integer

Applicable Structure Types

- **All structure records maintained by WSDOT Bridge Preservation**

The route sequencer is a two digit number used for placement of crossing records in the *Bridge List* M 23-09.

If the inventory route is not included in the bridge list, code 0.

For state owned structures, or structures with crossings managed by the Statewide Program Manager, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

WSBIS Item 2437 – Bridge List Override (miles) — N(5,2)

Applicable Structure Types

- **All structure records maintained by WSDOT Bridge Preservation**

The bridge list milepost override is used for placement of crossing records in the Bridge List M 23-09.

For state owned structures, or structures with crossings managed by the Statewide Program Manager, this item is coded by the BPO Information Group and is visible in the BridgeWorks Inventory Management mode.

WSBIS Item 2438 – Milepost Sequencer — Integer

Applicable Structure Types

- **All structure records maintained by WSDOT Bridge Preservation**

The milepost sequencer is a two digit number used for placement of crossing records in the Bridge List M 23-09.

If the inventory route is not included in the bridge list, code 0.

For state owned structures, or structures with crossings managed by the Statewide Program Manager, this item is coded by the BPO Information Group and is visible in BridgeWorks Inventory Management mode.

WSBIS Item 7479 – Federal Aid Route Number — AN(4)

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**
- **Local Agency Pedestrian, RR and other non-vehicular structures over public roadways**
- **Local Agency Tunnels carrying public roadways within**

If the route being inventoried is a federal aid highway, enter its federal aid route number in this field.

Federal Aid Route Numbers are shown on the Statewide National Functional Classification System Maps. These maps are located at local agency planning departments or at WSDOT Service Center Planning and at https://www.wsdot.wa.gov/data/tools/geoportal/.

If the bridge is not on a federal aid highway, the field should be filled with zeros.

Materials & Types Tab

WSBIS Item 1532 – Main Span Material - NBI **Pulldown**
NBI Item 43A

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Indicate the kind of material and/or design for the main span.

Table 1532 Main Span Material Code - NBI

WSBIS Code	Description
1	Concrete
2	Concrete continuous
3	Steel
4	Steel continuous
5	Prestressed and/or post-tensioned concrete
6	Prestressed and/or post-tensioned concrete continuous
7	Wood or Timber
8	Masonry
9	Aluminum, Wrought Iron, or Cast Iron
0	Other (also to be used when not applicable for approach spans)

WSBIS Item 1533 – Main Span Design - NBI **Pulldown**
NBI Item 43B

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Indicate the predominant type of design and/or type of construction.

Table 1533 - Main Span Design Code - NBI

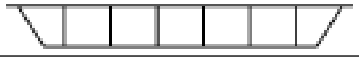
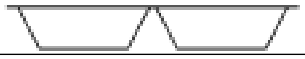
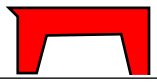
WSBIS Code	NBI Code	Description
1	01	Slab
2	02	Stringer/Multibeam or Girder
3	03	Girder and Floorbeam System
4	04	Tee Beam 
5	05	Box Beam or Girders – Multiple 
6	06	Box Beam or Girders – Single or Spread 
7	07	Frame (except frame culverts)
8	08	Orthotropic
9	09	Truss – Deck

Table 1533 - Main Span Design Code - NBI

WSBIS Code	NBI Code	Description
10	10	Truss – Thru
11	11	Arch – Deck
12	12	Arch – Thru
13	13	Suspension
14	14	Stayed Girder
15	15	Movable – Lift
16	16	Movable – Bascule
17	17	Movable – Swing
18	18	Tunnel (this code designates reporting to the NTI instead of the NBI)
19	19	Culvert (includes frame culverts)
20*	20*	Mixed types
21	21	Segmental Box Girder
22	22	Channel Beam (Bathtub Unit) 
0	00	Other (also to be used when not applicable for approach spans)

*Applicable only to approach spans – WSBIS Item 1536

Examples:

Wood or Timber Through Truss = 710
Masonry Culvert = 819
Steel Suspension = 313
Continuous Concrete Multiple Box Girders = 205
Simple Span Concrete Slab = 101
Tunnel in Rock = 018

WSBIS Item 1538 – Number of Main Spans - NBI **N(3,0)**
NBI Item 45

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Record the number of spans in the main or major unit. This item will include all spans of most bridges, the major unit only of a sizable structure, or a unit of material or design different from that of the approach spans.

A span that contains a drop-in span with cantilevers, or two cantilever spans with a hinge, is counted as one span (from pier to pier). Cantilever end spans are counted separately.

WSBIS Item 1535 – Approach Span Material - NBI **Pulldown**
NBI Item 44A

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

Indicate the type of structure for the approach spans to a major bridge or for the spans where the structural material is different. The codes are the same as for WSBIS Item 1532. If the kind of material is varied, code the most predominant.

Code 0 if this item is not applicable.

WSBIS Item 1536 – Approach Span Design - NBI **Pulldown**
NBI Item 44B

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

Indicate the type of structure for the approach spans to a major bridge or for the spans where the structural material is different using Table 1533. Use code 20 when no one type of design and/or construction is predominant for the approach units.

Code 00 if this item is not applicable.

WSBIS Item 1541 – Number of Approach Spans - NBI **N(3,0)**
NBI Item 46

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Record the number of approach spans to the major bridge, or the number of spans of material different from that of the major bridge.

Code 0 if this item is not applicable.

NBI Commentary:

This coding guide requires coding zeroes when there are no approach spans. The NBI coding guide assumes a zero entry.

WSBIS Item 1546 – Deck Type - NBI **Pulldown**
NBI Item 107

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways***

Record the type of deck system on the bridge. If more than one type of deck system is on the bridge, code the most predominant. Code A for a filled culvert or arch with the approach roadway section carried across the structure.

*Main Listing Under records (e.g., railroad bridges and pedestrian bridges) are to be coded N, with the following exception: WSDOT owned pedestrian bridges are to be coded with the appropriate Deck Type.

Use one of the following codes:

Table 1546 Deck Type Code - NBI

WSBIS Code	NBI Code	Description
1	1	Concrete Cast-in-Place
2	2	Concrete Precast Panels
3	3	Steel Grating – Open
4	4	Steel Grating – Filled with Concrete
5	5	Steel plate (includes orthotropic)
6	6	Corrugated Steel

Table 1546 Deck Type Code - NBI

7	7	Aluminum
8	8	Treated timber
9	8	Untreated timber
0	9	Other
A	N	Filled arches / Culverts
B	9	Precast integral with beam
N	N	Bridges with no deck

NBI Commentary:

WSDOT provides additional codes which are translated to NBI codes as shown above.

WSBIS Item 1547 – Wearing Surface - NBI **Pulldown**

NBI Item 108A

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways***

*Main Listing Under records (e.g., railroad bridges and pedestrian bridges) are to be coded N, with the following exception: WSDOT owned pedestrian bridges are to be coded with the appropriate Wearing Surface.

Table 1547 Wearing Surface Code

WSBIS Code	Description
1	Monolithic Concrete (concurrently placed with structural deck)
2	Integral Concrete (separate non-modified layer of concrete added to structural deck)
3	Latex Concrete or similar additive
4	Low Slump Concrete
5	Epoxy Overlay
6	Bituminous (ACP or BST)
7	Timber
8	Gravel
9	Other
0	None (no additional concrete thickness or wearing surface is included in the bridge deck)
N	Bridges with no deck

WSBIS Item 1548 – Membrane - NBI **Pulldown**

NBI Item 108B

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways***

*Main Listing Under records (e.g., railroad bridges and pedestrian bridges) are to be coded N, with the following exception: WSDOT owned pedestrian bridges are to be coded with the appropriate Membrane.

Table 1548 Membrane Code - NBI

WSBIS Code	Description
1	Built-up
2	Preformed Fabric
3	Epoxy
8	Unknown
9	Other
0	None
N	Bridges with no deck

WSBIS Item 1549 – Deck Protection - NBI **Pulldown**
NBI Item 108C

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways***

*Main Listing Under records (e.g., railroad bridges and pedestrian bridges) are to be coded N, with the following exception: WSDOT owned pedestrian bridges are to be coded with the appropriate Membrane.

Table 1549 Deck Protection Code - NBI

WSBIS Code	Description
1	Epoxy Coated Reinforcing
2	Galvanized Reinforcing
3	Other Coated Reinforcing
4	Cathodic Protection
6	Polymer Impregnated
7	Internally Sealed
8	Unknown
9	Other
0	None
N	Bridges with no deck

Superstructure Configuration Designation

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSP01	B.SP.01	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification / Commentary

This item is populated automatically from the WSP01 field.

Superstructure Configuration Code

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Calculated	-	I	WSP01	-	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the assigned span configuration designation using one of the following codes. **Code** **Description** M## Main A## Approach C## Culvert V## Culvert extension W## Widening The ## characters in the above codes are auto-generated with sequential numbers, with leading zeros, assigned to each span configuration.	This item captures how spans of the reported bridge configuration are classified and designated. Except for culverts, each bridge has at least one main span. Main spans include all spans of most bridges or the major span(s) of a sizable bridge. The "##" characters in the codes with a sequential number (e.g., M01, A01, A02, etc.)identifies each unique span configuration present on the bridge.

Commentary Continued

A bridge may or may not have approach spans. Approach spans are typically those of a different material, type, or design than the main span and are typically at one or both ends of the main span.

Consider the span(s) of vaulted abutments as an approach span.

Use code C for spans that convey water through or under a roadway embankment and are designed hydraulically to take advantage of submergence to increase water carrying capacity.

Use code V when a culvert is extended using dissimilar construction.

Use code W for widened portions of main or approach spans with dissimilar construction. Widening data sets do not contribute to the calculation of the total number of spans for the bridge.

Examples - Superstructure Configuration Code

Four-span steel plate girder bridge. This bridge has one span data set. Report M01.

Double-leaf bascule bridge with four steel box girder approach spans. This bridge has two span data sets.
- Report M01 for the bascule data set.
- Report A01 for the steel box girder data set.

Six-span bridge with two continuous steel plate girder main spans and four simply supported steel plate girder approach spans. This bridge has two span data sets.
- Report M01 for the continuous steel plate girder data set.
- Report code A01 for the simply supported steel plate girder data set.

Four-barrel corrugated steel pipe culvert, modified by adding four additional HDPE round pipes along the roadway centerline to increase hydraulic capacity. This bridge has two span data sets.
- Report C01 for the steel pipes data set.
- Report C02 for the HDPE pipes data set.

Steel truss main span bridge with three prestressed concrete multi-beam approach spans at the north end, and two steel multi-beam approach spans at the south end. This bridge has three span data sets.
- Report M01 for the steel truss data set.
- Report A01 for the north approach data set.
- Report A02 for the south approach data set.

Single span reinforced concrete tee-beam bridge widened with prestressed concrete box beams. This bridge has two span data sets.
- Report M01 for the reinforced concrete tee-beam data set.
- Report W01 for the prestressed concrete box beams data set.

Three-sided frame culvert, lengthened by adding a four-sided box culvert to the end of the barrel. This bridge has two span data sets.
- Report C01 for the three-sided frame culvert data set.
- Report V01 for the four-sided box culvert data set.

Single span steel beam bridge widened using the same superstructure/deck construction. This bridge has one span data set. Report M01.

Span Description

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	I	WSP02	-	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification / Commentary

Briefly identify the span numbers associated with the Span Configuration identified in WSP01.

Examples
- Main Spans 2, 3 and 4
- Approach Spans 1-3

Number of Spans

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(4,0)	-	I	BSP02	B.SP.02	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the number of spans.	This item captures the number of spans of the configuration(s) designated in item B.SP.01 (Span Configuration Designation). If the number of barrels or spans varies, report the maximum number.

Examples

Four-span steel plate girder bridge. This bridge has one span data set. Report 4.

Double-leaf bascule bridge with four steel box girder approach spans. This bridge has two span data sets.
- Report 1 for the bascule main span data set.
- Report 4 for the box girder approach span data set.

Six-span bridge with two continuous steel plate girder main spans and four simply supported steel plate girder approach spans. This bridge has two span data sets.

Report 2 for the main span data set.

Report 4 for the approach span data set.

Four-barrel corrugated steel pipe culvert, modified by adding four additional HDPE round pipes along the roadway centerline to increase hydraulic capacity. This bridge has two span data sets.
- Report 4 for the steel pipes data set.
- Report 4 for the HDPE pipes data set.

Three steel girder spans with concrete vaulted/cellular abutments that enclose a reinforced concrete slab span at each end of the bridge. This bridge has two span data sets.
- Report 3 for the steel girder main span data set.
- Report 2 for the reinforced concrete approach span data set.

Four-sided concrete box culvert that collects runoff at a single-barrel inlet at the northeast corner of an intersection, and at a three-barrel inlet at the northwest corner. The barrels merge beneath the intersection, and all four barrels outlet to the southeast corner. This bridge has one span data set. Report 4.

Three-sided frame culvert, lengthened by adding a four-sided box culvert to the end of the barrel. This bridge has two span data sets.
- Report 1 for the three-sided frame culvert data set.
- Report 1 for the four-sided box culvert data set.

Twin concrete box girder bridge that has eastbound and westbound lanes separated by a 1” median gap. Eastbound portion of superstructure is supported by two piers, and westbound portion is supported by three piers due to unusual terrain restrictions. This bridge has one span data set. Report 4.

Number of Beam Lines

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(3,0)	-	I	BSP03	B.SP.03	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the number of principal beam lines. Report 1 for bridges where Item B.SP.06 (Span Type) is F01, F02, S01, or S02. Report 0 for bridges where Item B.SP.06 (Span Type) is P01 or P02.	Principal beam lines include the main longitudinal load-carrying members of the superstructure such as beams, girders, trusses, and arches or arch ribs, but do not include stringers of a floor beam system or spandrel walls of an arch. Use the average number of beam lines for bridges with variable number of beam lines within a span configuration, rounded down.

Examples

Timber multi-beam bridge with 12 beams. Report 12.

Steel through truss bridge with two trusses and ten stringers. Report 2.

Flared three-span tee-beam bridge with 12 beams at the south end and 17 beams at the north end. Report 14.

Steel arch bridge with three arch ribs. Report 3.

Concrete arch bridge with masonry spandrel walls. Report 1.

Four-barrel corrugated steel pipe culvert, modified by adding four additional HDPE round pipes along the roadway centerline to increase hydraulic capacity. This bridge has two span data sets.
- Report 0 for the steel pipes data set.
- Report 0 for the HDPE pipes data set.

Three-sided frame culvert, lengthened by adding a four-sided box culvert to the end of the barrel. This bridge has two span data sets.
- Report 1 for the three-sided frame data set.
- Report 1 for the four-sided frame data set.

Span Material

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSP04	B.SP.04	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification

Report the principal span material type using one of the following codes.

Code	Description
A01	Aluminum
C01	Reinforced concrete - cast-in-place
C02	Reinforced concrete - precast
C03	Prestressed concrete - pre-tensioned
C04	Prestressed concrete - cast in place post-tensioned
C05	Prestressed concrete - precast post-tensioned
CX	Concrete - other
F01	FRP composite - aramid fiber
F02	FRP composite - carbon fiber
F03	FRP composite - glass fiber
FX	FRP composite - other
I01	Iron - cast
I02	Iron - wrought
M01	Masonry - block
M02	Masonry - stone
P01	Plastic - Polyethylene
PX	Plastic - other
S01	Steel - rolled shapes
S02	Steel - welded shapes
S03	Steel - bolted shapes
S04	Steel - riveted shapes
S05	Steel - bolted and riveted shapes
SX	Steel - other

Specification Continued

continued...

Code	Description
T01	Timber - glue laminated
T01	Timber - nail laminated
T01	Timber - solid sawn
T01	Timber - stress laminated
T01	Timber - other
X	Other

Span Material - Commentary
A principal span member includes the main longitudinal load-carrying members of the span such as beams, girders, trusses, arches, or pipes, but does not include the floor system. Use code C04 or C05, as applicable, for prestressed concrete superstructures that utilize both pre-tensioning and post- tensioning. Use code M01 for masonry made from bricks or concrete blocks. Use code M02 for natural stone. Use code P01 for plastics that include HDPE and PE materials typically used for pipes.

Examples – Span Material
Spliced concrete girder: post-tensioned, precast, pre-tensioned bulb-T. Report C05. Stress laminated timber slab. Report T04. Concrete encased steel rolled beam. Report S01. Bolted steel truss with timber stringers. Report S03. Cast-in-place reinforced concrete tee-beams strengthened with carbon fiber FRP. Report C01. Corrugated steel pipes with bolted seams. Report S03. Corrugated steel pipe culvert with welded seams, modified by adding additional HDPE round pipes to lengthen the culvert along the roadway centerline. This bridge has two span data sets. • Report S02 for the steel pipes data set. • Report P01 for the HDPE pipes data set. Three-sided, cast-in-place reinforced concrete frame culvert, lengthened by adding a four- sided precast reinforced concrete frame culvert to the end of the barrel. This bridge has two span data sets. • Report C01 for the three-sided frame data set. • Report C02 for the four-sided frame data set. Terra cotta pipes. Report X.

Span Continuity

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(1)	-	I	BSP05	B.SP.05	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the span continuity using one of the following codes. **Code** **Description** 1 Simple or single span 2 Continuous 3 Continuous for live loads only 4 Cantilever 5 Cantilever with pin and hanger 6 Frame 7 Buried	This item captures the continuity of the span(s) in the configuration. Use code 2 for bridges designed continuous for permanent (dead) loads and live loads. Also, use code 2 for cable stayed and suspension bridges, and for multi-span arches. Use code 3 for bridges designed as simple spans for permanent (dead) loads and continuous for live loads. When it is unknown if the superstructure was designed as continuous for live loads, code this item consistent with the assumption used in the load rating calculations. Use code 6 for three-sided and four-sided frames that are not buried. Use code 7 for pipe culverts and other structures that rely on soil-structure interaction to support vertical loads.

Examples - Span Continuity

Two prestressed concrete girder simple spans. Report 1.

Three-span bridge with cantilevered end spans that are unsupported at the extreme ends. Report 4.

Steel rigid K-frame. Report 6.

Two prestressed concrete girder simple spans with continuous deck designed to provide continuity for live load over the pier. Report 3.

Three-span concrete girder bridge with cantilever and suspended center span. Report 4.

Three-span steel girder bridge with cantilever and suspended pin and hanger center span. Report 5.

Three-barrel monolithic concrete frame bridge that is not buried. Report 6. Four-barrel corrugated steel pipe culvert. Report 7.

Span Type

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSP06	B.SP.06	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification

Report the span type using one of the following codes.

Code	Description
A01	Arch - under fill without spandrel
A02	Arch - open spandrel
A03	Arch - closed spandrel
A04	Arch - through
A05	Arch - tied
B01	Box girder/beam - single
B02	Box girder/beam - multiple adjacent
B03	Box girder/beam - multiple spread
B04	Box girder/beam - segmental
F01	Frame - three-sided
F02	Frame - four-sided
F03	Frame - K-shaped
F04	Frame - delta-shaped
G01	Girder/beam - I-shaped adjacent
G02	Girder/beam - I-shaped spread
G03	Girder/beam - tee-beam
G04	Girder/beam - inverted tee-beam
G05	Girder/beam - double-tee adjacent
G06	Girder/beam - double-tee spread
G07	Girder/beam - channel adjacent
G08	Girder/beam - channel spread
G09	Girder/beam - girder & floor beam
G10	Girder/beam - through girder
GX	Girder/beam - other

Specification Continued

continued...

Code	Description
L01	Cable - suspension
L02	Cable - suspension
L03	Cable - suspension
L04	Cable - other
M05	Moveable - vertical lift
M01	Moveable - vertical lift
M02	Moveable - vertical lift
M03	Moveable - other
P04	Pipe - rigid
P01	Pipe - flexible
S03	Slab - solid
S04	Slab - voided
T01	Truss - deck
T02	Truss - through
T03	Truss - pony
X04	Other - railroad flat car
X05	Other - ferry transfer
X06	Other - floating
X	Other

Span Type - Commentary
Adjacent girders/beams are those sections that are placed directly next to each other and are touching or nearly touching. Spread girders/beams are those sections that are spaced so that the deck spans the space between the sections. Box girder/beams include boxes, tubs, and cellular structures where interior surfaces may or may not be accessible. Use code F01 for three-sided rigid frames. Use code F02 for rigid four-sided concrete box bridges. Use code G01 or G02, as applicable, for bulb-tee and deck bulb-tee girders/beams. Use code G09 for superstructures with girder and floor beam systems regardless of the girder shape. Use code G10 for through girder type superstructures regardless of the girder shape. Use code P02 for pipes that rely on the stability of surrounding soils to maintain their structural shape.

Span Protective System

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSP07	B.SP.07	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the span protective system using one of the following codes. **Code** **Description** 0 None A01 Admixture – internally sealed A02 Admixture – low permeability A03 Admixture – polymer impregnated A04 Admixture – ASR inhibitor AX Admixture – other C01 Coating – paint C02 Coating – sealer C03 Coating – hot dip galvanizing C04 Coating – metalizing/thermal spray CX Coating - other E01 Encasement - concrete EX Encasement - other M01 Membrane - built-up M01 Membrane - sheet M01 Membrane - liquid applied M01 Membrane - unknown MX Membrane - other P01 Patina - uncoated weathering steel S01 Sacrificial - cathodic, passive S02 Sacrificial - cathodic, active SX Sacrificial - other T01 Treated - timber preservative U Unknown X Other	Code this item consistent with the material reported for Item B.SP.04 (Span Material). In cases where the span configuration may have a combination of protective systems, use the code for the predominant protective system based on protected area. In cases where multiple systems protect the same area, use the code for the outermost protective layer. Use code 0 when the span is unprotected. Use code 0 when unprotected steels either never were coated or currently have no signs of coating systems, and have no protective systems such as cathodic protection or weathering chemistry. Non-protective anti-graffiti and aesthetic coatings are not considered when coding this item. Use code C01 for weathering steel that has been painted. Use code C02 for sealers such as silanes, siloxanes, linseed oils, etc. Use code P01 only for weathering grades of steel. For timber, use code T01 for oil-based or water-borne timber preservatives. Use code C01 for paints and stains. Use the appropriate code for span members under fill that have a protective system.

Examples – Span Protective System

Low permeability concrete slab bridge with waterproofing sheet membrane. Report M02.

Weathering steel multi-beam bridge that has the beam ends painted to protect from leakage through the joints. Report P01.

Deck Interaction

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(2)	-	I	BSP08	B.SP.08	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the type of interaction between the superstructure and deck for the span configuration using one of the following codes. **Code** **Description** CS Composite - shored construction CU Composite - unshored constructions IM Integral or monolithic NC Non-composite Do not report this item when Item B.SP.09 (Deck Material and Type) is 0.	This item captures the type of structural interaction that occurs between the bridge deck and superstructure, which may indicate the importance of the deck to the overall stability and capacity of the bridge. Use code NC to indicate that the deck and the superstructure act independently. Use code CU to indicate that the deck acts composite with the superstructure, and that the superstructure can carry its own self-weight, plus that of the deck concrete prior to curing.

Commentary Continued

Use code CS to indicate that the deck acts composite with the superstructure, but without the deck the superstructure requires shoring to carry its own self weight, the weight of the deck concrete prior to curing, or both.

Use code IM to indicate that the deck was cast or fabricated of the same material and at the same time as the superstructure and the two can be expected to act as a unit. Use code IM for slabs and orthotropic steel decks.

When the type of interaction is unknown, code this item consistent with the assumption used in the load rating calculations.

Examples - Deck Interaction

Steel rolled shape beams with cast-in-place deck. No shear connectors. Report NC.

Precast concrete bulb-tee with cast-in-place deck. Shear connectors extend into the deck. Deck was cast without shoring. Report CU.

Precast concrete double-tee beam bridge with an additional structural deck cast on top. Report CU.

Steel plate girder with cast-in-place deck. Shear connectors extend into the deck. Girders were shored during deck construction to maintain stability. Report CS.

Cast-in-place tee-beam bridge. Report IM. Adjacent box beam bridge. Traffic rides on the top flange of the box. Report IM.

Steel box girder with orthotropic deck. Deck plate acts as top flange of the box section. Report IM.

Deck Material & Type

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSP09	B.SP.09	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification

Report the deck material and type for the span configuration using one of the following codes.

Code	Description
0	None
A01	Aluminum
C01	Reinforced concrete – cast-in-place
C02	Reinforced concrete – precast
C03	Prestressed concrete – pre-tensioned
C04	Prestressed concrete – cast-in-place post-tensioned
C05	Prestressed concrete – precast post-tensioned
CX	Concrete – other
F01	FRP composite - aramid fiber
F02	FRP composite - carbon fiber
F03	FRP composite - glass fiber
FX	FRP composite - other
S01	Steel - open grid
S02	Steel - filled or partially filled grid
S03	Steel - plate
S04	Steel - orthotropic
S05	Steel - corrugated
SX	Steel - other
T01	Timber - glue laminated
T02	Timber - nail laminated
T03	Timber - solid sawn
T04	Timer - stress laminated
T05	Timber - other
X	Other

Commentary

In cases where the superstructure configuration may have a combination of deck materials and/or types, code the predominant deck material and type based on the deck area.

Use the applicable code for superstructure types with integral top flanges that serve as the deck, such as concrete tee-beams and box beams/girders.

For slabs, and for the slab portion of three-sided and four-sided concrete rigid frame bridges and culverts not under fill, use the same applicable material code as used in Item B.SP.04 (Span Material).

Use code 0 for the following bridge and culvert types when under fill, as these do not have a deck component: slabs, arches without spandrels, closed spandrel arches, pipes, and three-sided or four-sided rigid frames.

Use code C02, C03, or C05, as applicable, for full depth precast panels only. Use code C01 or C04, as applicable, for cast-in-place concrete on partial depth structural panels that are not just considered stay-in-place forms.

Examples – Span Protective System

Low permeability concrete slab bridge with waterproofing sheet membrane. Report M02.

Weathering steel multi-beam bridge that has the beam ends painted to protect from leakage through the joints. Report P01.

Wearing Surface

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSP10	B.SP.10	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification

Report the predominant wearing surface material type protecting the deck or slab for the span configuration using one of the following codes.

Code	Description
0	None
B01	Bituminous (asphalt)
C01	Concrete – monolithic
C02	Concrete – unmodified
C03	Concrete – latex modified
C04	Concrete – low slump
C05	Concrete – fiber reinforced
C06	Concrete – microsilica
C07	Concrete – polyester
CX	Concrete – other
CU	Concrete – unknown
E01	Earth – gravel or soil
P01	Polymer – epoxy
P02	Polymer – polyester
PX	Polymer – other
S01	Steel
T01	Timber - running planks
X	Other

Commentary

When a span configuration has a combination of wearing surface types, code the predominant wearing surface type based on the deck or slab area.

Do not consider patching materials when coding this item.

Use code 0 when no additional sacrificial concrete thickness or wearing surface is included on the deck or slab.

Use codes C01 through CU for overlays that contain portland cement.

Use code C01 when there is an additional sacrificial thickness cast concurrently with the structural deck or slab.

Use code C02 when an additional placement of concrete of the same concrete material as the deck or slab is placed after the deck or slab has cured.

Use code CU when a concrete wearing surface exists, but the specific material composition is unknown.

Use code S01 when a steel grid deck is fabricated with an additional sacrificial thickness. Code S01 is not intended for temporary steel plates.

Use code T01 where running planks are added on timber decks or slabs.

Examples

Bridge with 2” asphalt wearing surface over a sheet waterproofing membrane. Report B01. Bridge with latex modified concrete overlay topped with an epoxy polymer overlay. Report P01.

Deck Protective System

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSP11	B.SP.11	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification

Report the deck protective system for the span configuration using one of the following codes.

Code	Description
0	None
A01	Admixture – internally sealed
A02	Admixture – low permeability
A03	Admixture – polymer impregnated
A04	Admixture – corrosion inhibitor
A05	Admixture – ASR inhibitor
AX	Admixture – other
C01	Coating – paint
C02	Coating – silane/siloxane
C03	Coating – methacrylate
CX	Coating - other
M01	Membrane – built up
M02	Membrane – sheet
M03	Membrane – liquid applied
MU	Membrane – unknown
MX	Membrane – other
P01	Patina – weathering steel
X	Other

Do not report this item when Item B.SP.09 (Deck Material and Type) is 0.

Commentary

Code this item consistent with the predominant material reported in Item B.SP.09 (Deck Material and Type).

In cases where the deck may have a combination of protective systems, use the code for the predominant protective system based on protected area. In cases where multiple systems protect the same area, use the code for the outermost protective layer.

Use code 0 when there is no known internal or external protective system in place.

Use code A01 for internally sealed concrete systems that use wax beads in the concrete. After the concrete cures, it is heated to melt the wax and seal the concrete.

Use code A02 when low permeability concrete is used with admixtures such as flyash, microsilica, or slag.

Use code A05 when admixtures are used to inhibit alkali-silica reactivity (ASR).

Do not use codes C02 and C03 when the material is applied for localized crack repair.

Use code M01 when the membrane is built up using combined layers of liquid and preformed/ sheet membranes.

Use code MU when a membrane exists, but the type is unknown.

Use code MX when a membrane type is known, but does not match the types specified for codes M01, M02, or M03.

Examples

Bridge with 2” asphalt wearing surface over a sheet waterproofing membrane. Report M02.

Bridge deck constructed with polymer impregnated concrete and sealed with a flood coat of methacrylate. Report C03.

Deck Reinforcing Protective System

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSP12	B.SP.12	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification

Report the type of deck reinforcing protective system for the span configuration using one of the following codes for concrete decks and slabs.

Code	Description
0	None
C01	Coating – epoxy coated
C02	Coating – galvanized
C03	Coating – metalized
CX	Coating – other
R01	Reinforcing – stainless, clad
R02	Reinforcing – stainless, solid
R03	Reinforcing – high chromium
R04	Reinforcing – FRP, aramid fiber
R05	Reinforcing – FRP, carbon fiber
R06	Reinforcing – FRP, glass fiber
R07	Reinforcing – FRP, other
RX	Reinforcing – other
S01	Sacrificial – cathodic, passive
S02	Sacrificial – cathodic, active
SX	Sacrificial – other
X	Other

Report this item only if Item B.SP.09 (Deck Material and Type) is concrete (i.e. codes C01 to CX).

Commentary

In cases where the span(s) may have a combination of protective systems, use the code for the predominant protective system based on protected area. In cases where multiple systems protect the same area, use the code for the outermost protective layer. If the top and bottom mat have different protective systems, report the protective system for the top mat.

Do not consider bar chairs or other reinforcing steel supports when coding this item.

Use code 0 when steel reinforcement is unprotected, such as with black steel.

Use codes C01 to CX and R01 to RX when any (e.g., top mat only) or all the reinforcing steel in the deck is protected by the selected steel type.

Use code S02 when impressed currents are used as the cathodic protection system.

Examples

Bridge deck constructed with black reinforcing bars, later widened with a top mat of epoxy coated bars and bottom mat of black bars. This bridge has two span data sets.

- Report 0 for the original deck data set.
- Report C01 for the widened deck data set.

Deck Stay-In-Place Forms

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSP13	B.SP.13	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the type of deck stay-in-place form for the span configuration using one of the following codes. **Code** – **Description** 0 – None C01 – Concrete – reinforced C02 – Concrete – prestressed F01 – FRP composite M01 – Metal T01 – Timber X – Other Do not report this item when Item B.SP.09 (Deck Material and Type) is 0.	Use this item to identify forms used in construction that remain in place by design or owner preference. When a span configuration has a combination of stay-in-place form types, code the predominant type based on the deck area. Use code C01 when a precast reinforced concrete panel (partial depth) is used with a cast-in-place reinforced concrete placement on top. Use code C02 when a precast prestressed concrete panel (partial depth) is used with a cast-in-place reinforced concrete placement on top. This item is not intended to be used for materials installed only for debris shielding, or when Item B.SP.09 (Deck Material and Type) is S05 (Steel – corrugated).

Examples

Bridge constructed using 3” thick prestressed concrete form panels. Completed deck is 8” thick. Report C02.

Bridge with reinforced concrete deck placed originally with removable forms, subsequently widened with reinforced concrete deck placed on metal stay-in-place forms. This bridge has two span data sets.

- Report 0 for the original data set.
- Report M01 for the widened data set.

Substructure Configuration Designation

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSB01	B.SB.01	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification / Commentary

This item is automatically populated from WSB01

Substructure Configuration Code

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Calculated	-	I	WSB01	-	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the substructure set designation using one of the following codes. **Code** **Description** A## Abutment P## Pier or Bent W## Widening The ## characters in the above codes are auto-generated with sequential numbers, with leading zeros, assigned to each substructure configuration.	This item captures how the reported substructure configuration is designated. The substructure is the portion of a bridge below the bearings or below the springline of an arch, which transfers loads to the foundation. This includes the walls of three-sided and four-sided rigid frame bridges. The "##" characters in the codes with a sequential number (e.g., A01, A02, P01, etc.) identifies each unique substructure configuration present on the bridge.

Commentary Continued

An abutment is a substructure unit located at the end of a bridge that transfers loads from the superstructure to the foundation while providing lateral support for the approach roadway embankment. Typically, a bridge has two abutments, but there may be cases (such as bifurcated structures assigned two bridge numbers) where one end of the bridge does not mate up with the approach roadway.

A multiple span bridge with cantilevered end spans that are unsupported at the extreme ends does not have abutments.

Piers and bents are substructure units that support the spans of a multi-span superstructure at intermediate location(s) between abutments.

Use code W for widened portions of abutments or piers/bents with dissimilar substructure construction.

Examples

Single-span concrete rigid frame bridge. This bridge has one designated substructure data set. Report A01.

Two-span concrete, three-sided, rigid frame culvert. This bridge has two designated substructure data sets.

- Report A01 for the end support frame legs data set.
- Report P01 for the intermediate support frame leg data set.

Four-span multi-beam bridge with integral concrete abutments and concrete column piers. This bridge has two designated substructure data sets.

- Report A01 for the abutment data set.
- Report P01 for the pier data set.

Three-span bridge with intermediate concrete pier walls and cantilevered end spans that are unsupported at the extreme ends. This bridge has one designated substructure data set. Report P01.

Three-span suspension bridge with concrete tower piers, concrete pier walls supporting the ends of the suspension spans, eight timber bents supporting the approach spans, and concrete stub abutments at each end of the bridge. The north abutment has a spread footing on rock foundation and the south abutment has a steel H-pile foundation. This bridge has five designated substructure data sets.

- Report A01 for the north abutment data set.
- Report A02 for the south abutment data set.
- Report P01 for the towers data set.
- Report P02 for the concrete pier walls data set.
- Report P03 for the timber bents data set.

Five-span girder bridge with concrete stub abutments and concrete wall piers. Bridge is widened with concrete stub abutments and concrete column piers. This bridge has three designated substructure data sets.

- Report A01 for the stub abutments (including the widening) data set.
- Report P01 for the concrete wall piers data set.
- Report W01 for the concrete columns data set.

Pier Description

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Pulldown	-	I	WSB02	-	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification / Commentary

Briefly identify the substructure numbers associated with the Substructure Configuration identified in WSB01.

Examples

- Abutments 1 and 5
- Piers 2-4

Number of Substructure Units

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(3,0)	-	I	BSB02	B.SB.02	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the number of substructure units.	This item captures the number of substructure units of similar material, design, and foundation type that are being reported.

Examples

Four-span multi-beam bridge with integral concrete abutments and concrete column piers. This bridge has two substructure data sets.
- Report 2 for the abutment data set.
- Report 3 for the pier data set.

Three-span bridge with intermediate concrete pier walls and cantilevered end spans that are unsupported at the extreme ends. This bridge has one substructure data set. Report 2.

Three-span suspension bridge with concrete tower piers, concrete pier walls supporting the ends of the suspension spans, eight timber bents supporting the approach spans, and concrete stub abutments at each end of the bridge. The north abutment has a spread footing on rock foundation and the south abutment has a steel H-pile foundation. This bridge has five substructure data sets.

- Report 1 for the north abutment data set.
- Report 1 for the south abutment data set.
- Report 2 for the towers data set.
- Report 2 for the concrete pier walls data set.
- Report 8 for the timber bents data set.

Five-span girder bridge with concrete stub abutments and concrete wall piers. Bridge is widened with concrete stub abutments and concrete column piers. This bridge has three substructure data sets.

- Report 2 for the stub abutments (including the widening) data set.
- Report 4 for the concrete wall piers data set.
- Report 4 for the concrete columns data set.

Substructure Material

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSB03	B.SB.03	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification

Report the principal substructure material type using one of the following codes.

Code	Description
0	None
A01	Aluminum
C01	Reinforced concrete – cast-in-place
C02	Reinforced concrete – precast
C03	Prestressed concrete – pre-tensioned
C04	Prestressed concrete – cast-in-place post-tensioned
C05	Prestressed concrete – precast post-tensioned
CX	Concrete – other
E01	Earth – reinforced soil
F01	FRP composite – aramid fiber
F02	FRP composite – carbon fiber
F03	FRP composite – glass fiber
FX	FRP composite – other
I01	Iron – cast
I02	Iron – wrought
M01	Masonry – block
M02	Masonry – stone
P01	Plastic - polyethylene
PX	Plastic - other

Specification Continued

continued...

Code	Description
S01	Steel - rolled shapes
S02	Steel - welded shapes
S03	Steel - bolted shapes
S04	Steel - riveted shapes
S05	Steel - bolted and riveted shapes
S06	Steel - pipes
SX	Steel - other
T01	Steel - rolled shapes
T02	Steel - rolled shapes
T03	Steel - rolled shapes
T04	Steel - rolled shapes
TX	Steel - rolled shapes
X	Other

Examples - Substructure Material

Closed spandrel arch founded on cast-in-place concrete spread footings on rock. Report C01. Reinforced concrete full height cantilever abutment. Report C01.

Pile bent abutment with timber piles, timber lagging, and concrete cap. Report C01. Pile bent abutment with steel H-piles, timber lagging, and rolled steel cap. Report S01. Reinforced concrete stub abutment on steel piles with a MSE wall. Report C01.

GRS abutment with precast, prestressed concrete box beams placed directly on the reinforced soil mass. Report E01.

Substructure Type

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSB04	B.SB.04	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification

Report the abutment, pier, or bent design type using one of the following codes.

Code	Description
0	None
A01	Abutment – cantilever/wall
A02	Abutment – stub
A03	Abutment – open/spill through
A04	Abutment – integral
A05	Abutment – semi-integral
A06	Abutment – gravity
A07	Abutment – counterfort
A08	Abutment – pile bent with lagging
A09	Abutment – crib
A10	Abutment – cellular/vaulted
A11	Abutment – reinforced soil
A12	Abutment – footing only
AX	Abutment – other
B01	Bent – column or open
B02	Bent – column with web wall
B03	Bent – pile
B04	Bent – straddle or c-shaped
BX	Bent - other

Specification Continued

continued...

Code	Description
P01	Pier – wall
P02	Pier – single column
P03	Pier – multiple column
P04	Pier – multiple column with web wall
P05	Pier – straddle or c-shaped
P06	Pier – movable bridge
P07	Pier – tower
P08	Pier – footing only
PX	Pier – other
U	Unknown
X	Other

Substructure Type - Commentary

In cases where the substructure may have a combination of designs due to retrofitting actions, use the code for the predominant design.

Both piers and bents provide the same function; however, a pier has only one footing at each substructure unit (the footing may serve as a pile cap) while a bent has several footings or no footing, as is the case with a pile bent.

