

# Appendix 2-C Washington State Bridge Inventory System Coding Guide

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2437	Bridge List Milepost Override	Crossing Tab Supplement	2-C-134
2438	Milepost Sequencer	Crossing Tab Supplement	2-C-135
2440	Milepost	Crossing Tab	2-C-116
2468	Directional Indicator	Crossing Tab Supplement	2-C-135
2470	Ahead/Back Indicator	Crossing Tab Supplement	2-C-135
2500	Minimum Vertical Clearance, Route Direction	Crossing Tab Supplement	2-C-133
2501	Maximum Vertical Clearance, Reverse Direction	Crossing Tab	2-C-129
2502	Minimum Vertical Clearance, Reverse Direction	Crossing Tab Supplement	2-C-133
2537	Alphabetic Span Type	Design Tab	2-C-140
2580	Reference Inspection Date	Load Rating Tab	2-C-149
2581	Load Rating Date	Load Rating Tab	2-C-149
2582	Rated By	Load Rating Tab	2-C-149
2587	Type 3 Rating Factor	Load Rating Tab	2-C-152
2588	Type 3S2 Rating Factor	Load Rating Tab	2-C-152
2589	Type 3-3 Rating Factor	Load Rating Tab	2-C-152
2590	Notional Rating Load (NRL) Rating Factor	Load Rating Tab	2-C-152
2591	Single Unit 4 (SU4) Rating Factor	Load Rating Tab	2-C-153
2592	Single Unit 5 (SU5) Rating Factor	Load Rating Tab	2-C-153
2593	Single Unit 6 (SU6) Rating Factor	Load Rating Tab	2-C-153
2594	Single Unit 7 (SU7) Rating Factor	Load Rating Tab	2-C-153
2596	Overload 1 (OL-1) Rating Factor	Load Rating Tab	2-C-154
2597	Overload 2 (OL-2) Rating Factor	Load Rating Tab	2-C-154
2598	Emergency Vehicle 2 (EV2) Rating Factor	Load Rating Tab	2-C-153
2599	Emergency Vehicle 3 (EV3) Rating Factor	Load Rating Tab	2-C-153
2610	Asphalt Depth	NBI Tab	2-C-61
2611	Design Curb Height	NBI Tab	2-C-61
2612	Bridge Rail Height	NBI Tab	2-C-61
2613	Risk Category	NBI Tab	2-C-45
2614	Subject to NBIS Flag	NBI Tab	2-C-62
2615	Special Structures Flag	Bridge ID Tab	2-C-88
2642	Inspection Hours	Report Tab	2-C-33

**Table 1** WSBIS Item Numbers by Sequence

WSBIS Item No.	WSBIS Item Name	WSBIS Application Tab	Page No.
2643	Inspection Overtime Hours	Report Tab	2-C-33
2646	Inspector Initials	Report Tab	2-C-33
2649	Inspector Certification Number	Report Tab	2-C-33
2654	Co-Inspector Initials	Report Tab	2-C-33
2675	Number of Utilities	NBI Tab	2-C-61
2688	Revise Rating Flag	NBI Tab	2-C-63
2691	Photos Flag	NBI Tab	2-C-63
2693	Soundings Flag	NBI Tab	2-C-63
2694	Clearance Flag	NBI Tab	2-C-64
2695	QA Flag	NBI Tab	2-C-64
2853	Proposed Improvement Roadway Width	Proposed Improvements Tab	2-C-161
2860	Proposed Improvement Cost Per SF of Deck	Proposed Improvements Tab	2-C-161
2870	Proposed Improvement Eng. and Misc. Cost	Proposed Improvements Tab	2-C-161
2883	Proposed Improvement Calculation	Proposed Improvements Tab	2-C-159
2900	Late Inspection Explanation	Report Tab	2-C-34
2901	Program Manager Response Date	Report Tab	2-C-34
2902	Program Manager Approval	Report Tab	2-C-34
2920	Report Type	Report Tab	2-C-27
2921	Inspection Type	Report Tab	2-C-27
2922	Inspection Due Date	Report Tab	2-C-31
2923	Inspection Due Date Override	Report Tab	2-C-32
2924	Report Type Notes	Report Tab	2-C-32
2930	Obsolete Structure Flag	Bridge ID Tab	2-C-88
7281	Legislative District 1	Bridge ID Tab	2-C-87
7283	Legislative District 2	Bridge ID Tab	2-C-87
7296	Historical Significance - Local	Bridge ID Tab	2-C-87
7441	Speed Limit	Crossing Tab	2-C-132
7479	Federal Aid Route Number	Crossing Tab	2-C-131
7557	Design Exception Date	Design Tab	2-C-131
7565	Federal Aid Project Number	Design Tab	2-C-138
7644	Inspection Report Hours	Report Tab	2-C-34
7664	Drain Condition	NBI Tab	2-C-65
7665	Drain Status	NBI Tab	2-C-65
7666	Deck Scaling	NBI Tab	2-C-66
7667	Deck Scaling Percent	NBI Tab	2-C-66
7669	Deck Rutting	NBI Tab	2-C-67
7670	Deck Exposed Rebar	NBI Tab	2-C-67
7672	Curb Condition	NBI Tab	2-C-68
7673	Sidewalk Condition	NBI Tab	2-C-68
7674	Paint Condition	NBI Tab	2-C-69
7681	Approach Condition	NBI Tab	2-C-69
7682	Retaining Wall Condition	NBI Tab	2-C-70
7683	Pier Protection Condition	NBI Tab	2-C-71
7710	Sufficiency Rating	NBI Tab	2-C-71
7711	Structurally Deficient/Functionally Obsolete	NBI Tab	2-C-72

**Table 1**      **WSBIS Item Numbers by Sequence**

<b>WSBIS Item No.</b>	<b>WSBIS Item Name</b>	<b>WSBIS Application Tab</b>	<b>Page No.</b>
7832	Water Type	Waterway Tab	2-C-155
7833	Flood Plain Intrusion	Waterway Tab	2-C-155
7834	Flood Control	Waterway Tab	2-C-155
7835	Scour History	Waterway Tab	2-C-156
7836	Streambed Material Type	Waterway Tab	2-C-156
7837	Substructure Stability	Waterway Tab	2-C-156
7838	Waterway Obstruction	Waterway Tab	2-C-157
7839	Streambed Stability	Waterway Tab	2-C-157
7840	Streambed Anabranch	Waterway Tab	2-C-158
7841	Piers in Water	Waterway Tab	2-C-158

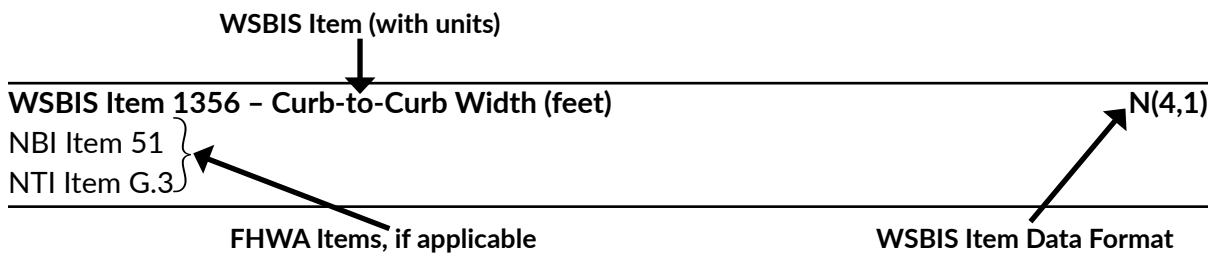
## Coding Guide Instructions

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 4 digit 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 and/or NTI. Some WSBIS field definitions vary from the NBI or NTI, 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

Each field defined herein has a standard header:



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.

## II. On, Under, and “Neither On or Under” Records

On and Under records define how a structure relates to public roadways, signifying routes On and routes Under a structure. Note that when a single structure carries a public roadway and has a public roadway crossing under it, it should have both an On and Under record. In cases where multiple roadways cross under a structure, it may have multiple Under records, each carrying data specific to that route.

“Neither On or Under” records are used when the structure has no relationship to a public roadway.

### Examples:

**Bridge 90/327 Schoessler Rd Over I-90** – This bridge has an On crossing record for Schoessler Rd and an Under crossing record for I-90.

**Bridge 90/531N I-90 Over Garden Springs Rd** – This bridge has an On crossing record for I-90 and an Under crossing record for Garden Springs Road.

**Bridge 90/564P Pedestrian Br Over I-90** – This bridge has an Under crossing record for I-90 and no On record, since the bridge doesn’t carry a public roadway.

**Bridge 90/179.25 Schnebly Coulee** – This bridge has an On crossing record for I-90 and no Under record, since the bridge doesn’t have a public roadway crossing under it. **Bridge 90/43P Mercer Slough Pedestrian Bridge** – This is a “Neither On or Under record” since it doesn’t carry a public roadway on or under it.

**Tunnel 90/55 SE 35th St Tunnel Under I-90** – Tunnels are coded as Under records, and only carry route information for the route inside the tunnel. As of 2018, WSBIS doesn’t maintain data for routes on top of tunnels.

Pedestrian and railroad bridges over routes carrying public roadways are inventoried in WSBIS primarily to manage restrictions to roadway traffic imposed by these structures. WSBIS maintains less data for these structures, as compared to bridges carrying public roadways themselves. Table 2 provides a listing of the WSBIS fields maintained for these structures.

**Table 2 WSBIS Items Coded for Pedestrian, Railroad, and other non-vehicular bridges over public roadways<sup>1</sup>**

WSBIS Item No.	WSBIS Item Name	NBI Item No.	Page No.
<b>Report Tab</b>			
2920	Report Type	-	2-C-27
1991	Routine Inspection Frequency	91	
1991	Fracture Critical Inspection Frequency	92A	
1991	Underwater Inspection Frequency	92B	
1991	Special Feature Inspection Frequency	92C	
1990	Routine Inspection Date	90	
1990	Fracture Critical Inspection Date	93A	
1990	Underwater Inspection Date	93B	
1990	Special Feature Inspection Date	93C	
2922	Inspection Due Date	-	2-C-31
2923	Inspection Due Date Override	-	2-C-32
2924	Report Type Notes	-	2-C-32
2921	Inspection Type	-	2-C-27
2646	Inspector Initials	-	2-C-33
2649	Inspector Certification Number	-	2-C-33
2654	Co-Inspector Initials	-	2-C-33
2642	Inspection Hours	-	2-C-33
2643	Inspection Overtime Hours	-	2-C-33
7644	Inspection Report Hours	-	2-C-34
2900	Late Inspection Explanation	-	2-C-34
2901	Program Manager Response Date	-	2-C-34
2902	Program Manager Approval	-	2-C-34
<b>NBI Tab</b>			
<b>Adequacy Appraisals</b>			
2613	Risk Category	-	2-C-45
<b>Condition Codes<sup>2</sup></b>			
1663	Deck Condition	58	2-C-47
1671	Superstructure Condition	59	2-C-48
1676	Substructure Condition	60	2-C-49
1677	Channel Protection Condition	61	2-C-50
1678	Culvert Condition	62	2-C-51
<b>Miscellaneous Fields</b>			
2614	Subject to NBIS Flag	-	2-C-62
<b>Inspection Flags</b>			
2691	Photos Flag	-	2-C-63
2694	Clearance Flag	-	2-C-64
2695	QA Flag	-	2-C-64
<b>Bridge ID Tab</b>			
1001	Structure Identifier	8	2-C-73
2009	Bridge Number	-	2-C-73
2010	Bridge Sort Number	-	2-C-61
1132	Structure Name	-	2-C-75
1232	Features Intersected	6	2-C-76