Use code 0 when the superstructure rests directly on the foundation.

Use codes A01 to A10, as appropriate, if the superstructure load is supported by a substructure unit, which is in turn supported by piles or the reinforced soil mass. Use code A11 when the superstructure rests directly on the reinforced soil mass.

Use code A10 when the space between wingwalls, abutment stem, approach slab, and footings is hollow.

Use code A12 or P08 when the superstructure rests only on a footing, grade beam, or thrust block.

Use code B04 when a highway or railroad passes directly beneath or through the bent.

Use code P06 for piers that support movable bridges and the equipment needed to open and close the bridge.

Use code P07 for towers of complex bridges such as cable-stayed and suspension bridges.

Examples - Substructure Type

Reinforced concrete full-height cantilever abutment. Report A01.

Reinforced concrete stub abutment on steel piles with a MSE wall. Report A02.

Pile bent type abutment with painted steel piles, timber lagging, and steel cap. Report A08.

Single-span closed spandrel arch that bears directly on a thrust block founded on rock. Report A12.

Single-span timber beams resting on concrete grade beam. Report A12. Single-span railroad flat car with ends resting on unreinforced soil. Report AX.

Intermediate bent supported on concrete-filled steel pipe piles connected with a concrete cap beam. Report B03.

Reinforced concrete pier wall widened with a single reinforced concrete column. This bridge has two substructure data sets.

- Report P01 for the pier data set.
- Report P02 for the widening data set.

Reinforced concrete pier with three concrete columns on concrete footing/pile cap. Report P03.

Substructure Protective System

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSB05	B.SB.05	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the substructure protective system using one of the following codes. **Code** **Description** 0 None A01 Admixture – internally sealed A02 Admixture – low permeability A03 Admixture – polymer impregnated A04 Admixture – corrosion inhibitor A05 Admixture – ASR inhibitor AX Admixture – other C01 Coating – paint C02 Coating – sealer C03 Coating – galvanizing/metalizing CX Coating – other E01 Encasement - concrete EX Encasement - other P01 Patina – weathering steel S01 Sacrificial – cathodic, passive S02 Sacrificial – cathodic, active SX Sacrificial – other T01 Bent – straddle or c-shaped X Other Do not report this item when Item B.SB.04 (Substructure Type) is 0.	Code this item consistent with the predominant material reported in Item B.SB.03 (Substructure Material). In cases where the substructure may have a combination of protective systems, use the code for the predominant protective system based on protected area. In cases where multiple systems protect the same area, use the code for the outermost protective layer. Use code 0 when the substructure is unprotected. Use code 0 when unprotected steels either never were coated or currently have no signs of coating systems and have no protective systems, such as, cathodic protection or weathering chemistry. Anti-graffiti coatings are not considered when coding this item. Use code C01 for weathering steel that has been painted. Use code C02 for sealers such as silanes, siloxanes, linseed oils, etc. Use code E01 for steel piles of pile bents that are encased in concrete. Use code P01 only for weathering grades of steel. For timber, use code T01 for oil-based or water-borne timber preservatives. Use code C01 for paints and stains.

Examples - Substructure Protective System
Painted weathering steel pier cap. Report C01. Pile bent with preservative treated timber piles and concrete cap sealed with siloxane. Report C02. Pile bent type abutment with painted steel H-pile foundation, timber lagging, and reinforced concrete cap with active cathodic protection. Report S02.

Foundation Type

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSB06	B.SB.06	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification

Report the substructure protective system using one of the following codes.

Code	Description
0	None
E01	Earth – reinforced soil
F01	Footing – not on rock
F02	Footing – on rock
F03	Footing – on reinforced soil
P01	Pile – steel H-shape
P02	Pile – steel pipe
P03	Pile – concrete, cast-in-place
P04	Pile – prestressed concrete
P05	Pile – timber
P06	Coating – other
P07	Pile – micropile
P08	Pile – composite
P09	Pile – FRP composite
PX	Pile – other
S01	Drilled shaft – single
S02	Drilled shafts – multiple
S03	Caisson
U	Unknown
X	Other

Do not report this item when Item B.SB.04 (Substructure Type) is 0.

Commentary

In cases where the substructure has a combination of foundations due to retrofitting actions, use the code for the predominant foundation.

Do not consider localized repairs to original foundation types when reporting this item.

Use code E01 when the superstructure bears directly on the reinforced soil mass.

Use codes F01 to F03, as appropriate, when the substructure or footing bears directly on the ground, such as a grade beam, floor, or gravity wall.

Use code F02 only if the design plans, or subsequent subsurface investigation, indicate that the entire foundation is supported by rock.

Use code F03 if the superstructure load is supported by a substructure unit, which is in turn supported by the reinforced soil mass.

Use code P02 for filled or unfilled steel pipe piles.

Use code P03 for cased and uncased cast-in-place concrete piles, and for driven corrugated, fluted, or spiral-welded shell-cased concrete piles.

Use code P04 for solid or hollow-core square, octagonal, or cylindrical piles.

Use code P06 for piles that have concrete or grout placed by pumping through the stem of the auger pipe as the auger is withdrawn.

Foundation Type - Commentary Continued

Use code P07 for small diameter piles, typically less than 12 inches, that are drilled, then grouted.

Use code P08 for piles in which the length is composed of two or more pile types or materials, excluding pile tips.

Use code P09 when FRP composite piles are used for construction but not as repairs to existing piles of a different type.

Use codes S01 and S02 for cased or uncased drilled shafts.

Use code S03 for footings sunk into position by excavation through or beneath the caisson structure.

Examples - Foundation Type

Three-sided concrete frame culvert with a spread footing keyed into bedrock, modified by adding a four-sided box culvert placed on crushed stone bedding to the end of the barrel to widen the culvert. This culvert has two substructure data sets.

- Report F02 for the three-sided concrete frame culvert data set.
- Report F01 for the four-sided box culvert data set.

Closed spandrel arch founded on spread footings on bedrock. Report F02.

Pile bent abutment with steel H-piles, timber lagging, and rolled steel cap. Report P01. Reinforced concrete stub abutment on steel H-piles with an MSE wall. Report P01.

Precast, reinforced concrete arch structure constructed on cast-in-place concrete footing with steel H-pile foundation. Report P01.

Pile bent abutment with timber piles, timber lagging, and concrete cap. Report P05.

GRS abutment with precast, prestressed concrete box beams placed directly on the reinforced soil mass. Report E01.

Four corrugated steel circular pipes placed on crushed stone bedding. Do not report this item.

Foundation Protection System

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(3)	-	I	BSB07	B.SB.07	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification

Report the foundation protective system using one of the following codes.

Code	Description
0	None
A01	Admixture – internally sealed
A02	Admixture – low permeability
A03	Admixture – polymer impregnated
A04	Admixture – corrosion inhibitor
A05	Admixture – ASR inhibitor
AX	Admixture - other
C01	Coating – paint
C02	Coating – sealer
C03	Coating – galvanizing/metalizing
CX	Coating – other
E01	Encasement - concrete
EX	Encasement – other
P01	Patina - weathering steel
S01	Sacrificial – cathodic, passive
S02	Sacrificial – cathodic, active
SX	Sacrificial – other
T01	Treated - timber preservative
U	Unknown
X	Other

Do not report this item when Item B.SB.04 (Substructure Type) is 0.

Commentary

Code this item consistent with the predominant material reported in Item B.SB.06 (Foundation Type).

In cases where the foundation may have a combination of protective systems, use the code for the predominant protective system based on protected area. In cases where multiple systems protect the same area, use the code for the outermost protective layer.

Use code 0 when the foundation is unprotected.

Use code 0 when unprotected steels either never were coated or currently have no signs of coating systems and have no protective systems, such as cathodic protection or weathering chemistry.

Anti-graffiti coatings are not considered when coding this item.

Use code C02 for sealers such as silanes, siloxanes, linseed oils, etc.

Use code E01 for steel piles of pile bents that are encased in concrete.

Use code P01 only for weathering grades of steel.

For timber, use code T01 for oil-based or water-borne timber preservatives. Use code C01 for paints and stains.

Examples - Foundation Protective System
Closed spandrel arch founded on spread footings on bedrock. Report 0. Pile bent abutment with timber piles treated with creosote, timber lagging, and concrete cap. Report T01. Pile bent with painted steel H-piles and rolled steel cap. Report C01. GRS abutment with precast, prestressed concrete box beams placed directly on the reinforced soil mass. Report 0. Three-sided concrete frame culvert with a spread footing keyed into bedrock, modified by adding a four-sided box culvert placed on crushed stone bedding to the end of the barrel to widen the bridge. The four-sided box was constructed with high performance concrete that provides for low permeability. • Report 0 for the three-sided concrete frame culvert data set. • Report A02 for the four-sided box culvert data set. Precast, reinforced concrete arch bridge constructed on cast-in-place concrete footing with unpainted steel H-pile foundation. Report 0.

Roadside Hardware

The data items in this subsection identify crash tested roadside hardware on the bridge. These data items are considered part of the Primary Data Set and have a one-to-one relationship with a bridge.

The data for these items typically remain static once a bridge has been inventoried. The following data items are included in this subsection.

Item ID	Data Item
B.RH.01	Bridge Rail Crash Test
B.RH.02	Bridge Rail Transition Crash Test

Roadside hardware is commonly associated with bridges and serves as a traffic safety feature to redirect errant vehicles and reduce crash severity. The items in this subsection are inventoried to indicate if hardware at the bridge is required, present, or has been crash tested. Do not consider the condition of the hardware when reporting these items.

Table 6 contains the applicable crash testing codes used for all the roadside hardware items in this subsection. The applicable code may be based on an approved analytical equivalency evaluation.

Refer to the FHWA Office of Highway Safety website for policy and guidance on roadside hardware (http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware). Also, refer to the Task Force 13 – Hardware Guide website for roadside hardware, systems specifications, and individual component details.

The AASHTO LRFD Bridge Design Specifications are currently used to design bridge railings. The AASHTO Manual for Assessing Safety Hardware (MASH), which replaces NCHRP Report 350, is currently used for testing and evaluating the safety performance of roadside hardware.

The AASHTO Roadside Design Guide addresses appropriate bridge railings, roadside barriers, barrier end treatments, and crash cushions

Table 6. Roadside Hardware codes.

Code	Test Level Code						Description
	1	2	3	4	5	6	
N							Not applicable – roadside hardware is not required.
	MYY1	MYY2	MYY3	MYY4	MYY5	MYY6	Roadside hardware successfully crash- tested for AASHTO MASH.
	3501	3502	3503	3504	3505	3506	Roadside hardware successfully crash- tested for NCHRP Report 350.
	2301	2302	2303				Roadside hardware successfully crash- tested for NCHRP Report 230.
	2391	2392	2393				Roadside hardware successfully crash- tested for NCHRP Report 239.
	891	892	893				Roadside hardware successfully crash- tested for 1989 AASHTO Guide Specifications for Bridge Railings.
X							Roadside hardware successfully crash- tested for other criteria.
AYY							Roadside hardware has not been crash-tested but meets AASHTO Standard Specifications for Highway Bridges.
SYY							Roadside hardware has not been crash-tested but meets approved agency standards.
I							Roadside hardware has not been crash-tested and does not meet approved agency standards.
0 (zero)							None - roadside hardware is required, but required roadside hardware is not present.

Note that YY, for codes in Table 6, represents the last two digits of the year for the crash testing publication, AASHTO Specifications, or agency approved standards.

Bridge Rail Crash Test

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(4)	-	I	BRH01	B.RH.01	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the crash-test level for the bridge railings using one of the codes in Table 6.	This roadside hardware includes all types and shapes of bridge railings (parapets, median barriers, or structure mounted) located on the bridge or that cross over culverts. Use the code that first applies going from the bottom (Code 0) of Table 6 to the top (MYY), if there are more than one type of bridge railing on the bridge.

Commentary Continued

A list of crash-tested bridge railings may be obtained from the FHWA Office of Highway Safety website at: http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware.

Bridge railings designed to meet AASHTO specifications prior to 1964 may not meet current specifications.

Prior to 1993, bridge railings were tested according to the AASHTO Guide Specifications for Bridge Railings, NCHRP Report 230, or NCHRP Report 239.

Since 1993, bridge railings were crash-tested and classified according to the guidelines shown in NCHRP Report 350.

Refer to the May 30, 1997 memo at the FHWA Office of Highway Safety website for a list of crash-tested bridge railings with equivalent NCHRP Report 350 test levels.

In 2009 the AASHTO Manual for Assessing Safety Hardware (MASH) replaced NCHRP 350. In 2015 AASHTO and FHWA entered into a MASH joint implementation agreement.

Refer to State, Federal agency, or Tribal government policies for acceptable bridge railing standards.

Use code I when no information is known about the crash test level or an agency approved standard.

Also, use code I when an overlay is applied to the deck/slab and the height no longer meets the original geometry requirements of the crash-tested rail.

BRCT Document Year (YYYY)

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(4,0)	-	I	WRH01	-	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

BRCT Document Year (YYYY) - Specification / Commentary

Code the year of the applicable specification when using codes with YY filler fields shown in Table 6.

Bridge Rail Transition Crash Test

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(4)	-	I	BRH02	B.RH.02	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**

Specification	Commentary
Report the crash-test level for transition railings using one of the codes in Table 6.	This roadside hardware serves as the transition from the roadside approach railing to the bridge railing and is firmly attached and anchored to the bridge railing to provide sufficient tension in the transition rail upon impact. Use the code that first applies going from the bottom (Code 0) of Table 6 to the top (MYY), if there are more than one type of transition.

Commentary Continued

A list of crash-tested transitions may be obtained from the FHWA Office of Highway Safety website at: http://safety.fhwa.dot.gov/roadway_dept/policy_guide/road_hardware.

Since 1993, transitions to bridge railings have been crash tested and classified according to the guidelines shown in NCHRP Report 350.

In 2009 the AASHTO Manual for Assessing Safety Hardware (MASH) replaced NCHRP 350. In 2015 AASHTO and FHWA entered into a MASH joint implementation agreement.

Refer to State, Federal agency, or Tribal government policies for acceptable transition railing standards.

Use code I when no information is known about the crash test level or an agency approved standard. Also, use code I when an overlay is applied to the deck/slab and the height no longer meets the original geometry requirements of the crash-tested transition.

Examples - Bridge Rail Transition Crash Test

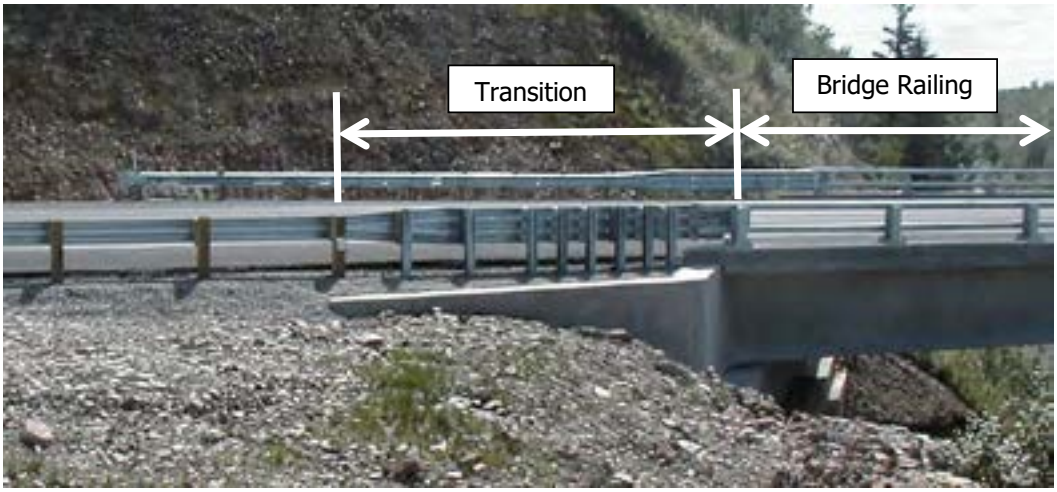


Figure 11. Metal bridge railing and transition. (Source: Alaska DOT)

Bridge carries an NHS route with the following roadside hardware.

Alaska Multi-State Bridge Rail successfully crash-tested for NCHRP 350 Test Level 4.

- Report 3504 for Item B.RH.01 *(Bridge Railings)*.

Alaska Multi-State Bridge Rail Thrie-Beam Transition successfully crash tested for NCHRP 350 Test Level 4.

- Report 3504 for Item B.RH.02 *(Transitions)*.

Figure 12. Metal bridge railing and transition for long-span application. (Source: Delaware DOT)

Concrete pipe bridge that carries a non-NHS route with the following roadside hardware.

Steel W-beam bridge rail with wood posts (long-span application) successfully crash tested to MASH 2009 Test Level 3.

- Report M093 for Item B.RH.01 *(Bridge Railings)*.

Steel W-beam transition with wood posts (long-span application) successfully crash tested to MASH 2009 Test Level 3.

- Report M093 for Item B.RH.02 *(Transitions)*.

BRTCT Document Year (YYYY)					
Format	**Translation**	**Frequency**	**WSBIS Item ID**	**SNBI Item ID**	**SNTI Item ID**
N(4,0)	-	I	WRH02	-	-
Applicable Structure Types • **Bridges & culverts carrying public roadways**					
Specification / Commentary					
Code the year of the applicable specification when using codes with YY filler fields shown in Table 6.					

Load Rating Tab

Rating

WSBIS Item 2580 – Reference Inspection Date **Date**

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Code the inspection report date used for the load rating calculations. Usually this field will be coded or updated by transcribing information from the most current Load Rating Summary Sheet.

WSBIS Item 1550 – Design Load - NBI **Pulldown**
NBI Item 31

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Use the codes below to indicate the live load for which the structure was designed. The numerical value of the railroad loading should be recorded on the form. Classify any other loading, when feasible, using the nearest equivalent of the loadings given below.

Table 1550 Design Load Code - NBI

WSBIS Code	Metric Description	English Description
0	Unknown	Unknown
1	M 9	H 10
2	M 13.5	H 15
3	MS 13.5	HS 15
4	M 18	H 20
5	MS 18	HS 20
6	MS 18 + Mod	HS 20 + Mod
7	Pedestrian	Pedestrian
8	Railroad	Railroad
9	MS 22.5 or greater	HS 25 or greater
A	HL 93	HL 93
B	Greater than HL 93	Greater than HL 93
C	Other	Other

NBI Commentary:

This field has been revised based on a February 2, 2011 FHWA memo available at https://www.fhwa.dot.gov/bridge/110202.cfm.

Design Load - SNBI

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(8)	-	I	BLR01	B.LR.01	-

Applicable Structure Types
- **All structure records**

Specification

Report the live load for which the bridge was designed using one of the following codes.

Code	Description
H10	H-10
H15	H-15
H20	H-20
HS15	HS-15
HS20	HS-20
HS20M	HS-20 and Military
HS20Plus	Greater than HS-20
HL93	HL-93
HL93Plus	Greater than HL-93
RR	Railroad
U	Unknown
X	Other

Commentary

For widened or rehabilitated bridges, code the most restrictive design load governing any portion of the bridge.

Use code HS20M when the bridge is designed to accommodate both the HS-20 and the alternate military load.

Use codes HS20Plus and HL93Plus when the HS-20 or HL-93 design load configuration is increased proportionally above that specified in the AASHTO design specifications.

Use code U when the design plans are not available and the likely design load cannot be inferred from design characteristics of the bridge or agency policy at the time the bridge was built.

A code other than U can be reported when design plans are not available, but the design load can be inferred from design characteristics of the bridge or agency policy at the time the bridge was built.

Use code X when the design is not based on AASHTO design load configurations.

Examples - Design Load - SNBI
A bridge designed for an HS-20 load is later widened. The widening is designed for the HL-93 load. Report HS20. Per State design policy, a bridge is designed using LRFD, in which the truck load portion of the HL-93 load is increased by 25%. Report HL93Plus. Per State design policy, a bridge is designed for the HL-93 design load, with further consideration of a State-defined permit vehicle. The permit vehicle controls the design of the superstructure. Report X.

Design Method

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(4)	-	I	BLR02	B.LR.02	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the method by which the bridge was designed using one of the following codes. **Code** — **Description** ASD — Allowable Stress Design LFD — Load Factor Design LRFD — Load and Resistance Factor Design U — Unknown X — Other	The codes describe the design methods used in accordance with AASHTO design specifications. For widened or rehabilitated bridges, code the design method associated with the code in Item B.LR.01 (Design Load). Use code U when the design plans are not available and the likely design method cannot be inferred from design characteristics of the bridge or agency policy at the time the bridge was built. A code other than U can be reported when design plans are not available, but the design method can be inferred from design characteristics of the bridge or agency policy at the time the bridge was built.

Examples
A bridge designed for an HS-20 load using Load Factor design is later widened. The widened portion is designed for the HL-93 load using Load and Resistance Factor design. Item B.LR.01 (Design Load) has code HS20 reported. Report LFD.

Load Rating Date *(Old Item 2581)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
YYYYMMDD	-	I	BLR03	B.LR.03	-

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Specification	Commentary
Report the date of the most recent load rating. Do not report this item if no rating analysis or evaluation has been performed **WSDOT Commentary:** Code the load rating calculation date. Usually this field will be coded or updated by transcribing information from the most current Load Rating Summary Sheet.	This item reflects the date of the most recent calculation or reevaluation of the load rating. The load rating may be performed independently and at a different date than the inspection. Defects discovered during inspections that may impact the strength or serviceability of the bridge typically require reevaluation of the load rating. When reevaluation of the load rating is completed, report the date of the reevaluation for this item. Refer to the following items when a new or updated load rating is completed: • B.LR.04 (Load Rating Method) • B.LR.05 (Inventory Load Rating Factor) • B.LR.06 (Operating Load Rating Factor) • B.LR.07 (Controlling Legal Load Rating Factor) • B.LR.08 (Routine Permit Loads)

Examples

Load rating calculations found in the bridge record are dated September 5, 1999. Report 19990905.

A bridge rated for an HS-20 load using Load Factor rating is later widened. The entire bridge is re-rated using Load and Resistance Factor rating on July 23, 2012. Report 20120723.

WSBIS Item 2582 – Rated By AN(16)

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Code the initials or engineering firm name indicating who performed the load rating. Usually this field will be coded or updated by transcribing information from the most current Load Rating Summary Sheet.

WSBIS Item 1660 – Operating Level - NBI **Pulldown**
NBI Item 70

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

The National Bridge Inspection Standards require the posting of load limits if the operating rating factor (RF) for any of the legal load configurations in the State is less than 1 based on the Load Factor Method (LFR) or the Allowable Stress Method (ASR); and less than 1 based on the Load and Resistance Factor Method. If the load capacity is such that posting is required, this item shall be coded 4 or less. If no posting is required at the operating rating, this item shall be coded 5.

This item evaluates the load capacity of a bridge in comparison to the State legal loads.

Although posting a bridge for load-carrying capacity is required only when the RF for any of the legal loads is less than 1, highway agencies may choose to post at a lower level. This posting practice may appear to produce conflicting coding when WSBIS Item 1293 – Structure Open, Posted or Closed to Traffic is coded to show the bridge as actually posted at the site and WSBIS Item 1660 – Bridge Posting is coded as bridge posting is not required. Since different criteria are used for coding these 2 items, this coding is acceptable and correct.

The use or presence of a temporary bridge affects the coding. The actual operating rating of the temporary bridge should be used to determine this item. However, the highway agency may choose to post at a lower level. This also applies to bridges shored up or repaired on a temporary basis.

The coding shall be based on the lowest rating factor of the legal loads.

The following are Washington State maximum legal load configurations and tonnages:

Table 1660a Legal Loads

Configuration	Tonnage
AASHTO Type 3	25 Tons
AASHTO Type 3-2	36 Tons
AASHTO Type 3-3	40 Tons
SU4	27 Tons
SU5	31 Tons
SU6	34.7 Tons
SU7	38.7 Tons
EV2	28.7 Tons
EV3	43 Tons

See the *Bridge Design Manual* Chapter 13 for more information.

Routine Permit Loads *(Old Item 1557)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
YAN(1)		I	BLR08	B.LR.08	

Applicable Structure Types
- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Specification	Commentary
Report the inspection type or scour monitoring performed using one of the following codes. **Code** — **Description** A — Bridge carries routine permit loads. Load capacity is adequate for all routine permit loads; no routine permit loads are restricted. B — Bridge carries routine permit loads. Load capacity is adequate for some routine permit loads but some routine permit loads are restricted. C — Bridge does not carry routine permit loads. Routine permit loads are restricted from the bridge. N — Bridge does not carry routine permit loads. Agency does not issue routine permits.	This item is used to identify bridges where State routine permit loads must be considered in load rating and posting evaluations and to identify bridges where routine permit loads are restricted due to bridge load capacity limitations. Agencies have varying policies for issuing routine permits, from not issuing routine permits to issuing various routine permits when these loads exceed State legal loads. Some agencies may utilize maps that indicate highways and bridges that are restricted to routine permit loads or that allow routine permit loads. Use code C when the agency issues routine permits, but all routine permit loads are restricted from the bridge. Use code N when the agency does not issue routine permits and therefore the bridge does not carry routine permit loads.

WSBIS Item 7557 – Design Exception Date (LP view only) — Date

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

If a design exception has been granted by the FHWA to permit a deviation from required standards, this is the effective date of FHWA approval. For example, if approval to build a one-lane bridge on a low volume road was granted, enter the date approval was given for this exception. If no design exception has been granted, leave this field blank.

NBI Loads

WSBIS Item 1551 – Operating Rating Method **Pulldown**
NBI Item 63
WSBIS Item 1554 – Inventory Rating Method **Pulldown**
NBI Item 65
NTI Item L.1

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Code these fields with one of the following codes to indicate which load rating method was used to determine the rating for this bridge.

Table 1551 Operating and Inventory Rating Method Code

WSBIS Codes		NTI Codes	Description
Used by WSDOT	Used by Local Agencies		
N	N	N	No load rating required (only applicable to some tunnels)
0	0	0	Field evaluation and documented engineering judgment reported in tons using HS20 loading
1	1	-	Load Factor (LF) reported in tons using HS20 loading
2	2	-	Allowable Stress (AS) reported in tons using HS20 loading
-	3	-	Load and Resistance Factor (LRFR) reported in tons
4	4	-	Load Testing reported in tons using HS20 loading
5	5	5	No rating analysis or evaluation performed
-	6	1	Load Factor (LF) rating reported by rating factor using HS20 loading
-	7	2	Allowable Stress (AS) rating reported by rating factor using HS20 loading
8	8	3	Load and Resistance Factor Rating (LRFR) reported by rating factor using HL93 loading
F	-	A	Assigned rating method based on Load and Resistance Factor Design (LRFD) reported by rating factor using HL93 loading

Note: WSDOT uses codes 0, 1, 2, 4, 5, 8 and F for bridges and culverts carrying public roadways. Local Agencies uses codes 0 through 8 for bridges and culverts carrying public roadways. For tunnels carrying public roadways within, all agencies use WSBIS codes 0, 1, 2, 3, 5, A and N.

Code 0 is to be used when the load rating is determined by field evaluation and documented engineering judgment, typically done when plans are not available for concrete structures or in cases of severe deterioration. Field evaluation and engineering judgment ratings must be documented. See Chapter 5 for additional guidance.

Code 5 is to be used when the structure has not been load rated or load rating documentation does not exist.

NBI and NTI Commentary:

WSBIS Item 1551 has been modified based on a November 15, 2011 FHWA Memo available at www.fhwa.dot.gov/bridge/nbi/111115.cfm.

The NTI does not report load ratings in tons, only rating factors. This restricts load rating methods to only those that report in rating factors. Also, the NTI has only one field to assign the load rating method for both inventory and operating methods. WSBIS has chosen to use the NBI Inventory rating method for reporting to the NTI.

Codes A through E are not available in WSBIS because there are no agencies which use these methods.

WSBIS Item 1552 – Operating Rating Tons	**N(3,0)**
NBI Item 64	
WSBIS Item 1555 – Inventory Rating Tons	**N(3,0)**
NBI Item 66	

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

WSDOT enters rating data into the database as English tonnage for all cases noted in WSBIS Items 1551 and 1554 which have methods coded 0 through 4. For methods coded 5* through 8 or F, use WSBIS Items 1553 and 1556 to enter the rating factor.

If the bridge will not carry a minimum of 3 tons of live load, the operating rating tons shall be coded 0; and, consistent with the direction of the AASHTO Manual, it shall be closed.

The use or presence of a temporary bridge requires special consideration in coding. In such cases, since there is no permanent bridge, the inventory and operating rating tons should be coded 0 even though the temporary structure is rated for as much as full legal load.

A bridge shored up or repaired on a temporary basis is considered a temporary bridge and the inventory and operating rating tons shall be coded as if the temporary shoring were not in place. See WSBIS Item 1289 – Temporary Structure Designation for definition of a temporary bridge.

For a bridge that is closed (WSBIS Item 1293 is coded K), operating and inventory rating tons shall be coded 0.

Code 99 for a structure under sufficient fill such that, according to AASHTO design, the live load stress on the structure is insignificant in the structure load capacity.

*Rating Tons (Items 1552/1555) or Rating Factors (Items 1553/1556) can be entered when Items 1551/1554 are coded 5.

NBI Commentary:

WSBIS Items 1552 and 1555 have been modified based on a March 22, 2004, FHWA Memo available at www.fhwa.dot.gov/bridge/nbi/111115.cfm.

Note: This field is no longer restricted to reporting HS20 loads only – by WSBIS Item 1551 definition, in some cases HL93 load cases are reported here. Additional clarification on how to code these fields was also added.

When this 3-digit number is reported in the NBI submittal, the FHWA multiplies it by 32.4 and rounds it to tenths. This number represents metric tons. Due to the fact the FHWA cannot currently process metric tons greater than 99.9, any rating factor greater than 3.08 is truncated to 99.9 metric tons upon conversion.

WSBIS Item 1553 – Operating Rating Factor	**N(4,2)**
NBI Item 64	
NTI Item L.3	
WSBIS Item 1556 – Inventory Rating Factor	**N(4,2)**
NBI Item 66	
NTI Item L.2	

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

WSDOT enters rating data as factors for all cases noted in WSBIS Items 1551 and 1554 which have methods coded 5 through 8 or F. For methods coded 0 through 4, use WSBIS Items 1552 and 1555 to enter rating tonnage.

If WSBIS Item 1551 – Operating Rating Method has been coded 5, for new structures, the operating rating shall be coded with a rating factor of 1.30.

If WSBIS Item 1554 – Inventory Rating Method has been coded 5, for new structures, the inventory rating shall be coded with a rating factor of 1.00.

NBI Commentary:

When this number is reported in the NBI submittal, rating factors in excess of 9.99 will be reported to FHWA as 9.99.

Legal Loads

WSBIS Item 2587 – Type 3 Rating Factor	**N(4,2)**
WSBIS Item 2588 – Type 3S2 Rating Factor	**N(4,2)**
WSBIS Item 2589 – Type 3-3 Rating Factor	**N(4,2)**
WSBIS Item 2590 – Notional Rating Load (NRL) Rating Factor	**N(4,2)**

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Code the rating factors for the AASHTO legal load trucks as defined within the AASHTO *Manual for Bridge Evaluation* (MBE) Section 6. If the Load Factor or Working Stress method is used to rate this structure, enter the Operating Rating factor only.

Usually these fields will be coded or updated by transcribing information from the most current Load Rating Summary Sheet.

WSBIS Item 2591 – Single Unit 4 (SU4) Rating Factor	**N(4,2)**
WSBIS Item 2592 – Single Unit 5 (SU5) Rating Factor	**N(4,2)**
WSBIS Item 2593 – Single Unit 6 (SU6) Rating Factor	**N(4,2)**
WSBIS Item 2594 – Single Unit 7 (SU7) Rating Factor	**N(4,2)**

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Code the rating factor for the AASHTO legal load trucks as defined within the AASHTO *Manual for Bridge Evaluation* (MBE) Section 6. If the Load Factor or Working Stress method is used to rate this structure, enter the Operating Rating factors only.

Usually these fields will be coded or updated by transcribing information from the most current Load Rating Summary Sheet.

These fields can be null if WSBIS Item 2590 (NRL) is populated and equal to or greater than 1.00.

WSBIS Item 2598 – Emergency Vehicle 2 (EV2) Rating Factor	**N(4,2)**
WSBIS Item 2599 – Emergency Vehicle 3 (EV3) Rating Factor	**N(4,2)**

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Code the rating factor for the Emergency Vehicle legal load trucks as defined within the *Bridge Design Manual* M 23-50.14, Chapter 13. If the Load Factor or Working Stress method is used to rate this structure, enter the Operating Rating factors only.

Usually these fields will be coded or updated by transcribing information from the most current Load Rating Summary Sheet.

These fields can be null if the structure has not been rated for these loads.

Permit Loads

WSBIS Item 2596 – Overload 1 (OL-1) Rating Factor	**N(4,2)**
WSBIS Item 2597 – Overload 2 (OL-2) Rating Factor	**N(4,2)**

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Tunnels carrying public roadways within**

Code the rating factor for the WSDOT permit loads as defined within the *Bridge Design Manual* Chapter 13. If the Load Factor or Working Stress method is used to rate this structure, enter the Operating Rating factors only.

Usually this field will be coded or updated by transcribing information from the most current Load Rating Summary Sheet.

For local agencies, the following fields are mirrored in other tabs:

ADT	crossing tab
Truck percent	crossing tab
Design load code	design tab
Superstructure	NBI tab
Substructure	NBI tab
Culvert	NBI tab
Asphalt depth	NBI tab
Revise rating	NBI tab
Load rating note	(see Chapter 3)
Operating level note	NBI tab
Revise rating note	NBI tab

For these fields, see the applicable tab for field definitions.

Posted Loads

Posted Load - Gross - SNTI *(Old Item 1560)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(2,0)	-		TL5	-	L.5

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification / Commentary

Record the gross weight limit shown on the load posting sign rounded down to the nearest U.S. ton.

Leave this item blank if a gross load posting sign is not used.

Examples

Posting Load - Gross	Code
R12-1	10
R12-4	10
R12-3	3

Figure 2.7.1 - MUTCD Weight Limit Signs - R12-1, R12-4, and R12-3

Posted Load - Axel - SNTI *(Old Item 1561)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(2,0)	-		TL6	-	L.6

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record the axle weight limit shown on the load posting sign rounded down to the nearest U.S. ton. Leave this item blank if an axle load posting sign is not used.	This item can also be used for tandem axle load posting signs. The tandem axle weight can be recorded for this item when it is the lowest controlling axle weight limit.

Examples

Posting Load - Axel	Code
R12-2	5
R12-4	2

Figure 2.7.2 - MUTCD Weight Limit Signs - R12-5 and R12-4

Posted Load - Type 3 - SNTI *(Old Item 1562)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(2,0)	-		TL7	-	L.7

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record the weight limit value shown on the load posting sign for the AASHTO Type 3 vehicle or State equivalent rounded down to the nearest U.S. ton. Leave this item blank if no posting sign is used for this vehicle type.	A State equivalent vehicle is considered to have the same number of axles and similar axle spacing as the AASHTO Type 3 vehicle. Refer to the AASHTO Manual for Bridge Evaluation for legal load posting vehicle configurations.

Examples

Posting Load - Type 3	Code
R12-2	5

Figure 2.7.3 - MUTCD Weight Limit Signs - R12-5

Posting Load - Type 3S2 - SNTI *(Old Item 1563)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(2,0)	-		TL8	-	L.8

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record the weight limit value shown on the load posting sign for the AASHTO Type 3S2 vehicle or State equivalent rounded down to the nearest U.S. ton. Leave this item blank if no posting sign is used for this vehicle type.	A State equivalent vehicle is considered to have the same number of axles and similar axle spacing as the AASHTO Type 3S2 vehicle. Refer to the AASHTO Manual for Bridge Evaluation for legal load posting vehicle configurations.

Examples

Posting Load - Type 3S2	Code
R12-5	12

Figure 2.7.4 - MUTCD Weight Limit Signs - R12-5

Posted Load - Type 3-3 - SNTI *(Old Item 1563)*

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
N(2,0)	-		TL9	-	L.9

Applicable Structure Types
- **Tunnels carrying public roadways within**

Specification	Commentary
Record the weight limit value shown on the load posting sign for the AASHTO Type 3-3 vehicle or State equivalent rounded down to the nearest U.S. ton. Leave this item blank if no posting sign is used for this vehicle type.	A State equivalent vehicle is considered to have the same number of axles and similar axle spacing as the AASHTO Type 3-3 vehicle. Refer to the AASHTO Manual for Bridge Evaluation for legal load posting vehicle configurations.

Examples

Posting Load - Type 3S2	Code
R12-5	16

Figure 2.7.4 - MUTCD Weight Limit Signs - R12-5

Waterway Tab

WSBIS Item 7832 – Water Type — Pulldown

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**

This field describes the type of water the bridge crosses over.

B Brackish (a mixture of fresh and salt water).
F Fresh water.
S Salt water.
T Tidal.

Leave blank if not over water.

WSBIS Item 7833 – Flood Plain Intrusion — Pulldown

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**

This code indicates whether or not the structure's approach roadway or abutment intrude into the flood plain of the waterway (i.e., whether or not previous or possible flooding could cause or has caused water to rise so it touches the structure's approach roadway embankment or abutment).

A No intrusion into the flood plain.
B Bridge or approaches intrude into the waterway causing minor backwater.
C Overtopping of approach roadway has occurred.
D A portion of the superstructure has been under water.
U Flood plain intrusion is unknown.

Leave blank if not over water.

WSBIS Item 7834 – Flood Control — Pulldown

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**

This field indicates if there is any existing type of flood control on the waterway under the bridge. To be considered, this flood control must be in place either upstream or downstream from the bridge and must be near enough to have an effect on the bridge. Flood control may be provided by dams, dikes, fill, or other means.

B Both upstream and downstream.
U Upstream.
D Downstream.
N No flood control.

Leave blank if not over water.

WSBIS Item 7835 – Scour History — Pulldown

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**

This code describes scour conditions at the bridge site.

C Current scour problems.
H History of scour problems but scour conditions are now stable.
N No history of scour.
U Scour history is unknown.

Leave blank if not over water.

WSBIS Item 7836 – Streambed Material Type — Pulldown

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**

This code describes the composition of the streambed at the bridge site.

Enter one of the following codes to indicate the predominant type of material that is evident.

1 Bedrock
2 Sediment
3 Gravel
4 Sand
5 Cobbles
6 Lined Canal
7 Vegetation
8 Alluvial Fan
9 Unknown

Leave blank if not over water.

WSBIS Item 7837 – Substructure Stability — Pulldown

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**

This code describes the type of material upon which the bridge's substructure rests. This code is used to determine the degree of stability that can be expected in the bridge substructure.

Code the lower number value If different sections of a continuous span bridge are supported by different materials.

1 Spread footing, simple spans.
2 Spread footing, continuous spans.
3 Pile foundation, simple spans.
4 Pile foundation, continuous spans.
5 Bedrock, simple spans.
6 Bedrock, continuous spans.
7 Unknown, simple spans.
8 Unknown, continuous spans

Leave blank if not over water.

WSBIS Item 7838 – Waterway Obstruction — Pulldown

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**

This code indicates any conditions in the waterway which affect the flow of water beneath the bridge.

A	Debris accumulates at the bridge.
B	Ice accumulates at the bridge.
C	The waterway is overgrown with vegetation.
D	A and C above.
E	A and B above.
F	B and C above.
G	A, B, and C above.
N	No obstruction to the flow of water beneath the bridge.