**Table 2 WSBIS Items Coded for Pedestrian, Railroad, and other non-vehicular bridges over public roadways<sup>1</sup>**

WSBIS Item No.	WSBIS Item Name	NBI Item No.	Page No.
1256	Facilities Carried	7	2-C-76
1156	Location (Main Listings)	9	2-C-77
2400	Program Manager	-	2-C-77
1286	Custodian	21	2-C-77
1019	Owner	22	2-C-77
1021	County Code	3	2-C-79
2023	City	-	2-C-80
1274	Region code	2	2-C-80
1188	Latitude	16	2-C-81
1196	Longitude	17	2-C-81
2181	Section	-	2-C-82
2183	Township	-	2-C-82
2185	Range	-	2-C-82
1276	FIPS Code	4	2-C-83
1285	Toll	20	2-C-83
1288	Parallel Structure	101	2-C-84
1289	Temporary Structure	103	2-C-85
1292	Historical Significance - NRHP	37	2-C-86
2295	Historical Significance - HAER	-	2-C-86
7296	Historical Significance - Local	-	2-C-87
7281	Legislative District 1	-	2-C-87
7283	Legislative District 2	-	2-C-87
2615	Special Structures Flag	-	2-C-88
2930	Obsolete Structure Flag	-	2-C-88
<b>Layout Tab</b>			
1332	Year Built	27	2-C-89
1336	Year Rebuilt	106	2-C-89
1340	Structure Length	49	2-C-90
1348	Maximum Span Length	48	2-C-93
1352	Lanes On	28A	2-C-94
1374	Minimum Vertical Clearance Under Bridge	54B	2-C-101
1378	Vertical Underclearance Code	54A	2-C-103
1379	Minimum Lateral Underclearance Right	55B	2-C-103
1382	Lateral Underclearance Code	55A	2-C-106
1383	Minimum Lateral Underclearance Left	56	2-C-106
1386	Navigation Control	38	2-C-107
1387	Navigation Vertical Clearance	39	2-C-108
1390	Navigation Horizontal Clearance	40	2-C-108



**Table 2 WSBIS Items Coded for Pedestrian, Railroad, and other non-vehicular bridges over public roadways<sup>1</sup>**

WSBIS Item No.	WSBIS Item Name	NBI Item No.	Page No.
<b>Crossing Tab</b>			
1432	Inventory Route On/Under	5A	2-C-113
1433	Inventory Route Highway Class	5B	2-C-114
1434	Inventory Route Service Level	5C	2-C-115
1435	Route	5D	2-C-115
2440	Milepost	-	2-C-116
1445	ADT	29	2-C-116
1451	ADT Truck Percentage	109	2-C-117
1453	ADT Year	30	2-C-117
1457	Future ADT	114	2-C-118
1463	Future ADT Year	115	2-C-118
1467	Linear Referencing System Route	13A	2-C-119
1469	LRS Milepost	11	2-C-120
1483	National Highway System	104	2-C-121
1484	Base Highway Network	12	2-C-122
1485	STRAHNET Highway	100	2-C-122
1486	Federal Lands Highways	105	2-C-123
1487	Functional Classification	26	2-C-124
1489	National Truck Network	110	2-C-125
1490	Lane Use Direction	102	2-C-125
1354	Lanes Under	28B	2-C-126
1491	Horizontal Clearance, Route Direction	47	2-C-126
1495	Horizontal Clearance, Reverse Direction	47	2-C-126
1413	Detour Length	19	2-C-128
1499	Maximum Vertical Clearance, Route Direction	10	2-C-129
2501	Maximum Vertical Clearance, Reverse Direction	10	2-C-129
2409	NTI Reportable Flag	-	2-C-131
2410	NBI Reportable Flag	-	2-C-131
7479	Federal Aid Route Number	-	2-C-131
7441	Speed Limit	-	2-C-132
<b>Crossing Tab Supplement</b>			
2000	Main Listing Flag	-	2-C-133
2401	Crossing Manager	-	2-C-133
2402	Crossing Description	-	2-C-133
2500	Minimum Vertical Clearance, Route Direction	-	2-C-133
2502	Minimum Vertical Clearance, Reverse Direction	-	2-C-133
2411	Bridge List	-	2-C-134
2436	Route Sequencer	-	2-C-134
2437	Bridge List Milepost Override	-	2-C-134
2438	Milepost Sequencer	-	2-C-135
2468	Directional Indicator	-	2-C-135
2470	Ahead/Back Indicator	-	2-C-135

**Table 2**                      **WSBIS Items Coded for Pedestrian, Railroad, and other non-vehicular bridges over public roadways<sup>1</sup>**

WSBIS Item No.	WSBIS Item Name	NBI Item No.	Page No.
<b>Design Tab</b>			
1532	Main Span Material	43A	2-C-137
1533	Main Span Design	43B	2-C-138
1535	Approach Span Material	44A	2-C-139
1536	Approach Span Design	44B	2-C-139
2537	Alphabetic Span Type	-	2-C-140
1544	Service On	42A	2-C-142
1545	Service Under	42B	2-C-143
1546	Deck type	107	2-C-144
1547	Wearing Surface	108A	2-C-145
1548	Membrane	108B	2-C-145
1549	Deck Protection	108C	2-C-146

**Notes:**

1. These structures are always associated with a Condition and/or Primary Safety Inspection report type.
2. Condition codes used only when Condition report type is used.

Tunnels are coded as Under records. Table 3 identifies the fields coded for tunnels, noting that all route information applies to the route inside the tunnel.

**Table 3 WSBIS Items Coded for Tunnels**

WSBIS Item No.	WSBIS Item Name	NTI Item No.	WSBIS Application Tab	Page No.
<b>Report Tab</b>				
2920	Report Type	-	Report Tab	2-C-27
1991	Routine Inspection Frequency	D.3	Report Tab	
1991	Fracture Critical Inspection Frequency	-	Report Tab	
1991	Underwater Inspection Frequency	-	Report Tab	
1991	Special Feature Inspection Frequency	-	Report Tab	
1990	Routine Inspection Date	D.2	Report Tab	
1990	Fracture Critical Inspection Date	-	Report Tab	
1990	Underwater Inspection Date	-	Report Tab	
1990	Special Feature Inspection Date	-	Report Tab	
2922	Inspection Due Date	-	Report Tab	2-C-31
2923	Inspection Due Date Override	-	Report Tab	2-C-32
2924	Report Type Notes	-	Report Tab	2-C-32
2921	Inspection Type	-	Report Tab	2-C-27
2646	Inspector Initials	-	Report Tab	2-C-33
2649	Inspector Certification Number	-	Report Tab	2-C-33
2654	Co-Inspector Initials	-	Report Tab	2-C-33
2642	Inspection Hours	-	Report Tab	2-C-33
2643	Inspection Overtime Hours	-	Report Tab	2-C-33
7644	Inspection Report Hours	-	Report Tab	2-C-34
2900	Late Inspection Explanation	-	Report Tab	2-C-34
2901	Program Manager Response Date	-	Report Tab	2-C-34
2902	Program Manager Approval	-	Report Tab	2-C-34
<b>NBI Tab (NTI Tab in WSBIS Application)</b>				
<b>Adequacy Appraisals</b>				
1293	Open, Closed or Posted	L.4	Load Rating Tab	2-C-44
2613	Risk Category	-	NTI Tab	2-C-45
<b>Miscellaneous Fields</b>				
2614	Subject to NBIS Flag	-	NTI Tab	2-C-62
<b>Inspection Flags</b>				
2688	Revise Rating Flag	-	NTI Tab	2-C-63
2691	Photos Flag	-	NTI Tab	2-C-63
2694	Clearance Flag	-	NTI Tab	2-C-64
2695	QA Flag	-	NTI Tab	2-C-64
<b>Bridge ID Tab (Tunnel ID Tab in WSBIS Application)</b>				
1001	Structure Identifier	I.1	Tunnel ID Tab	2-C-73
2009	Bridge Number	-	Tunnel ID Tab	2-C-73
2010	Bridge Sort Number	-	Tunnel ID Tab	2-C-75
1132	Structure Name	I.2	Tunnel ID Tab	2-C-75
1232	Features Intersected	-	Tunnel ID Tab	2-C-76
1256	Facilities Carried	I.10	Tunnel ID Tab	2-C-76
1156	Location (Main Listings)	-	Tunnel ID Tab	2-C-77
2400	Program Manager	-	Tunnel ID Tab	2-C-77
1286	Custodian	C.2	Tunnel ID Tab	2-C-77

**Table 3 WSBIS Items Coded for Tunnels**

WSBIS Item No.	WSBIS Item Name	NTI Item No.	WSBIS Application Tab	Page No.
1019	Owner	C.1	Tunnel ID Tab	2-C-77
1021	County Code	I.4	Tunnel ID Tab	2-C-79
2023	City	-	Tunnel ID Tab	2-C-80
1274	Region code	I.6	Tunnel ID Tab	2-C-80
1188	Latitude	I.13	Tunnel ID Tab	2-C-81
1196	Longitude	I.14	Tunnel ID Tab	2-C-81
2181	Section	-	Tunnel ID Tab	2-C-82
2183	Township	-	Tunnel ID Tab	2-C-82
2185	Range	-	Tunnel ID Tab	2-C-82
1276	FIPS Code	I.5	Tunnel ID Tab	2-C-83
1285	Toll	C.4	Tunnel ID Tab	2-C-83
1292	Historical Significance - NRHP	-	Tunnel ID Tab	2-C-86
2295	Historical Significance - HAER	-	Tunnel ID Tab	2-C-86
7296	Historical Significance - Local	-	Tunnel ID Tab	2-C-86
7281	Legislative District 1	-	Tunnel ID Tab	2-C-87
7283	Legislative District 2	-	Tunnel ID Tab	2-C-87
2615	Special Structures Flag	-	Tunnel ID Tab	2-C-88
2930	Obsolete Structure Flag	-	Tunnel ID Tab	2-C-88
<b>Layout Tab</b>				
1332	Year Built	A.1	Layout Tab	2-C-89
1336	Year Rebuilt	A.2	Layout Tab	2-C-89
1340	Structure Length	-	Layout Tab	2-C-90
1356	Curb-to-Curb Width	G.3	Layout Tab	2-C-94
1364	Sidewalk/Curb Width Left	G.4	Layout Tab	2-C-97
1367	Sidewalk/Curb Width Right	G.5	Layout Tab	2-C-97
<b>Crossing Tab (Route Tab in WSBIS Application)</b>				
1432	Inventory Route On/Under	-	Route Tab	2-C-113
1433	Inventory Route Highway Class	I.9	Route Tab	2-C-114
1434	Inventory Route Service Level	-	Route Tab	2-C-115
1435	Route	I.7	Route Tab	2-C-115
2440	Milepost	-	Route Tab	2-C-116
1445	ADT	A.4	Route Tab	2-C-116
1451	ADT Truck Percentage	A.5	Route Tab	2-C-117
1453	ADT Year	A.6	Route Tab	2-C-117
1457	Future ADT	-	Route Tab	2-C-118
1463	Future ADT Year	-	Route Tab	2-C-118
1467	Linear Referencing System Route	I.11	Route Tab	2-C-119
1469	LRS Milepost	I.12	Route Tab	2-C-120
1483	National Highway System	C.5	Route Tab	2-C-121
1484	Base Highway Network	-	Route Tab	2-C-122
1485	STRAHNET Highway	C.6	Route Tab	2-C-122
1486	Federal Lands Highways	-	Route Tab	2-C-123
1487	Functional Classification	C.7	Route Tab	2-C-124
1489	National Truck Network	-	Route Tab	2-C-125
1490	Lane Use Direction	C.3	Route Tab	2-C-125
1354	Lanes Under	A.3	Route Tab	2-C-126