Leave blank if not over water.

WSBIS Item 7839 – Streambed Stability — Pulldown

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**

This code describes any existing stream conditions which may influence scour at the bridge site.

A	Sharp bends.
B	Significant lateral shifts.
C	Steep slopes.
D	High water velocity.
E	Degradation.
F	Aggredation.
G	No conditions influencing scour exist.
H	Streambed conditions are unknown.

Leave blank if not over water.

WSBIS Item 7840 – Streambed Anabranch — Pulldown

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**

This field indicates whether or not confluences or shifting anabranches are present in the waterway. A confluence is a flowing together of two or more streams. An anabranch is a river branch that re-enters the main stream, creating an island in the waterway.

Code only those conditions which exist near the bridge site.

A	Anabranches are present.
B	Both anabranches and confluences are present.
C	Confluences are present.
N	Neither anabranches nor confluences are present.
U	Waterway configuration is unknown.

Leave blank if not over water.

WSBIS Item 7841 – Piers in Water — Pulldown

Applicable Structure Types

- **Local Agency Bridges & culverts carrying public roadways**

This field contains the number of the structure's piers in the water at normal yearly high water.

If the bridge is inspected at low water, look for evidence that the piers or pile bents have been in the water.

0	No piers in the water.
1-9	Number of piers in the water.
M	More than nine piers in the water.

Leave blank if not over water.

Discontinued Tab

Items in the Discontinued tab will be removed from Bridgeworks (WSBIS) in January 2026.

Proposed Improvements

WSBIS Item 2883 – Proposed Improvement Calculation **Check Box**

This checkbox directs the WSBIS system to compute costs for any proposed bridge improvements. It is checked by default for all structures. To prevent automatic calculation and to perform manual entry, uncheck the box.

For local agency bridge owners, the Proposed Improvement entries are required for NBIS bridges when the Sufficiency Rating (Item 2710) is 80 or less and Status (Item 2711) is SD or FO.

The following method is used to perform the automatic calculation:

If Work Type 31 or 32 is chosen:

Work Method = 1
Structure Length = Bridge Length + 10 feet
Roadway Width = (Lanes On x 12 feet) + 14 feet
Cost per SF of Deck = $950 (as of 2022)
Structure Cost = 0.50 x Total Cost
Roadway Cost = 0.10 x Total Cost
Engineering & Misc Cost = 0.4 x Total Cost
Total Cost = (Structure Imp Length x Prop Roadway Width) x Cost Per SF of Prop Deck
Estimate Year = (current year)

If Work Type 33 through 38 is chosen:

Work Method = 1
Structure Length = Bridge Length
Roadway Width = Approach Roadway Width + 2 feet
Cost per SF of Deck = $475 (as of 2022)
Structure Cost = 0.50 x Total Cost
Roadway Cost = 0.10 x Total Cost
Engineering & Misc Cost = 0.40 x Total Cost
Total Cost = (Structure Imp Length x Prop Roadway Width) x Cost Per SF of Prop Deck
Estimate Year = (current year)

WSBIS Item 1844 – Proposed Improvement Work Type **Pulldown**
NBI Item 75A

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Use one of the following codes to represent the proposed work type:

Table 1844 Work Type Code

WSBIS Code	Description
38	Other structural work, including hydraulic replacements.
37	Bridge deck replacement with only incidental widening.
36	Bridge deck rehabilitation with only incidental widening.
35	Bridge rehabilitation because of general structure deterioration or inadequate strength.
34	Widening of existing bridge with deck rehabilitation or replacement.
33	Widening of existing bridge or other major – structure without deck rehabilitation or replacement; includes culvert lengthening.
32	Replacement of bridge or other structure because of relocation of road.
31	Replacement of bridge or other structure because of substandard load carrying capacity or substandard bridge roadway geometry.

WSBIS Item 1846 – Proposed Improvement Work Method **Pulldown**
NBI Item 75B

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Use one of the following codes to indicate whether the proposed work is to be done by contract or by force account:

Table 1846 Proposed Improvement Work Method Code

WSBIS Code	Description
2	Work to be done by owner's forces
1	Work to be done by contract

WSBIS Item 1847 – Proposed Improvement Structure Length (feet) **N(6,0)**
NBI Item 76

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code the length of the proposed bridge improvement to the nearest foot. For replacement or rehabilitation of the entire bridge, the length should be back to back of backwalls of abutments or from pavement notch to pavement notch. For replacement or rehabilitation of only part of the structure, use the length of the portion to be improved.

For culvert improvements, use the proposed length measured along the centerline of the barrel regardless of the depth below grade. The measurement should be made between the inside faces of the top parapet or edge-stiffening beam of the top slab.

WSBIS Item 2853 – Proposed Improvement Roadway Width (feet) **N(6,0)**

Code the curb-to-curb width of the roadway on the proposed bridge. This measurement is coded to the nearest foot.

WSBIS Item 2860 – Proposed Improvement Cost per S.F. of Deck (dollars) **N6,0)**

Code the estimated cost per square foot of proposed deck. For State bridges, this number is provided by the WSDOT Bridge Management Engineer.

WSBIS Item 1867 – Proposed Improvement Structure Cost (thousand dollars) **N(7,0)**
NBI Item 94

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code a number to represent the estimated cost of the proposed bridge improvements (including replacement) in thousands of dollars. This cost does not include roadway, right of way, detour, demolition, or preliminary engineering costs.

NBI Commentary:

WSBIS allows up to seven digits each for Structure, Roadway and Total Costs (in thousands of dollars). Amounts coded greater than six digits will be converted to 999999 for the NBI data submittal.

WSBIS Item 1873 – Proposed Improvement Roadway Cost (thousand dollars) **N(7,0)**
NBI Item 95

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code a number to represent the cost of the proposed roadway improvement in thousands of dollars. This shall include only roadway construction costs, excluding bridge, right-of-way, detour, extensive roadway realignment costs, preliminary engineering, etc. Do not use this item for estimating maintenance costs.

NBI Commentary:

WSBIS allows up to seven digits each for Structure, Roadway and Total Costs (in thousands of dollars). Amounts coded greater than six digits will be converted to 999999 for the NBI data submittal.

WSBIS Item 2870 – Proposed Improvement Eng. and Misc. Cost (thousand dollars) **N(7,0)**

Code the estimated cost of engineering and other miscellaneous items. For State bridges, this number is provided by the WSDOT Bridge Management Engineer.

WSBIS Item 1861 – Proposed Improvement Total Cost (thousand dollars) **N(7,0)**
NBI Item 96

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code a number to represent the total project cost in thousands of dollars, including incidental costs not included in Structure Cost and Roadway Cost. This item should include all costs normally associated with the proposed bridge improvement project. The Total Project Cost will therefore usually be greater than the sum of Structure and Roadway Costs.

NBI Commentary:

WSBIS allows up to seven digits each for Structure, Roadway and Total Costs (in thousands of dollars). Amounts coded greater than six digits will be converted to 999999 for the NBI data submittal.

WSBIS Item 1879 – Proposed Improvement Estimate Year **N(4,0)**
NBI Item 97

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code the year that the costs of proposed work were estimated. The data provided for these items must be current; that is, the estimate year shall be no more than 8 years before the current year.

Other Discontinued

WSBIS Item 1022 – Urban Code - SNTI **Pulldown**

Applicable Structure Types

- **Tunnels carrying public roadways within**

Record the urbanized area code.

WSBIS Item 1188 – Latitude - NBI **(XX degrees XX minutes XX.XX seconds)**
NBI Item 16
NTI Item I.13
WSBIS Item 1196 – Longitude - NBI **(XXX degrees XX minutes XX.XX seconds)**
NBI Item 17
NTI Item I.14

Applicable Structure Types

- **All structure records**

Code the latitude and longitude in degrees, minutes and seconds to the nearest hundredth of a second using the NAD 83/91 - North American Datum of 1983, with 1991 adjustments. Note that true longitudes are a negative number at all locations in Washington State, but when coded in WSBIS a positive number is used.

Accurate data can be acquired using internet resources such as Google Maps or Bing Maps.

For bridges and culverts carrying public roadways, the reading should be taken at the beginning of the structure at centerline. When the inventory route has a Linear Referencing System (LRS) designation, the beginning of the structure is the lower milepoint for the LRS route.

For pedestrian, RR and other non-vehicular structures over public roadways, the reading should be taken at the centerline of the roadway under the bridge.

For tunnels carrying public roadways within, the reading should be taken at the beginning of the tunnel portal at the centerline.

SNBI Latitude and Longitude fields added in 2023 into the Crossing Tab in BridgeWorks and have a different format. See WSBIS Items 1470 and 1471 in Appendix D.

WSBIS Item 1288 – Parallel Structure **Pulldown**
NBI Item 101

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

Code this item to indicate situations where separate structures carry the inventory route in opposite directions of travel over the same feature. The lateral distance between structures has no bearing on the coding of this item.

For pedestrian, railroad and other non-vehicular structures over public roadways, always code N.

One of the following codes shall be used:

Table 1288 Parallel Structure Code

WSBIS Code	Description
R	The right structure of parallel bridges carrying traffic in the direction of increasing mileposts.
L	The left structure of parallel bridges carrying traffic in the direction of decreasing mileposts.
N	No parallel structure exists; OR pedestrian, railroad or other non-vehicular structure over public roadway.

WSBIS Item 1312 - Flared Flag **Pulldown**
NBI Item 35

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code this item to indicate if the structure is flared (i.e., the width of the structure varies). Generally, such variance will result from ramps converging with or diverging from the through lanes on the structure, but there may be other causes. Minor flares at ends of structures should be ignored.

Table 1312 Flared Flag

WSBIS Code	NBI Code	Description
N	0	No flare
Y	1	Yes, flared

WSBIS Item 1332 – Year Built - NBI **N(4,0)**
NBI Item 27
NTI Item A.1

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Code all 4 digits of the year in which construction of the structure was completed. If the year built is unknown, code best estimate or 1900. If the year built is earlier than 1900, code 1900.

WSBIS Item 1352 – Lanes On - NBI **N(2,0)**
NBI Item 28A

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

Code the number of lanes being carried on the structure. For pedestrian, RR and other non-vehicular structures, code 0.

Include all lanes carrying highway traffic (e.g., cars, trucks, buses) which are striped or otherwise operated as a full width traffic lane for the entire length of the structure. This shall include any full width merge lanes and ramp lanes, and shall be independent of directionality of usage (e.g., a 1-lane bridge carrying 2-directional traffic is still considered to carry only one lane on the structure).

It should be noted here that for the purpose of evaluating WSBIS Item 1658 Deck Geometry, any 1-lane bridge, not coded as a ramp (WSBIS Item 1434 = 7), which has a WSBIS Item 1356 Curb-to-Curb coded 16 feet or greater shall be evaluated as 2 lanes.

Double deck bridges may be coded as 1 or 2 structures, but all related data must be compatible with the method selected.

WSBIS Item 1378 – Vertical Underclearance Code **Pulldown**
NBI Item 54A

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

Code the reference feature from which the clearance measurement is taken:

Note: For waterways beneath structure, code the navigation control code 1386 as appropriate, but always code 1378 = N

Table 1378 - Vertical Underclearance Code

WSBIS Code	Description
H	Functionally classified public highway beneath structure
R	Railroad beneath structure
N	No ground based transportation feature (terrain, waterway, etc)
P	Other ground based transportation feature (parking lot, pedestrian/bike path, private road, etc.
*	Delete

WSBIS Item 1379 – Minimum Lateral Underclearance Right (feet) **N(3,1)**
NBI Item 55B

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

The purpose of this item is to identify the lateral restrictions caused by the structure on the railroad or roadway underneath.

Code the minimum lateral underclearance on the right to the nearest tenth of a foot. When both a railroad and highway are under the structure, code the lateral clearance for the reference feature coded in Item 1384.

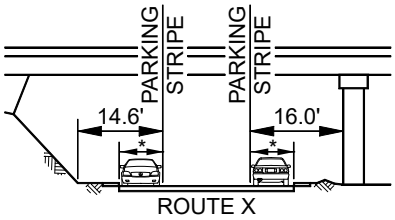
The lateral clearance should be measured from the right edge of the travelled way (outer edge of fog line) or from the centerline (between rails) of the right-hand track of a railroad to the nearest substructure unit (pier, abutment, etc.), a retaining wall or to a slope. If no fog line exists on the roadway, assume a 12 foot lane. The right/left orientation is based on traffic direction. The clearance measurements to be recorded will be the minimum after measuring the clearance in both directions of travel, perpendicular to the centerline of the undercrossing.

If two related features are below the bridge, measure both and record the lesser of the two. An explanation should be written on the inspection form as to what was recorded. When the clearance is 100 feet or greater, code 99.9.

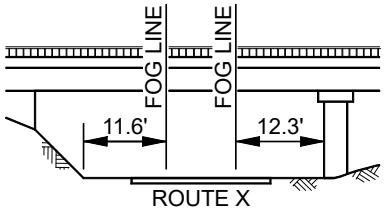
If the feature beneath the structure is not a railroad or highway, code 0 to indicate not applicable.

The presence of ramps and acceleration or turning lanes is not considered in this item; therefore, the minimum lateral clearance on the right should be measured from the right edge of the through roadway.

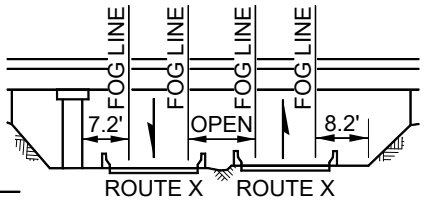
Figure WSBIS 1379a



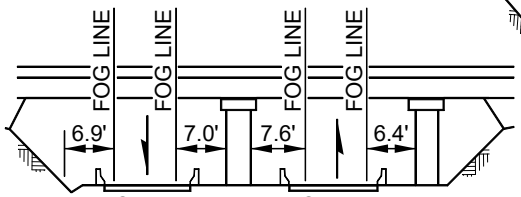
CITY STREET (Figure 1)
2-WAY TRAFFIC: RT. = 14.6 LT. = 0.0
1-WAY TRAFFIC LOOKING IN THE DIRECTION OF TRAFFIC: RT. = 16.0 LT. = 14.6
* = PARKING AREA, INSPECTORS PLEASE DOCUMENT DIMENSION.



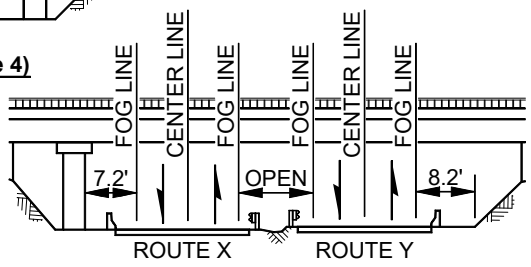
HIGHWAY (Figure 2)
2-WAY TRAFFIC: RT. = 11.6 LT. = 0.0
1-WAY TRAFFIC LOOKING IN THE DIRECTION OF TRAFFIC: RT. = 12.3 LT. = 11.6



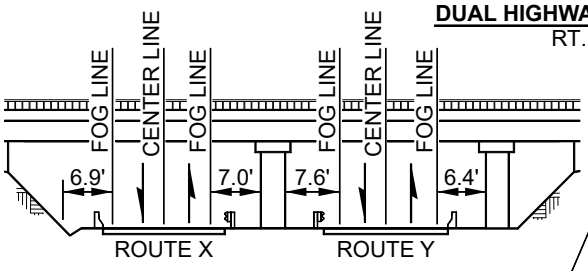
FREEWAY OPEN MEDIAN (Figure 3)
RT. = 7.2 LT. = 99.9



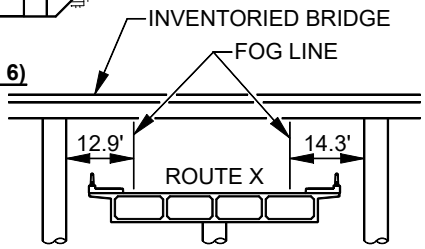
FREEWAY PIER MEDIAN (Figure 4)
RT. = 6.4 LT. = 7.0



DUAL HIGHWAY OPEN MEDIAN (Figure 5)
RT. = 7.2 LT. = 99.9



DUAL HIGHWAY PIER MEDIAN (Figure 6)
RT. = 6.4 LT. = 0.0



MULTIPLE LEVEL INTERCHANGE (Figure 7)
2-WAY TRAFFIC: RT. = 12.9 LT. = 0.0
1-WAY TRAFFIC LOOKING IN THE DIRECTION OF TRAFFIC: RT. = 14.3 LT. = 12.9

NBI Commentary:

The NBI coding guide text and drawings are not clear or consistent, particularly with respect to determining whether or not the lateral measurements extend to guardrails, concrete rails, non-mountable curbs, substructure units, or slopes. Attempts to define the steepness of slopes was also problematic. This coding guide clarifies that all measurements are to substructure units or "slopes" without defining the steepness. In addition, the NBI coding guide was not entirely clear about how to code dual highways in relation to substructure units or medians. This coding guide clarifies this through illustration.

WSBIS Item 1382 – Lateral Underclearance Code **Pulldown**
NBI Item 55A

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

This code identifies the type of reference feature from which the clearance measurement is taken.

Note: For waterways beneath structure, code the navigation control code 1386 as appropriate, but always code 1382 = N

Table 1382 - Lateral Underclearance Code

WSBIS Code	Description
H	Functionally classified public highway beneath structure
R	Railroad beneath structure
N	No ground based transportation feature (terrain, waterway, etc)
P	Other ground based transportation feature (parking lot, pedestrian/bike path, private road, etc.
*	Delete

WSBIS Item 1383 – Minimum Lateral Underclearance Left (feet) **N(3,1)**
NBI Item 56

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

The purpose of this code is to identify the lateral restrictions caused by the structure on the railroad or roadway underneath when restrictions exist to left lanes of divided highways, 1 way streets, and ramps. For all 2 direction, 2 lane routes which are undivided, code 0.

Code the minimum lateral underclearance on the left (median side for divided highways) to the nearest tenth of a foot. The lateral clearance should be measured from the left edge of travelled way (outer edge of fog line) to the nearest substructure unit, or to a slope. Refer to examples for WSBIS Item 1379 – Minimum Lateral Underclearance on Right.

For clearances greater than 100 feet, code 99.8.

In cases where there is an open median (no piers in median), code 99.9.

Code 0 to indicate not applicable.

NBI Commentary:
See WSBIS Item 1379 NBI Commentary.

WSBIS Item 1386 – Navigation Control Code **Pulldown**
NBI Item 38

Applicable Structure Types

- Bridges & culverts carrying public roadways
- Pedestrian, RR and other non-vehicular structures over public roadways

Indicate for this item whether or not navigation control (a bridge permit for navigation) is required. Use one of the following codes:

Table 1386 Navigation Control Code

WSBIS Code	Description
N	Not applicable, no waterway
0	No navigation control on waterway (bridge permit not required or bridge has received advance approval by the USCG1
1	Navigation control on waterway (bridge permit required)

1. The USCG provides "advance approval" of certain navigable waters. This item should be coded 0 when Title 33, Code of Federal Regulations, Section 115.70, as amended states that the U.S. Coast Guard Commandant has given advance approval to the location and plans of bridges to be constructed across reaches of waterways navigable in law, but not actually navigated other than by logs, log rafts, rowboats, canoes and small motorboats.

For state owned structures, this item is coded by the BPO Information Group. Local agencies need to contact USCG to determine the correct coding for this field:

Commander, Thirteenth Coast Guard District

Federal Building
915 Second Avenue
Seattle, WA 98174-1067
206-220-7282

NBI Commentary:

This coding guide provides additional guidance on how to code bridges crossing advance approval waterways.

WSBIS Item 1387 – Navigation Vertical Clearance (feet) **N(3,0)**
NBI Item 39

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

If WSBIS Item 1386 – Navigation Control has been coded 1, record the minimum vertical clearance imposed at the site as measured above a datum that is specified on a navigation permit issued by a control agency. The measurement shall be coded to the foot. This measurement will show the clearance that is allowable for navigational purposes. In the case of a swing or bascule bridge, the vertical clearance shall be measured with the bridge in the closed position (i.e., open to vehicular traffic). The vertical clearance of a vertical lift bridge shall be measured with the bridge in the raised or open position. Also, WSBIS Item 1394 – Vertical Lift Minimum Navigation Clearance shall be coded to provide clearance in a closed position. If WSBIS Item 1386 – Navigation Control has been coded 0 or N, code 0 to indicate not applicable.

For state owned structures, this item is coded by the BPO Information Group.

WSBIS Item 1390 – Navigation Horizontal Clearance (feet) **N(4,0)**
NBI Item 40

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

If WSBIS Item 1386 – Navigation Control has been coded 1, record the horizontal clearance measurement imposed at the site that is shown on the navigation permit. This may be less than the structure geometry allows. If a navigation permit is required but not available, use the minimum horizontal clearance between fenders, if any, or the clear distance between piers or bents. Code the clearance to the foot. If WSBIS Item 1386 – Navigation Control has been coded 0 or N, code 0 to indicate not applicable.

For state owned structures, this item is coded by the BPO Information Group.

WSBIS Item 1394 – Vertical Lift Minimum Navigation Clearance (feet) **N(3,0)**
NBI Item 116

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Code the minimum vertical clearance to the nearest lesser foot imposed at the site as measured above a datum that is specified on a navigation permit issued by a control agency.

Leave this item blank if the structure is not a vertical lift bridge (Item 1533 = 15).

For state owned structures, this item is coded by the BPO Information Group.

NBI Commentary:

Per FHWA guidance , ferry terminal structures coded as lift spans should have 0 coded in this field. See FHWA general index file.

WSBIS Item 1544 – Service On **Pulldown**
NBI Item 42A

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

Table 1544 - Service On Code

WSBIS Code	Description
1	Highway
2	Railroad
3	Pedestrian-bicycle
4	Highway-railroad
5	Highway-pedestrian
6	Overpass structure at an interchange or second level of a multilevel interchange
7	Third level (Interchange)
8	Fourth level (Interchange)
9	Building or plaza
0	Other

WSBIS Item 1545 – Service Under **Pulldown**
NBI Item 42B

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**

Table 1545 - Service Under Code

WSBIS Code	Description
1	Highway, with or without pedestrian
2	Railroad
3	Pedestrian-bicycle
4	Highway-railroad
5	Waterway
6	Highway-waterway
7	Railroad-waterway
8	Highway-waterway-railroad
9	Relief for waterway
0	Other (non-waterway)

WSBIS Item 1657 - Structural Evaluation **Calculated**
NBI Item 67

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This item is calculated automatically and cannot be edited.

Structural Evaluation rates the adequacy of the structure's condition, taking into account any major structural deficiencies. This rating is based on the overall condition of the superstructure, substructure, the inventory rating, and the ADT.

Table 1657 explains how the inventory rating and Proposed Improvements may further lower this code. The code for this item is no higher than the lowest of the condition codes for Superstructure Overall, Substructure Condition, or Culvert Condition.

Table 1657 Structural Evaluation

Inventory Rating HS Truck (Tons)			Structural Adequacy Appraisal Rating Code
ADT 0-500	ADT 501-5000	ADT >5000	
>36	>36	>36	9
36	36	36	8
31	31	31	7
23	25	27	6
18	20	22	5
12	14	18	4
Inventory rating less than value in rating code of 4 and requiring corrective action.			3
Inventory rating is less than above and bridge requires replacement (WSBIS Item 1844, Proposed Improvement Work Type is coded 31 or 32).			2
Bridge is closed and requires replacement.			0

NBI Commentary:

The use of the Proposed Improvement Work Type code in the calculation is not documented in the FHWA Coding Guide.

WSBIS Item 1658 - Deck Geometry **Calculated**
NBI Item 68

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This item is calculated automatically and cannot be edited.

The level of service provided by the bridge is evaluated with respect to the highway system of which it is a part. This appraisal is based on the number of traffic lanes, the curb-to-curb width, the minimum vertical clearance over the bridge deck, the ADT, and the federal functional classification.

The following tables explain how the values are determined with respect to the highway system of which the bridge is a part. The lowest code determined from the tables is used.

Use this guide to determine which table to use.

For all bridges with a vertical clearance restriction over the deck, also use Table 1658f. Use whichever rating code is lower.

Table 1658a Deck Geometry

Direction of Traffic	Number of Lanes	Curb to Curb Width	Table to Use
2 way non-interstate	3+		Table 1658d
2 way non-interstate	2		Table 1658b
2 way non-interstate	1	< 16'	Table 1658c
2 way non-interstate	1	≥16'	Table 1658b
1 way non-interstate	1		Table 1658b
1 way non-interstate	2 or more		Table 1658d
Ramp	any		Table 1658e
1 way interstate	any		Table 1658d
2 way interstate	any		Table 1658d

For all bridges with a vertical clearance restriction over the deck, also use Table WSBIS-1658f. Use whichever rating code is lower.

Table 1658b Deck Geometry

Curb-to-Curb Bridge Roadway Width						Deck Geometry Appraisal Rating Code
ADT 0-100	ADT 101-400	ADT 401-1000	ADT 1-2k	ADT 2-5k	ADT >5k	
not applicable						9
≥32	≥36	≥40	≥44	≥44	≥44	8
28	32	36	40	44	44	7
24	28	30	34	40	44	6
20	24	26	28	34	38	5
18	20	22	24	28	32(28)[2]	4
16	18	20	22	26	30(26)[2]	3
Bridge is open and has a width less than required for a rating code of 3 and bridge is open.						2
Bridge is closed.						0

Notes:
1. Use the lower rating code for roadway widths between those shown.
2. For structures longer than 200 feet, use the values shown in parentheses.

Table 1658c Deck Geometry

Curb-to-Curb Bridge Roadway Width		Deck Geometry Appraisal Rating Code
ADT 0-100	ADT >100	
not applicable		9
<16	-	8
15	-	7
14	-	6
13	-	5
12	-	4
11	<16	3
Bridge is open and has a width less than required for a rating code of 3.		2
Bridge is closed.		0

Note:
Use the lower rating code for roadway widths between those shown.

Table 1658d Deck Geometry

Curb-to-Curb Bridge Roadway Width - 2 or More Lanes in Each Direction				Deck Geometry Appraisal Rating Code
Number of Lanes (N) (Interstate)		Number of Lanes (N) (Other Roadways)		
2 Lanes	> 2 Lanes	2 Lanes	> 2 Lanes	
not applicable				9
≥ 42	≥ 12N + 24	≥ 42	≥ 12N + 18	8
40	12N + 20	38	12N + 15	7
38	12N + 16	36	12N + 12	6
36	12N + 14	33	11N + 10	5
34 (29)[2]	11N + 12	30	11N + 6	4
	(11N + 7)[2]			
33 (28)[2]	11N + 11	27	11N + 5	3
	(11N + 6)[2]			
Bridge is open and has a width less than required for rating code of 3 and bridge open to traffic.				2
Bridge is closed.				0

Notes:
1. Use the lower rating code for roadway widths between those shown.
2. For structures longer than 200 feet, use the values shown in parentheses.

Table 1658e Deck Geometry

Curb-to-Curb Ramp Bridge Roadway Width		Deck Geometry Appraisal Rating Code
1 Lane	> 1 Lane	
Not Applicable		9
≥ 26	≥ 12N + 12	8
24	12N + 10	7
22	12N + 8	6
20	12N + 6	5
18	12N + 4	4
16	12N + 2	3
Bridge is open and has deck width less than required for a rating code of 3.		2
Bridge is closed.		0

Note:
Use the lower rating code for roadway widths between those shown.

Table 1658f Deck Geometry

Functional Class				Deck Geometry Appraisal Rating Code
Interstate and Other Freeway		Other Principal and Minor Arterials	Major and Minor Collectors and Locals	
Designated Routes[2]	Undesignated Routes[2]			
Minimum Vertical Clearance				
not applicable				9
≥ 17' - 0"	≥ 16' - 0"	≥ 16' - 6"	≥ 16' - 6"	8
16' - 9"	15' - 6"	15' - 6"	15' - 6"	7
16' - 6"	14' - 6"	14' - 6"	14' - 6"	6
15' - 8"	14' - 3"	14' - 3"	14' - 3"	5
15' - 0"	14' - 0"	14' - 0"	14' - 0"	4
Vertical clearance is less than value for rating of 4; corrective action is required.				3
Vertical clearance is less than value for rating of 4 and bridge requires replacement (WSBIS Item 1844 Proposed Improvement Work Type is coded 31 or 32).				2
Bridge is closed.				0

Notes:
1. Use the lower rating code for vertical clearances between those shown.
2. Use the first column (Designated Routes) for all routes except designated routes in urban areas where there is an alternative interstate or freeway facility with a minimum clearance of at least 16' - 0". Use the second column (Undesignated Routes) for all undesignated interstate or freeway facilities.

WSBIS Item 1659 - Underclearances **Calculated**
NBI Item 69

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This item is calculated automatically and cannot be edited.

This appraisal is based on the vertical and lateral underclearances beneath the bridge as related to the federal functional classification of the roadway carried beneath the bridge. If the bridge is not over a highway or a railroad, the field will be set to 9.

Minimum vertical underclearance, minimum lateral underclearance on right, and minimum lateral underclearance on left are used to evaluate this item.

See the following tables for an explanation of how the values are calculated.

The functional classification used in the tables is for the route under the bridge. If no Under record exits, it is assumed that the route under the bridge is a major or minor collector or a local road for the purpose of using the tables.

Table 1659a Underclearances

Functional Class					Underclearance Adequacy Appraisal Rating Code
Interstate and Other Freeway		Other Principal and Minor Arterials	Major and Minor Collectors and Locals	Railroads	
Designated Routes[2]	Undesignated Routes[2]				
Minimum Vertical Underclearance					
not applicable					9
≥ 17' - 0"	≥ 16' - 0"	≥ 16' - 6"	≥ 16' - 6"	≥ 23' - 0"	8
16' - 9"	15' - 6"	15' - 6"	15' - 6"	22' - 6"	7
16' - 6"	14' - 6"	14' - 6"	14' - 6"	22' - 0"	6
15' - 9"	14' - 3"	14' - 3"	14' - 3"	21' - 0"	5
15' - 0"	14' - 0"	14' - 0"	14' - 0"	20' - 0"	4
Vertical Clearance is less than value for rating of 4; corrective action is required.					3
Vertical clearance is less than value for rating of 4 and bridge requires replacement (WSBIS Item 1844 Proposed Improvement Work Type is coded 31 or 32).					2
Bridge closed.					0

Notes:
1. Use the lower rating code for vertical clearances between those shown.
2. Use the first column (Designated Routes) for all routes except designated routes in urban areas where there is an alternative interstate or freeway facility with a minimum clearance of at least 16' - 0". Use the second column (Undesignated Routes) for all undesignated interstate or freeway facilities.

Table 1659b Underclearances

Functional Class							Underclearance Adequacy Appraisal Rating Code
1-Way Traffic				2-Way Traffic			
Principal Arterials (Interstate, etc.)				Other Principal & Minor Arterials	Major & Minor Collectors and Locals	Railroads	
Main Line		Ramp					
Lt.	Rt.	Lt.	Rt.				
Minimum Lateral Underclearance							
not applicable							9
≥ 30	≥ 30	≥ 4	≥ 10	≥ 30	≥ 12	≥ 20	8
18	21	3	9	21	11	17	7
6	12	2	8	12	10	14	6
5	11	2	6	10	8	11	5
4	10	2	4	8	6	8	4
Underclearance is less than value for rating of 4; corrective action is required.							3
Underclearance is less than value for rating of 4 and bridge requires replacement (WSBIS Item 1844 Proposed Improvement Work Type is coded 31 or 32).							2
Bridge is closed.							0

Notes:
1. Use the lower rating code for lateral clearances between those shown.
2. Use the value from the Right Ramp column to determine the rating code when acceleration or deceleration lanes or ramps are provided under 2-way traffic.

WSBIS Items 1684, 1685, 1686, 1687
NBI Item 36A - 36D

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Bridge inspection shall include the recording of information on traffic safety features so that the evaluation of their adequacy can be made.

Use the following codes for each of the four traffic safety segments:

Table 6 Traffic Safety Feature Codes

WSBIS Code	Description
0	Inspected feature does not meet currently acceptable standards or a safety feature is required and none is provided.
1	Inspected feature meets currently acceptable standards.
N	Not applicable (structure does not carry traffic) or a safety feature is not required (see item description for requirements).

NBI Commentary:

WSDOT has applied state safety standards to determine how these fields are coded.

WSBIS Item 1684 – Bridge Rails **Pulldown**
NBI Item 36A

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Bridge railings should be coded to reflect the current WSDOT standards. Refer to *Design Manual* Section 1610.07 Bridge Traffic Barriers.

Acceptable crash tested bridge rails fall into two general categories.

Thrie-beam Retrofit

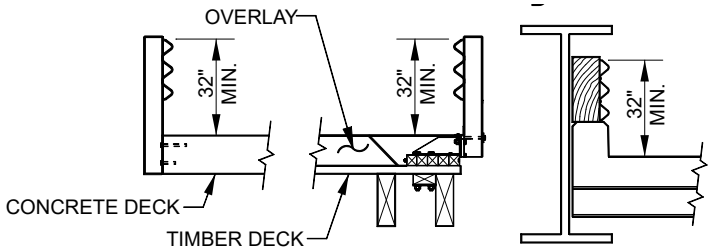
- Thrie-beam mounted to baluster rail
- Steel truss and Thrie-beam
- Edge mounted Thrie-beam
- Thrie-beam mounted to steel posts on concrete deck
- Thrie-beam mounted to open girder

Concrete Rail

- New Jersey style rail
- F-shaped concrete rail
- Single slope concrete rail
- 32” vertical concrete parapet
- Type 7 concrete rail

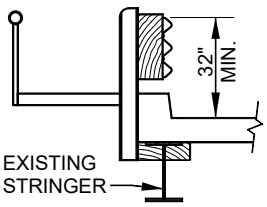
Bridge rails are coded as N when there is sufficient roadway fill that there is no attachment to the structure.

Table 1684 Bridge Rails

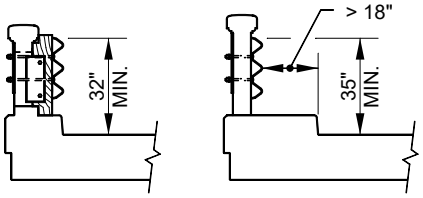


EDGE MOUNTED THRIEBEAM (Fig. a)

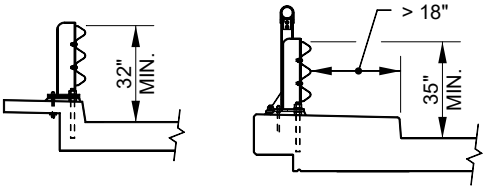
THRIE BEAM MOUNTED TO OPEN GIRDER (Fig. b)



STEEL TRUSS & THRIE BEAM (Fig. c)

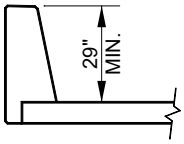


THRIE BEAM MOUNTED TO BALLUSTER RAIL (Fig. d)



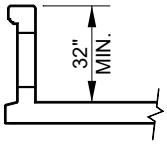
THRIE BEAM MOUNTED TO STEEL POSTS ON CONCRETE DECK (Fig. e)

THRIE BEAM RETROFIT



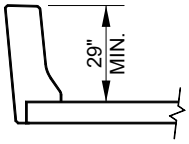
SINGLE SLOPE CONCRETE RAIL (Fig. a)

(NOTE: BARRIER IS ACCEPTABLE WITH ANY TYPE OF METAL RAIL MOUNTED TO IT)



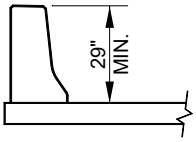
32" INCH VERTICAL CONCRETE PARAPET (Fig. b)

(NOTE: BARRIER IS ACCEPTABLE WITH ANY TYPE OF METAL RAIL MOUNTED TO IT)



F-SHAPE TYPE CONCRETE RAIL (Fig. c)

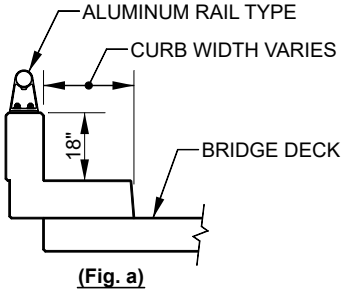
(NOTE: BARRIER IS ACCEPTABLE WITH ANY TYPE OF METAL RAIL MOUNTED TO IT)



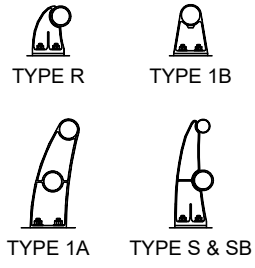
NEW JERSEY STYLE RAIL (Fig. d)

(NOTE: BARRIER IS ACCEPTABLE WITH ANY TYPE OF METAL RAIL MOUNTED TO IT)

CONCRETE RAIL



(Fig. a)



ALUMINUM RAIL TYPE	CURB WIDTH	
	9 INCHES OR LESS	GREATER THAN 9 INCHES
TYPE R, S, OR SB	CODE 1	CODE 1
TYPE 1B OR 1A	CODE 1	CODE 0

TYPE 7 BRIDGE RAIL

WSBIS Item 1685 – Transitions **Pulldown**
Item 36B

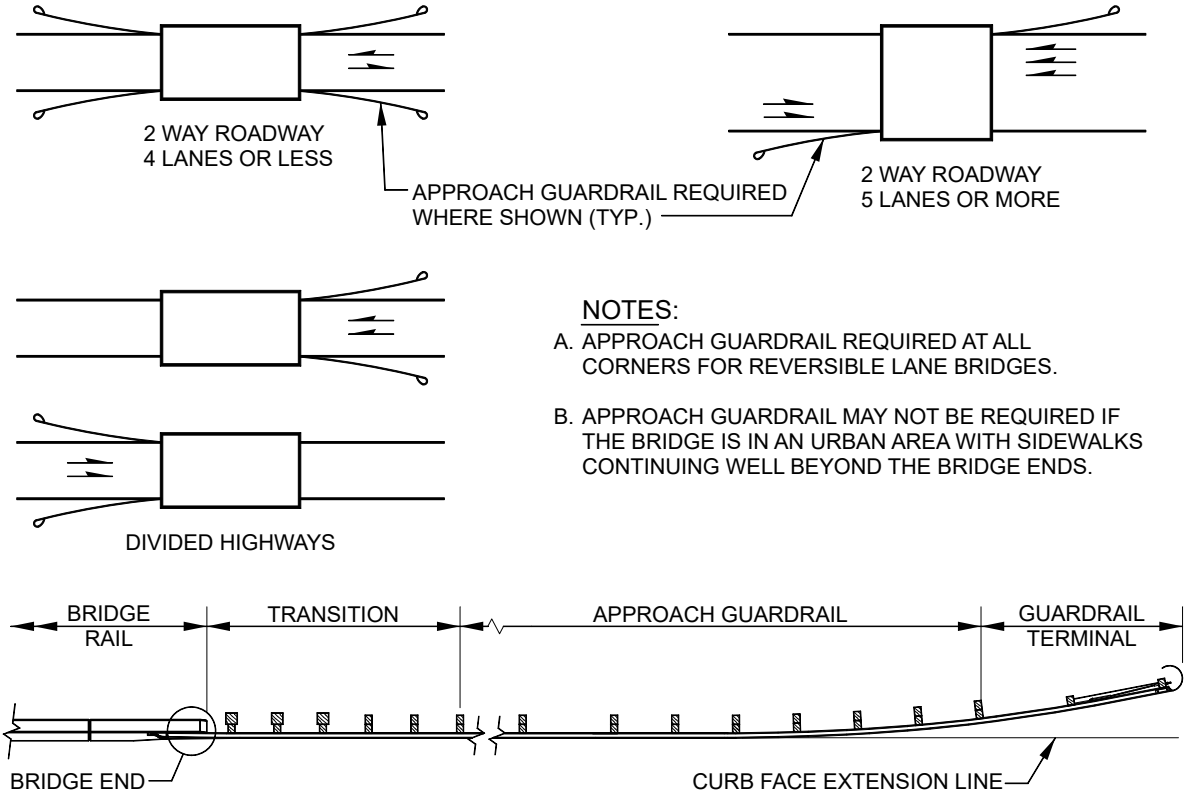
Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Transition details are shown in WSDOT Standard Plans Section C. Features that the inspector should note are:

- If guardrails are not required, the absence of transitions is automatically acceptable and coded as 1.
- Transitions must be nested (two layers). In most cases this will be Thriebeam. W-beam is allowed only when there is insufficient bridge rail height to accommodate the Thrie-beam transition, for example Type 7 bridge rail.
- Post spacing should decrease in the transition resulting in gradual stiffening as a vehicle moves along the transition from a flexible guardrail to the more rigid concrete bridge rail.
- Type III transitions (hollow steel post) have generally been retrofitted, but are only acceptable if they have been retrofitted with a block out less than or equal to 1' – 6" from rail to anchor. On oneway highways, the non-retrofitted posts are acceptable on the trailing edge. Unless further investigation shows that it meets current standards, this is the criteria for acceptance that will be used.
- Transitions are coded as N when there is sufficient roadway fill that there is no attachment to the structure.

Table 1685 Transitions



WSBIS Item 1686 - Guardrails **Pulldown**
NBI Item ##

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

W-beam and Thrie-beam are acceptable rail types. Details of these rails are shown in Standard Plans Section C. Features that the inspector should pay close attention to while inspecting the approach rail are:

- Rails are not necessarily required at all four corners of the bridge. Code Guardrails as 1 when not required.
- Posts should be 6″ × 8″ timber (nominal), or W6x9's, spaced at 6′ 3″ o.c. Nested Thrie-beam is also acceptable but requires lower post spacing.
- Guardrail height (from ground to top of W-beam) should be between 26″ and 28″.
- Guardrail height (from ground to top of Thrie-beam) should be 32″.
- Concrete rail is acceptable.

WSBIS Item 1687 - Terminals **Pulldown**
NBI Item ##

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

Terminals are to be coded as 1 or 0 if they are within a reasonable distance of the bridge. On a fill embankment, this would be near the bottom of the fill slope (*Design Manual* M 22-01). Otherwise they will be coded as an N.

If guardrails are not required, the absence of terminals is automatically acceptable and coded as 1.

Acceptable guardrail terminals are shown in the Washington State Standard Plans Section C or *Design Manual* M 22-01.

WSBIS Item 2537 – Alpha Span Type (INV MO only) **AN(20)**

Applicable Structure Types

- **Bridges & culverts carrying public roadways**
- **Pedestrian, RR and other non-vehicular structures over public roadways**
- **Tunnels carrying public roadways within**

Use Table 2537 to identify each group of span types that make up the entire bridge.

- List the main span Alpha type first, followed by the approach spans.
- Approach span Alpha types should be listed longest to shortest if there are different/variable approach span types.
- The Alpha types must be compatible with WSBIS Items 1532, 1533, 1535, and 1536 respectively.
- Separate each span group by a space.

Example:

Steel through truss main span has a 140 foot timber approach (treated with creosote) at one end of the truss, and a 30 foot concrete T-beam span at the other.

WSBIS Item 1532 = 3 – steel

WSBIS Item 1533 = 10 – through truss

WSBIS Item 1535 = 7 – wood or timber

WSBIS Item 1536 = 02 – girder

The Alpha Span Type would be enteres as follows: STrus TTC CTB

Table 2537 Alpha Span Type Codes

Alpha Span Type	Description
3SCCulv	3 Sided Concrete Culvert
3STCulv	3 Sided Timber Culvert
BAS	Bascule Lift Span
CA	Concrete Arch
CBox	Concrete Box Girder
CCulv	Concrete Culvert
CEFA	Concrete Earth Filled Arch
CESB	Concrete Encased Steel Beam
CFP	Concrete Floating Pontoon
CG	Concrete Girder
CLTun	Concrete Lined Tunnel
CS	Concrete Slab
CSS	Cable Stayed Span
CSTP	Concrete Slab on Timber Piling
CTB	Concrete T-Beam
CTrus	Concrete Truss
CVS	Concrete Voided Slab
LIDTun	Cut and Cover (LID) Tunnel
MCulv	Masonry Culvert
PCBTG	Prestressed Concrete Bulb-T Girder
PCG	Prestressed Concrete Girder
PCMWG	Prestressed Concrete Multi-Web Girder
PCS	Prestressed Concrete Slab
PCTG	Prestressed Concrete Trapizoidal Girder
Plaza	Park Plaza Structures
PRCB	Precast Reinforced Concrete Beam
PTCBox	Post-Tensioned Concrete Box Girder

Alpha Span Type	Description
PTCSeg	Post-Tensioned Segmental Box Girder
PTCTB	Post-Tensioned Concrete T-Beam
SA	Steel Arch
SBox	Steel Box Girder
SCulv	Steel Culvert
SFP	Steel Floating Pontoon
SG	Steel Girder (weld or rivet)
SLS	Steel Lift Span
SRB	Steel Rolled Beam
SSCG	Steel Stayed Concrete Girder
SSusS	Steel Suspension Span
SSwS	Steel Swing Span
STA	Steel Tied Arch
STrus	Steel Truss
TCulv	Timber Culvert
TLTun	Timber Lined Tunnel
TS	Timber Slab
TTC	Treated Timber (Creosote) Bridge
TTLB	Treated Timber Laminated Beam
TTS	Treated Timber (Salts) Bridge
TTTrus	Treated Timber Truss
UT	Untreated Timber Bridge
UTLB	Untreated Timber Laminated Beam
UTTrus	Untreated Timber Truss
UTun	Unlined Tunnel
WSBox	Weathering Steel Box Girder
WSG	Weathering Steel Girder

WSBIS Item 2710 - Sufficiency Rating **Calculated**
NBI Item ##

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This item is calculated automatically and cannot be edited.

The Sufficiency Rating (SR) formula provides a method of evaluating highway bridge data by calculating four separate factors to obtain a numeric value which is indicative of bridge sufficiency to remain in service. The result of this method is a percentage in which 100 percent would represent an entirely sufficient bridge and zero percent would represent an entirely insufficient or deficient bridge. The formula considers the structural adequacy, functional obsolescence, level of service and essentiality for public use.

See Appendix 2-G for the Sufficiency Rating formula.

WSBIS Item 2711 - Structurally Deficient/Functionally Obsolete (SD/FO) **Calculated**

Applicable Structure Types

- **Bridges & culverts carrying public roadways**

This item is calculated automatically and cannot be edited.

Bridges are considered Structurally Deficient (SD) if significant load carrying elements are found to be in poor condition due to deterioration and/or damage, or the adequacy of the waterway opening provided by the bridge is determined to be extremely insufficient to the point of causing overtopping with intolerable traffic interruptions.

SD is numerically defined as follows:

- A bridge component (deck, superstructure, substructure or culvert) having a condition rating of 4 or less (poor condition).
  or
- Structural Evaluation or Waterway Adequacy rated 2 or less (a bridge with a very low load rating capacity, or a bridge that is subject to overtopping with significant or severe traffic delays).

For a structure to be considered SD, one of the following items must be true:

Table 2711a Structurally Deficient/Functionally Obsolete (SD/FO)

WSBIS Item	Condition/Appraisal Rating
1657 – Structural Evaluation	≤ 2
1662 – Waterway Adequacy	≤ 2
1663 – Deck	≤ 4
1671 – Superstructure	≤ 4
1676 – Substructure	≤ 4
1678 – Culvert	≤ 4

Bridges are considered Functionally Obsolete (FO) when the deck geometry, load carrying capacity (comparison of the original design load to the current State legal load), clearance or approach roadway alignment no longer meet the usual criteria for the system of which it is an integral part. In general, FO means that the bridge was built to standards that are not used today. Examples of characteristics leading to an FO classification:

- Low load carrying capacity
- Low waterway adequacy
- Deck geometry (insufficient deck roadway width)
- Insufficient horizontal and vertical clearances
- Poor approach roadway alignment

For a structure to be considered FO, one of the following items must be true:

Table 2711b Structurally Deficient/Functionally Obsolete (SD/FO)

WSBIS Item	Appraisal Rating
1657 – Structural Evaluation	3
1658 – Deck Geometry	≤ 3
1659 – Underclearances	≤ 3
1661 – Approach Roadway Alignment	≤ 3
1662 – Waterway Adequacy	3

WSBIS Item 1436 – Route Direction - TUNNEL **Pulldown**
NTI Item I.8

Applicable Structure Types

- **Tunnels carrying public roadways within**

Record the route direction for the route in the tunnel using one of the following codes:

Table 1436 Route Direction Code

WSBIS Code	Description
4	West
3	South
2	East
1	North
0	Two route directions

Use code 0 when the tunnel carries both directions of a divided highway, and when the roadway is undivided. Route direction is considered the designated direction of the route, not geographic orientation.

Auto-Generated Fields Section

This section is auto-generated for the NBI, NTI and SNBI Items not maintained in Bridgeworks (WSBIS) but are reported to FHWA during submittal.

NBI Item 1 / NTI Item I.3 / SNBI Item BL01 - State Code

The Washington State Code is 530, and is created automatically for insertion in NBI, NTI and SNBI reports. This data field is not maintained in the Washington State Bridge Inventory.

NBI Item 5E – Route Directional Suffix

Washington State does not maintain directional suffixes to route numbers, so this information is not maintained in the Washington State Bridge Inventory. This code is automatically generated as 0 (not applicable) to the NBI.

NBI Item 112 – NBIS Bridge Length

The NBIS bridge length = Y for all On records reported to the NBI by definition, and is created automatically for insertion in NBI text file. This data field is not maintained in the Washington State Bridge Inventory.

NTI Items I.15 through I.18– Border Tunnel Data

Washington State has no tunnels across it's borders. These 4 fields are automatically reported as null to the NTI.

NTI Items N.1 through N.3 – Navigable Waterway Data

Washington State has no tunnels under navigable waters. These 3 fields are automatically reports as 0 to the NTI.

NSTM Inspection Required

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Calculated	-	I	BIR01	B.IR.01	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report whether the bridge requires an NSTM inspection using one of the following codes. **Code** — **Description** N — NSTM inspection not required Y — NSTM inspection required I — NSTM inspection not required - Internal redundancy S — NSTM inspection not required - System redundancy Do not report this item for bridges that do not have steel members, as indicated in Items B.SP.04 (Span Material) and B.SB.03 (Substructure Material).	The intent of this item is to identify bridges that require NSTM inspection for any part of the bridge, to ensure they are inspected in accordance with the NBIS. It is the State's option to record a required NSTM inspection for any bridges meeting a State definition more rigorous than the FHWA definition of NSTM inspection. Use code N when an NSTM inspection is not required and codes I and S do not apply. Use code I when the bridge owner has demonstrated to FHWA, through the use of nationally recognized methods, that a member without load path redundancy is internally redundant, and it is determined that the bridge does not require an NSTM inspection. Use code S when the bridge owner has demonstrated to FHWA, through the use of nationally recognized methods, that a bridge without load path redundancy is system redundant, and it is determined that the bridge does not require an NSTM inspection.

Inspection Data Update Date

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Calculated	-	EI	BIE10	B.IE.10	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
This field is automatically generated.when the updated data is released into the permanent record by the data steward.	The intent of this item is to verify that a complete NBI inspection data set is accepted and is entered or updated in the inventory within the timeframes required by the NBIS.

Underwater Inspection Required

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Calculated	-	I	BIR03	B.IR.03	-

Applicable Structure Types
- **All structure records**

Specification

Report whether an underwater inspection is required under normal flow conditions using one of the following codes.

Code	Description
N	Underwater inspection not required
Y	Underwater inspection required

Do not report this item for bridges that do not pass over water as indicated in Item B.F.01 (Feature Type).

Commentary

The intent of this item is to identify bridges that require an underwater inspection per the NBIS.

Use code Y when during a typical routine inspection, any portion of a bridge substructure and the surrounding channel cannot be inspected to the mudline at low water by wading or probing, generally requiring diving or other appropriate technique.

Use code N when during a typical routine inspection, all portions of a bridge substructure and the surrounding channel can be inspected to the mudline at low water by wading or probing.

If this item was previously reported as Y because an underwater inspection is generally required, it should continue to be reported as Y even for instances of unusually low flow where all portions of the substructure can be inspected by wading and probing, and an underwater inspection is not required. This applies only if the low flow condition is truly unusual and is not likely to reoccur during the next inspection interval.

The reported code for this item may change in the rare circumstance where long-term environmental conditions change for inspection access to underwater portions of the substructure.

Complex Feature - SNBI

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
AN(1)	-	I	BIR04	B.IR.04	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report whether the bridge has a complex feature by using one of the following codes. **Code** **Description** N Bridge does not have complex feature Y Bridge has a complex feature Do not report this item for bridges that do not pass over water as indicated in Item B.F.01 (Feature Type).	The intent of this item is to identify bridges with complex features as defined by the NBIS. Bridges with complex features are typically identified in agency policies and procedures.

Lowest Condition Rating Code

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Calculated	-	I	BC13	B.C.13	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
This item is calculated by FHWA and is not required to be reported. The code for this item is the lowest condition rating code from the following items: B.C.01 (Deck Condition Rating),B.C.02 (Superstructure Condition Rating), B.C.03 (Substructure Condition Rating), and B.C.04 (Culvert Condition Rating).	

Examples - Lowest Condition Rating Code
Code 7 is calculated and recorded for a reinforced concrete closed-spandrel wall arch bridge with the following component condition rating item codes: • B.C.02 (Superstructure Condition Rating) = 7 • B.C.03 (Substructure Condition Rating) = 8 Code 5 is calculated and recorded for a corrugated metal pipe culvert with the following component condition rating item code: • B.C.04 (Culvert Condition Rating) = 5 Code 4 is calculated and recorded for a steel box girder bridge with the following component condition rating codes: • B.C.01 (Deck Condition Rating) = 4 • B.C.02 (Superstructure Condition Rating) = 6 • B.C.03 (Substructure Condition Rating) = 7

Inspection QA Date

Format	Translation	Frequency	WSBIS Item ID	SNBI Item ID	SNTI Item ID
Calculated	-	EI	BIE09	B.IE.09	-

Applicable Structure Types
- **All structure records**

Specification	Commentary
Report the date that the QA review was completed. Do not report when a QA review was not performed.	The intent of this item is to identify inspections that have had independent QA reviews to measure or verify the overall quality of the inspection program. Agency QA procedures often vary in the definition of a review period and number of inspections reviewed. Bridge inspections might be randomly selected for agency QA reviews or selected based on representative bridge type, region, district, or other agency defined bridge populations.

Examples

A Routine and NSTM inspection started on August 1, 2020. The Routine inspection was completed on August 2, 2020. The NSTM inspection was completed on August 4, 2020. An agency QC review was performed on the Routine and NSTM inspections on September 15, 2020.

The Routine inspection was randomly selected for an agency QA review according to agency policies and procedures, which was performed on January 4, 2021. Report 20210104 for the Routine inspection.

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Inspection Equipment

Format	Frequency	Item ID
AN (120)	EI	B.IE.12

Specification

Report all access and inspection equipment used to perform the inspection using one or more of the following codes.

Report multiple codes separated by pipe (|) delimiters.

Do not report this item if none of the equipment below was used.

Code	Description
	Access
AN	No access equipment used
A01	Ladder
A02	Bucket lift vehicle
A03	Under bridge inspection vehicle
A04	Rigging
A05	Waders
A06	Boat
A07	Snorkel
A08	SCUBA
A09	Surface supplied air
A10	Remotely Operated Vehicle (ROV)
A11	Video pole
A12	Borescope
A13	Unmanned aerial systems (UAS)
A14	Service Traveler
AX	Other

Codes continued next page.

Commentary

This item is used to provide information about access and inspection equipment used in addition to standard equipment for each inspection.

Remotely operated vehicles include any remotely controlled device used to provide video access to members of a bridge via ground, water surface, or underwater.

Use code AN when none of the listed access equipment codes apply for the inspection performed.

Use code A13 when unmanned aerial systems (UAS), also referred to as drones, are used to supplement inspections.

Use code IN when none of the listed inspection equipment codes apply for the inspection performed.

Use code I13 when underwater imaging technologies such as side scan sonar are used to supplement underwater inspections.

NDE and testing inspection equipment listed represent only more common or general types. Use the most closely related code, or use code IX for types not listed.

6.2 – INSPECTION EVENTS

Specification Continued – Inspection Equipment

Code	Description
	Inspection
IN	No inspection equipment used
I01	Ultrasonic
I02	Ground-penetrating radar
I03	Infrared thermography
I04	Radiographic testing
I05	Impact echo
I06	Electromagnetic methods
I07	Rebound & penetration methods
I08	Acoustic emissions testing
I09	Dye penetrant
I10	Magnetic particle
I11	Eddy current
I12	Boring or drilling
I13	Underwater imaging
I14	Depth finder/fathometer
I15	Stress wave timer
IX	Other

Example – Inspection Equipment

A NSTM inspection was performed, including hands-on inspection of all girders and floor beams in spans 2 and 3. An under bridge inspection vehicle was used to gain access and magnetic particle testing was done to check fatigue details for cracking.

- Report A03|I10 for the NSTM inspection.

An underwater inspection was performed with divers using a boat and surface supplied air. Before the dive, side-scan sonar was performed to capture underwater images.

- Report A06|A09|I13 for the underwater inspection.

The bridge was struck by an over-height vehicle requiring a damage inspection. A hands-on inspection was performed using a bucket truck for access. Dye penetrant testing was used in several locations where cracks were suspected. The tip of identified cracks was determined using Eddy Current testing.

- Report A02|I09|I11 for the damage inspection.

A scour critical bridge experienced flood water elevations up to the web of the exterior girder. Per the scour POA, scour monitoring was immediately completed by a team leader. A remotely operated water vehicle was used that was equipped with underwater imaging technology.

- Report A10|I13 for the scour monitoring inspection.

7.2 – ELEMENT IDENTIFICATION

Element Number

Format	Frequency	Item ID
N (4,0)	EI	B.E.01

Specification	Commentary
Report the applicable element number (EN) for each element reported for the bridge.	Refer to *Table 22* for element numbers reported to FHWA.

Example

Values shown in the shaded cells, with italicized text, under column B.E.01 are the data for the elements in this example.

Element	B.E.01 EN
RC Deck	*12*
Wearing Surface	*510*
Open Joint	*304*
RC Bridge Railing	*331*
Steel Beam/Girder	*107*
Steel Protective Coating	*515*
Elastomeric Bearings	*310*
RC Columns	*205*
RC Pier Wall	*210*
RC Abutment	*215*
RC Pier Cap	*234*

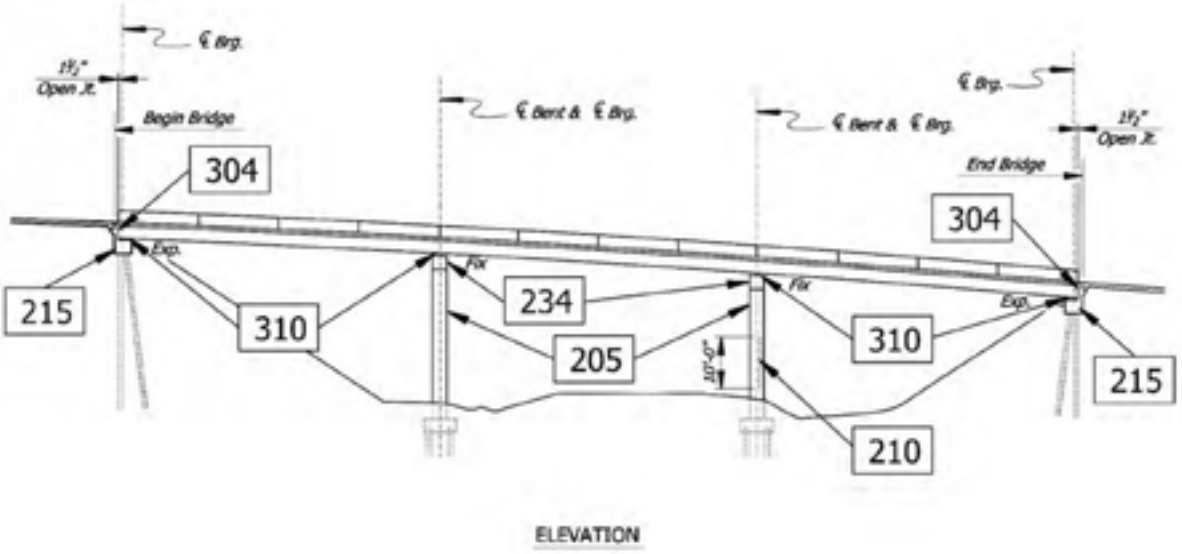

Figure 179. Bridge elevation view from construction plans for a three-span steel beam bridge. (Source: Alabama DOT)

Example Continued – Element Number

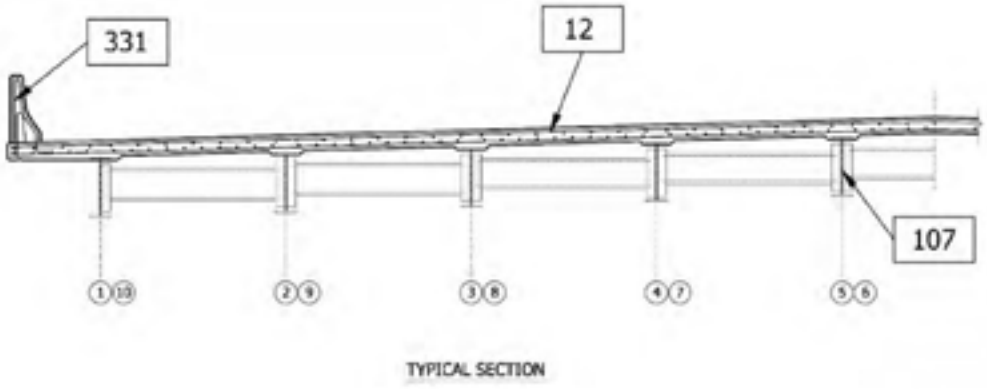

Figure 180. Typical bridge superstructure cross-section view from construction plans for a steel multi-beam bridge. (Source: Alabama DOT)

7.2 – ELEMENT IDENTIFICATION

Element Parent Number

Format	Frequency	Item ID
N (4,0)	EI	B.E.02

Specification	Commentary
Report the element number of the protected element for each protective system element reported for the bridge. Do not report this item for elements that do not have a protective system.	Refer to *Table 22* for wearing surface and protective coatings elements reported to FHWA.

Example

Values shown in the shaded cells, with italicized text, under column B.E.02 are the element parent number (EPN) data for the element numbers shown in column B.E.01 in this example.

Element	B.E.01	B.E.02
	EN	EPN
RC Deck	12	
Wearing Surface	510	*12*
Open Joint	304	
RC Bridge Railing	331	
Steel Beam/Girder	107	
Steel Protective Coating	515	*107*
Elastomeric Bearings	310	
RC Columns	205	
RC Pier Wall	210	
RC Abutment	215	
RC Pier Cap	234	

7.2 – ELEMENT IDENTIFICATION

Element Total Quantity

Format	Frequency	Item ID
N (8,0)	EI	B.E.03

Specification	Commentary
Report the total element quantity (Total Qty) to the nearest whole unit of measure for each applicable element reported for the bridge.	Refer to the AASHTO MBEI for details on the calculation of total element quantities for applicable elements.

Example

Quantities shown in the shaded cells, with italicized text, under column B.E.03 are the data for the element numbers shown in column B.E.01 in this example.

Element	B.E.01	B.E.02	B.E.03
	EN	EPN	Total Qty
RC Deck (ft^2)	12		*16217*
Wearing Surface (ft^2)	510	12	*15783*
Open Joint (ft)	304		*158*
RC Bridge Railing (ft)	331		*412*
Steel Beam/Girder (ft)	107		*2054*
Steel Protective Coating (ft^2)	515	107	*15728*
Elastomeric Bearings (each)	310		*40*
RC Columns (each)	205		*8*
RC Pier Wall (ft)	210		*54*
RC Abutment (ft)	215		*182*
RC Pier Cap (ft)	234		*150*

7.3 – ELEMENT CONDITIONS

Element Quantity Condition State One

Format	Frequency	Item ID
N (8,0)	EI	B.CS.01

Specification	Commentary
Report the element quantity assigned to condition state one (CS1 Qty) to the nearest whole unit of measure for each element reported for the bridge.	Refer to the AASHTO MBEI for element defect and condition state definitions.

Example

Quantities shown in the shaded cells, with italicized text, under column B.CS.01 are the data for the element numbers shown under column B.E.01 in this example.

Element	B.E.01	B.E.02	B.E.03	B.CS.01
	EN	EPN	Total Qty	CS1 Qty
RC Deck (ft^2)	12		16217	*0*
Wearing Surface (ft^2)	510	12	15783	*15083*
Open Joint (ft)	304		158	*100*
RC Bridge Railing (ft)	331		412	*360*
Steel Beam/Girder (ft)	107		2054	*1044*
Steel Protective Coating (ft^2)	515	107	15728	*0*
Elastomeric Bearings (each)	310		40	*30*
RC Columns (each)	205		8	*4*
RC Pier Wall (ft)	210		54	*44*
RC Abutment (ft)	215		182	*140*
RC Pier Cap (ft)	234		150	*105*

7.3 – ELEMENT CONDITIONS

Element Quantity Condition State Two

Format	Frequency	Item ID
N (8,0)	EI	B.CS.02

Specification	Commentary
Report the element quantity assigned to condition state two (CS2 Qty) to the nearest whole unit of measure for each element reported for the bridge.	Refer to the AASHTO MBEI for element defects and condition state definitions.

Example

Quantities shown in the shaded cells, with italicized text, under column B.CS.02 are the data for the element numbers shown under column B.E.01 in this example.

Element	B.E.01	B.E.02	B.E.03	B.CS.01	B.CS.02
	EN	EPN	Total Qty	CS1 Qty	CS2 Qty
RC Deck (ft^2)	12		16217	0	*16000*
Wearing Surface (ft^2)	510	12	15783	15083	*500*
Open Joint (ft)	304		158	100	*58*
RC Bridge Railing (ft)	331		412	360	*40*
Steel Beam/Girder (ft)	107		2054	1044	*1000*
Steel Protective Coating (ft^2)	515	107	15728	0	*5628*
Elastomeric Bearings (each)	310		40	30	*5*
RC Columns (each)	205		8	4	*4*
RC Pier Wall (ft)	210		54	44	*5*
RC Abutment (ft)	215		182	140	*30*
RC Pier Cap (ft)	234		150	105	*30*

7.3 – ELEMENT CONDITIONS

Element Quantity Condition State Three

Format	Frequency	Item ID
N (8,0)	EI	B.CS.03

Specification	Commentary
Report the element quantity assigned to condition state three (CS3 Qty) to the nearest whole unit of measure for each element reported for the bridge.	Refer to the AASHTO MBEI for element defects and condition state definitions.

Example

Quantities shown in the shaded cells, with italicized text, under column B.CS.03 are the data for the element numbers shown under column B.E.01 in this example.

Element	B.E.01	B.E.02	B.E.03	B.CS.01	B.CS.02	B.CS.03
	EN	EPN	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty
RC Deck (ft^2)	12		16217	0	16000	*217*
Wearing Surface (ft^2)	510	12	15783	15083	500	*0*
Open Joint (ft)	304		158	100	58	*0*
RC Bridge Railing (ft)	331		412	360	40	*12*
Steel Beam/Girder (ft)	107		2054	1044	1000	*10*
Steel Protective Coating (ft^2)	515	107	15728	0	5628	*10000*
Elastomeric Bearings (each)	310		40	30	5	*5*
RC Columns (each)	205		8	4	4	*0*
RC Pier Wall (ft)	210		54	44	5	*5*
RC Abutment (ft)	215		182	140	30	*12*
RC Pier Cap (ft)	234		150	105	30	*15*

7.3 – ELEMENT CONDITIONS

Element Quantity Condition State Four

Format	Frequency	Item ID
N (8,0)	EI	B.CS.04

Specification	Commentary
Report the element quantity assigned to condition state four (CS4 Qty) to the nearest whole unit of measure for each element reported for the bridge.	Refer to the AASHTO MBEI for element defects and condition state definitions.

Example

Quantities shown in the shaded cells, with italicized text, under column B.CS.04 are the data for the element numbers shown under column B.E.01 in this example.

Element	B.E.01	B.E.02	B.E.03	B.CS.01	B.CS.02	B.CS.03	B.CS.04
	EN	EPN	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
RC Deck (ft^2)	12		16217	0	16000	217	*0*
Wearing Surface (ft^2)	510	12	15783	15083	500	0	*200*
Open Joint (ft)	304		158	100	58	0	*0*
RC Bridge Railing (ft)	331		412	360	40	12	*0*
Steel Beam/Girder (ft)	107		2054	1044	1000	10	*0*
Steel Protective Coating (ft^2)	515	107	15728	0	5628	10000	*100*
Elastomeric Bearings (each)	310		40	30	5	5	*0*
RC Columns (each)	205		8	4	4	0	*0*
RC Pier Wall (ft)	210		54	44	5	5	*0*
RC Abutment (ft)	215		182	140	30	12	*0*
RC Pier Cap (ft)	234		150	105	30	15	*0*

7.3 – ELEMENT CONDITIONS

Example Element Data Set

This example shows the progression of element data sets considering all inspections performed since the last reporting of data to FHWA and ending with the data set *(Table 26)* that would be reported to FHWA.

Table 24. Element data set for a complete routine inspection performed since the last reporting of data to FHWA.

B.E.01	B.E.02	B.E.03	B.CS.01	B.CS.02	B.CS.03	B.CS.04
EN	EPN	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
12		16217	0	16000	217	0
510	12	15783	15083	500	0	200
107		2054	1044	1000	10	0
515	107	15728	0	5628	10000	100
205		8	4	4	0	0
210		54	44	5	5	0
215		182	140	30	12	0
234		150	105	30	15	0
304		158	100	58	0	0
310		40	30	5	5	0
331		412	360	40	12	0

Preservation work was completed on the reinforced concrete deck (EN 12) and steel open girder/beam (EN 107). An inspection was performed prior to reporting data to FHWA to update the condition of the following elements: steel protective coating (EN 515), steel open girder/beam (EN 107 - with section loss), reinforced concrete deck (EN 12), new wearing surface (EN 510), and new pourable joints (EN 301). The element data for this inspection is shown in *Table 25*.

Table 25. Element data collected for a one-time special inspection performed to account for preservation work that occurred after the inspection data shown in *Table 24* and prior to reporting data to FHWA.

B.E.01	B.E.02	B.E.03	B.CS.01	B.CS.02	B.CS.03	B.CS.04
EN	EPN	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
12		16217	0	*16217*	*0*	0
510	12	15783	*15783*	*0*	0	*0*
107		2054	*2044*	*0*	10	0
515	107	15728	*15728*	*0*	*0*	*0*
301		158	*158*	*0*	0	0

Cells shaded, with italicized text, in columns B.E.01, B.CS.01, B.CS.02, B.CS.03, and B.CS.04 show changes in data from *Table 24*.

7.3 – ELEMENT CONDITIONS

Table 26. Element data set reported to FHWA reflecting all inspections performed since the last reporting of data to FHWA.

B.E.01	B.E.02	B.E.03	B.CS.01	B.CS.02	B.CS.03	B.CS.04
EN	EPN	Total Qty	CS1 Qty	CS2 Qty	CS3 Qty	CS4 Qty
12		16217	0	*16217*	*0*	0
510	12	15783	*15783*	*0*	0	*0*
107		2054	*2044*	*0*	10	0
515	107	15728	*15728*	*0*	*0*	*0*
301		158	*158*	*0*	0	0
205		8	4	4	0	0
210		54	44	5	5	0
215		182	140	30	12	0
234		150	105	30	15	0
310		40	30	5	5	0
331		412	360	40	12	0

Cells shaded, with italicized text, in columns B.E.01, B.CS.01, B.CS.02, B.CS.03, and B.CS.04 show changes in data from *Table 24*.

4.1 – FEATURE IDENTIFICATION

Feature Type

Format	Frequency	Item ID
AN (3)	I	B.F.01

Specification	Commentary
Report the feature that is above, below, or carried on the bridge using one of the following codes. Code Description H## Highway R## Railroad P## Pathway W## Waterway F## Relief for waterway B## Urban feature D## Dry terrain or side slope X## Other Replace the ## characters in the above codes with sequential numbers, with leading zeros, assigned to each feature type. For a double deck bridge that is inventoried with one unique bridge number, report a feature for each deck level. Report a railroad feature for each separate railroad service type, as identified in Item B.RR.01 *(Railroad Service Type)*, that is carried on or passes below the bridge. When a track carries multiple railroad service types, report only one feature. When multiple tracks carry the same railroad service type(s), report only one feature. Report one highway feature for a highway that is designated with two or more route numbers. Report multiple highway features when the highway is divided at the bridge.	All bridges have at least one feature carried on the bridge and one feature below the bridge. Some bridges have several features that are above, below, or carried on the bridge. Each feature type is numbered sequentially, starting with one (H01, R01, etc.). Highway features should be numbered beginning with the features carried on the bridge, followed by those below and above (H01, H02, H03, etc.). This item does not include ancillary structures and utilities. Reporting more than one Urban feature or Other feature is optional. For multi-level interchanges, report highway features directly above and below the bridge. The presence of a flush or mountable median on the bridge does not in itself indicate that the highway is divided. Use code R for each railroad service type listed in Item B.RR.01 *(Railroad Service Type)*. Use code P for separated pathways dedicated for pedestrian, bicycle, equestrian, or other non-highway modes of human transportation not covered in other codes. Use code W for each unique waterway. Do not use for roadside ditches or pipes that typically only carry roadway runoff from rain events. Use code F for bridges where one or more spans provide waterway openings for flow only during flood stages to provide additional hydraulic capacity, such as relief channels.

4.1 – FEATURE IDENTIFICATION

Commentary Continued – Feature Type
Use code B for urban features such as buildings, parking lots, etc. Use code D for features such as a natural depression or sidehill slope when there is no discernable waterway channel and none of the other feature codes apply. Use code X when no other code applies for features that exist below the bridge. For border bridges, the Neighboring State reports this item for all highway features carried on or passing above the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Examples – Feature Type
A bridge carries I-66 eastbound and I-66 westbound over County Route 601 and Passage Creek. I-66 eastbound and westbound are divided at the bridge by an opening between two superstructure units supported by abutments common to both superstructures. • Report H01 for I-66 eastbound. • Report H02 for I-66 westbound. • Report H03 for County Route 601. • Report W01 for Passage Creek. A bridge carries I-68 eastbound and State Route 17 northbound over County Route 603, the Appalachian Trail, and Postage Creek. I-68 eastbound and State Route 17 northbound share a common highway that is not divided at the bridge. Above the bridge is a ramp connecting I-68 westbound to County Route 603 southbound. • Report H01 for I-68/SR17. • Report H02 for County Route 603. • Report H03 for the ramp. • Report P01 for the Appalachian Trail. • Report W01 for Postage Creek. A bridge carries Brookside Glen Drive over Union Creek. The bridge carries sidewalks on the north and south sides. • Report H01 for Brookside Glen Drive. • Report P01 for the sidewalks. • Report W01 for Union Creek.

4.1 – FEATURE IDENTIFICATION

Feature Location

Format	Frequency	Item ID
AN (1)	I	B.F.02

Specification

Report the location for the feature reported in Item B.F.01 *(Feature Type)* that is above, below, or carried on the bridge using one of the following codes.

Code	Description
C	Carried on bridge
A	Above bridge
B	Below bridge
T	Top level
L	Lower level

Commentary

This item has a corresponding code for each feature reported for Item B.F.01 *(Feature Type)*.

Use code T for the top level of a double deck bridge that is inventoried using one unique bridge number.

Use code L for the lower level of a double deck bridge that is inventoried using one unique bridge number.

For border bridges, the Neighboring State reports this item for all highway features carried on or passing above the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Examples

A bridge carries I-66 eastbound and I-66 westbound over County Route 601 and Passage Creek. I-66 eastbound and westbound are divided at the bridge by an opening between two superstructure units supported by abutments common to both superstructures.

- Report C for I-66 eastbound.
- Report C For I-66 westbound.
- Report B for County Route 601.
- Report B for Passage Creek.

A bridge carries I-68 eastbound and State Route 17 northbound over County Route 603, the Appalachian Trail, and Postage Creek. I-68 eastbound and State Route 17 northbound share a common highway that is not divided at the bridge. Above the bridge is a ramp connecting I-68 westbound to County Route 603 southbound.

- Report C for I-68/SR17.
- Report B for County Route 603.
- Report A for the ramp.
- Report B for the Appalachian Trail.
- Report B for Postage Creek.

A bridge carries Brookside Glen Drive over Union Creek. The bridge carries sidewalks on the north and south sides.

- Report C for Brookside Glen Drive.
- Report C for the sidewalks.
- Report B for Union Creek.

4.1 – FEATURE IDENTIFICATION

Feature Name

Format	Frequency	Item ID
AN (300)	I	B.F.03

Specification	Commentary
Report the commonly known name(s) for the feature reported in Item B.F.01 *(Feature Type)*. If the feature has no commonly known name, provide a general description. For more than one name, report all names with the most common name first. When applicable, report the route number first followed by other names. Report multiple names separated by pipe (|) delimiters.	This item has correlating data for each feature reported for Item B.F.01 *(Feature Type)*. The owner may include directional or other descriptive information in this field. Official names and local names may be included. For border bridges, the Neighboring State reports this item for all highway features carried on or passing above the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Examples

I-90, commonly named Massachusetts Turnpike. Report I-90|Massachusetts Turnpike.

I-64, with no commonly known name. Report I-64.

US 50 & US 301 carried on one highway commonly named John Hanson Highway. Report US 50|US 301|John Hanson Highway.

I-95S carried on the lower deck of the George Washington Bridge. Report I95S|George Washington Bridge - Lower Deck.

I-495 northbound. Report I-495 NB.

A bridge carries I-68 eastbound (commonly named Harry Byrd Expressway), and State Route 17 northbound (commonly named Paris Pike) over County Route 603 (commonly named Blue Ridge Mountain Road), the Appalachian Trail, and Postage Creek. I-68 eastbound and State Route 17 northbound share a common highway that is not divided at the bridge. Above the bridge is a ramp connecting I-68 westbound to County Route 603 southbound.

- Report I-68|Harry Byrd Expressway|SR17|Paris Pike for I-68/SR17.
- Report County Route 603|Blue Ridge Mountain Road for County Route 603.
- Report I-68 WB to County Route 603 SB for the ramp.
- Report Appalachian Trail for the pathway.
- Report Postage Creek for the waterway.

A bridge carries Brookside Glen Drive over Union Creek. The bridge carries sidewalks on the north and south sides.

- Report Brookside Glen Drive for the highway.
- Report Sidewalks for the pathways.
- Report Union Creek for the waterway.