**Table 3 WSBIS Items Coded for Tunnels**

WSBIS Item No.	WSBIS Item Name	NTI Item No.	WSBIS Application Tab	Page No.
1491	Horizontal Clearance, Route Direction	-	Crossing Tab (INV)	2-C-126
1495	Horizontal Clearance, Reverse Direction	-	Crossing Tab (INV)	2-C-126
1413	Detour Length	A.7	Route Tab	2-C-128
1499	Maximum Vertical Clearance, Route Direction	-	Crossing Tab (INV)	2-C-129
2501	Maximum Vertical Clearance, Reverse Direction	-	Crossing Tab (INV)	2-C-129
2409	NTI Reportable Flag	-	Route Tab	2-C-131
2410	NBI Reportable Flag	-	Route Tab	2-C-131
7479	Federal Aid Route Number	-	Route Tab	2-C-131
7441	Speed Limit	-	Route Tab	2-C-132
<b>Crossing Tab Supplement</b>				
2000	Main Listing Flag	-	Crossing Tab (INV)	2-C-133
2401	Crossing Manager	-	Crossing Tab (INV)	2-C-133
2402	Crossing Description	-	Crossing Tab (INV)	2-C-133
2500	Minimum Vertical Clearance, Route Direction	-	Crossing Tab (INV)	2-C-133
2502	Minimum Vertical Clearance, Reverse Direction	-	Crossing Tab (INV)	2-C-133
2411	Bridge List	-	Crossing Tab (INV)	2-C-134
2436	Route Sequencer	-	Crossing Tab (INV)	2-C-134
2437	Bridge List Milepost Override	-	Crossing Tab (INV)	2-C-134
2438	Milepost Sequencer	-	Crossing Tab (INV)	2-C-135
2468	Directional Indicator	-	Crossing Tab (INV)	2-C-135
2470	Ahead/Back Indicator	-	Crossing Tab (INV)	2-C-135
<b>Design Tab</b>				
2537	Alphabetic Span Type	-	Layout Tab	2-C-140
<b>Load Rating Tab</b>				
2580	Reference Inspection Date	-	Load Rating Tab	2-C-149
2581	Load Rating Date	-	Load Rating Tab	2-C-149
2582	Rated By	-	Load Rating Tab	2-C-149
1551	Operating Rating Method	-	Load Rating Tab	2-C-150
1554	Inventory Rating Method	L.1	Load Rating Tab	2-C-150
1553	Operating Rating Factor	L.3	Load Rating Tab	2-C-152
1556	Inventory Rating Factor	L.2	Load Rating Tab	2-C-152
2587	Type 3 Rating Factor	-	Load Rating Tab	2-C-152
2588	Type 3S2 Rating Factor	-	Load Rating Tab	2-C-152
2589	Type 3-3 Rating Factor	-	Load Rating Tab	2-C-152
2590	Notional Rating Load (NRL) Rating Factor	-	Load Rating Tab	2-C-152
2591	Single Unit 4 (SU4) Rating Factor	-	Load Rating Tab	2-C-153
2592	Single Unit 5 (SU5) Rating Factor	-	Load Rating Tab	2-C-153
2593	Single Unit 6 (SU6) Rating Factor	-	Load Rating Tab	2-C-153
2594	Single Unit 7 (SU7) Rating Factor	-	Load Rating Tab	2-C-153
2598	Emergency Vehicle 2 (EV2) Rating Factor	-	Load Rating Tab	2-C-153
2599	Emergency Vehicle 3 (EV3) Rating Factor	-	Load Rating Tab	2-C-153
2596	Overload 1 (OL-1) Rating Factor	-	Load Rating Tab	2-C-154
2597	Overload 2 (OL-2) Rating Factor	-	Load Rating Tab	2-C-154

Table 3 WSBIS Items Coded for Tunnels

WSBIS Item No.	WSBIS Item Name	NTI Item No.	WSBIS Application Tab	Page No.
<b>Tunnel Supplement Tab</b>				
1992	Routine Inspection Target Date	D.1	Report Tab	2-C-163
1022	Urban Code	C.8	Tunnel ID Tab	2-C-165
1560	Posted Load - Gross	L.5	Load Rating Tab	2-C-167
1561	Posted Load - Axle	L.6	Load Rating Tab	2-C-167
1562	Posted Load - Type 3	L.7	Load Rating Tab	2-C-169
1563	Posted Load - Type 3S2	L.8	Load Rating Tab	2-C-167
1564	Posted Load - Type 3-3	L.9	Load Rating Tab	2-C-167
1543	Service in Tunnel	A.8	Layout Tab	2-C-168
1349	Tunnel Length	G.1	Layout Tab	2-C-168
1510	Number of Bores	S.1	Layout Tab	2-C-169
1511	Tunnel Shape	S.2	Layout Tab	2-C-170
1512	Portal Shape	S.3	Layout Tab	2-C-171
1513	Ground Conditions	S.4	Layout Tab	2-C-171
1514	Complex	S.5	Layout Tab	2-C-172
1401	Min. Vertical Clearance Over Tunnel Roadway	G.2	Layout Tab	2-C-172
1402	Tunnel Height Restriction	L.10	Layout Tab	2-C-173
1408	Tunnel Hazardous Material Restriction	L.11	Layout Tab	2-C-173
1409	Tunnel Other Restrictions	L.12	Layout Tab	2-C-174
1436	Route Direction	I.8	Route Tab	2-C-175

### III. Establishing the Inventory Record

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

- A new bridge has been built (usually before it is placed in service).
- An existing bridge has been replaced with a new bridge (**it is required that the existing record and its' SID be deleted before a new record for the bridge is established with a new unique SID**).
- A detour bridge 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 bridge not previously inventoried is added to the statewide inventory.

A bridge'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, 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.

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

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

To obsolete the inventory record of a local agency bridge, 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 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 bridge retains its unique Structure Identifier throughout the life of the bridge. See Section 2-2.1 for additional information on bridge ownership transfers.

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



## Reports Tab

WSBIS Item 1990 – Inspection Date	Pulldown
WSBIS Item 1991 – Inspection Frequency (months)	N(3,0)
WSBIS Item 2920 – Report Type	Check Box
WSBIS Item 2921 – Inspection Type	Pulldown

### Applicable Structure Types

- All structure records

**Editing Report Types.** A check is required in **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 2920a through d and Chapter 3 for more information.

Table 2920a summarizes all the Report Types, Inspection Types, Inspection Dates/Frequencies, and how these fields relate to the NBI and NTI.