4.2 – ROUTES

Route Designation

Format	Frequency	Item ID
AN (3)	I	B.RT.01

Specification	Commentary
Report the assigned route designation for the highway reported in Item B.F.01 *(Feature Type)* using the following code. Code – Description R## – Unique Route Designation Replace the ## characters in the above code with sequential numbers, with leading zeros, assigned to each unique route designation carried on the highway feature (e.g., R01, R02, etc.). If a highway carries multiple routes, report only those routes that have a route number. If a highway carries only routes without route numbers, report one route designation.	This item captures how routes that share the reported highway feature are designated. Each highway feature has at least one route designation. Typically, the route with the highest-class route type is listed first, using the hierarchy shown in Item B.RT.04 *(Route Type)*. An interstate is considered the highest-class route. If the highway feature is carried on a ramp bridge, report all applicable routes for the highways that are being connected. For border bridges, the Neighboring State reports this item for all highway features carried on the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Examples

I-35 southbound. Report R01.

Local road with no known route number. Report R01.

I-66 and State Route 17 northbound share one highway that is not divided at the bridge.
- Report R01 for I-66.
- Report R02 for State Route 17.

A ramp bridge departs from I-66 westbound and enters I-81 southbound.
- Report R01 for I-66.
- Report R02 for I-81.

One highway feature is signed for both State Highway 43 and Harlem Avenue.
- Report R01 for State Highway 43.
- Do not report a route record for Harlem Avenue.

4.2 – ROUTES

Route Number

Format	Frequency	Item ID
AN (15)	I	B.RT.02

Specification	Commentary
Report the route number for the route reported in Item B.RT.01 *(Route Designation)*. Include letters that are used as part of the route numbers. Report 0 for routes without route numbers.	For divided highways, do not report the route direction. Identify that information in Item B.RT.03 *(Route Direction)*. For border bridges, the Neighboring State reports this item for all highway features carried on the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Examples

I-35 southbound. Report 35.

I-35W southbound. Report 35W.

State Highway 9A is not divided at the bridge. Report 9A.

Local road with no known route number. Report 0.

I-66 and State Route 17 northbound share one highway that is not divided at the bridge.
- Report 66 for the route designated as I-66.
- Report 17 for the route designated as State Route 17.

A ramp bridge departs from I-66 westbound and enters I-81 southbound.
- Report 66 for the route designated as I-66.
- Report 81 for the route designated as I-81.

4.2 – ROUTES

Route Direction

Format	Frequency	Item ID
AN (2)	I	B.RT.03

Specification	Commentary
Report the designated route direction for the route reported in Item B.RT.01 *(Route Designation)* using one of the following codes. Code – Description NB – Northbound EB – Eastbound SB – Southbound WB – Westbound NS – Northbound and Southbound EW – Eastbound and Westbound	Use code NS when the route is not divided at the bridge, and carries traffic in both north and south directions. Use code EW when the route is not divided at the bridge, and carries traffic in both east and west directions. Use the designated route direction for the departure or entrance route when a bridge only carries a ramp; i.e. Item B.RT.05 *(Service Type)* is 7. Use the most applicable code when a route does not have a designated route direction. For border bridges, the Neighboring State reports this item for all highway features carried on the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Examples

I-35 southbound. Report SB.

I-35W southbound. Report SB.

State Highway 9W is not divided at the bridge and carries traffic in north and south directions. Report NS.

A ramp bridge departs from I-66 westbound and enters I-81 southbound.
- Report WB for the route designated as I-66.
- Report SB for the route designated as I-81.

Bridge carries I-81 northbound and I-64 eastbound.
- Report NB for the route designated as I-81.
- Report EB for the route designated as I-64.

4.2 – ROUTES

Route Type

Format	Frequency	Item ID
AN (1)	I	B.RT.04

Specification	Commentary
Report the route type for the route reported in Item B.RT.01 *(Route Designation)* using one of the following codes. Code – Description 1 – Interstate route 2 – U.S. route 3 – State route 4 – County route 5 – City street 6 – Federal lands road 7 – State lands road X – Other	Use code 4 for parish routes or other county route equivalents. Use code 5 for city or other municipal streets. Use code 6 when a public highway passes through Federal lands such as national parks, national forests, or DOD facilities and does not meet the description of codes 1 through 5. Use code 7 when a public highway passes through State lands such as State parks or State forests and does not meet the description of codes 1 through 5. Use code X when a public highway is not designated as one of the defined route type codes. For border bridges, the Neighboring State reports this item for all highway features carried on the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Examples

Highway feature is signed for both I-35 and US-77.
- Report 1 for the route designated as I-35.
- Report 2 for the route designated as US-77.

Route is signed I-35 southbound. Report 1.

Route is signed State Highway 9W. Report 3.

A ramp bridge departs from VA-7 westbound and enters I-81 southbound.
- Report 3 for the route designated as VA-7.
- Report 1 for the route designated as I-81.

4.2 – ROUTES

Service Type

Format	Frequency	Item ID
AN (1)	I	B.RT.05

Specification	Commentary
Report the designated service type for the route reported in Item B.RT.01 *(Route Designation)*, using one of the following codes. Code – Description 1 – Mainline 2 – Alternate 3 – Bypass 4 – Spur 6 – Business 7 – Ramp, connector, etc. 8 – Service or frontage road X – Other	The service type designation is determined by the agency, and typically included as part of the signage for the route. Use code 7 for all types, arrangements, and sizes of turning roadways that connect two or more highways at an interchange. Use code 8 for frontage roads. These are typically parallel to the traveled way, may be provided on one or both sides of the mainline, and may or may not be continuous. A frontage road may include a U-turn lane. For Federal agency roads, report the most logical description of the service type compared to other routes within the facility. For border bridges, the Neighboring State reports this item for all highway features carried on the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Examples

A ramp bridge connects I-66 westbound to I-81 southbound. Report 7.

I-35W southbound. Report 1.

4.3 – HIGHWAYS

Functional Classification

Format	Frequency	Item ID
AN (1)	I	B.H.01

Specification

Report the functional classification for the highway feature reported in Item B.F.01 *(Feature Type)* using one of the following codes.

Code	Description
1	Interstate
2	Principal Arterial – Other Freeways and Expressways
3	Principal Arterial – Other
4	Minor Arterial
5	Major Collector
6	Minor Collector
7	Local

Commentary

Functional classifications result from the grouping of highways by the character of service they provide.

Ensure that the functional classification designated in this item is consistent with the HPMS.

When one highway feature carries multiple route types, report the code for the highest-class route following the hierarchy in the code descriptions; Interstate being the highest class.

Use code 7 for State or Federal parkways and other park roads unless there is a through highway designated at a higher classification.

FHWA Highway Functional Classification Concepts, Criteria, and Procedures website: *http://www.fhwa.dot.gov/planning/processes/statewide/related/highway_functional_classifications/*.

4.3 – HIGHWAYS

Urban Code

Format	Frequency	Item ID
AN (5)	I	B.H.02

Specification	Commentary
Report the urbanized area code consistent with the State's HPMS urban boundaries for the highway feature reported in Item B.F.01 *(Feature Type)* at the bridge.	Urban codes can be found at: *https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural.html*. For bridges outside urbanized areas, use code 99999 for rural areas with population less than 5,000 and use code 99998 for small urban areas with population 5,000 to 49,999 in accordance with the HPMS Field Manual. FHWA approves adjusted urban boundaries submitted by State DOT planning offices. State's HPMS urban boundaries are based on the FHWA-approved adjusted urban boundaries. State maps of the unadjusted U.S. Census urban boundaries with highways (map layers: Labels, Transportation, and Urban Areas checked) can be found at: *https://tigerweb.geo.census.gov*.

Example

U.S. 13/113A over Saint Jones River. Report 24580.

Figure 80. TIGERweb screen shot for the bridge in Delaware. (Source: US Census Bureau)

4.3 – HIGHWAYS

NHS Designation

Format	Frequency	Item ID
AN (1)	I	B.H.03

Specification	Commentary
Report the NHS designation for the highway feature reported in Item B.F.01 *(Feature Type)*, using one of the following codes. Code Description N Non-NHS Y NHS	The National Highway System (NHS) includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility. The NHS was developed by the U.S. Department of Transportation (DOT) in cooperation with the states, local officials, and metropolitan planning organizations (MPOs). The NHS includes the following subsystems of highways: Interstate, other principal arterials, STRAHNET, major STRAHNET connectors, and intermodal connectors. NHS routes and connectors are identified in the HPMS. State maps of the NHS can be found at: *http://www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/.* For border bridges, the Neighboring State reports this item for all highway features carried on the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

4.3 – HIGHWAYS

National Highway Freight Network

Format	Frequency	Item ID
AN (1)	I	B.H.04

Specification

Report the National Highway Freight Network (NHFN) designation for the highway feature reported in Item B.F.01 *(Feature Type)*, using one of the following codes.

Code	Description
1	Primary Highway Freight System
2	Interstate portions not on the Primary Highway Freight System
3	Critical Rural Freight Corridor
4	Critical Urban Freight Corridor
N	Not on the NHFN

Commentary

This item is used to identify the National Highway Freight Network and to report to Congress on the conditions and performance of the network. This item is also used with other items to classify bridges according to serviceability, safety, and essentiality for public use and considers the potential impacts to emergency evacuation routes and to regional and national freight and passenger mobility if the serviceability of the bridge is restricted or diminished.

More information can be found at: *http://www.ops.fhwa.dot.gov/freight/infrastructure/index.htm.*

4.3 – HIGHWAYS

STRAHNET Designation

Format	Frequency	Item ID
AN (1)	I	B.H.05

Specification	Commentary
Report the Strategic Highway Network (STRAHNET) designation for the highway feature reported in Item B.F.01 *(Feature Type)*, using one of the following codes. Code – Description 1 – STRAHNET route 2 – STRAHNET Connector route N – Not a STRAHNET route	The STRAHNET is a system of Interstate and primary highways and connectors that provide access to major US military installations and strategic ports, and provides continuity and emergency capabilities for defense purposes. The STRAHNET is determined by the Surface Deployment and Distribution Command (SDDC) in coordination with FHWA. STRAHNET routes and STRAHNET Connector routes can be found on NHS State maps at: *http://www.fhwa.dot.gov/planning/national_highway_system/nhs_maps/.*

4.3 – HIGHWAYS

LRS Route ID

Format	Frequency	Item ID
AN (120)	I	B.H.06

Specification	Commentary
Report the LRS Route ID defined by the State that is reported to the HPMS for the highway feature reported in Item B.F.01 *(Feature Type)*. The LRS Route ID must match the HPMS data exactly. Report N if an LRS Route ID has not been assigned.	The LRS Route ID is not necessarily the same as the route number posted along the highway, but is a number used to uniquely identify a route within a county or a State for GIS analysis and mapping purposes. Refer to the FHWA HPMS Field Manual at *http://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/*. For border bridges, the Neighboring State reports this item for all highway features carried on the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

4.3 – HIGHWAYS

LRS Mile Point

Format	Frequency	Item ID
N (8,3)	I	B.H.07

Specification	Commentary
Report the LRS mile point for the highway feature reported in Item B.F.01 *(Feature Type)* to the nearest thousandth of a mile. The mile point must be consistent with the LRS route and mile point system for the HPMS. For highway features that carry an LRS route, report the mile point at the beginning of the bridge. When the LRS route passes below the bridge, report the mile point on the LRS route where the bridge is first encountered.	The LRS mile point is used to establish the location of the bridge along the LRS route. If the highway does not carry an LRS route, report the most appropriate mile point. Refer to the FHWA HPMS Field Manual at *http://www.fhwa.dot.gov/policyinformation/hpms/fieldmanual/*. For border bridges, the Neighboring State reports this item for all highway features carried on the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Examples

LRS Mile Point from HPMS is 130.344. Report 130.344.

LRS Mile Point from HPMS is 9.600. Report 9.600.

The highway does not carry an LRS route. The beginning of the bridge is 0.2 miles past the 34.0 mile marker. Report 34.2.

4.3 – HIGHWAYS

Lanes On Highway

Format	Frequency	Item ID
N (2,0)	I	B.H.08

Specification	Commentary
Report the number of highway traffic lanes for the highway feature reported in Item B.F.01 *(Feature Type)*. Report 1 when a highway is signed or striped for one-lane, but carries two-way traffic. Report 1 for a highway feature carried on the bridge when Item B.G.06 *(Bridge Width Curb-to-Curb)* is less than 16 feet and the bridge is not striped for full width traffic lanes.	For highway features carried on the bridge, include all lanes that are striped or otherwise operated as full width highway traffic lanes and special use lanes (e.g., merge lanes, ramp lanes, and left-turn lanes) - and run the entire length of the bridge. For highway features below the bridge that are not carried on another bridge, include all lanes that are striped or otherwise operated as full width highway traffic lanes and special use lanes (e.g., merge lanes, ramp lanes, and left-turn lanes) that pass below the entire width of the bridge.

Commentary Continued

Do not include pedestrian sidewalks, bike paths, or railroad tracks as lanes, unless the railroad tracks are concurrent with the highway lanes.

For double deck bridges and parallel bridges, report the number of lanes consistent with the highway feature reported in Item B.F.01 *(Feature Type)*.

For sidehill bridges, report the total number of lanes for the highway feature regardless if carried on the bridge or terrain/earth material.

Examples

Highway feature carried on the bridge has one lane. Report 1.

Highway feature carries two-way traffic on unstriped lanes and has a curb-to-curb width of 18 ft. Report 2.

Double deck bridge inventoried as one unique bridge number. Highway feature on top level carries five lanes. Highway feature on lower level carries five lanes.

- Report 5 for the highway feature on the top level.
- Report 5 for the highway feature on the lower level.

4.3 – HIGHWAYS

Annual Average Daily Traffic

Format	Frequency	Item ID
N (8,0)	I	B.H.09

Specification	Commentary
Report the annual average daily traffic (AADT) from the most recent count for the highway feature reported in Item B.F.01 *(Feature Type)*. The AADT must be compatible with the other items reported for the highway feature. Report the design AADT for a newly inventoried highway feature when actual AADT information is not yet available. Report the last open AADT for a highway feature that is temporarily closed until repair or replacement can be completed.	The AADT should be updated at intervals in accordance with the standards for the HPMS and standards/policies within the State. All traffic, including trucks, is counted in the AADT. The number of trucks counted in the AADT is reported in Item B.H.10 *(Annual Average Daily Truck Traffic)*. When HPMS or other planning data are not available, use a best estimate based on site familiarity or functional classification in accordance with State standards and policies.

4.3 – HIGHWAYS

Annual Average Daily Truck Traffic

Format	Frequency	Item ID
N (8,0)	I	B.H.10

Specification	Commentary
Report the Average Annual Daily Truck Traffic (AADTT) from the most recent count for the highway feature reported in Item B.F.01 *(Feature Type)*. The AADTT must be compatible with the other items reported for the highway feature. Report the design AADTT for a newly inventoried highway feature when actual AADTT information is not yet available. Report the last open AADTT for a highway feature that is temporarily closed until repair or replacement can be completed.	The AADTT should be updated at intervals in accordance with the standards for the HPMS and standards/policies within the State. When HPMS or other planning data are not available, use a best estimate based on site familiarity or functional classification in accordance with State standards and policies. Do not include vans, pickup trucks, and other light delivery trucks in the AADTT. The AADTT represents vehicle classes 4-13 as described in FHWA's Traffic Monitoring Guide at: *http://www.fhwa.dot.gov/policyinformation/tmguide/*.

4.3 – HIGHWAYS

Year of Annual Average Daily Traffic

Format	Frequency	Item ID
N (4,0)	I	B.H.11

Specification	Commentary
Report the year associated with the data reported in Item B.H.09 *(Annual Average Daily Traffic)* for the highway feature reported in Item B.F.01 *(Feature Type)*.	The traffic data should be updated at intervals in accordance with the standards for the HPMS and standards/policies within the State.

4.3 – HIGHWAYS

Highway Maximum Usable Vertical Clearance

Format	Frequency	Item ID
N (3,1)	EI	B.H.12

Specification	Commentary
Report the minimum vertical clearance for the highway feature reported in Item B.F.01 *(Feature Type),* measured over the 10-foot-wide envelope of the traveled part of the highway, that provides for the maximum usable clearance envelope, rounded down to the nearest tenth of a foot. Measure the vertical clearance plumb from the deck or highway surface to the lowest bridge member restriction, appurtenance (signs, utilities, etc.) attached to the bridge, or other structure. Report 99.9 when the clearance is 100 feet or greater or no restriction exists above the highway.	This item identifies the maximum height of a notional 10-foot wide vehicle that can pass on the highway feature(s) reported in Item B.F.01 *(Feature Type).* This information is sometimes used for preliminary military routing. The data may not represent the absolute minimum clearance over the highway feature. Refer to Item B.H.13 *(Highway Minimum Vertical Clearance)* for the absolute minimum clearance. The traveled part of the highway feature does not include shoulders. These data may be different than the posted vertical clearance due to agency vertical clearance posting policies and procedures. These data are not sufficient for permit routing as the location of the 10-foot-wide envelope that provides for the maximum usable clearance is not reported. For a double decked bridge inventoried as one bridge, report this information for each highway feature on each level of the bridge. Update field measurements when alterations are made to the bridge or highway that affect the previously measured clearance. Reporting this item is optional for highway features below the bridge that do not carry NHS routes as identified in Item B.H.03 *(NHS Designation).* Clearances greater than 30 feet may be estimated.

Example – Highway Maximum Usable Vertical Clearance

The bridge has a 13′-9″ maximum usable vertical clearance. Report 13.7.

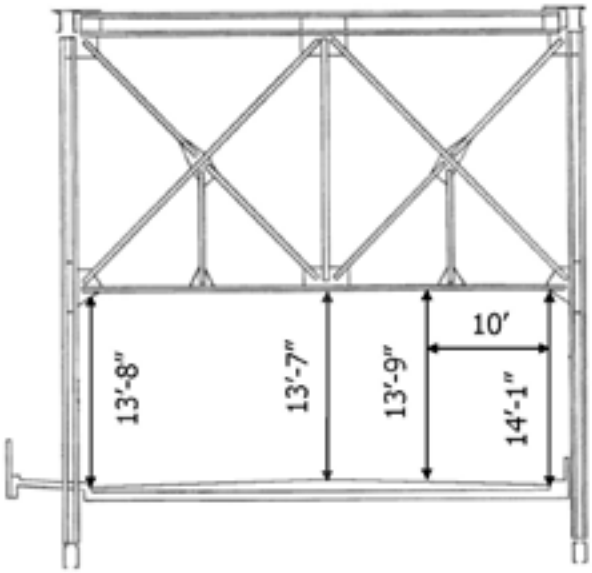

Figure 81. Cross-section view of through truss bridge showing vertical clearances.

The bridge carries a highway with no vertical clearance restrictions. Report 99.9.

Arthur Road passes below the bridge and has an 18′-5″ maximum usable vertical clearance. SR70 also passes below the bridge and has a 19′-11″ maximum usable vertical clearance.

- Report 18.4 for the Arthur Road highway feature.
- Report 19.9 for the SR70 highway feature.

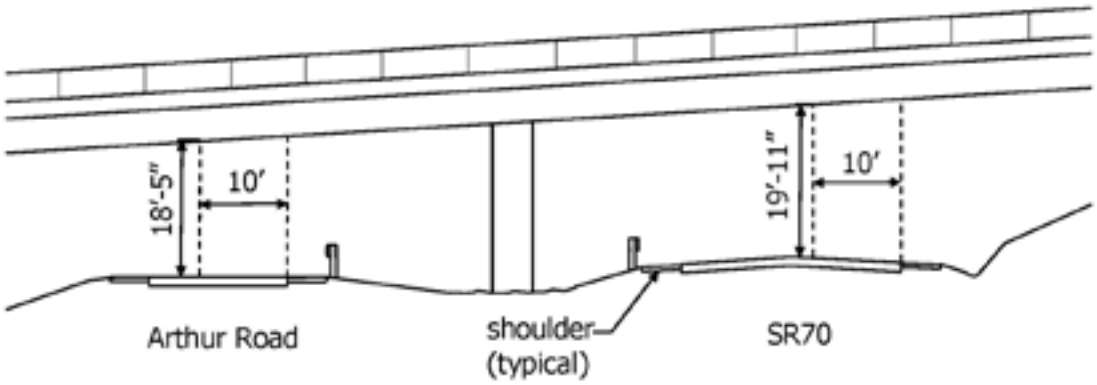

Figure 82. Elevation view with two separate highway features passing below the bridge.

4.3 – HIGHWAYS

Highway Minimum Vertical Clearance

Format	Frequency	Item ID
N (3,1)	EI	B.H.13

Specification	Commentary
Report the minimum vertical clearance measured over the highway feature reported in Item B.F.01 *(Feature Type)*, rounded down to the nearest tenth of a foot. Measure the vertical clearance plumb from the deck or highway surface (including paved or stabilized shoulders) to the lowest bridge member restriction, appurtenance (signs, utilities, etc.) attached to the bridge, or other structure. Report 99.9 when the clearance is 100 feet or greater or no restriction exists above the highway.	Several measurements may need to be made to determine the minimum vertical clearance. However, only the minimum measurement is reported. Shoulders must be contiguous with the traveled way and must be structurally adequate for all weather and traffic conditions consistent with the facility carried. Unstabilized grass or dirt, with no base course, flush with and beside the traffic lane is not to be considered a shoulder for this item. Refer to agency policy for when and where stabilized shoulders are used. When it is not readily known if stabilized construction details were used, the presence of rutting, heaving, water retention, or other distress may be used as indicators that the shoulder is not stabilized. These data may be different than the posted vertical clearance due to agency vertical clearance posting policies and procedures. Update field measurements when alterations are made to the bridge or highway that affect the previously measured clearance. Clearances greater than 30 feet may be estimated.

Examples – Highway Minimum Vertical Clearance

The bridge has a 13′-7″ minimum vertical clearance. Report 13.5.

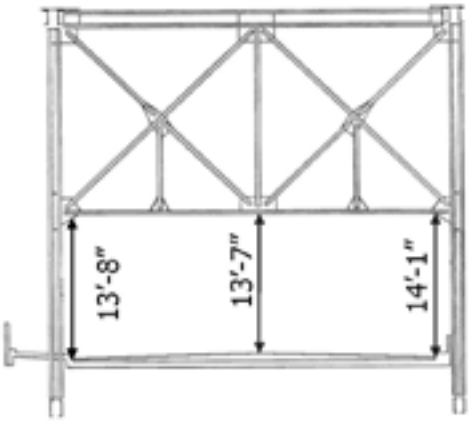

Figure 83. Cross-section view of a through truss bridge showing minimum vertical clearance.

The bridge carries a highway with no vertical clearance restrictions. Report 99.9.

Two highway features below the bridge. Arthur Road passes below the bridge and has an 18′-3″ minimum vertical clearance. SR70 also passes below the bridge and has a 19′-9″ minimum vertical clearance.

- Report 18.2 for the Arthur Road highway feature.
- Report 19.7 for the SR70 highway feature.

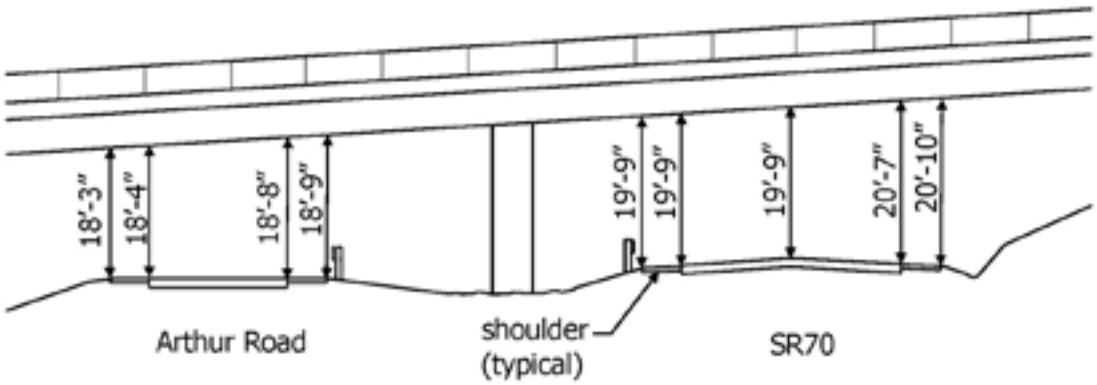

Figure 84. Elevation view with two separate highway features passing below the bridge.

4.3 – HIGHWAYS

Highway Minimum Horizontal Clearance, Left

Format	Frequency	Item ID
N (3,1)	I	B.H.14

Specification	Commentary
Report the minimum horizontal clearance on the left, for the highway feature reported in Item B.F.01 *(Feature Type)*, rounded down to the nearest tenth of a foot. Measure from the left edge line of the highway (excluding shoulders, turn lanes, acceleration, or deceleration lanes) in the direction of travel to the nearest substructure unit, rigid barrier, oncoming traffic lane, or toe of slope that is steeper than 1 to 3 (vertical to horizontal). Report 99.9 when the clearance is 100 feet or greater. Report 0 when the highway is a two-way highway that is not divided at the bridge. Do not report this item for highway feature(s) carried on the bridge.	This item provides data for the highway feature(s) reported in Item B.F.01 *(Feature Type)* that pass below the bridge. Highways undivided at the bridge are reported as 0 due to the adjacent oncoming traffic lane which provides no horizontal clearance to the left. Reinforced concrete and masonry traffic safety features are considered rigid barriers; metal and timber railings are not considered rigid barriers. Clearances greater than 30 feet may be estimated.

Examples

Highway feature below the bridge carries 1-way traffic, looking in the direction of travel. Report 20.0.

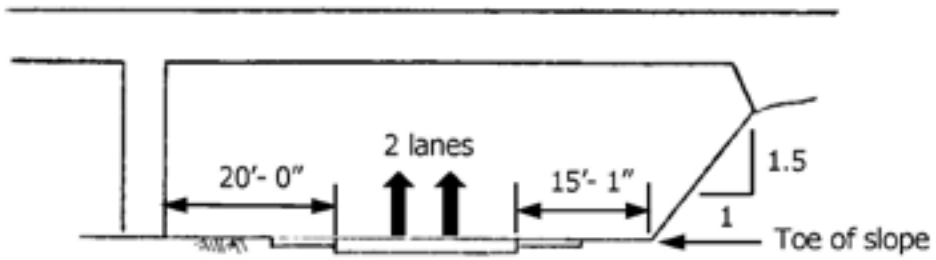

Figure 85. Bridge elevation view of horizontal clearances for a 2-lane highway with 1-way traffic below the bridge.

Examples Continued – Highway Minimum Horizontal Clearance, Left

Highway feature below the bridge carries two-way traffic. Report 0.

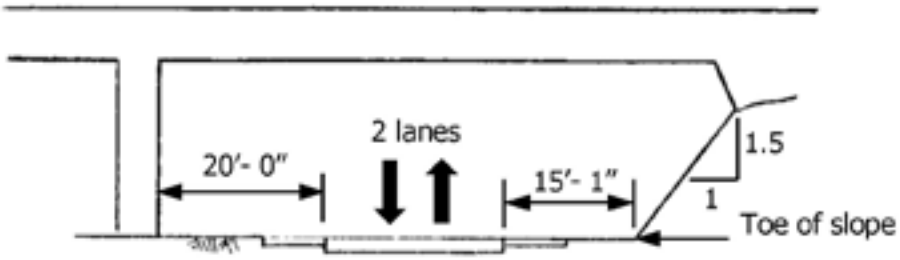

Figure 86. Bridge elevation view of horizontal clearances for a 2-lane highway with 2-way traffic below the bridge.

Two highway features below the bridge for a highway that is divided at the bridge. One highway feature carries 1-way traffic southbound and one carries 1-way traffic northbound.

- Report 18.0 for the southbound highway feature.
- Report 19.0 for the northbound highway feature.

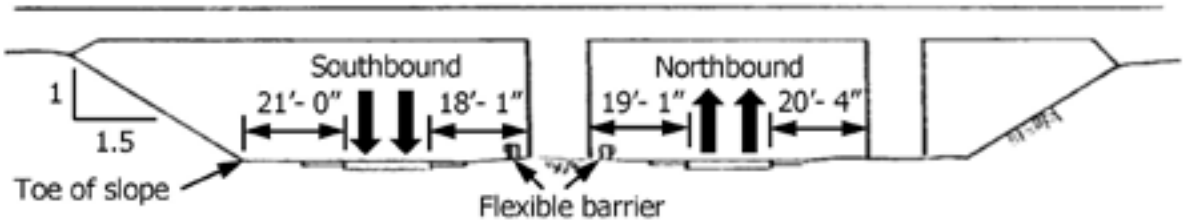

Figure 87. Bridge elevation view of horizontal clearances for separate southbound and northbound highway features below the bridge, with flexible barriers.

Two highway features below the bridge for a highway that is divided at the bridge. One highway feature carries 1-way traffic eastbound and one carries 1-way traffic westbound.

- Report 35.5 for the eastbound highway feature.
- Report 35.5 for the westbound highway feature.

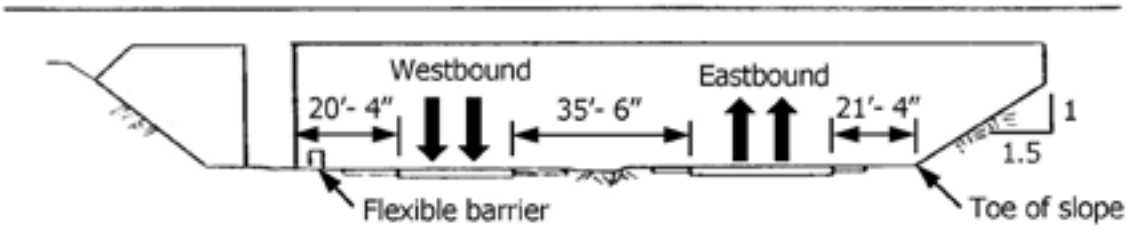

Figure 88. Bridge elevation view of horizontal clearances for separate westbound and eastbound highway features below the bridge, with flexible barrier.

4.3 – HIGHWAYS

Examples Continued – Highway Minimum Horizontal Clearance, Left

Highway feature below the bridge carries 1-way ramp traffic, looking in the direction of travel. Report 14.5.

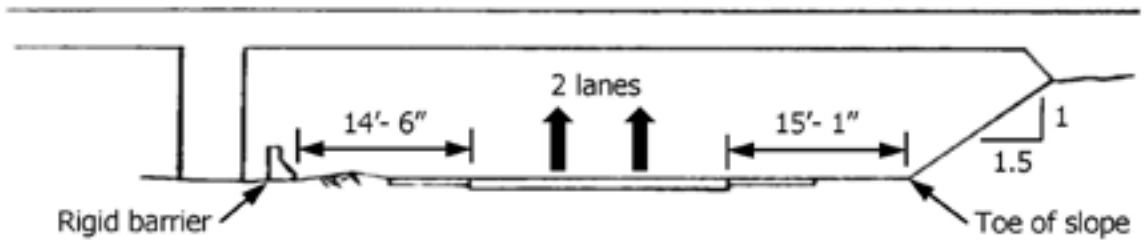

Figure 89. Bridge elevation view of horizontal clearances for a 2-lane, 1-way highway feature below the bridge, with a rigid barrier.

Highway feature below the bridge carries 1-way mainline traffic and 1-way ramp traffic, looking in the direction of travel. Report 20.0.

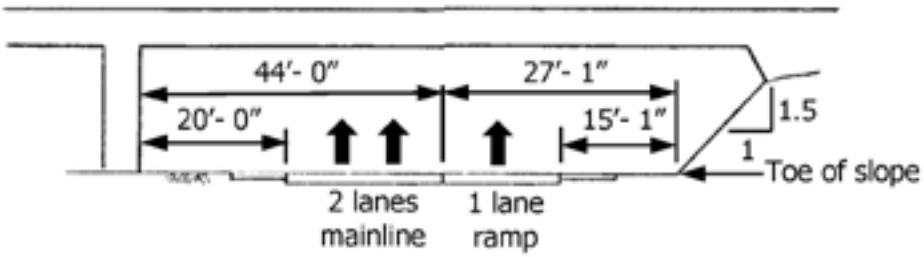

Figure 90. Bridge elevation view of horizontal clearances for a highway feature below the bridge carrying mainline and ramp.

4.3 – HIGHWAYS

Highway Minimum Horizontal Clearance, Right

Format	Frequency	Item ID
N (3,1)	I	B.H.15

Specification	Commentary
Report the minimum horizontal clearance on the right, for the highway feature below the bridge reported in Item B.F.01 *(Feature Type)*, rounded down to the nearest tenth of a foot. Measure from the right edge line of the highway (excluding shoulders, turn lanes, acceleration, or deceleration lanes) in the direction of travel to the nearest substructure unit, rigid barrier, oncoming traffic lane or toe of slope that is steeper than 1 to 3 (vertical to horizontal). Report 99.9 when the clearances are 100 feet or greater. Do not report this item for highway feature(s) carried on the bridge.	This item provides data for the highway feature(s) reported in Item B.F.01 *(Feature Type)* that pass below the bridge. Reinforced concrete and masonry traffic safety features are considered rigid barriers; metal and timber railings are not considered rigid barriers. Clearances greater than 30 feet may be estimated.

Examples

Highway feature below the bridge carries 1-way traffic, looking in the direction of travel. Report 15.0.

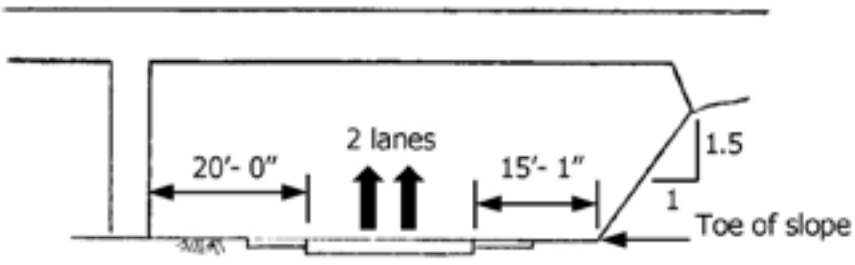

Figure 91. Bridge elevation view of horizontal clearances for a 2-lane highway feature with 1-way traffic below the bridge.

Examples Continued – Highway Minimum Horizontal Clearance, Right

Highway feature below the bridge carries two-way traffic. Report 15.0.

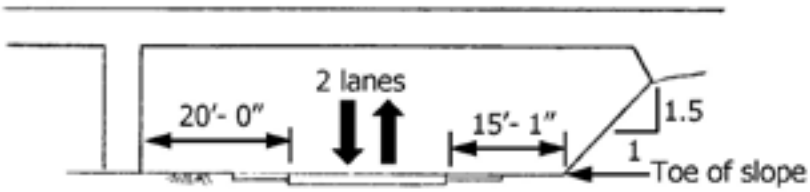

Figure 92. Bridge elevation view of horizontal clearances for a 2-lane highway feature with 2-way traffic below the bridge.

Two highway features below the bridge for a highway that is divided at the bridge. One highway feature carries 1-way traffic southbound and one carries 1-way traffic northbound.

- Report 21.0 for the southbound highway feature.
- Report 20.3 for the northbound highway feature.

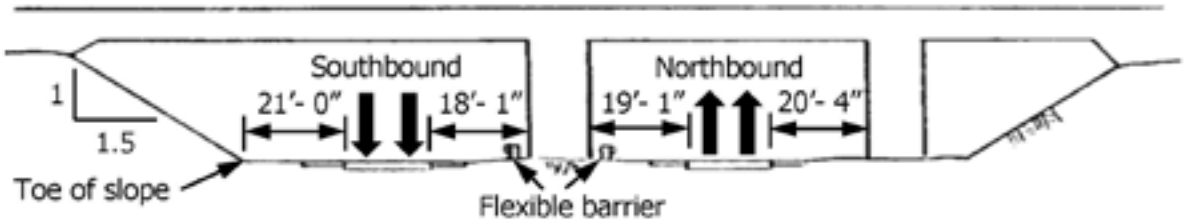

Figure 93. Bridge elevation view of horizontal clearances for separate southbound and northbound highway features below the bridge, with flexible barriers.

Two highway features below the bridge for a highway that is divided at the bridge. One highway feature carries 1-way traffic eastbound and one carries 1-way traffic westbound.

- Report 21.3 for the eastbound highway feature.
- Report 20.3 for the westbound highway feature.

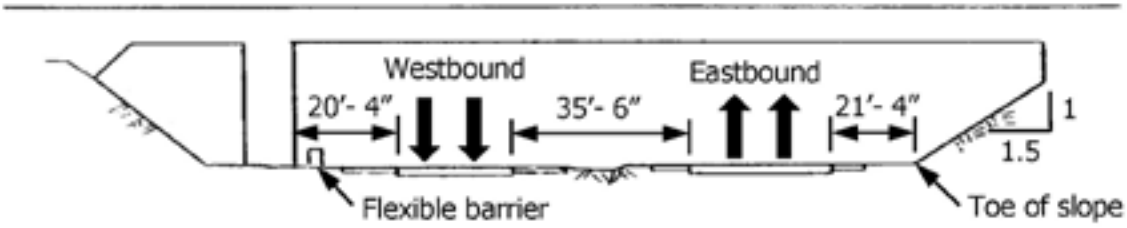

Figure 94. Bridge elevation view of horizontal clearances for separate westbound and eastbound highway features below the bridge, with a flexible barrier.

Examples Continued – Highway Minimum Horizontal Clearance, Right

Highway feature below the bridge carries 1-way ramp traffic, looking in the direction of travel. Report 15.0.

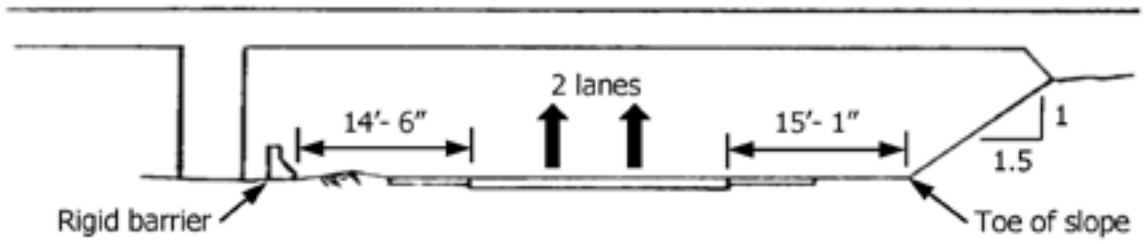

Figure 95. Bridge elevation view of horizontal clearances for a 2-lane, 1-way highway feature below the bridge, with a rigid barrier.

Highway feature below the bridge carries 2-way traffic. Report 14.5.

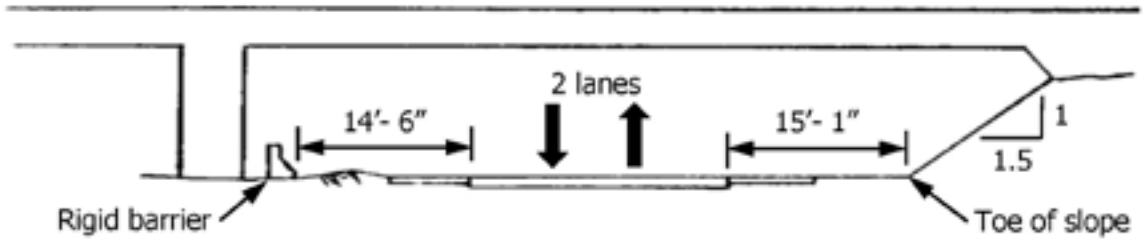

Figure 96. Bridge elevation view of a 2-lane, 2-way highway feature below the bridge, with a rigid barrier.