Table 2920a Report Types and Inspection Types

Report Type	Inspection Type Code	Inspection Type	NBI Item		NTI Item	
			Insp. Date	Insp. Freq.	Insp. Date	Insp. Freq.
Routine <sup>1</sup>	N/A		90	91	D.2	D.3
Fracture Critical <sup>1</sup>	N/A		93A	92A	-	-
Underwater <sup>1</sup>	N/A		93B	92B	-	-
Special Feature <sup>1</sup>	1	Movable	93C	92C	-	-
	2	Floating	93C	92C	-	-
	3	Suspension	93C	92C	-	-
	4	Redundant Pin and Hanger	93C	92C	-	-
	5	Segmental	93C	92C	-	-
	6	Ferry Terminal	93C	92C	-	-
	7	High Strength Steel	93C	92C	-	-
	8	Structure with Temporary Support	93C	92C	-	-
	9	Cable Stayed	93C	92C	-	-
	0	Other	93C	92C	-	-
Short Span	-		-	-	-	-
Condition	-		-	-	-	-
Primary Safety	-		-	-	-	-
Damage	A	Overheight	-	-	D.5	-
	B	Lateral Damage to Vertical Member	-	-	D.5	-
	E	Flood	-	-	D.5	-
	G	Earthquake	-	-	D.5	-
	H	Bridge Rail	-	-	D.5	-
	O	Other	-	-	D.5	-
	S	Reported by Others - Overheight	-	-	D.5	-
	T	Reported by Others - Lateral	-	-	D.5	-
	U	Reported by Others - Bridge Rail	-	-	D.5	-
	V	Reported by Others - Other Misc.	-	-	D.5	-
In-Depth	-		-	-	D.4	-
Interim	-		-	-	D.6	-
UW Interim	-		-	-	-	-
Routine Mechanical <sup>2</sup>						
Routine Electrical <sup>2</sup>						
Secondary Safety	-		-	-	-	-
Geometric	-		-	-	-	-
Inventory	-		-	-	-	-
Feature	-		-	-	-	-
Equipment	-		-	-	-	-
2 Man UBIT	-		-	-	-	-
Informational	-		-	-	-	-

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, Primary/Secondary 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.

Table 2920b 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 2920b Core Report Types**

Report Type	Structure Characteristics	Typical Examples
Routine	Structures subject to the NBIS or NTIS	Highway bridges over 20 feet long
Short Span	Structures not subject to the NBIS or NTIS and do carry public roadways	Highway bridges under 20 feet long
Condition	Structures not subject to the NBIS or NTIS and don't carry public roadways	Pedestrian bridges owned by highway agency, <b>privately owned bridges</b>
Primary Safety	Structure has a public roadway undercrossing	Railroad bridges over highway OR multi-agency inspection responsibility <sup>1</sup>

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

Table 2920c 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 2920c Supplemental Report Types**

Supplemental Report Type	Associated Core Report Type	Usage	Typical Examples
Fracture Critical	Routine, <b>Condition</b>	Use for bridges deemed fracture critical.	Steel Truss bridges.
Underwater	Routine, <b>Condition</b>	Use for bridges when piers or abutments are permanently underwater exceeding wading depths.	Bridges with foundations in deep water.
Special Feature	Routine, <b>Condition</b>	Use for bridges subject to the NBIS and deemed to have special 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.
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, <b>Condition</b>	Use when some structure components need more frequent inspection. Dovetail inspection date and frequency with associated report type.	Decayed timber, cracked steel in redundant/secondary components, significant structural movement, significant 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.	Underwater components with significant structural damage, significant scour not accessible by wading

Table 2920c Supplemental Report Types

Supplemental Report Type	Associated Core Report Type	Usage	Typical Examples
Routine Mechanical	Routine	Generated automatically when a mechanical inspection report is completed in the Complex Structures system.	Tunnels and movable bridges with mechanical components.
Routine Electrical	Routine	Generated automatically when a electrical inspection report is completed in the Complex Structures system.	Tunnels and movable bridges with electrical components.
Secondary Safety	Primary Safety	Use when more than one agency performs a safety inspection	Railroad bridge over a state route and a city street.
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	Any	Use for certified and non-certified inspectors to document time spent in bridge inspection activities. Also use for unscheduled non reoccurring inspections.	Co-inspector working on road crew documents bridge rail damage observed while in the area of the bridge. One time only chain drag of deck. Evaluation of bridge for overload permit.
Equipment	Any	Used only by local agencies at their option to schedule inspection equipment. Alternately this equipment can be scheduled within the Report Type resources grid.	High cost equipment needed on a schedule different from the frequency of the Core report type.
2 Man UBIT	Any	Used only when one agency provides a UBIT and UBIT operator, but no lead inspector.	Used for intra-agency or consultant scheduling on a reoccurring basis.
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.

Table 2920d summarizes the inspection frequencies associated with each report type, and in particular identifies the five report types that are not scheduled, and therefore do not have inspection frequencies. Frequencies are summarized in this table but more detailed guidance is provided in Chapter 3.

**Table 2920d Report Type Inspection Frequencies**

Report Type	Inspection Frequency
Routine	Usually 24 months
Fracture Critical	24 months maximum
Underwater	Usually 60 months
Special Feature	Varies based on engineering evaluation
Short Span	Varies based on owning agency guidelines
Condition	Varies based on owning agency guidelines
Primary Safety	Varies based on inspecting agency guidelines
Damage	NOT SCHEDULED - no inspection frequency
In-Depth	NOT SCHEDULED - no inspection frequency
Interim	Varies as needed to dovetail with associated core report type
UW Interim	Varies as needed to dovetail with Underwater report type
Routine Mechanical	12 months
Routine Electrical	12 months
Secondary Safety	Varies based on inspecting agency guidelines
Geometric	Varies based on owning agency guidelines <b>WSDOT guidelines: 8 years (96 months) for bridges with minimum clearances of 16.5 feet and less; and 16 years (192 months) for bridges with minimum clearances greater than 16.5 feet.</b>
Inventory	NOT SCHEDULED - no inspection frequency
Feature <sup>1</sup>	NOT SCHEDULED - no inspection frequency
Equipment	Varies based on owning agency guidelines
2 Man UBIT	Varies based on owning agency guidelines
Informational <sup>1</sup>	NOT SCHEDULED - no inspection frequency

1. The Informational and Feature report types are unique because a user can create and release this report type, but the next time a user creates a new UCD they are automatically removed. All other report types - scheduled or unscheduled - must be manually removed by the user as part of editing another report type.

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### WSBIS Item 2922 – Inspection Due Date

Calculated

#### Applicable Structure Types

- All structure records

This field is automatically calculated based on the inspection date and frequency. When an inspection was performed in a month later than expected, this calculation will restore the next due date to the original due month.