Highway feature below the bridge carries 1-way mainline traffic and 1-way ramp traffic, looking in the direction of travel. Report 15.0.

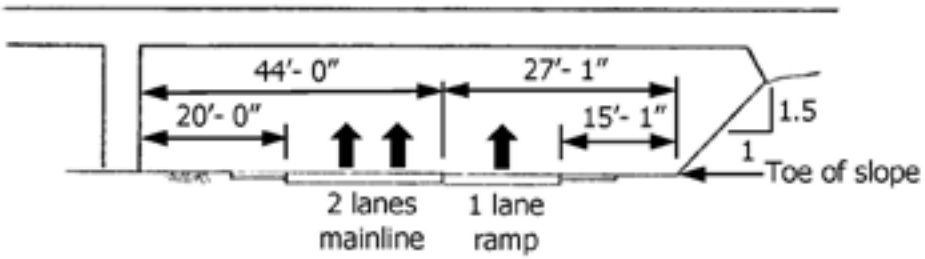

Figure 97. Bridge elevation view of horizontal clearances for highway feature carrying mainline and ramp traffic below the bridge.

4.3 – HIGHWAYS

Highway Maximum Usable Surface Width

Format	Frequency	Item ID
N (3,1)	I	B.H.16

Specification	Commentary
Report the maximum usable surface width for the highway feature reported in Item B.F.01 *(Feature Type)* that passes below or is carried on the bridge, rounded down to the nearest tenth of a foot. Measure the width perpendicular to the centerline of the highway (including paved or stabilized shoulders). Report 99.9 when the surface width is 100 feet or greater.	Shoulders are included when they are contiguous with the traveled way and structurally adequate for all weather and traffic conditions consistent with the facility carried. Unstabilized grass or dirt, with no base course, flush with and beside the traffic lane is not considered a shoulder for this item. Refer to agency policy for when and where stabilized shoulders are used. When it is not readily known if stabilized construction details were used, the presence of rutting, heaving, water retention, or other distress may be used as indicators that the shoulder is not stabilized.

Commentary Continued

Flush (striped) and mountable medians are not considered restrictions.

A curb greater than 6 inches high may be considered non-mountable for these specifications.

Use the least restrictive configuration when movable rigid barriers are used to accommodate reversible lanes for non-construction-related applications.

Reporting this item is optional for highway features below the bridge that do not carry NHS routes as identified in Item B.H.03 *(NHS Designation)*.

Examples

Two highway features below the bridge. One highway feature carries eastbound traffic and one carries westbound traffic.

- Report 34.6 for the eastbound highway feature.
- Report 42.4 for the westbound highway feature.

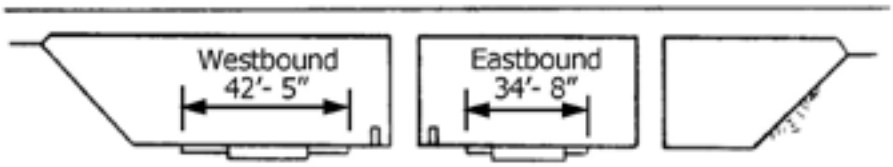

Figure 98. Bridge elevation view of two separate highway features below the bridge.

Examples Continued – Highway Maximum Usable Surface Width

One highway feature carried on the bridge. Highway feature carries 2-way traffic that is not divided at the bridge. Report measurement A.

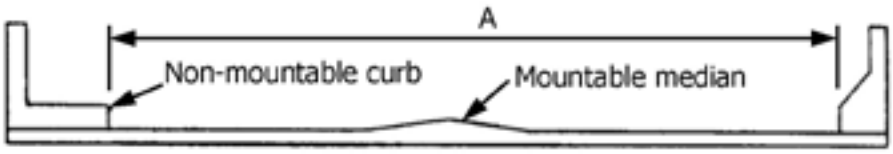

Figure 99. Cross-section view of a highway feature carried on the bridge with a mountable median.

Two highway features carried on the bridge. Highway 1 (H01) and Highway 2 (H02) are divided at the bridge by the non-mountable median.

- Report measurment A for H01.
- Report measurement B for H02.

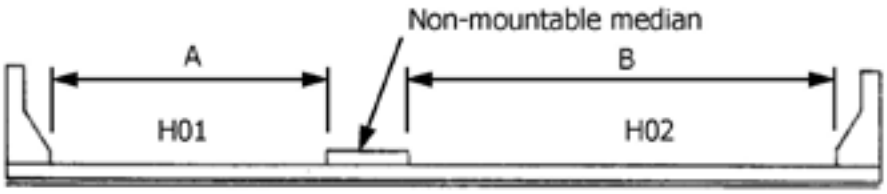

Figure 100. Cross-section view of two highway features carried on the bridge with a non-mountable median.

Two highway features carried on the pipe culvert under fill. Highway 1 (H01) and Highway 2 (H02) are divided at the bridge.

- Report measurement A for H01.
- Report measurement B for H02.

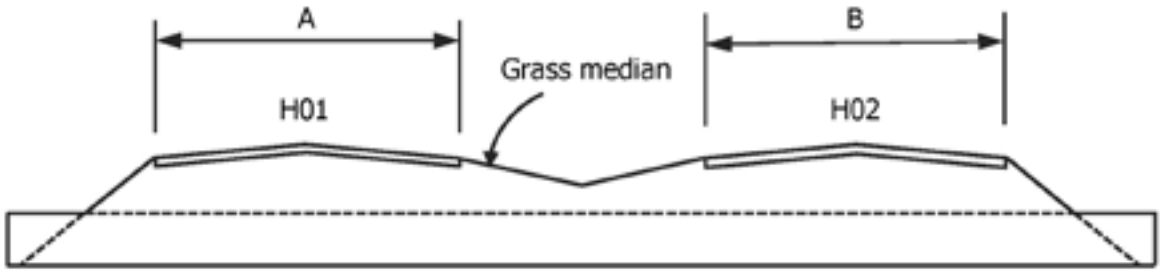

Figure 101. Cross-section view of two highway features carried on the pipe culvert under fill with a grass median.

4.3 – HIGHWAYS

Bypass Detour Length

Format	Frequency	Item ID
N (3,0)	I	B.H.17

Specification	Commentary
Report the length to the nearest mile of the total additional travel for a vehicle to bypass the bridge for the highway feature reported in Item B.F.01 *(Feature Type)*, that passes below or is carried on the bridge. Report 999 where a detour does not exist. Report 0 for available ground level bypass. Report 1 when the highway feature is carried by a bridge, is not at an interchange, and a parallel bridge can be used as a temporary bypass with a reasonable amount of crossover grading.	Determine bypass detour length by evaluating the potential to move traffic, including military vehicles and trucks, around bridges. • Avoid detour routes that have load, height, or capacity limitations unacceptable for the additional traffic detoured onto them. • Consider using the parallel bridge of dual bridges or temporary culverts if emergency detours can be constructed with a reasonable amount of grading within the existing right-of-way. • Consider using ramps and/or frontage roads in interchanges. • Review plans for strategic bridge detour routes.

Examples

Diamond interchange. Bridge can be bypassed. Report 0.

Cloverleaf. Bridge cannot be bypassed; 18-mile detour. Report 18.

Highway feature carried on the bridge with a 4-mile detour *(Figure 102)*. Report 4.

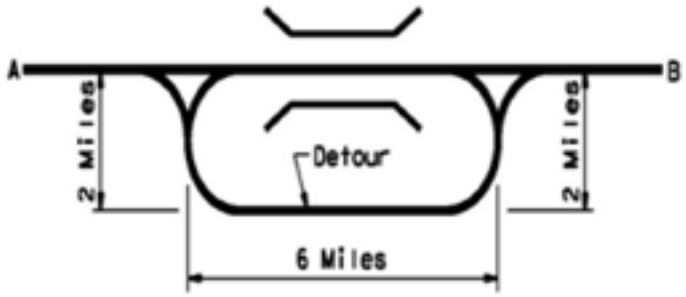

Figure 102. Detour map for a highway feature carried on the bridge.

Examples Continued – Bypass Detour Length

Highway feature passes below the bridge with a 0-mile detour *(Figure 103)*. Report 0.

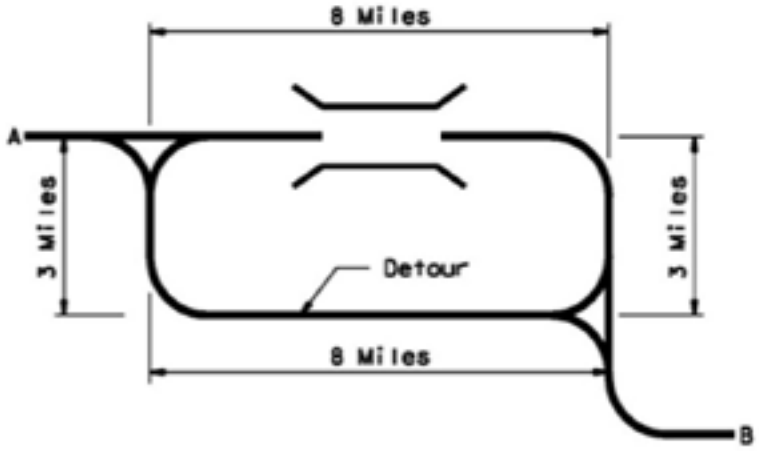

Figure 103. Detour map for a highway feature that passes below the bridge.

4.3 – HIGHWAYS

Crossing Bridge Number

Format	Frequency	Item ID
AN (15)	I	B.H.18

Specification	Commentary
Report the exact bridge number(s) as assigned in Item B.ID.01 *(Bridge Number)* for the bridge carrying a highway feature that is located directly above or below the inventoried highway bridge. Do not report this item when the highway bridge does not pass above or below another bridge, or passes above or below a bridge that is not reportable to the NBI.	The intent of this item is to capture the bridge number for bridges of a multi-level interchange, where bridges pass directly above or below other bridges. For border bridges, the Neighboring State reports this item for all highway features that pass above the bridge, as part of their abbreviated bridge record. For more information, see the Border Bridges section of this document.

Example

The inventoried bridge number 300000B-X636010 passes above bridge number 300000B-X638012 and passes below 300000B-X635010 and 30000B-X634010.

- Report 300000B-X638012 for the bridge below.
- Report 300000B-X635010 for the bridge above.
- Report 300000B-X634010 for the other bridge above.

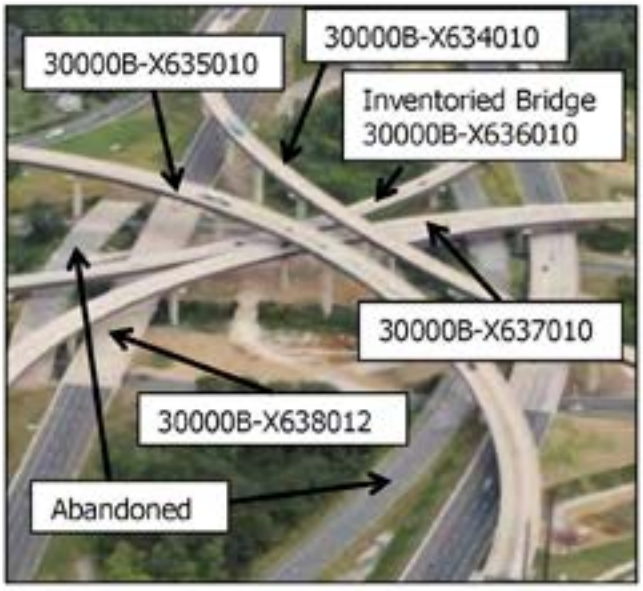

Figure 104. Multi-level interchange with bridges passing above and below other bridges. (Source: Maryland Transportation Authority)

4.4 – RAILROADS

Railroad Service Type

Format	Frequency	Item ID
AN (2)	I	B.RR.01

Specification

Report the designated railroad service type for the railroad feature reported in Item B.F.01 *(Feature Type)* using one of the following codes.

Code	Description
F	Freight
FE	Freight - electrified
P	Passenger
PE	Passenger - electrified
M	Multiple services - not electrified
ME	Multiple services - electrified
I	Inactive

Commentary

Electrified is intended for electricity-powered rail lines and third-rails, but not for battery or fuel cell powered lines.

Use code M when multiple rail services (such as freight and passenger rail) use the same tracks and both services are not electrified.

Use code ME when multiple rail services (such as freight and passenger rail) use the same tracks, and at least one is electrified.

Examples

The bridge carries two highway features separated by two electrified passenger rail tracks (i.e. one railroad feature). Two railroad tracks pass below the bridge that both carry freight (i.e. one railroad feature).

- Report PE for the railroad feature carried on the bridge.
- Report F for the railroad feature below the bridge.

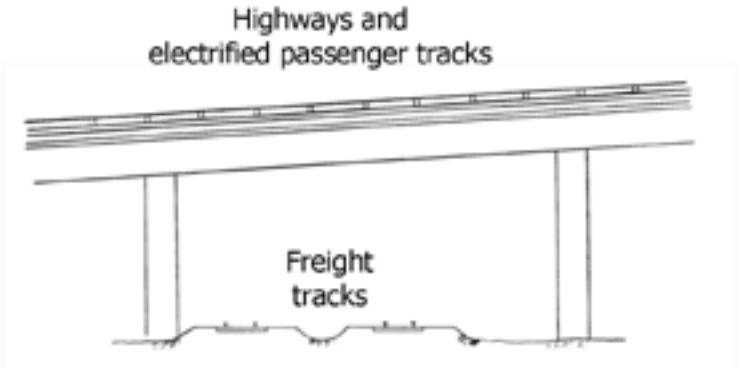

Figure 105. Bridge elevation view with two electrified passenger rail tracks carried on the bridge and two freight rail tracks below the bridge.

4.4 – RAILROADS

Examples Continued – Railroad Service Type

Two railroad tracks below the bridge. One carries passenger rail service and one carries freight (i.e. two railroad features).

- Report P for the passenger rail feature.
- Report F for the freight rail feature.

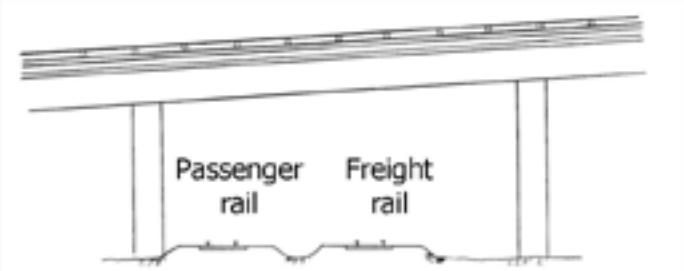

Figure 106. Bridge elevation view with one passenger rail and one freight rail track below the bridge.

Two railroad tracks below the bridge that both carry freight and passenger service (i.e. one railroad feature). Report M.

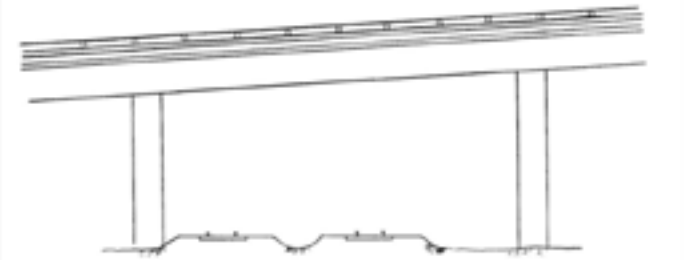

Figure 107. Bridge elevation view with two freight/passenger rail tracks below the bridge.

Two railroad tracks below the bridge. One carries electrified passenger service and one carries non-electrfied passenger service (i.e. two railroad features).

- Report PE for the electrified passenger rail feature.
- Report P for the non-electrified passenger rail feature.

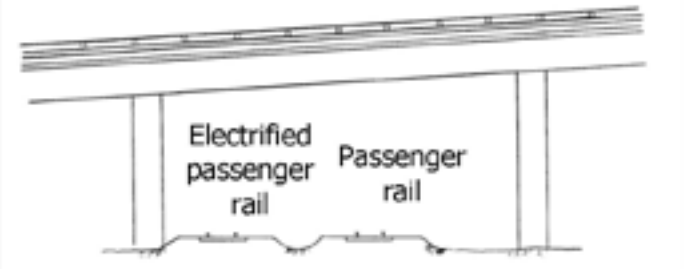

Figure 108. Bridge elevation view with an electrified passenger rail track and a non-electrified passenger rail track below the bridge.

4.4 – RAILROADS

Railroad Minimum Vertical Clearance

Format	Frequency	Item ID
N (3,1)	EI	B.RR.02

Specification	Commentary
Report the minimum vertical clearance for the railroad feature reported in Item B.F.01 *(Feature Type)*, rounded down to the nearest tenth of a foot. Measure plumb from the top of rails to the lowest bridge restriction or appurtenance (signs, utilities, etc.) attached to the bridge. Appurtenances attached to the bridge that serve only a railroad purpose, such as catenary systems, are excluded from the measurement and do not reduce the vertical clearance measurement. Report 99.9 when the clearance is 100 feet or greater. Report this item only when Item B.F.02 *(Feature Location)* is B.	Several measurements may need to be made to determine the minimum vertical clearance for each railroad feature when one or more railroad tracks pass below the bridge. However, only the minimum measurement is reported. Update measurements when alterations are made to the bridge or railroad tracks that affect the previously measured clearance. Clearances greater than 30 feet may be estimated.

Examples

Two railroad tracks below the bridge that both carry freight and passenger service (i.e. one railroad feature). Report 31.2.

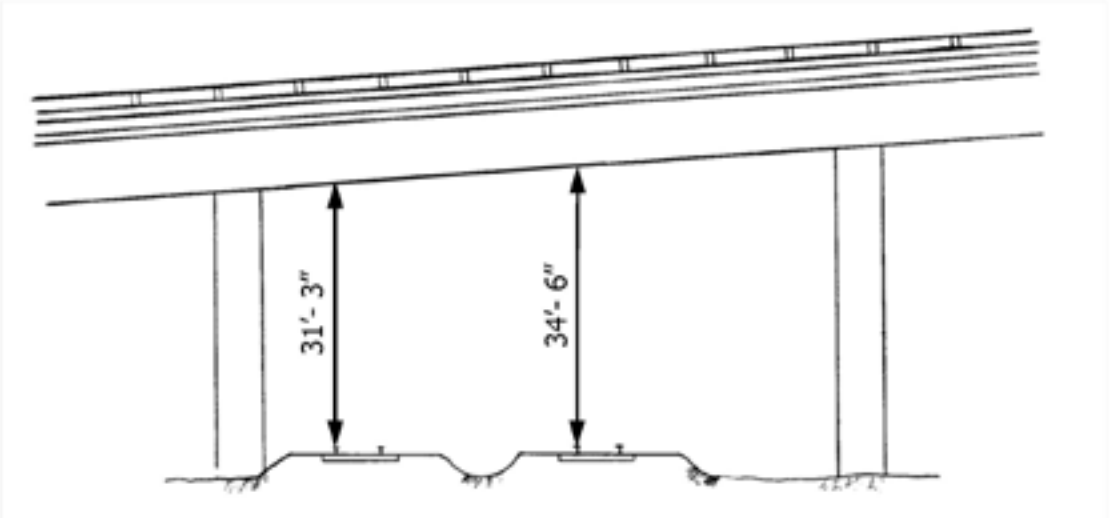

Figure 109. Bridge elevation view with two freight/passenger rail tracks below the bridge.

Examples Continued – Railroad Minimum Vertical Clearance

Two railroad tracks below the bridge. One carries passenger rail service, and one carries freight (i.e. two railroad features).

- Report 20.2 for the passenger rail feature.
- Report 21.2 for the freight rail feature.

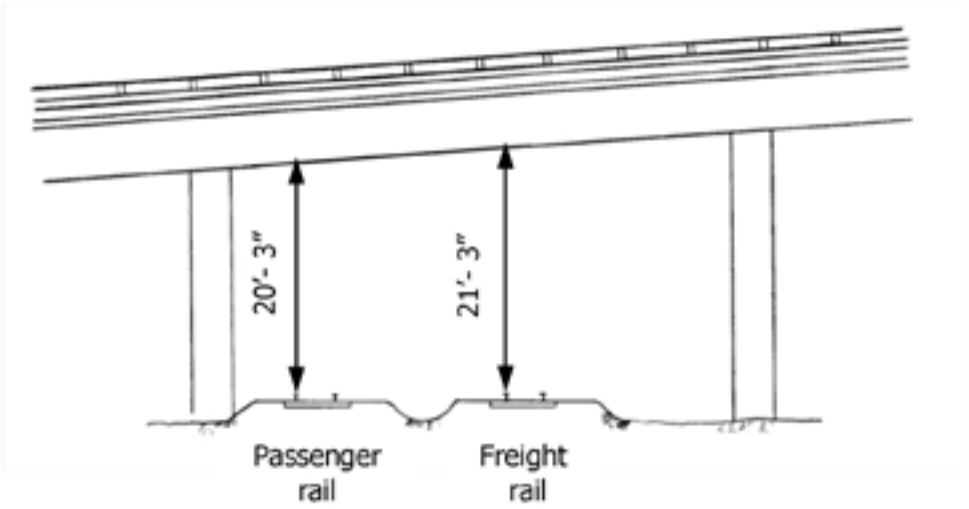

Figure 110. Bridge elevation view with one passenger rail and one freight rail track below the bridge.

4.4 – RAILROADS

Railroad Minimum Horizontal Offset

Format	Frequency	Item ID
N (3,1)	I	B.RR.03

Specification	Commentary
Report the minimum horizontal offset for the railroad feature reported in Item B.F.01 *(Feature Type)*, rounded down to the nearest tenth of a foot. Measure perpendicular from the centerline of the tracks to the nearest substructure unit or toe of slope that is steeper than 1 to 3 (vertical to horizontal). For multiple tracks with the same railroad service type, report the minimum distance after measuring the offsets in both directions from all tracks. Report 99.9 when the minimum horizontal offset is 100 feet or greater. Report this item only when Item B.F.02 *(Feature Location)* is B.	The intent of this item is to collect the minimum distance from the centerline of the railroad track to a bridge related obstruction. Offsets greater than 30 feet may be estimated.

Examples

One railroad track below the bridge. Report 20.3.

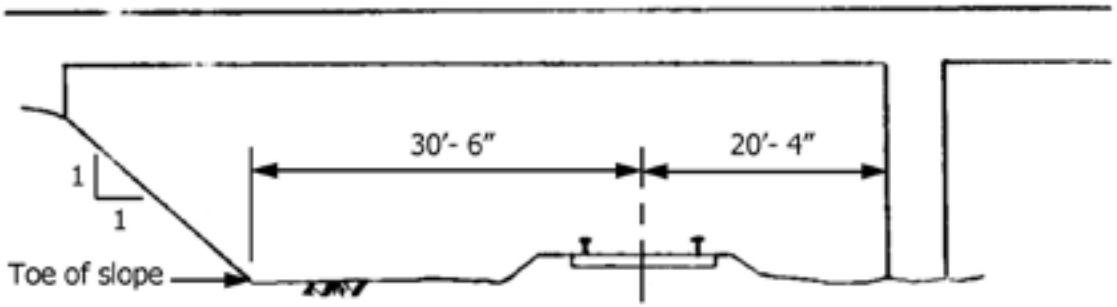

Figure 111. Bridge elevation view indicating horizontal offset for one railroad track below the bridge.

Examples Continued – Railroad Minimum Horizontal Offset

Two railroad tracks that both carry freight (i.e. one railroad feature). Report 18.5.

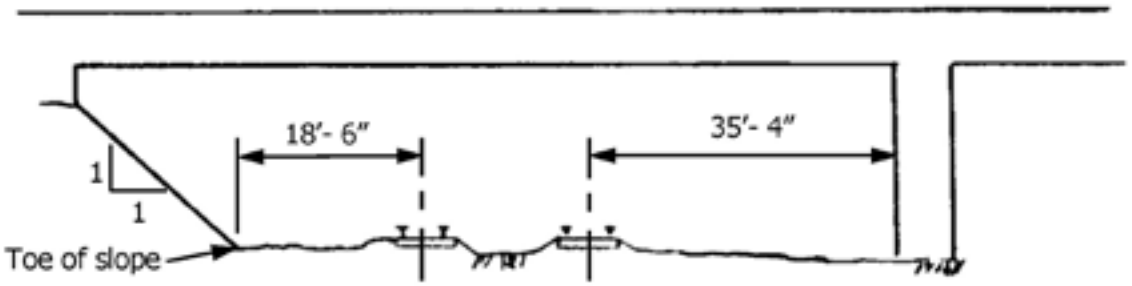

Figure 112. Bridge elevation view indicating horizontal offset for two railroad tracks below the bridge.

4.5 - NAVIGABLE WATERWAYS

Navigable Waterway

Format	Frequency	Item ID
AN (1)	I	B.N.01

Specification

Report whether the waterway feature reported in Item B.F.01 *(Feature Type)* is considered navigable waters of the United States using one of the following codes.

Code	Description
N	Not navigable waters
Y	Navigable waters
U	Navigable waters designation is undetermined

Commentary

This item identifies bridges over navigable waters where the United States Coast Guard may exercise jurisdiction, as defined in 33 CFR, Part 2. This information helps identify bridges at risk from vessel collision and bridges where a Coast Guard permit may be required for modifications to the structure.

Information helpful in coding this item may be found in design and construction documentation or prior correspondence with the Coast Guard.

Navigable waterways are determined by the Commandant of the United States Coast Guard per Title 33 of the Code of Federal Regulations, Section 2.36.

4.5 - NAVIGABLE WATERWAYS

Navigation Minimum Vertical Clearance

Format	Frequency	Item ID
N (4,1)	I	B.N.02

Specification

Report the minimum vertical clearance over the waterway feature reported in Item B.F.01 *(Feature Type)*, rounded down to the nearest tenth of a foot.

The reported clearance is from the highest datum plane referenced in the approved permit plans to the lowest superstructure restriction or other appurtenances attached to the bridge over the designated navigation channel.

For all movable bridges, the vertical clearance reported for this item is for the bridge in the closed position (i.e., open to vehicular traffic).

Report the most restrictive clearance when there are multiple designated navigation channels.

Report this item only when Item B.N.01 *(Navigable Waterway)* is Y.

Commentary

Reference datum, designated navigation channels, and vertical clearances can be found on permit plans approved by the United States Coast Guard.

When permit plans are not available, values can be established from field measurements obtained for known navigation channels and the most restrictive clearance recorded. Reference field measurements to the following datum:

Crossing Type	Datum
Tidal waters	Mean High Water
Non-tidal waters	Extreme High Water
River	Q50 Surface Elevation

Examples

Permit plans for a bridge over tidal waters with the navigation channel designated by cross-hatched area. Permit plans set the datum at mean higher-high water (M.H.H.W.) instead of mean high water. Report 50.0.

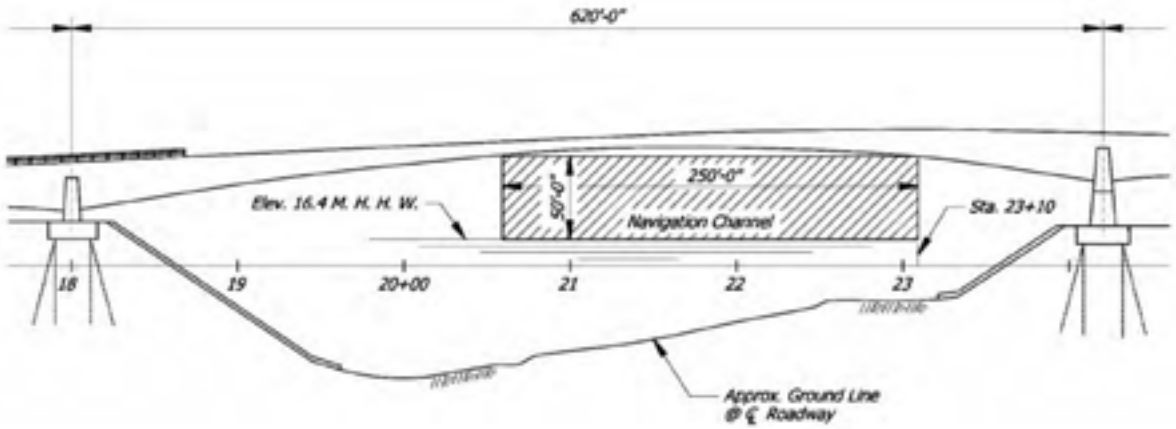

Figure 115. Bridge elevation view indicating navigation channel and vertical clearance. (Source: Alaska DOT)

Examples Continued - Navigation Minimum Vertical Clearance

Permit plans for a bridge over tidal waters with multiple designated navigation channels. Permit plans set the datum at mean higher-high water (M.H.H.W.) instead of mean high water. Report 23.1.

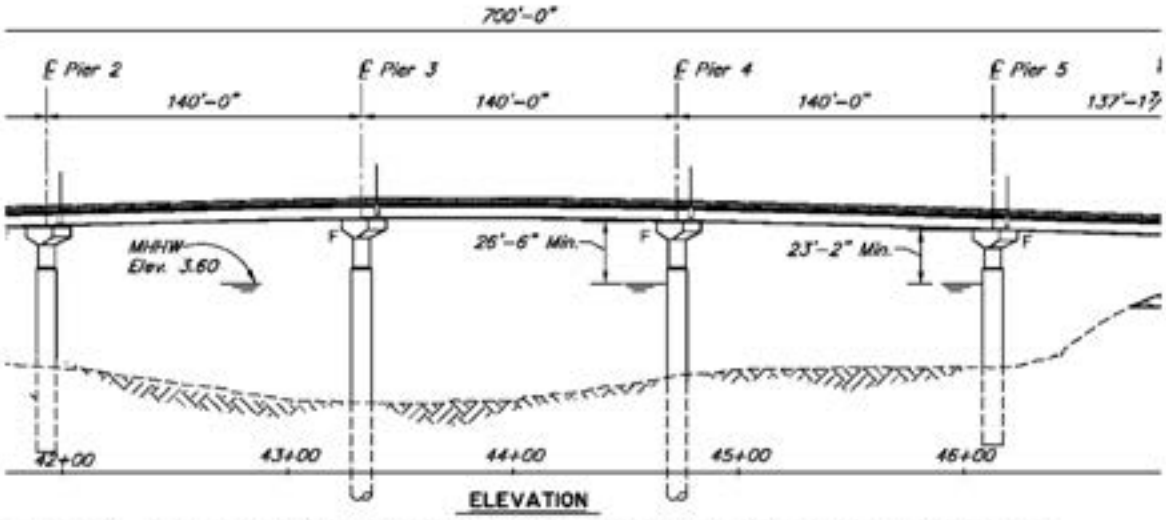

Figure 116. Bridge elevation view indicating multiple navigation channels and vertical clearances. (Source: Alaska DOT)

Vertical lift bridge. Information taken from "As-Built" plans as no permit plans are available. Mean High Water elevation is 3.2 ft. Minimum vertical underclearance is 12 ft – 3.2 ft = 8.8 ft. Report 8.8.

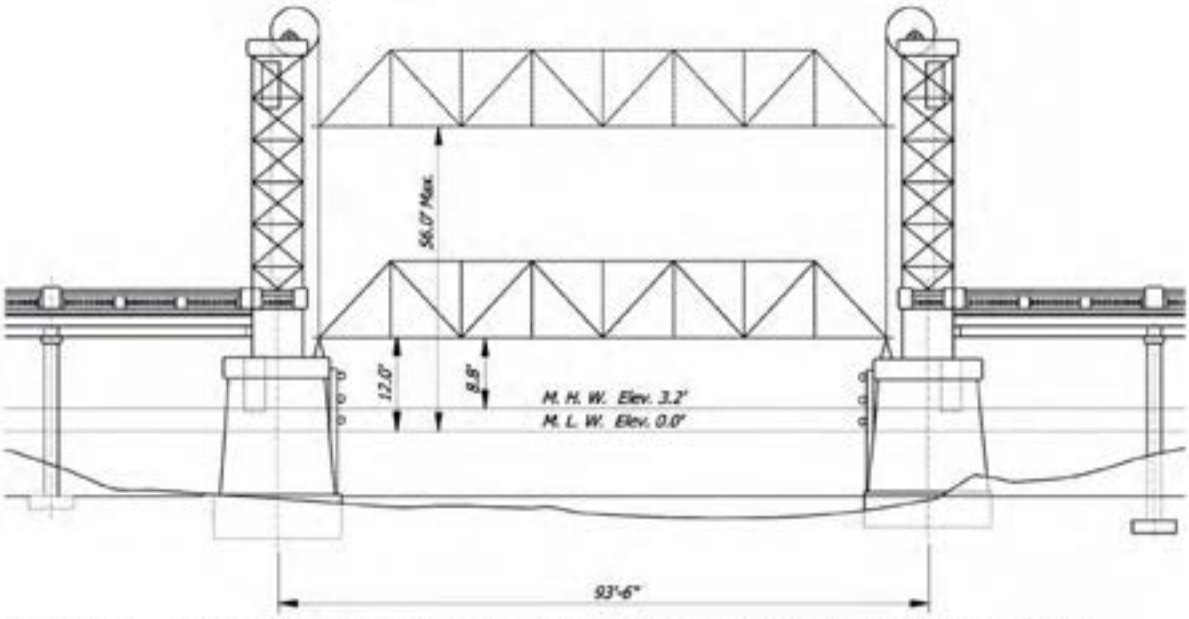

Figure 117. Bridge elevation view for a vertical lift bridge indicating vertical clearances. (Source: Florida DOT)

4.5 - NAVIGABLE WATERWAYS

Movable Bridge Maximum Navigation Vertical Clearance

Format	Frequency	Item ID
N (4,1)	I	B.N.03

Specification	Commentary
Report the maximum vertical clearance over the waterway feature reported in Item B.F.01 *(Feature Type)*, rounded down to the nearest tenth of a foot. The reported clearance is from the highest datum plane referenced in the approved permit plans to the lowest superstructure restriction or other appurtenances attached to the bridge over the designated navigation channel, when the movable bridge is in the open position. Report 999.9 when the bridge provides unlimited vertical clearance over the navigation channel in the open position. Report this item only when Item B.N.01 *(Navigable Waterway)* is Y and Item B.SP.06 *(Span Type)* begins with M, indicating that the span type is movable.	The value reported for this item is particularly useful for vertical lift bridges and for bascule bridges where the leaf (or leaves) does not provide unlimited vertical clearance over the designated navigation channel in the open position. When permit plans are not available, values can be obtained from field measurements. Reference field measurements to the following datum: Crossing Type — Datum Tidal waters — Mean High Water Non-tidal waters — Extreme High Water River — Q50 Surface Elevation

Example

Vertical lift bridge. Information taken from "As-Built" plans as no permit plans are available. Mean High Water elevation is 3.2 ft. Maximum vertical underclearance is 56 ft – 3.2 ft = 52.8 ft. Report 52.8.

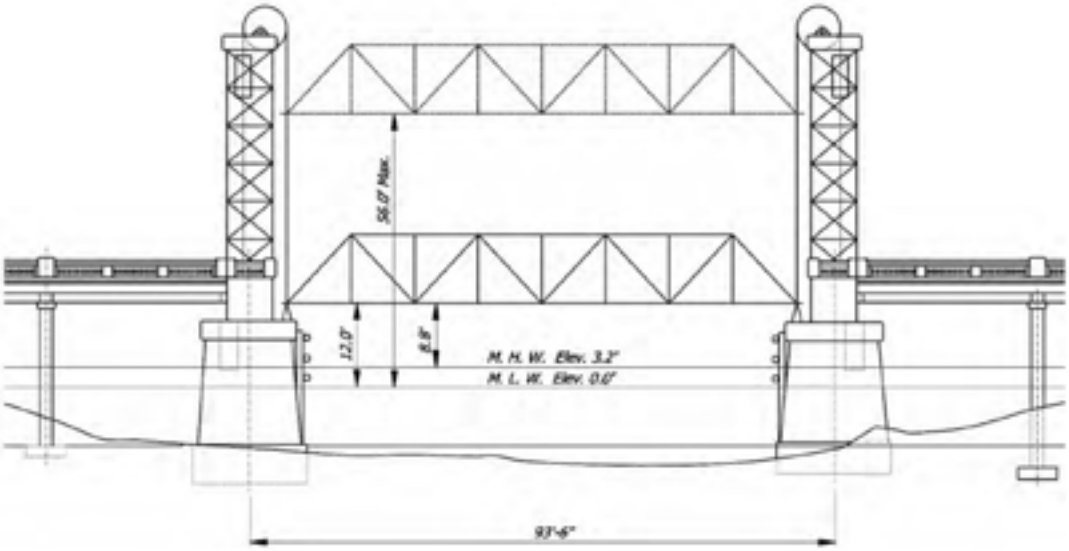

Figure 118. Bridge elevation view for a vertical lift bridge indicating vertical clearances. (Source: Florida DOT)

4.5 - NAVIGABLE WATERWAYS

Navigation Channel Width

Format	Frequency	Item ID
N (5,1)	I	B.N.04

Specification	Commentary
Report the navigation channel width for the waterway feature reported in Item B.F.01 *(Feature Type)*, rounded down to the nearest tenth of a foot. The width is as shown on the approved permit plans, or field measured when the navigation channel changes or is unmarked. For field measurements, measure the horizontal distance perpendicular to the centerline of the navigation channel. For marked channels measure between the markers designating the limits of the channel at the bridge. For unmarked channels, measure the minimum clear distance between fenders or piers. If multiple channels exist, report the most restrictive. Report this item only when Item B.N.01 *(Navigable Waterway)* is Y.	The width provided here should be consistent with the navigation channel used in the navigation vertical clearance items. The designated navigation channel width may be less than the distance between substructure units.

Examples

Permit plans for a bridge over tidal waters with the navigation channel designated by cross-hatched area. Report 250.0.

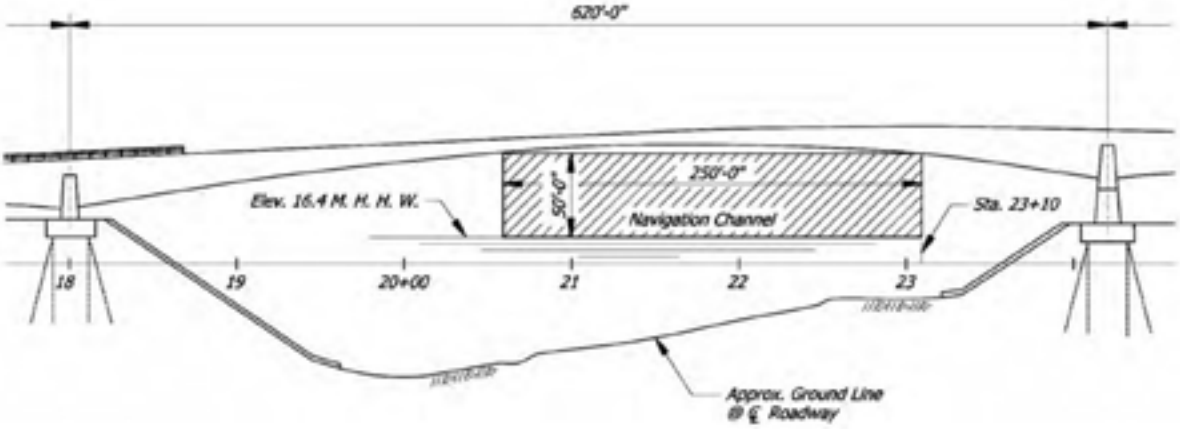

Figure 119. Bridge elevation view indicating navigation channel width dimensions. (Source: Alaska DOT)

Examples Continued - Navigation Channel Width

Bridge with multiple designated navigation channels bounded by piers. Report 126.5.