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**WSBIS Item 2923 – Inspection Due Date Override**

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Pulldown

**Applicable Structure Types**

- All structures owned by a Washington State Agency

This field should remain blank under most circumstances. However, in cases where the calculated due date needs to be adjusted, insert the desired next inspection date in this field. For Routine, FC, Underwater, and Special Feature report types, this override due date cannot cause the next inspection to exceed the calculated due date and frequency without prior approval by the program manager.

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**WSBIS Item 2924 – Report Type Notes**

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AN (unlimited)

**Applicable Structure Types**

- All structure types

This field is should remain blank under most circumstances, and is intended to describe unusual details specific to the report type. This note field can be used to explain:

- Adding an Inspection Due Date Override
- What data is updated in an informational report type

This field is not intended to hold inspection findings or explain specific information about Damage or Interim report types – use the zero note or **Note 3** instead.

**Remove these notes when they no longer apply.**



WSBIS Item 2646 – Lead Inspector Initials	Pulldown
WSBIS Item 2649 – Lead Inspector Certification Number	Computed

#### Applicable Structure Types

- All structure records

Code the lead inspector initials who performed the inspection for selected report types as designated in Table 2646 that require a lead inspector. When lead inspectors perform inspections for report types that do not require a team leader, they should still populate these fields.

Based on the lead inspector initials, the lead inspector certification number is automatically populated. When no lead inspector was involved in the inspection, these fields should remain blank.

**Table 2646 Lead Inspector Initials and Certification**

Required	Not required
Routine	Short Span
Fracture Critical	Condition
Underwater	Primary Safety
Special Feature	Secondary Safety
Damage	Geometric
In Depth	Inventory
Interim	Feature
UW Interim	Equipment
Routine Mechanical	2 Man UBIT
Routine Electrical	Informational

Lead inspectors must maintain current certification in order to successfully complete the inspection documentation in the WSBIS application. See Chapter 1 for more information.

WSBIS Item 2654 – Co-Inspector Initials	AN(8,0)
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#### Applicable Structure Types

- All structure records

These are the initials of the individual 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 2646.

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).

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<b>WSBIS Item 7644 – Inspection Report Hours</b>	<b>N(4,1)</b>
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**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.

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<b>WSBIS Item 2900 – Late Inspection Explanation</b>	<b>AN(500)</b>
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<b>WSBIS Item 2901 – Program Manager Response Date</b>	<b>Pulldown</b>
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<b>WSBIS Item 2902 – Program Manager Approval</b>	<b>Pulldown</b>
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**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 NBI or NTI reportable inspection type, when an inspection is or will be performed later than the calculated month due, 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.

## NBI Tab

### Adequacy 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 NBI Adequacy Appraisal Ratings**

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.)

<b>WSBIS Item 1657 Structural Evaluation</b>	<b>Calculated</b>
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 Adequacy Appraisal Rating**

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.

**Table 1658a Deck Geometry Guide to Cases**

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 Appraisal Rating Case 1**

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) <sup>2</sup>	4
16	18	20	22	26	30(26) <sup>2</sup>	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 Appraisal Rating Case 2

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.

All single lane bridges with a deck width <16 ft. and ADT greater than 100 shall be rated at 3 or below.

Table 1658d Deck Geometry Appraisal Rating Case 3

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
$\geq 42$	$\geq 12N + 24$	$\geq 42$	$\geq 12N + 18$	8
40	$12N + 20$	38	$12N + 15$	7
38	$12N + 16$	36	$12N + 12$	6
36	$12N + 14$	33	$11N + 10$	5
34 (29) <sup>2</sup>	$11N + 12$	30	$11N + 6$	4
	$(11N + 7)^2$			
33 (28) <sup>2</sup>	$11N + 11$	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:**

- Use the lower rating code for roadway widths between those shown.
- For structures longer than 200 feet, use the values shown in parentheses.

Table 1658e Deck Geometry Appraisal Rating Case 4

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 Appraisal Rating Case 5

Functional Class				Deck Geometry Appraisal Rating Code
Interstate and Other Freeway		Other Principal and Minor Arterials	Major and Minor Collectors and Locals	
Designated Routes <sup>2</sup>	Undesignated Routes <sup>2</sup>			
Minimum Vertical Clearance				Deck Geometry Appraisal Rating Code
not applicable				
≥ 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 Vertical Underclearance Adequacy Appraisal Rating**

Functional Class				Railroads	Underclearance Adequacy Appraisal Rating Code
Interstate and Other Freeway		Other Principal and Minor Arterials	Major and Minor Collectors and Locals		
Designated Routes <sup>2</sup>	Undesignated Routes <sup>2</sup>				
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 Lateral Underclearance Adequacy Appraisal Rating**

Functional Class							Railroads	Underclearance Adequacy Appraisal Rating Code
1-Way Traffic				2-Way Traffic				
Principal Arterials (Interstate, etc.)				Other Principal & Minor Arterials	Major & Minor Collectors and Locals			
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 Item 1661 - Alignment**

**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.

**Table 1661 Approach Roadway Alignment Appraisal Rating**

WSBIS Code	Description
9	Not applicable (non-vehicular traffic on the structure).
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.

**WSBIS Item 1662 – Waterway**

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**

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:**

BPO inspection staff inspecting bridges with records maintained by BPO do not code this field, which is maintained by the BPO Scour Engineer. If an inspector has information relevant to this code, that information notify the Scour Engineer and adjust the notes under his/her direction.

**NBI Commentary:**

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

**WSBIS Item 1660 – Operating Level**

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**

<b>Configuration</b>	<b>Tonnage</b>
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**

WSBIS Code	Operating <b>Legal Load</b> Rating Factors based on LFR or ASR Methods or <b>Legal Load</b> Rating Factors based on LRFR
5	$RF \geq 1$
4	$1 > RF > 0.9$
3	$0.9 \geq RF > 0.8$
2	$0.8 \geq RF > 0.7$
1	$0.7 \geq RF > 0.6$
0	$0.6 \geq RF$
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 1293 – Open, Closed or Posted**

**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**

WSBIS Code	Description
A	Open, no restriction
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)
R	Posted for other load-capacity restriction (speed, number of vehicles on structure, etc.)

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**WSBIS Item 2613 – NBIS Risk Category** **Calculated**


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**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”:

[www.fhwa.dot.gov/bridge/nbip/metrics.pdf](http://www.fhwa.dot.gov/bridge/nbip/metrics.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 Inspections**

WSBIS Item	Routine Inspection 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 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.