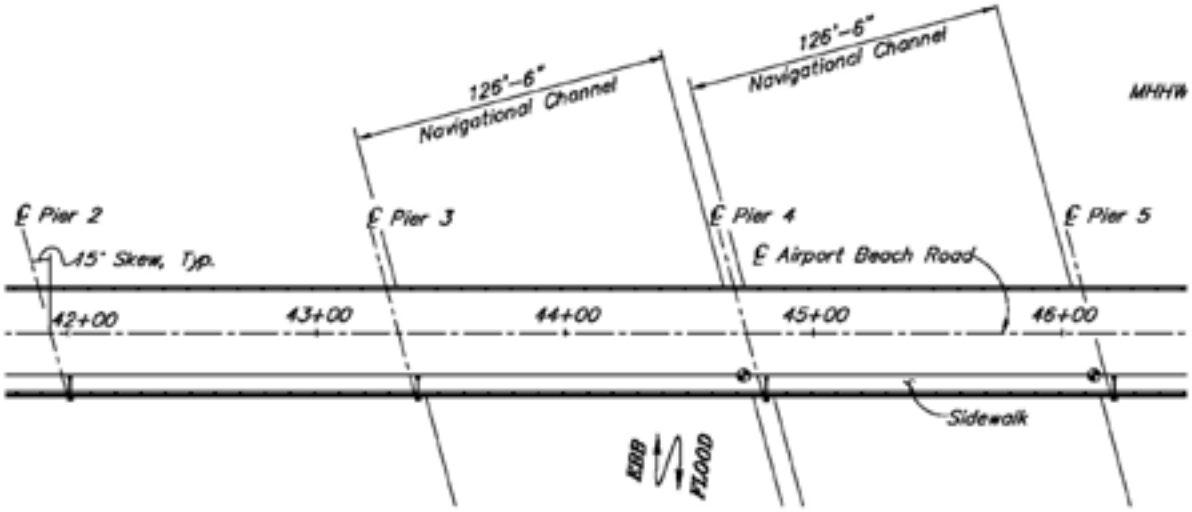

Figure 120. Bridge plan view indicating navigation channel width dimensions. (Source: Alaska DOT)

4.5 - NAVIGABLE WATERWAYS

Navigation Channel Minimum Horizontal Clearance

Format	Frequency	Item ID
N (5,1)	I	B.N.05

Specification	Commentary
Report the minimum horizontal clearance for the waterway feature reported in Item B.F.01 *(Feature Type),* rounded down to the nearest tenth of a foot. The clearance is the minimum distance from either edge of the navigation channel shown on the approved permit plans, to the face of the nearest bridge substructure unit located within the waterway. The clearance may be field measured when the placement of navigation markers at the bridge is inconsistent with the permit plans, or if the presence of navigation markers indicates a navigation channel and no permit plans are available. For field measurements, measure the horizontal distance perpendicular to the centerline of the navigation channel from the markers designating the limits of the channel at the bridge, to the face of the nearest bridge substructure unit located within the waterway. Report 0 when substructure units in the waterway are the boundaries for the navigation channel. Report 9999.9 when no substructure unit is within the waterway. Report this item only when Item B.N.01 *(Navigable Waterway)* is Y.	The intent of this item is to collect the most restrictive distance from the edge of the navigational channel to a bridge substructure to assess risk for vessel collision. The clearance provided here should be consistent with the navigation channel used in Item B.N.04 *(Navigation Channel Width).*

4.5 - NAVIGABLE WATERWAYS

Examples

Permit plans for a bridge over tidal waters with the navigation channel designated by cross-hatched area. No substructure units within the waterway. Report 9999.9.

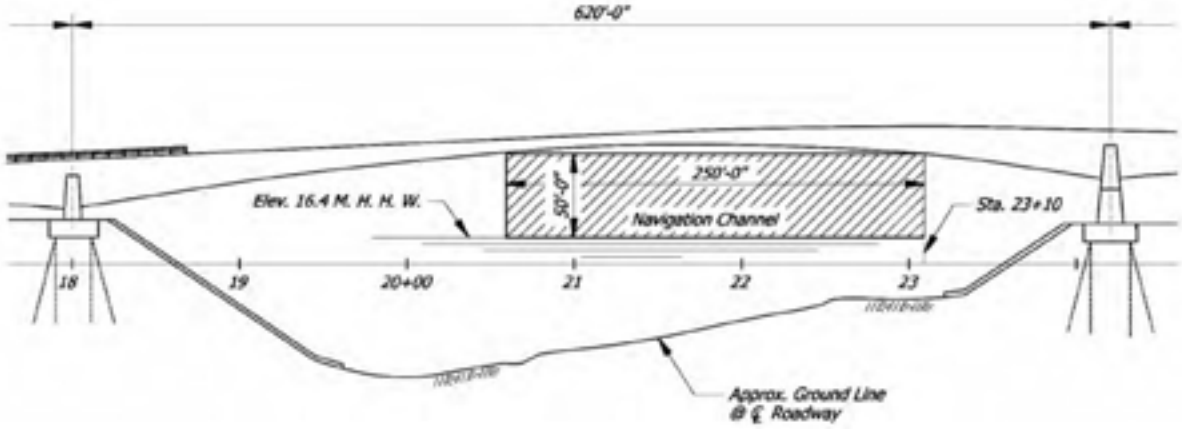

Figure 121. Bridge elevation view with no substructure units in the waterway. (Source: Alaska DOT)

Bridge with multiple designated navigation channels bounded by piers. Report 0.

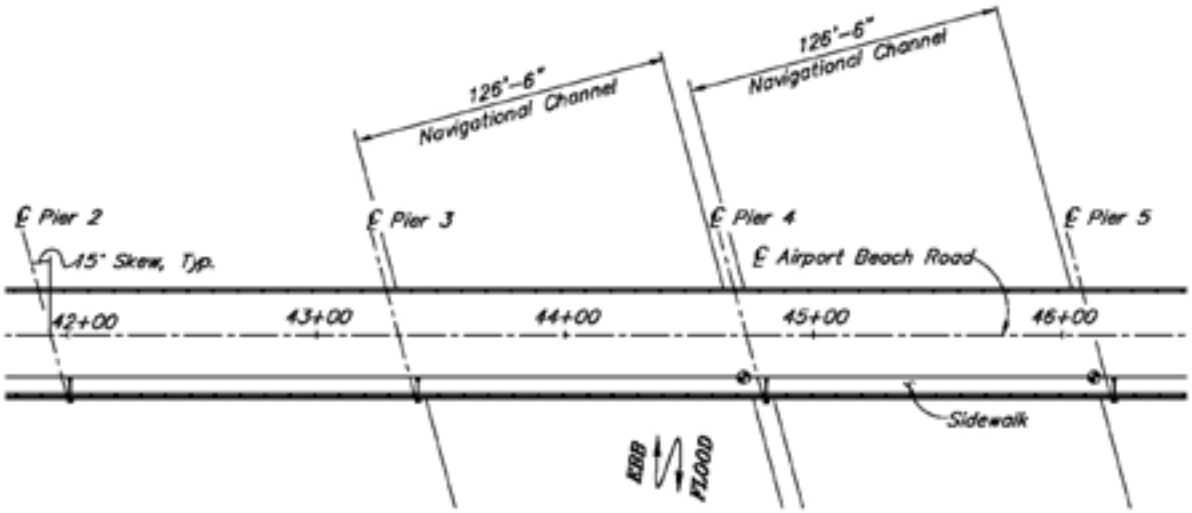

Figure 122. Bridge plan view indicating multiple navigation channel width dimensions to substructure units in the waterway. (Source: Alaska DOT)

Bridge with navigation channel designated by cross-hatched area. Substructure units within the waterway. Report 135.6.

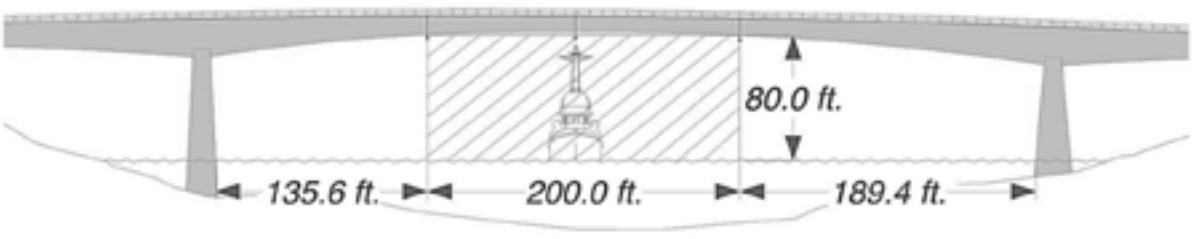

Figure 123. Bridge elevation view indicating navigation channel clearances to substructure units in the waterway.

5.1 – LOADS AND LOAD RATING

Load Rating Method

Format	Frequency	Item ID
AN (4)	I	B.LR.04

Specification

Report the method used to calculate the load rating using one of the following codes.

Code	Description
LFR	Load Factor Rating
ASR	Allowable Stress Rating
LRFR	Load and Resistance Factor Rating
LT	Load Testing
AR	Assigned Rating
EJ	Field evaluation and documented engineering judgment
N	No rating analysis or evaluation has been performed

Commentary

When different portions of a bridge are load rated using different methods, report the rating method associated with the controlling rating factor.

For information on applicable load rating methods, refer to the October 30, 2006 FHWA memorandum at: http://www.fhwa.dot.gov/bridge/nbis/103006.cfm.

For information on using code AR, refer to the September 29, 2011 FHWA memorandum at: http://www.fhwa.dot.gov/bridge/110929.cfm

For information on using code EJ, refer to the February 2, 2011 FHWA memorandum at: http://www.fhwa.dot.gov/bridge/110202.cfm

Example

A bridge rated for an HS-20 load using Load Factor rating is later widened. The entire bridge is re-rated using Load and Resistance Factor rating. Report LRFR.

A steel truss bridge with steel beam approach spans originally rated using Allowable Stress Rating. The approach spans are re-rated using Load Factor Rating due to deterioration. The rating of the approach spans controls. Report LFR.

A bridge designed and checked using Load Factor Design and an HS-20 live load. The bridge meets the criteria stated in the September 29, 2011 FHWA memo and has an assigned load rating. Report AR.

A concrete bridge constructed in 1910 has no design plans. Load rating determined by a qualified engineer after field condition and live load history evaluation. Report EJ.

5.1 – LOADS AND LOAD RATING

Inventory Load Rating Factor

Format	Frequency	Item ID
N (4,2)	I	B.LR.05

Specification	Commentary
Report the inventory load rating factor, truncated to the hundredth, for the standard AASHTO HS-20 or HL-93 loadings, whichever is applicable based on the method reported in Item B.LR.04 *(Load Rating Method)*. When temporary or supported conditions exist, as indicated in Item B.PS.01 *(Load Posting Status)*, report the rating factor for the bridge including the temporary or supported conditions. Do not report this item when no rating analysis or evaluation has been performed.	For LRFR, this is the rating factor for the design load rating at the inventory level of reliability using the HL-93 loading considering all applicable strength and serviceability limit states. Refer to the AASHTO Manual for Bridge Evaluation for details of HS-20 and HL-93 loadings.

Example

A bridge has a calculated inventory load rating factor of 1.486. Report 1.48.

5.1 – LOADS AND LOAD RATING

Operating Load Rating Factor

Format	Frequency	Item ID
N (4,2)	I	B.LR.06

Specification	Commentary
Report the operating load rating factor, truncated to the hundredth, for the standard AASHTO HS-20 or HL-93 loadings, whichever is applicable based on the method reported in Item B.LR.04 *(Load Rating Method)*. When temporary or supported conditions exist, as indicated in Item B.PS.01 *(Load Posting Status)*, report the rating factor for the bridge including the temporary or supported conditions. Do not report this item when no rating analysis or evaluation has been performed.	For LRFR, this is the rating factor for the design load rating at the operating level of reliability using the HL-93 loading considering all applicable strength and serviceability limit states. Refer to the AASHTO Manual for Bridge Evaluation for details of HS-20 and HL-93 loadings.

Example

A bridge has a calculated operating load rating factor of 1.679. Report 1.67.

5.1 – LOADS AND LOAD RATING

Controlling Legal Load Rating Factor

Format	Frequency	Item ID
N (4,2)	I	B.LR.07

Specification	Commentary
Report the lowest (controlling) rating factor for the State's and AASHTO legal loads truncated to the hundredth. When temporary or supported conditions exist, as indicated in Item B.PS.01 *(Load Posting Status)*, report the rating factor for the bridge including the temporary or supported conditions. Do not report this item when no rating analysis or evaluation has been performed.	For LRFR this would be the "Legal Load Rating", a second level rating that provides a single safe load capacity (for a given truck configuration) applicable to AASHTO and State legal loads. For LRFR, when all State legal loads are enveloped by the HL-93 design loading and the design load rating factor at the operating level is greater than or equal to 1.0, then the value in Item B.LR.06 *(Operating Load Rating Factor)* can be reported for this item in lieu of calculating a "Legal Load Rating." For allowable stress and load factor rating this would be the operating load rating factor for the State's legal loads. If all State legal loads are enveloped by the design loading and the operating rating is greater than or equal to 1.0, then the value in Item B.LR.06 *(Operating Load Rating Factor)* can be reported for this item. State legal loads would typically be described in State laws (State vehicle codes).

Example

A bridge has the following calculated legal load rating factors for the AASHTO legal loads and a State-defined legal load:

Legal Load Configuration	Rating Factor
Type 3	1.07
Type 3S2	0.88
Type 3-3	0.80
SU4	0.70
SU5	0.65
FL120	1.15

Report 0.65.

5.2 – LOAD POSTING STATUS

Load Posting Status

Format	Frequency	Item ID
AN (2)	I	B.PS.01

Specification	Commentary
Report the load posting status of the bridge using one of the codes in *Table 15*.	When temporary or supported conditions exist ensure that data items related to physical characteristics of the bridge (e.g. geometry, clearances, condition, and load rating) represent those characteristics of the temporary or supported bridge. When both a weight and other load restriction exist at the bridge, use the code for the weight restriction (code PP, TP, or SP).

Specification Continued

Table 15. Load Posting Status Codes.

	No restriction			Posted or restricted				Closed
	New	Open	Needs Action	Weight	Other	Needs Reduction	Missing	
Permanent	N	PO	PA	PP	PR	PD	PM	C
Temporary		TO	TA	TP	TR	TD	TM	C
Supported		SO	SA	SP	SR	SD	SM	C

Terms:

Permanent (P) – Permanent bridge in place with no temporary supports.

Temporary (T) – Temporary bridge in place to carry traffic while the permanent bridge is closed and awaiting repair, rehabilitation, or replacement.

Supported (S) – Bridge with temporary shoring, supports, repairs, or supplemental members in place to keep the bridge open pending the completion of active or imminent repair, or replacement projects.

New (N) – Bridge is newly constructed and not yet open to traffic, but is expected to be open within 12 months.

Open (O) – Bridge is open with no restrictions.

Needs Action (A) – Bridge that is open with load posting recommended, but no posting signs in place, or a posting sign that is not legally enforceable.

Weight (P) – Bridge is posted with a weight limit sign or signs.

Other (R) – A posting sign or other traffic control device(s) at the bridge that reduces loading by reducing speed (to reduce impact), limiting the number of lanes or vehicles, or restricting commercial vehicles in general.

Needs Reduction (D) – Bridge is posted, with posting reduction recommended but not implemented.

Missing (M) – Bridge has a legally enforceable load posting and was posted, but one or more required signs are missing or illegible.

Closed (C) – Bridge is closed to all traffic.

5.2 – LOAD POSTING STATUS

Posting Status Change Date

Format	Frequency	Item ID
YYYYMMDD	I	B.PS.02

Specification	Commentary
Report the date the bridge entered the status reported in Item B.PS.01 *(Load Posting Status).*	For bridges entering posted status, it is preferable that the reported date represent the date on which signs were properly installed at the bridge. The date the load posting became legally enforceable can also be used for this item when the installation date is unknown. When neither the installation nor legal enforcement date are known, the date the posting was first documented to be in place can be used for this item.

5.3 – LOAD EVALUATION AND POSTING

Legal Load Configuration

Format	Frequency	Item ID
AN (3)	I	B.EP.01

Specification	Commentary
Report the configuration of the AASHTO legal load using one of the following codes. Code – Description 3 – Type 3 3S2 – Type 3S2 3-3 – Type 3-3 SU4 – SU4 truck SU5 – SU5 truck SU6 – SU6 truck SU7 – SU7 truck NRL – Notional Rating Load EV2 – Type EV2 emergency vehicle EV3 – Type EV3 emergency vehicle	Refer to the AASHTO Manual for Bridge Evaluation for details of legal loading configurations. For information on the load rating and load posting of emergency vehicles, refer to the November 3, 2016 FHWA memorandum at: *http://www.fhwa.dot.gov/bridge/loadrating/161103.cfm*

5.3 – LOAD EVALUATION AND POSTING

Legal Load Rating Factor

Format	Frequency	Item ID
N (4,2)	I	B.EP.02

Specification	Commentary
Report the rating factor for the legal load configuration truncated to the hundredth. When temporary or supported conditions exist, as indicated in Item B.PS.01 *(Load Posting Status)*, report the rating factor for the bridge including the temporary or supported conditions.	For LRFR this would be the "Legal Load Rating", a second level rating that provides a single safe load capacity for a given AASHTO legal load. For allowable stress and load factor rating this would be the operating load rating factor calculated for a given AASHTO legal load as part of a posting analysis. Refer to the AASHTO Manual for Bridge Evaluation for details of legal loading configurations.

Example
A bridge has a calculated legal load rating factor of 0.926 for the Type 3S2 load. Report 0.92.

5.3 – LOAD EVALUATION AND POSTING

Posting Type

Format	Frequency	Item ID
AN (1)	I	B.EP.03

Specification

Report the type of posting at the bridge restricting the vehicle reported in Item B.EP.01 *(Legal Load Configuration)* using one of the codes.

Code	Description
G	Gross Load
A	Single Axle Load
D	Tandem Axle Load
T	Truck Load
C	No commercial vehicles
S	Speed reduction
L	Number of lanes restricted
V	Number of vehicles restricted
X	Other

Do not report this item if no posting sign is used for the legal load configuration.

Commentary

This item is only reported for legal load configurations with a rating factor less than 1.0, as reported in Item B.EP.02 *(Legal Load Rating Factor)*.

Examples

Report G.

Figure 126. Weight limit sign – gross load.

Report T.

Figure 127. Weight limit sign – truck silhouettes.

5.3 – LOAD EVALUATION AND POSTING

Posting Value

Format	Frequency	Item ID
N (2,0)	I	B.EP.04

Specification	Commentary
Report the weight limit value shown on the load posting sign for the vehicle reported in Item B.EP.02 *(Legal Load Rating Factor)* rounded down to the nearest U.S. ton. Do not report this item if no posting sign is used for the legal load configuration. Do not report this item if Item B.EP.03 *(Posting Type)* has codes C, S, L, or V reported.	This item is only reported for legal load configurations with a rating factor less than 1.0, as reported in Item B.EP.02 *(Legal Load Rating Factor)*.

Example

Report 10.

Figure 128. Weight limit sign – gross load (10T).

Report 8 for Type 3.

Report 12 for Type 3S2.

Report 16 for Type 3-3.

Figure 129. Weight limit sign – truck silhouettes (8T, 12T, and 16T).

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Appendix 2-E WSDOT BMS to NBE Translation

WSBIS ELEMENTS			Calendar Year 2024	NATIONAL BRIDGE ELEMENTS		
element_id		unit	TRANSLATION	element_id	name	unit
12	Concrete Deck (See Note 9)	SF			intentionally blank	
8217	Concrete Deck (See Note 9)	SF			intentionally blank	
14	Fully Supported Concrete Deck (See Note 9) Agency Defined to Change Later	SF			intentionally blank	
20	Concrete Deck - Lightweight Aggregate (See Note 9) Agency Defined to Change Later	SF		12	Reinforced Concrete Deck	SF
26	Concrete Deck w/Coated Bars (See Note 9) Agency Defined to Change Later	SF			intentionally blank	
35	Concrete Deck Soffit (See Note 9) Agency Defined to Change Later	SF			intentionally blank	
8216	Concrete Deck Soffit (See Note 9)	SF			intentionally blank	
16	Thin Concrete Deck Agency Defined to Change Later	SF			intentionally blank	
15	Post Tensioned Concrete Deck Agency Defined to Change Later	SF		13	Prestressed Concrete Deck	SF
	no state element equivalent			15	Prestressed Concrete Top Flange	SF
13	Bridge Deck Surface Agency Defined to Change Later	SF		16	Reinforced Concrete Top Flange	SF
8213	Bridge Deck Surface	SF			intentionally blank	
27	Steel Orthotropic Deck Agency Defined to Change Later	SF			intentionally blank	
30	Deck-Corrugated or Other Steel System Agency Defined to Change Later	SF		30	Steel Deck—Corrugated/Orthotropic/Etc.	SF
8222	Deck-Corrugated or Other Steel System	SF			intentionally blank	
28	Steel Deck Open Grid	SF		28	Steel Deck—Open Grid	SF
8218	Steel Deck Open Grid	SF			intentionally blank	
29	Steel Deck - Concrete Filled Grid	SF		29	Steel Deck—Concrete Filled Grid	SF
8219	Steel Deck - Concrete Filled Grid	SF			intentionally blank	
31	Timber Deck	SF		31	Timber Deck	SF
8221	Timber Deck	SF			intentionally blank	
32	Fiber Reinforced Polymer (FRP) Deck Agency Defined to Change Later	SF		60	Other Deck	SF
36	Deck Rebar Cover Flag	SF			intentionally blank	

WSBIS ELEMENTS			Calendar Year 2024 TRANSLATION	NATIONAL BRIDGE ELEMENTS		
element_id		unit		element_id	name	unit
38	Concrete Slab	SF			intentionally blank	
49	Concrete Hollow Slab Agency Defined to Change Later	SF			intentionally blank	
50	Prestressed Concrete Slab Agency Defined to Change Later	SF		39	Prestressed Concrete Slab To be added later	SF
8150	Prestressed Concrete Slab	SF		38	Reinforced Concrete Slab	SF
51	Prestressed Conc Slab w/Coated Bars Agency Defined to Change Later	SF			intentionally blank	
8151	Prestressed Conc Slab w/Coated Bars	SF			intentionally blank	
52	Concrete Slab w/Coated Bars Agency Defined to Change Later	SF			intentionally blank	
54	Timber Slab	SF		54	Timber Slab	SF
	no state element equivalent			65	Other Slab	SF
89	Prestressed Concrete Girder w/Coated Strands Agency Defined to Change Later	LF			intentionally blank	
98	Thin Flange Girder Agency Defined to Change Later	LF			intentionally blank	
103	Prestressed Concrete Super Girder Agency Defined to Change Later	LF			intentionally blank	
108	Prestressed Concrete Bulb-T Girder Agency Defined to Change Later	LF			intentionally blank	
8108	Prestressed Concrete Bulb-T Girder	LF		109	Girder/Beam - Prestressed Concrete	LF
109	Prestressed Concrete Multiple Web Girder Units Agency Defined to Change Later	LF			intentionally blank	
8109	Prestressed Concrete Multiple Web Girder Units	LF			intentionally blank	
115	Prestressed Concrete Girder Agency Defined to Change Later	LF			intentionally blank	
8111	Prestressed Concrete Girder	LF			intentionally blank	
97	Prestressed Concrete Tub Girder Agency Defined to Change Later	LF			intentionally blank	
100	Post-Tensioned Concrete Segmental Box Girder Agency Defined to Change Later	LF		104	Closed Web/Box Girder - Prestressed Concrete	LF
104	Post-Tensioned Concrete Box Girder Agency Defined to Change Later	LF			intentionally blank	
90	Steel Rolled Girder Agency Defined to Change Later	LF			intentionally blank	
8090	Steel Rolled Girder	LF				
91	Steel Riveted Girder Agency Defined to Change Later	LF			intentionally blank	
92	Steel Welded Girder Agency Defined to Change Later	LF		107	Girder/Beam - Steel	LF
107	Steel Open Girder Agency Defined to Change Later	LF			intentionally blank	
8201	Steel Open Girder	LF			intentionally blank	
96	Concrete Encased Steel Girder Agency Defined to Change Later	LF			intentionally blank	

WSBIS ELEMENTS			Calendar Year 2024 TRANSLATION	NATIONAL BRIDGE ELEMENTS		
element_id		unit		element_id	name	unit
	no state element equivalent			112	Girder/Beam - Other	LF
102	Steel Box Girder	LF		102	Closed Web/Box Girder - Steel	LF
8200	Steel Box Girder	LF			intentionally blank	
105	Concrete Box Girder	LF		105	Closed Web/Box Girder - Reinforced Concrete	LF
	no state element equivalent			106	Closed Web/Box Girder - Other	LF
110	Concrete Girder	LF			intentionally blank	
8110	Concrete Girder	LF		110	Girder/Beam - Reinforced Concrete	LF
114	Concrete Multiple Web Girder Unit Agency Defined to Change Later	LF			intentionally blank	
111	Timber Glue-Lam Girder Agency Defined to Change Later	LF			intentionally blank	
117	Timber Sawn Girder Agency Defined to Change Later	LF		111	Girder/Beam - Timber	LF
8112	Timber Sawn Girder	LF				
8114	Timber Laminated Girder	LF			intentionally blank	
113	Steel Stringer	LF		113	Stringer - Steel	LF
8209	Steel Stringer	LF			intentionally blank	
	no state element equivalent			115	Stringer - Prestressed Concrete	LF
116	Concrete Stringer	LF		116	Stringer - Reinforced Concrete	LF
118	Timber Stringer Agency Defined to Change Later	LF		117	Stringer - Timber	LF

WSBIS ELEMENTS			Calendar Year 2024 TRANSLATION	NATIONAL BRIDGE ELEMENTS		
element_id		unit		element_id	name	unit
	no state element equivalent			118	Stringer - Other	LF
119	Concrete Truss Agency Defined to Change Later	LF		136	Truss - Other	LF
126	Steel Thru Truss Agency Defined to Change Later	LF			intentionally blank	
8204	Steel Thru Truss	LF		120	Truss - Steel	LF
131	Steel Deck Truss Agency Defined to Change Later	LF			intentionally blank	
133	Truss Gusset Plates Agency Defined to Change Later	EA		162	Gusset Plate	EA
8210	Truss Gusset Plates	EA				
135	Timber Truss	LF		135	Truss - Timber	LF
139	Timber Arch Agency Defined to Change Later	LF		146	Arch - Timber	LF
140	Composite Arch Agency Defined to Change Later	LF		142	Arch - Other	LF
141	Steel Arch Agency Defined to Change Later	LF		141	Arch - Steel	LF
142	Steel Tied Arch Agency Defined to Change Later	LF			intentionally blank	
	no state element equivalent			143	Arch - Prestressed Concrete	LF
	no state element equivalent			145	Arch - Masonry	LF
144	Concrete Arch	LF		144	Arch - Reinforced Concrete	LF
145	Earth Filled Concrete Arch Agency Defined to Change Later	LF			intentionally blank	
143	Steel Suspender - Rolled Shape Agency Defined to Change Later	EA			intentionally blank	
147	Steel Suspender - Cable Agency Defined to Change Later	EA		148	Cable - Steel Secondary	EA
146	Suspension - Main Cable (see note 8) Agency Defined to Change Later	EA		147	Cable - Steel Main	LF
149	Cable Stayed Bridge - Cable (see note 8) Agency Defined to Change Later	EA			intentionally blank	
150	Concrete Column on Spandrel Arch	EA			intentionally blank	
160	Steel Column on Spandrel Arch	EA			intentionally blank	
152	Steel Floor Beam Agency Defined to Change Later	LF			intentionally blank	
8206	Steel Floor Beam	LF		152	Floor Beam - Steel	LF
8341	Lift Beam (FC)	LF			intentionally blank	
154	Prestressed Concrete Floorbeam	LF		154	Floor Beam - Prestressed Concrete	LF
155	Concrete Floor Beam	LF		155	Floor Beam - Reinforced Concrete	LF
156	Timber Floor Beam	LF		156	Floor Beam - Timber	LF

WSBIS ELEMENTS			Calendar Year 2024 TRANSLATION	NATIONAL BRIDGE ELEMENTS		
element_id		unit		element_id	name	unit
	no state element equivalent			157	Floor Beam - Other	LF
161	Steel Hanger (See Note 10) Agency Defined to Change Later	EA			intentionally blank	
162	Steel Pin Agency Defined to Change Later	EA		161	Pin, Pin & Hanger Assembly, or both	EA
8343	Apron Two Hinge Pin System/LL Hanger Pins (FC)	EA			intentionally blank	
8342	Live Load Hanger Bars (FC) (See Note 10)	EA			intentionally blank	
163	Tension Hold Down Anchor Assembly					
200	Abutment Fill	EA			intentionally blank	
202	Steel ~~Pile/~~Column Name Change to NBE	EA		202	Column/Pile Extension - Steel Re-name to Steel Columns	EA
203	Prestressed Concrete Hollow Column ~~Pile~~ Name Change to NBE			204	Column/Pile Extension - Prestressed Concrete Re-name to Prestressed Concrete Column	EA
204	Prestressed Concrete ~~Pile/~~Column Name Change to NBE	EA			intentionally blank	
205	Concrete ~~Pile/~~Column Name Change to NBE	EA			intentionally blank	
207	Concrete ~~Pile/~~Column - w/Steel Jacket Name Change to NBE	EA		205	Column/Pile Extension - Reinforced Concrete Re-name to Concrete Column	EA
208	Concrete Pile/Column w/Composite Wrap	EA			intentionally blank	
206	Timber ~~Pile/~~Column Name Change to NBE	EA		206	Column/Pile Extension - Timber Re-name to Timber Column	EA
	no state element equivalent			203	Column - Other	EA
	no state element equivalent			207	Column Tower (Trestle) - Steel	EA
	no state element equivalent			208	Column Tower (Trestle) - Timber	EA
209	Submerged Concrete Pile/Column w/Steel Jacket Obsolete in 2024, Merge notes and quantities to 207	EA		205	Concrete Pile/Column - w/Steel Jacket	EA
227	Concrete ~~Submerged~~ Pile~~/Column~~ Name Change to NBE	EA		227	~~Submerged~~ Pile - Reinforced Concrete Name Change to NBE	EA
8125	Concrete Submerged Pile/Column	EA			intentionally blank	
210	Concrete Pier Wall	LF		210	Pier Wall - Reinforced Concrete	LF
212	Concrete Submerged Pier Wall Obsolete and move notes and quantities to 210	LF			intentionally blank	
211	Other Pier Wall	LF		211	Pier Wall - Other	LF
213	Other Submerged Pier Wall Obsolete and move notes and quantities to 211	LF			intentionally blank	
214	Concrete Web Wall between Columns	LF			intentionally blank	

WSBIS ELEMENTS			Calendar Year 2024	NATIONAL BRIDGE ELEMENTS		
element_id		unit	TRANSLATION	element_id	name	unit
	no state element equivalent			212	Pier Wall - Timber	LF
	no state element equivalent			213	Pier Wall - Masonry	LF
215	Concrete Abutment	LF			intentionally blank	
8102	Concrete Abutment	LF		215	Abutment - Reinforced Concrete	LF
219	Concrete Cantilevered Span Abutment Obsoleted in 2024 Notes moved to 200 Element	LF	Removed		intentionally blank	
216	Timber Abutment	LF		216	Abutment - Timber	LF
8103	Timber Abutment	LF			intentionally blank	
217	Other Abutment Obsolete in 2026 change to 218	LF		218	Abutment - Other	LF
218	Steel Abutment Obsolete in 2026 change to 219	LF		219	Abutment - Steel	LF
8101	Steel Abutment				intentionally blank	
	no state element equivalent			217	Abutment - Masonry	LF
220	~~Concrete Submerged Foundation~~ Revise name to **Concrete Pile Cap/Footing** in 2024	LF			intentionally blank	
8136	Concrete Submerged Foundation	LF		220	Pile Cap/Footing - Reinforced Concrete	LF
221	Concrete Foundation Obsolete in 2024 merged notes to 220 Pile Cap Footing	LF			intentionally blank	
222	Timber Foundation	LF			intentionally blank	
225	Steel ~~Submerged~~ Pile~~/Column~~ Name Change to NBE	EA			intentionally blank	
8129	Transfer Span/OHL Supercolumn	EA		225	~~Submerged~~ Pile - Steel Name Change to NBE	EA
8128	Steel Submerged Pile/Column	EA			intentionally blank	
226	Prestressed Concrete ~~Submerged~~ Pile~~/Column~~ Name Change to NBE	EA			intentionally blank	
8127	Prestressed Concrete Submerged Pile/Column	EA		226	~~Submerged~~ Pile - Prestressed Concrete Name Change to NBE	EA
232	Prestressed Concrete Hollow ~~Submerged~~ Pile~~/Column~~ Name Change in 2024	EA				
228	Timber ~~Submerged~~ Pile~~/Column~~ Name Change to NBE	EA		228	~~Submerged~~ Pile - Timber Name Change to NBE	EA
8124	Timber Submerged Pile/Column	EA			intentionally blank	

WSBIS ELEMENTS			Calendar Year 2024	NATIONAL BRIDGE ELEMENTS		
element_id		unit	TRANSLATION	element_id	name	unit
	no state element equivalent			229	Pile - Other	EA
229	Timber Cap Rehab with Steel Agency Defined to Change Later	LF			intentionally blank	
231	Steel Pier Cap/Crossbeam	LF		231	Pier Cap - Steel	LF
8130	Steel Pier Cap/Crossbeam	LF			intentionally blank	
233	Prestressed Concrete Pier Cap/Crossbeam	LF		233	Pier Cap - Prestressed Concrete	LF
234	Concrete Pier Cap/Crossbeam	LF		234	Pier Cap - Reinforced Concrete	LF
8132	Concrete Pier Cap/Crossbeam	LF			intentionally blank	
235	Timber Pier Cap	LF		235	Pier Cap - Timber	LF
8131	Timber Pier Cap	LF			intentionally blank	
	no state element equivalent			236	Pier Cap - Other	LF
236	Concrete Floating Pontoon	Cell			intentionally blank	
237	Pontoon Hatch/Bulkhead	EA			intentionally blank	
238	Floating Bridge - Anchor Cable Agency Defined to Change Later	EA		149	Cable - Other Secondary	EA
240	Metal Culvert	LF		240	Culvert - Steel	LF
241	Concrete Culvert	LF		241	Culvert - Reinforced Concrete	LF
242	Timber Culvert	LF		242	Culvert - Timber	LF
	no state element equivalent			244	Culvert - Masonry	LF
243	Other Culvert	LF		243	Culvert - Other	LF
	no state element equivalent			245	Culvert - Prestressed Concrete	LF
260	Steel Open Grid Sidewalk & Supports	SF			intentionally blank	
261	Steel Filled Grid Sidewalk & Supports	SF			intentionally blank	
8261	Steel Filled Grid Sidewalk & Supports	SF			intentionally blank	
262	Corrugated/Orthotropic Sidewalk & Supports	SF			intentionally blank	
8262	Corrugated/Orthotropic Sidewalk & Supports	SF			intentionally blank	
264	Timber Sidewalk & Supports	SF			intentionally blank	
8264	Timber Sidewalk & Supports	SF			intentionally blank	
266	Concrete Sidewalk & Supports	SF			intentionally blank	
8266	Concrete Sidewalk & Supports	SF			intentionally blank	

WSBIS ELEMENTS			Calendar Year 2024 TRANSLATION	NATIONAL BRIDGE ELEMENTS		
element_id		unit		element_id	name	unit
267	Fiber Reinforced Polymer(FRP) Sidewalk & Supports	SF			intentionally blank	
8265	Fiber Reinforced Polymer(FRP) Sidewalk & Supports	SF			intentionally blank	
310	Elastomeric Bearing	EA		310	Elastomeric Bearing	EA
311	Moveable Bearing (roller, sliding, etc)	EA		311	Moveable Bearing (roller, sliding, etc)	EA
8391	Moveable Bearing (roller, sliding, etc)	EA			intentionally blank	
312	Concealed Bearing or Bearing System	EA		312	Enclosed/Concealed Bearing	EA
313	Fixed Bearing	EA		313	Fixed Bearing	EA
8390	Fixed Bearing	EA			intentionally blank	
316	Isolation Bearing Agency Defined to Change Later	EA		316	Bearing - Other	EA
314	Pot Bearing	EA		314	Pot Bearing	EA
315	Disc Bearing	EA		315	Disk Bearing	EA
	no state element equivalent			320	Prestressed Concrete Approach Slab	SF
321	Concrete Roadway Approach Slab	SF		321	Reinforced Concrete Approach Slab	SF
322	Bridge Impact	EA			intentionally blank	
330	Metal Bridge Railing	LF		330	Metal Bridge Railing	LF
8810	Metal Bridge Railing	LF			intentionally blank	
331	Concrete Bridge Railing	LF		331	Reinforced Concrete Bridge Railing	LF
8811	Concrete Bridge Railing	LF			intentionally blank	
332	Timber Bridge Railing	LF		332	Timber Bridge Railing	LF
8812	Timber Bridge Railing	LF			intentionally blank	
333	Other Bridge Railing	LF		333	Other Bridge Railing	LF
8813	Other Bridge Railing	LF			intentionally blank	
	no state element equivalent			334	Masonry Bridge Railing	LF
340	Metal Pedestrian Railing	LF			intentionally blank	
8815	Metal Pedestrian Railing	LF			intentionally blank	
341	Concrete Pedestrian Railing	LF			intentionally blank	
8816	Concrete Pedestrian Railing	LF			intentionally blank	
342	Timber Pedestrian Railing	LF			intentionally blank	

WSBIS ELEMENTS			Calendar Year 2024	NATIONAL BRIDGE ELEMENTS		
element_id		unit	TRANSLATION	element_id	name	unit
8817	Timber Pedestrian Railing	LF			intentionally blank	
343	Other Pedestrian Railing	LF			intentionally blank	
8818	Other Pedestrian Railing	LF			intentionally blank	
355	Damaged Bolts or Rivets	EA			intentionally blank	
8355	Damaged Bolts or Rivets	EA			intentionally blank	
356	Steel Cracking	EA			intentionally blank	
8356	Steel Cracking	EA			intentionally blank	
357	Pack Rust	EA			intentionally blank	
8357	Pack Rust	EA			intentionally blank	
360	Bridge Movement	EA			intentionally blank	
8360	Bridge Movement	EA			intentionally blank	
351	Chloride Impact	EA			intentionally blank	
353	Encampment Impact	EA			intentionally blank	
361	Scour	EA			intentionally blank	
8361	Scour	EA			intentionally blank	
8362	Impact Damage	EA			intentionally blank	
378	State Undercrossing ~~Primary~~ Safety	EA			intentionally blank	
379	Local Agency Undercrossing ~~Secondary~~ Safety	EA			intentionally blank	
~~367~~	~~Movable Bridge~~ Obsoleted in 2024	~~EA~~			intentionally blank	
368	Seismic Pier Crossbeam Bolster	LF			intentionally blank	
369	Seismic Pier Infill Wall	EA			intentionally blank	
370	Seismic - Longitudinal Restrainer	EA			intentionally blank	
8370	Seismic - Longitudinal Restrainer	EA			intentionally blank	
371	Seismic - Transverse Restrainer	EA			intentionally blank	
8371	Seismic - Transverse Restrainer	EA			intentionally blank	
372	Seismic - Link/Pin Restrainer	EA			intentionally blank	
373	Seismic - Catcher Block	EA			intentionally blank	
374	Seismic - Column Silo	EA			intentionally blank	

WSBIS ELEMENTS			Calendar Year 2024 TRANSLATION	NATIONAL BRIDGE ELEMENTS		
element_id		unit		element_id	name	unit
~~375~~	~~Cathodic Protection~~ Obsoleted in 2024	~~EA~~			intentionally blank	
8375	Cathodic Protection	EA			intentionally blank	
376	Concrete Deck Delamination Testing	SF			intentionally blank	
8376	Concrete Deck Delamination Testing	SF			intentionally blank	
381	Joint Seal/Gland Leaking	EA			intentionally blank	
400	Asphalt Butt Joint Seal (see note 11) Agency Defined to Change Later	LF			intentionally blank	
403	Concrete Bulb-T (see note 11) Agency Defined to Change Later	LF		301	Pourable Joint	LF
417	Silicone Rubber Joint Filler (see note 11) Agency Defined to Change Later	LF			intentionally blank	
401	Asphalt Open Joint Seal (see note 11) Agency Defined to Change Later	LF			intentionally blank	
402	Open Concrete Joint (see note 11) Agency Defined to Change Later	LF			intentionally blank	
407	Steel Angle Header (see note 11) Agency Defined to Change Later	LF		304	Open Joint	LF
8407	Steel Angle Header (see note 11)	LF			intentionally blank	
419	Steel Angle w/Raised Bars (see note 11) Agency Defined to Change Later	LF			intentionally blank	
408	Steel Sliding Plate (see note 11) Agency Defined to Change Later	LF			intentionally blank	
8408	Steel Sliding Plate (see note 11)	LF			intentionally blank	
409	Steel Sliding Plate w/Raised Bars (see note 11) Agency Defined to Change Later	LF		305	Assembly Joint without Seal	LF
414	Bolt Down - Sliding Plate w/Springs (see note 11) Agency Defined to Change Later	LF			intentionally blank	
410	Steel Fingers (see note 11) Agency Defined to Change Later	LF			intentionally blank	
411	Steel Fingers w/Raised Bars (see note 11) Agency Defined to Change Later	LF			intentionally blank	
404	Compression Seal / Concrete Header (see note 11)	LF			intentionally blank	
8404	Compression Seal / Concrete Header (see note 11)	LF			intentionally blank	
405	Compression Seal / Polymer Header (see note 11)	LF		302	Compression Seal	LF
406	Compression Seal / Steel Header (see note 11)	LF			intentionally blank	
8406	Compression Seal / Steel Header (see note 11)	LF			intentionally blank	
412	Strip Seal - Anchored (see note 11)	LF		300	Strip Seal	LF
413	Strip Seal - Welded (see note 11)	LF			intentionally blank	
416	Assembly Joint Seal (Modular) (see note 11)	LF		303	Assembly Joint Seal (Modular)	LF

WSBIS ELEMENTS			Calendar Year 2024 TRANSLATION	NATIONAL BRIDGE ELEMENTS		
element_id		unit		element_id	name	unit
415	Bolt Down Panel - Molded Rubber (see note 11)	LF			intentionally blank	
418	Asphalt Plug (see note 11)	LF		306	Joint - Other	LF
422	Flexible Joint Seal (see note 11)	LF			intentionally blank	
420	Joint Paved Over Flag	LF			intentionally blank	
421	Joint Over Steel Corbel Bearings	LF			intentionally blank	
501	Movable Bridge Steel Tower	LF			intentionally blank	
705	Bridge Luminaire Pole and Base	EA			intentionally blank	
8705	Bridge Luminaire Pole and Base	EA			intentionally blank	
707	Fender System/Pier Protection	EA			intentionally blank	
709	Ceramic Tile	SF			intentionally blank	
710	Bridge Mounted Sign Structure	EA			intentionally blank	
800	Asphaltic Concrete (AC) Overlay (see note 11)	SF			intentionally blank	
8223	Asphaltic Concrete (AC) Overlay (see note 11)	SF			intentionally blank	
801	AC Overlay with Waterproofing Membrane (see note 11)	SF			intentionally blank	
802	Thin Polymer Overlay (see note 11)	SF			intentionally blank	
8224	Thin Polymer Overlay (see note 11)	SF		510	Wearing Surfaces	SF
803	Modified Concrete Overlay (see note 11)	SF			intentionally blank	
804	Polyester Concrete Overlay (see note 11)	SF			intentionally blank	
805	AC Over a Polymer Overlay (see note 11)	SF			intentionally blank	
807	AC Overlay with High Performance Membrane (see note 11)	SF				
806	BST on Concrete (Chip Seal)	SF			intentionally blank	

WSBIS ELEMENTS			Calendar Year 2024 TRANSLATION	NATIONAL BRIDGE ELEMENTS		
element_id		unit		element_id	name	unit
901	Red Lead Alkyd Paint System	SF			intentionally blank	
8901	Red Lead Alkyd Paint System	SF			intentionally blank	
902	Inorganic-Zinc/Vinyl Paint System	SF			intentionally blank	
8902	Inorganic-Zinc/Vinyl Paint System	SF			intentionally blank	
903	Inorganic Zinc/Urethane Paint System	SF			intentionally blank	
8903	Inorganic Zinc/Urethane Paint System	SF			intentionally blank	
904	Organic Zinc/Urethane Paint System	SF			intentionally blank	
8904	Organic Zinc/Urethane Paint System	SF			intentionally blank	
905	Coal Tar Epoxy Paint System	SF		515	Steel Protective Coating	SF
8905	Coal Tar Epoxy Paint System	SF			intentionally blank	
906	Metallizing	SF			intentionally blank	
907	Galvanizing	SF			intentionally blank	
8907	Galvanizing	SF			intentionally blank	
908	Epoxy Paint for Weathering Steel	SF			intentionally blank	
909	Zinc Primer	SF			intentionally blank	
8909	Zinc Primer	SF			intentionally blank	
910	Weathering Steel Patina	SF			intentionally blank	
911	Paint System - Other	SF			intentionally blank	
	no state element equivalent			520	Concrete Reinforcing Steel Protective System	SF
	no state element equivalent			521	Concrete Protective Coating	SF
8225	Non-skid Metal Surfacing	SF			intentionally blank	
8263	Steel Open Grid Sidewalk w/Cover Plate & Suppt.	SF			intentionally blank	
8301	Apron Steel Orthotropic Deck	SF			intentionally blank	
8305	Apron Hinge Multi-Pin & Plate	EA			intentionally blank	
8307	Apron Lips & Pins	EA			intentionally blank	
8310	Apron Hoist/Cables/Spool/Platform/Supports/Rigging	EA			intentionally blank	
8312	Span Apron/Cab Gangplank Pivot/Raise/Rams/Fittings	EA			intentionally blank	

WSBIS ELEMENTS			Calendar Year 2024	NATIONAL BRIDGE ELEMENTS		
element_id		unit	TRANSLATION	element_id	name	unit
8413	Steel Tower	EA			intentionally blank	
8414	Timber Tower	EA			intentionally blank	
8415	Steel Headframe	LF			intentionally blank	
8416	Timber Headframe	LF			intentionally blank	
8417	Tower Base Platform	SF			intentionally blank	
8418	Counterweight Guides	EA			intentionally blank	
8419	Concrete Counterweights	EA			intentionally blank	
8420	CTWT Sheaves/Shafts(FC)/Bearings/Anchor Blts.	EA			intentionally blank	
8421	Counterweight Cable Protective Systems	LF			intentionally blank	
8423	Steel Counterweights	EA			intentionally blank	
8450	Timber Wingwalls	LF			intentionally blank	
8451	Steel Pile Frame Wingwalls	LF			intentionally blank	
8460	Timber Pile Dolphins	EA			intentionally blank	
8462	Steel Pile Frame Dolphins	EA			intentionally blank	
8463	Timber Floating Dolphin	LF			intentionally blank	
8464	Concrete Pontoon Floating Dolphin	LF			intentionally blank	
8640	Moveable Pedestrian Gangplank	LF			intentionally blank	
8650	Overhead Passenger Loading Cab	SF			intentionally blank	
8653	Passenger Cab Floor System and Lift Beam(FC)	LF			intentionally blank	
8701	Ferry Concrete Floating Pontoon	CELL			intentionally blank	
8702	Ferry Steel Floating Pontoon	CELL			intentionally blank	
8703	Spud Piling & Wells	EA			intentionally blank	
8704	Pontoon Anchors, Anchor Chain/Cables/Clamps	EA			intentionally blank	
8906	Epoxy Paint System	SF			intentionally blank	
8910	Safety Access Ladders	EA			intentionally blank	
8911	Safety Railing & Catwalks	LF			intentionally blank	

Translation Notes

1.	State elements highlighted in light blue are used for structures owned and maintained by the Washington State Ferry system.
2.	National bridge elements that do not have a state element equivalent are highlighted in orange.
3.	A green arrow:  Indicates that the state element should be directly translated to the national element, including total quantities and each quantity for each condition state.
4.	A green bracket with a green arrow:  Indicates that all state elements on a given bridge need total quantity and the quantity in each condition state to be summed prior to translation to the indicated national element.
5.	A green drop arrow:  Indicates the state element is not translated to a national element.
6.	A red arrow:  Indicates special treatment is required for the translation. See associated note for details.
7.	Vacant as of 2022.
8.	State Elements 146 and 149 will remain EA units. Quantities in each condition state and the total will be summed and reported in NBI element 147 as LF units without alteration.

WSBIS ELEMENTS			Calendar Year 2022	NATIONAL TUNNEL ELEMENTS		
element_id		unit	TRANSLATION	element_id	name	unit
10000	Steel Tunnel Liner	SF	→	10000	Steel Tunnel Liner	SF
10001	Cast-in-Place Concrete Tunnel Liner	SF	→	10001	Cast-in-Place Concrete Tunnel Liner	SF
10002	Precast Concrete Tunnel Liner	SF	→	10002	Precast Concrete Tunnel Liner	SF
10003	Shotcrete Tunnel Liner	SF	→	10003	Shotcrete Tunnel Liner	SF
10004	Timber Tunnel Liner	SF	→	10004	Timber Tunnel Liner	SF
10005	Masonry Tunnel Liner	SF	→	10005	Masonry Tunnel Liner	SF
10006	Unlined Rock Tunnel	SF	→	10006	Unlined Rock Tunnel	SF
10007	Rock Bolt/Dowel	EA	→	10007	Rock Bolt/Dowel	EA
10009	Other Tunnel Liner	SF	→	10009	Other Tunnel Liner	SF
10010	Steel Tunnel Roof Girders	LF	→	10010	Steel Tunnel Roof Girders	LF
10011	Concrete Tunnel Roof Girders	LF	→	10011	Concrete Tunnel Roof Girders	LF
10012	Prestressed Concrete Tunnel Roof Girders	LF	→	10012	Prestressed Concrete Tunnel Roof Girders	LF
10019	Other Tunnel Roof Girders	LF	→	10019	Other Tunnel Roof Girders	LF
10020	Steel Columns/Piles	EA	→	10020	Steel Columns/Piles	EA
10021	Concrete Columns/Piles	EA	→	10021	Concrete Columns/Piles	EA
10029	Other Columns/Piles	EA	→	10029	Other Columns/Piles	EA
10030	Steel Cross Passageway	LF	→	10030	Steel Cross Passageway	LF
10031	Concrete Cross Passageway	LF	→	10031	Concrete Cross Passageway	LF
10033	Shotcrete Cross Passageway	LF	→	10033	Shotcrete Cross Passageway	LF
10034	Timber Cross Passageway	LF	→	10034	Timber Cross Passageway	LF
10035	Masonry Cross Passageway	LF	→	10035	Masonry Cross Passageway	LF
10036	Unlined Rock Cross Passageway	LF	→	10036	Unlined Rock Cross Passageway	LF
10039	Other Cross Passageway	LF	→	10039	Other Cross Passageway	LF
10041	Concrete Interior Walls	SF	→	10041	Concrete Interior Walls	SF
10049	Other Interior Walls	SF	→	10049	Other Interior Walls	SF
10051	Concrete Portal	SF	→	10051	Concrete Portal	SF
10055	Masonry Portal	SF	→	10055	Masonry Portal	SF
10059	Other Portal	SF	→	10059	Other Portal	SF
10061	Concrete Ceiling Slab	SF	→	10061	Concrete Ceiling Slab	SF
10069	Other Ceiling Slab	SF	→	10069	Other Ceiling Slab	SF
10070	Steel Ceiling Girder	LF	→	10070	Steel Ceiling Girder	LF
10071	Concrete Ceiling Girder	LF	→	10071	Concrete Ceiling Girder	LF
10072	Prestressed Concrete Ceiling Girder	LF	→	10072	Prestressed Concrete Ceiling Girder	LF
10079	Other Ceiling Girder	LF	→	10079	Other Ceiling Girder	LF
10080	Steel Hangers and Anchorages	EA	→	10080	Steel Hangers and Anchorages	EA
10089	Other Hangers and Anchorages	EA	→	10089	Other Hangers and Anchorages	EA
10090	Steel Ceiling Panels	SF	→	10090	Steel Ceiling Panels	SF
10091	Concrete Ceiling Panels	SF	→	10091	Concrete Ceiling Panels	SF
10099	Other Ceiling Panels	SF	→	10099	Other Ceiling Panels	SF
10101	Concrete Invert Slab	SF	→	10101	Concrete Invert Slab	SF
10109	Other Invert Slab	SF	→	10109	Other Invert Slab	SF
10111	Concrete Slab-on-Grade	SF	→	10111	Concrete Slab-on-Grade	SF
10119	Other Slab-on-Grade	SF	→	10119	Other Slab-on-Grade	SF
10120	Steel Invert Girder	LF	→	10120	Steel Invert Girder	LF
10121	Concrete Invert Girder	LF	→	10121	Concrete Invert Girder	LF
10122	Prestressed Concrete Invert Girder	LF	→	10122	Prestressed Concrete Invert Girder	LF
10129	Other Invert Girder	LF	→	10129	Other Invert Girder	LF
10130	Strip Seal Expansion Joint	LF	→	10130	Strip Seal Expansion Joint	LF
10131	Pourable Joint Seal	LF	→	10131	Pourable Joint Seal	LF
10132	Compression Joint Seal	LF	→	10132	Compression Joint Seal	LF
10133	Assembly Joint With Seal	LF	→	10133	Assembly Joint With Seal	LF
10134	Open Expansion Joint	LF	→	10134	Open Expansion Joint	LF
10135	Assembly Joint Without Seal	LF	→	10135	Assembly Joint Without Seal	LF
10139	Other Joint	LF	→	10139	Other Joint	LF
10140	Gaskets	LF	→	10140	Gaskets	LF
10151	Concrete Wearing Surface	SF	→	10151	Concrete Wearing Surface	SF
10158	Asphalt Wearing Surface	SF	→	10158	Asphalt Wearing Surface	SF
10159	Other Wearing Surface	SF	→	10159	Other Wearing Surface	SF
10160	Steel Traffic Barrier	LF	→	10160	Steel Traffic Barrier	LF
10161	Concrete Traffic Barrier	LF	→	10161	Concrete Traffic Barrier	LF
10169	Other Traffic Barrier	LF	→	10169	Other Traffic Barrier	LF
10170	Steel Pedestrian Railing	LF	→	10170	Steel Pedestrian Railing	LF
10171	Concrete Pedestrian Railing	LF	→	10171	Concrete Pedestrian Railing	LF
10179	Other Pedestrian Railing	LF	→	10179	Other Pedestrian Railing	LF
10200	Ventilation System	EA	→	10200	Ventilation System	EA
10201	Fans	EA	→	10201	Fans	EA
10300	Drainage and Pumping System	EA	→	10300	Drainage and Pumping System	EA
10301	Pumps	EA	→	10301	Pumps	EA
10400	Emergency Generator System	EA	→	10400	Emergency Generator System	EA
10475	Flood Gate	EA	→	10475	Flood Gate	EA
10500	Electrical Distribution System	EA	→	10500	Electrical Distribution System	EA
10550	Emergency Distribution System	EA	→	10550	Emergency Distribution System	EA
10600	Tunnel Lighting Systems	EA	→	10600	Tunnel Lighting Systems	EA
10601	Tunnel Lighting Fixtures	EA	→	10601	Tunnel Lighting Fixtures	EA
10620	Emergency Lighting Systems	EA	→	10620	Emergency Lighting Systems	EA
10621	Emergency Lighting Fixtures	EA	→	10621	Emergency Lighting Fixtures	EA
10650	Fire Detection System	EA	→	10650	Fire Detection System	EA

10700	Fire Protection System	EA	→	10700	Fire Protection System	EA
10750	Emergency Communications System	EA	→	10750	Emergency Communications System	EA
10800	Tunnel Operations and Security System	EA	→	10800	Tunnel Operations and Security System	EA
10850	Traffic Sign	EA	→	10850	Traffic Sign	EA
10870	Egress Sign	EA	→	10870	Egress Sign	EA
10890	Variable Message Board	EA	→	10890	Variable Message Board	EA
10910	Lane Signal	EA	→	10910	Lane Signal	EA
10911	Lane Signal Fixture	EA	→	10911	Lane Signal Fixture	EA
10950	Steel Corrosion Protective Coating	SF	→	10950	Steel Corrosion Protective Coating	SF
10951	Concrete Corrosion Protective Coating	SF	→	10951	Concrete Corrosion Protective Coating	SF
10952	Fire Protective Coating	SF	→	10952	Fire Protective Coating	SF
10955	Reflective Tunnel Tile	SF	↓		intentionally blank	

Note 9 - Deck Translation Specifications

For WSDOT elements 12, 14, 20, 26, and 8217, perform the following steps towards translation to NBE element 12:

Step	Description
1	Sum total quantities and all quantities in each condition state into an NBE Temp element 12.
2	Move all quantities in WSDOT CS4 into NBE Temp CS2, adding to the quantity of NBE Temp CS2 added in Step 1. NBE Temp CS4 will have zero quantity at this point.
3	Move all quantities in WSDOT CS3 into NBE Temp CS4.
4	Add WSDOT elements 35 and 8216 CS2 to NBE Temp CS2.
5	Add WSDOT elements 35 and 8216 CS3 to NBE Temp CS4.
6	If NBE Temp total quantity = NBE Temp CS1 + CS2 + CS3 + CS4, go to Step 11.
7	If NBE Temp total quantity > NBE Temp CS1 + CS2 + CS3 + CS4, deduct difference from NBE Temp CS1 to zero limit, then go to Step 6.
8	If NBE Temp total quantity > NBE Temp CS1 + CS2 + CS3 + CS4, deduct difference from NBE Temp CS2 to zero limit, then go to Step 6.
9	If NBE Temp total quantity > NBE Temp CS1 + CS2 + CS3 + CS4, deduct difference from NBE Temp CS3 to zero limit, then go to Step 6.
10	If NBE Temp total quantity > NBE Temp CS1 + CS2 + CS3 + CS4, set NBE Temp CS4 = NBE Temp total quantity, then go to Step 11.
11	Move NBE Temp total quantity and all Temp CS1 through CS4 quantities to final NBE element
12	Note that CS3 will have zero quantity in the final translation.

For WSDOT elements 13 and 8413, perform the following steps towards translation to NBE element 16:

Step	Description
1	Sum total quantities and all quantities in each condition state into NBE element 16.
2	Move all quantities in WSDOT CS4 into NBE CS2, adding to the quantity of NBE CS2 added in Step 1. NBE CS4 will have zero quantity at this point.
3	Move all quantities in WSDOT CS3 into NBE CS4. Note that NBE CS3 will have zero quantity in the final translation.

Note 10 - Pin, Pin & Hanger Translation Specifications

For WSDOT elements 162 and 8343, perform the following steps towards translation to NBE element 161:

Step	Description
1	Sum the WSDOT elements 162 and 8243 total quantities and all condition state quantiies into NBE Temp element 161.
2	Add the WSDOT element 161 and 8342 CS1 through CS4 to corresponding NBE Temp element 161 CS1 through CS4.
3	If NBE Temp total quantity = NBE Temp CS1 + CS2 + CS3 + CS4, go to Step 8.
4	If NBE Temp total quantity > NBE Temp CS1 + CS2 + CS3 + CS4, deduct difference from NBE Temp CS1 to zero limit, then go to Step 3.
5	If NBE Temp total quantity > NBE Temp CS1 + CS2 + CS3 + CS4, deduct difference from NBE Temp CS2 to zero limit, then go to Step 3.
6	If NBE Temp total quantity > NBE Temp CS1 + CS2 + CS3 + CS4, deduct difference from NBE Temp CS3 to zero limit, then go to Step 3.
7	If NBE Temp total quantity > NBE Temp CS1 + CS2 + CS3 + CS4, set NBE Temp CS4 = NBE Temp total quantity, then go to Step 8.
8	Move NBE Temp total quantity and all Temp CS1 through CS4 quantities to final NBE element 161.

Note 11 - Joint and Wearing Surface Translation Specifications

For WSDOT elements 400, 403 and 417, perform the following steps towards translation to NBE element 301:

Step	Description
1	Sum the WSDOT element total quantities and into NBE element total quantities.
2	Sum the WSDOT element CS1 quantities into NBE element CS2 quantities. Note that NBE will have zero quantities in CS1.
3	Sum the WSDOT element CS2 quantities into NBE element CS3 quantities.
4	Sum the WSDOT element CS3 quantities into NBE element CS4 quantities.

Perform these same steps listed above for the following translations:

- WSDOT elements 401, 402, 407 8407, and 419 translated into NBE element 304
- WSDOT elements 408, 8408, 409, 414, 410 and 411 translated into NBE element 305
- WSDOT elements 404, 8404, 405, 406 and 8406 translated into NBE element 302
- WSDOT elements 412 and 413 translated into NBE element 300
- WSDOT element 416 translated into NBE element 303
- WSDOT elements 415 and 418 translated into NBE element 306
- WSDOT elements 800, 8223, 801, 802, 8224, 803, 804, and 805 translated into NBE element 510

Note 12 - Paint/Coating Translation Specifications

For WSDOT elements 901, 8901, 902, 8902, 903, 8903, 904, 8904, 905, 8905, 906, 907, 8907, 908, 909, 8909, and 910, perform the following steps towards translation to NBE element 515:

Step	Description
1	Sum the WSDOT element total quantities and into NBE element total quantities.
2	Sum the WSDOT element CS1 quantities into NBE element CS1 quantities.
3	Sum the WSDOT element CS2 quantities into NBE element CS2 quantities.
4	Sum the WSDOT element CS3 quantities into NBE element CS4 quantities. Note that NBE CS3 will always have zero quantities.

Appendix 2-F Border Bridge Information

Oregon

Send all reports and any requests for their reports to

Erick Cain, OPMA, Erick.j.cain@odot.state.or.us
Bridge Inventory Coordinator
4040 Fairview Industrial Dr. SE MS #4
Salem, OR 97302
Phone: 503 986 3384 Fax: 503 986 3407

Region 1 - (Longview to Hood River) –
Joel Boothe, Joel.E.BOOTHE@odot.state.or.us
Office 503-652-5691, Cell 503-969-1091, Fax 503-653-3085

Inspected by Oregon:
5/1E – 000000PR – Columbia R Interstate (Oregon #01377A)
5/1W – 0005216A – Columbia R Interstate (Oregon #07333)
205/1 – 0010833A – Glen Jackson Bridge (Oregon #09555)
0259228300 – 08712700 – Br of the Gods (Oregon # 02592)

Inspected by Washington:
433/1 – 0003760A – Lewis & Clark (Oregon #02046)

Region 2 -
Bill Burns, 503-986-2659, Robert.W.BURNS@odot.state.or.us

Inspected by Oregon:
101/1 – 0007666A - Megler (Oregon #07949D) – Spans 1-4
101/1(A) – 0007666B - Megler(A) (Oregon #07949A) – Spans 5-19
101/1(B) – 0007666C - Megler(B) (Oregon #07949B) – Spans 20-159
101/1(C) – 0007666D - Megler(C) (Oregon #07949C) – Span 160

Region 4 - (Hood River to Biggs Jct.) –
Mike Pulzone, James.M.PULZONE@odot.state.or.us
Office 541-388-6188, Cell 541-419-1688, Fax 541-388-6108

Inspected by Oregon:
197/1 – 000000PC – The Dalles (Oregon #06635Q)

Inspected by Washington:
97/1 – 0006539A – Biggs Rapids-Sam Hill (Oregon #00849A)

Inspected by Consultants
06645 – 000000PH – Hood River (Oregon #06645)

Region 5 -
Kelley McAlister, Kelley.T.MCALISTER@odot.state.or.us
541-963-1371

Inspected by Washington:
82/280N – 0012819A – Umatilla (Oregon #16424)
82/280S – 000000PD – Umatilla (Oregon #02230A)

Oregon Underwater Reports –
Rick Shorb, Rick.L.SHORB@odot.state.or.us

Idaho

Patty Fish, patty.fish@itd.idaho.gov, 208-334-8847
cc to Kathleen Slinger, Kathleen.Slinger@itd,idaho.gov

Inspected by Washington
12/915 – 0002348A – Snake R Clarkston (ID SID 000000000010360)

Inspected by Idaho
41/10 – 00000LLV – BNRR OC (ID SID 000000000014255)
90/594N – 00200520 – Spokane River (ID SID 000000000016735)
90/594S – 00200519 – Spokane River (ID SID 000000000016740)
5700-1 – 08374400 – Southway Bridge (ID SID 000000000021495) – Local Agency owned (Asotin County) – Idaho works directly with Asotin County

Appendix 2-G Sufficiency Rating Calculation

Sufficiency Rating Worksheet

An Illustration of Sufficiency Rating (SR) Factors

4. Special Reductions
S4 = 13% Maximum

Detour Length
Main Span Design
Bridge Rail
Transition
Guardrail
Terminal

Sufficiency Rating = S1 + S2 + S3 - S4

Sufficiency Rating shall not be < 0 nor > 100

If S1 + S2 + S3 ≥ 50, then subtract S4, otherwise SR = S1 + S2 + S3

Structure ID: _____

Bridge Number: _____

Bridge Name: _____

Sufficiency Rating = S1 + S2 + S3 – S4 (Range: 0 to 100)

= ( ) + ( ) + ( ) - ( )

= _____

SD/FO (WSBIS Item 2711) = _____

Calculated by: _____

Date: _____

Note:

These calculations use English units. The final value may differ slightly from WSBIS Item 2710 as it is calculated using metric values.

STRUCTURAL ADEQUACY & SAFETY (S1)

1. Determine the value of A:

(a) Enter the condition codes for:

WSBIS 1671	*SUPERSTRUCTURE OVERALL*	_____
WSBIS 1676	*SUBSTRUCTURE CONDITION*	_____
WSBIS 1678	*CULVERT CONDITION*	_____

(b) Find A:

A = 55 : If the lowest code above is less than or equal to 2
A = 40 : If the lowest code is equal to 3
A = 25: If the lowest code is equal to 4
A = 10 : If the lowest code is equal to 5
A = 0 : If the lowest code is greater than 5

A **=** _____

2. Determine the value of B:

***Either*:**

when the Inventory Rating uses Tons:

(a) Enter the Inventory Rating (IR):

WSBIS 1555 INVENTORY RATING (IR)=_____TONS

(b) Find the value of B:

$B = (36 - IR)^{1.5} \times 0.2778$

B **=** _____

***Or*:**

when the Inventory Rating uses a Factor*:

(a) Enter the Inventory Rating (IR):

WSBIS 1556 INVENTORY RATING (IR)=_____FACTOR

(b) Find the value of B:

$B = (36 - (IR \times 36))^{1.5} \times 0.2778$

B **=** _____

3. Determine S1:

S1 = 55 - (A + B)

S1 = _____ (points range from 0 to 55)

* See article at http://www.fhwa.dot.gov/bridge/bridgeload01.cfm

SERVICEABILITY & FUNCTIONAL OBSOLESCENCE (S2)

1. Determine the value of C:

(a) Enter the adequacy or condition codes for the fields listed.
(b) Determine corresponding values for these codes from Table 1.
(c) For codes higher than those listed, use a value of 0.

TABLE 1

	Code	Value
If *STRUCTURAL EVALUATION* is:	≤ 3	= 4
WSBIS 1657	= 4	= 2
	= 5	= 1
If *DECK GEOMETRY* is:	≤ 3	= 4
WSBIS 1658	= 4	= 2
	= 5	= 1
If *UNDERCLEARANCES* is:	≤ 3	= 4
WSBIS 1659	= 4	= 2
	= 5	= 1
If *ALIGNMENT* is:	≤ 3	= 4
WSBIS 1661	= 4	= 2
	= 5	= 1
If *WATERWAY* is:	≤ 3	= 4
WSBIS 1662	= 4	= 2
	= 5	= 1
If *OVERALL DECK CONDITION* is:	≤ 3	= 5
WSBIS 1663	= 4	= 3
	= 5	= 1

(d) Add the values to determine C.

		Code	Value
WSBIS 1657	*STRUCTURAL EVALUATION*	_____	_____
WSBIS 1658	*DECK GEOMETRY*	_____	_____
WSBIS 1659	*UNDERCLEARANCES*	_____	_____
WSBIS 1661	*ALIGNMENT*	_____	_____
WSBIS 1662	*WATERWAY*	_____	_____
WSBIS 1663	*OVERALL DECK CONDTION*	_____	_____

TOTAL C = _____(13 maximum)

2. Determine the value of D:

(a) Enter measurements for the following fields:

WSBIS 1397 *APPROACH ROADWAY WIDTH* _____
WSBIS 1356 *CURB-TO-CURB WIDTH* _____

(b) Find the value of D: (For bridges that are <u>not</u> culverts (i.e., Main Span Design is not 19))

APPROACH ROADWAY WIDTH > (*CURB-TO-CURB WIDTH* + 2.0'), D = 5
APPROACH ROADWAY WIDTH ≤ (*CURB-TO-CURB WIDTH* + 2.0'), D = 0

D = _____

3. Determine the value of E:

(a) Enter or determine the following values:

WSBIS 1352 *LANES ON* _____
WSBIS 1356 *CURB-TO-CURB WIDTH* _____
WSBIS 1445 *ADT ON INVENTORY ROUTE* _____
Lane Width (rounded to tenths):
CURB-TO-CURB WIDTH/LANES ON _____
ADT/Lane:
ADT ON INVENTORY ROUTE/LANES ON _____

(b) Find the value of E: (where the following conditions apply)

<u>For One-Lane Bridges:</u>

- Lane Width < 14, E = 15
- 14 ≤ Lane Width < 18, E = 15 ((18-Lane Width)/4) = _____
- Lane Width ≥ 18, E = 0

<u>For Two or More Lane Bridges:</u>

- *LANES ON* = 02 and Lane Width ≥ 16, E = 0
- *LANES ON* = 03 and Lane Width ≥ 15, E = 0
- *LANES ON* = 04 and Lane Width ≥ 14, E = 0
- *LANES ON* > 05 and Lane Width ≥ 12, E = 0

If the above calculations apply, <u>do not</u> continue.

- ADT/Lane > 50 and Lane Width < 9, E =15
- ADT/Lane ≤ 50 and Lane Width < 9, E =7.5
- ADT/Lane ≤ 50 and Lane Width ≥ 9, E = 0

- 50 < ADT/Lane ≤ 125 and Lane Width <10, E = 15
- 50 < ADT/Lane ≤ 125 and 10 ≤ Lane Width <13,
  E = 15 (13 - Lane Width)/3 = _____
- 50 < ADT/Lane ≤ 125 and Lane Width ≥13, E = 0

- 125 < ADT/Lane ≤ 375 and Lane Width < 11, E = 15
- 125 < ADT/Lane ≤ 375 and 11 ≤ Lane Width < 14,
  E = 15 (14 - Lane Width)/3 = _____
- 125 < ADT/Lane ≤ 375 and Lane Width ≥ 14, E = 0

- 375 < ADT/Lane ≤ 1350 and Lane Width < 12, E= 15
- 375 < ADT/Lane ≤ 1350 and 12 ≤ Lane Width < 16,
  E = 15 (16 - Lane Width)/4 = _____
- 375 < ADT/Lane ≤ 1350 and Lane Width ≥ 16, E = 0

- ADT/Lane > 1350 and Lane Width < 15, E=15
- ADT/Lane > 1350 and 15 ≤ Lane Width < 16,
  E = 15 (16 - Lane Width) = _____
- ADT/Lane > 1350 and Lane Width ≥ 16, E = 0

***E* =** _____

4. Determine the value of F:

(a) Enter the following values:

WSBIS 1370 *MIN. VERT. CLEARANCE OVER DECK* _____
WSBIS 1485 *STRAHNET* _____

(b) Find the value of F: (using the following conditions)

- *STRAHNET* > 0 and *MIN. VERT. CLEARANCE OVER DECK* ≥ 16 00, F = 0
- *STRAHNET* > 0 and *MIN. VERT. CLEARANCE OVER DECK* < 16 00, F = 2
- *STRAHNET* = 0 and *MIN. VERT. CLEARANCE OVER DECK* ≥ 14 00, F = 0
- *STRAHNET* = 0 and *MIN. VERT. CLEARANCE OVERDECK* < 14 00, F = 2

***F* =** _____

5. Determine S2:

S2 = 30 - (C +(D + E)+ F*)* *((D + E) cannot be more than 15*)

S2 = _____ (points range from 0 to 30)

ESSENTIALITY FOR PUBLIC USE (S3)

1. Determine the value of G:

(a) Enter the following values:

WSBIS 1445 *ADT ON INVENTORY ROUTE* _____
WSBIS 1413 *DETOUR LENGTH* _____
S1 POINTS _____
S2 POINTS _____

(b) Calculate the value of G:

$$G = \frac{(ADT\ ON\ INVENTORY\ ROUTE)(DETOUR\ LENGTH)(7.5)}{[(S1 + S2)/85](100{,}000)}$$

$$G = \frac{(\_\_\_\_\_)(\_\_\_\_\_)\ (7.5)}{[(\_\_\_\_\_+\_\_\_\_\_)/85](100{,}000)}$$

***G* =** _____ (15 maximum)

2. Determine the value of H:

(a) Enter the following value:

WSBIS 1485 *STRAHNET* _____

(b) Find the value of H:

- *STRAHNET* code is 1 or 2, H = 2
- *STRAHNET* code is 0, H = 0

***H* =** _____

3. Determine S3:

S3 = 15 - (G + H)

S3 = _____ (points range from 0 to 15)

SPECIAL REDUCTIONS (S4)

Use only if S1 + S2 + S3 $\geq$ 50

1. Determine the value of I:

(a) Enter the following value:

WSBIS 1413 *DETOUR LENGTH* _____

(b) Calculate the value of I:

$I = (DETOUR\ LENGTH)^4(5.205)(10^{-8})$

***I* =** _____ (5 maximum)

2. Determine the value of J:

(a) Enter the following value:

WSBIS 1533 *MAIN SPAN DESIGN* _____

(b) Find the value of J:

- If *MAIN SPAN DESIGN* is 10, 12, 13, 14, 15, 16, or 17, then J = 5
- Otherwise, J = 0

***J* =** _____

3. Determine the value of K:

(a) Enter the following coding values:

WSBIS 1684 *BRIDGE RAIL* _____
WSBIS 1685 *TRANSITION* _____
WSBIS 1686 *GUARDRAIL* _____
WSBIS 1687 *TERMINAL* _____

(b) Find the value of K:

- If 2 of the above values are 0, then K = 1
- If 3 of the above values are 0, then K = 2
- If 4 of the above values are 0, then K = 3

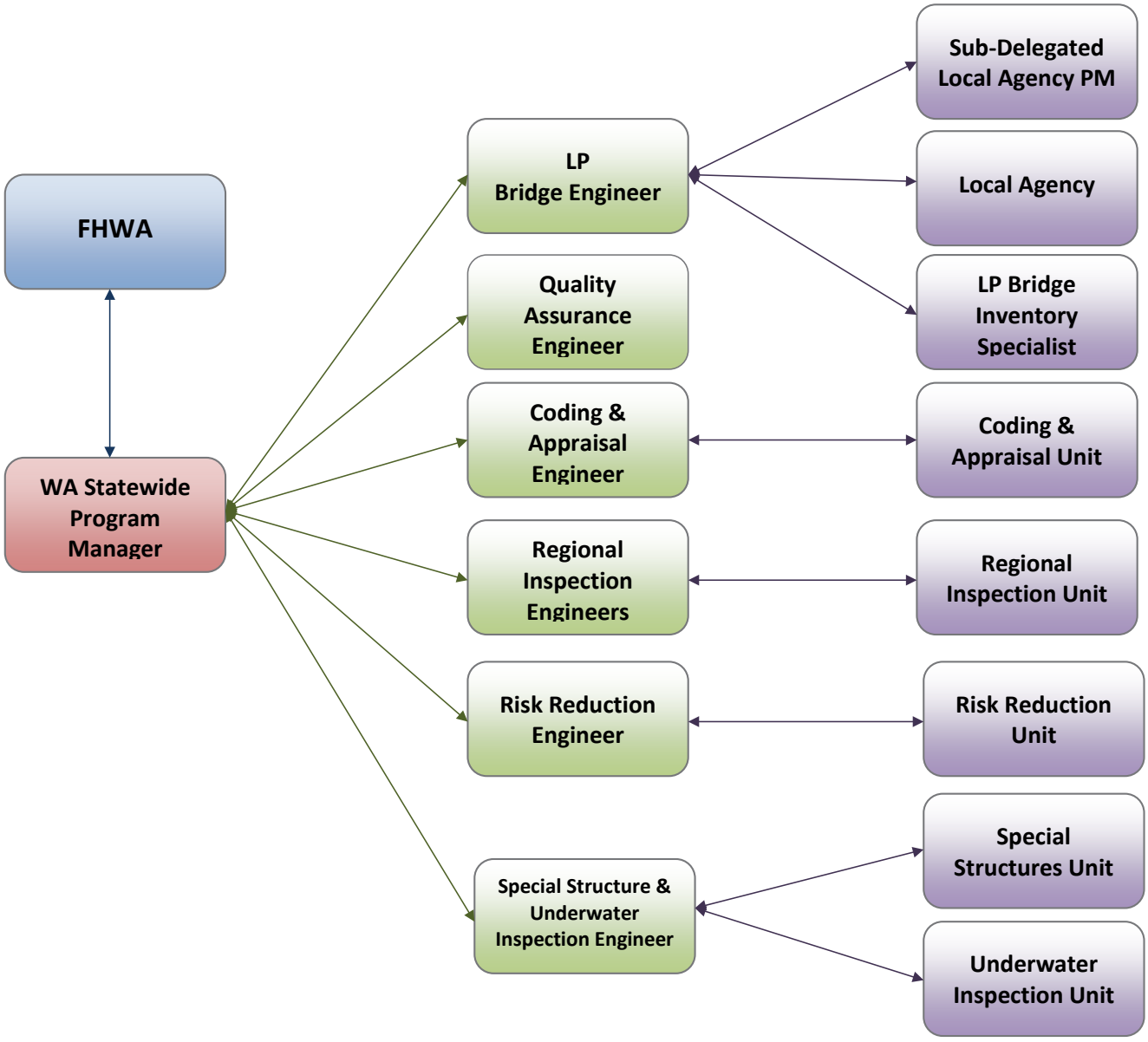
***K* =** _____

4. Determine S4:

S4 = I + J + K

S4 = _____ (points range from 0 to 13)

Appendix 2-H WSDOT/FHWA Communication Protocol Flowchart



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