**Condition Codes**


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**WSBIS Items 1663, 1671, 1676, 1677, and 1678**

NBI Items 58, 59, 60, 61, and 62

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**Applicable Structure Types**

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

In order to promote uniformity between bridge inspectors, these guidelines will be used to rate and code WSBIS Items 1663, 1671, 1676, 1677, and 1678.

Condition ratings are used to describe the existing, in-place bridge as compared to the as-built condition. Evaluation is for the materials related, physical condition of the deck, superstructure, and substructure components of a bridge. The condition evaluation of channels and channel protection and culverts is also included. Condition codes are properly used when they provide an overall characterization of the general condition of the entire component being rated. Conversely, they are improperly used if they attempt to describe localized or nominally occurring instances of deterioration or disrepair. Correct assignment of a condition code must, therefore, consider both the severity of the deterioration or disrepair and the extent to which it is widespread throughout the component being rated.

The load-carrying capacity will not be used in evaluating condition items. The fact that a bridge was designed for less than current legal loads and may be posted shall have no influence upon condition ratings.

Portions of bridges that are being supported or strengthened by temporary members will be rated based on their actual condition; that is, the temporary members are not considered in the rating of the item. (See WSBIS Item 1289 – Temporary Structure Designation for the definition of a temporary bridge.)

Completed bridges not yet opened to traffic, if rated, shall be coded as if open to traffic.

\* 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.

The following general condition ratings shall be used as a guide in evaluating WSBIS Items 1663, 1671 and 1676:

**Table 5 Condition Rating**

WSBIS Code	NBI Code	Description
9	N	Not applicable
8	9	Excellent condition - no problems noted
8	8	Very good condition - no problems noted.
7	7	Good condition - some minor problems.
6	6	Satisfactory condition - structural elements show some minor deterioration.
5	5	Fair condition - all primary structural elements are sound but may have minor section loss, cracking, spalling or scour.
4	4	Poor condition - advanced section loss, deterioration, spalling or scour.
3	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	2	Critical condition - advanced deterioration of primary structural elements. Fatigue cracks in steel or shear cracks in concrete may be 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	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	0	Failed condition - out of service beyond corrective action.

**NBI Commentary:**

WSBIS uses the 9 code to indicate "Not applicable," which is translated to N when reported to the NBI. WSDOT uses condition code 8 for all cases where a bridge is in "Excellent" or "Very good" condition.

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**WSBIS Item 1663 – Deck Condition**

Pulldown

NBI Item 58

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**Applicable Structure Types**

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

This item describes the overall condition rating of the deck. Rate and code the condition in accordance with the above general condition ratings.

The following structures shall be coded 9:

- Culverts
- Filled arch bridges
- Buried structures (bridges with fill depth greater than B/2, using B as defined in WSBIS Item 1340 Structure Length)

Bridges with fill depth less than B/2 shall be considered to have a deck and coded appropriately.

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.

Concrete decks should be inspected for cracking, scaling, spalling, leaching, chloride contamination, potholing, delamination, and full or partial depth failures. Steel grid decks should be inspected for broken welds, broken grids, section loss, and growth of filled grids from corrosion. Timber decks should be inspected for splitting, crushing, fastener failure, and deterioration from rot.

The condition of the wearing surface/protective system, joints, expansion devices, curbs, sidewalks, parapets, fascias, bridge rail, and scuppers shall not be considered in the overall deck evaluation. However, their condition should be noted on the inspection form under the appropriate BMS element note.

Decks integral with the superstructure will be rated as a deck only and not how they may influence the superstructure rating (for example, rigid frame, slab, deck girder or T-beam, voided slab, box girder, etc.). Similarly, the superstructure of an integral deck type bridge will not influence the deck rating.

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

\* 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.

**NBI Commentary:**

This item has been modified to incorporate BMS deck element condition states into the coding criteria.

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**WSBIS Item 1671 – Superstructure Condition**

Pulldown

NBI Item 59

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**Applicable Structure Types**

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

This item describes the physical condition of all structural members. Rate and code the condition in accordance with the previously described general condition ratings. Code 9 for culverts.

The structural members should be inspected for signs of distress which may include cracking, deterioration, section loss, and malfunction and misalignment of bearings.

The condition of bearings, joints, paint system, etc., shall not be included in this rating, except in extreme situations, but should be noted on the inspection form under the appropriate BMS element note.

On bridges where the deck is integral with the superstructure, the superstructure condition rating may be affected by the deck condition. The resultant superstructure condition rating may be lower than the deck condition rating where the girders have deteriorated or been damaged.

Fracture critical components should receive careful attention because failure could lead to collapse of a span or the bridge.

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

\* 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.



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**WSBIS Item 1676 – Substructure Condition**

Pulldown

NBI Item 60

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**Applicable Structure Types**

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

This item describes the physical condition of piers, abutments, piles, fenders, footings, or other components. Rate and code the condition in accordance with the previously described general condition ratings. Code 9 for culverts.

All substructure elements should be inspected for visible signs of distress including evidence of cracking, section loss, settlement, misalignment, scour, collision damage, and corrosion.

The substructure condition rating shall be made independent of the deck and superstructure.

Integral-abutment wingwalls to the first construction or expansion joint shall be included in the evaluation. For non-integral superstructure and substructure units, the substructure shall be considered as the portion below the bearings. For structures where the substructure and superstructure are integral, the substructure shall be considered as the portion below the superstructure.

In all cases, if WSBIS Item 1680 – Scour is 2 or less, WSBIS Item 1676 – Substructure shall be coded the same.

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

\* 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.

**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 [www.fhwa.dot.gov/engineering/hydraulics/policymemo/revguide.cfm](http://www.fhwa.dot.gov/engineering/hydraulics/policymemo/revguide.cfm).

## WSBIS Item 1677 – Channel Protection Condition

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**

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 1678 – Culvert Condition**

Pulldown

NBI Item 62

**Applicable Structure Types**

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

This item evaluates the alignment, settlement, joints, structural condition, scour, and other items associated with culverts. The rating code is intended to be an overall condition evaluation of the culvert. Integral wingwalls to the first construction or expansion joint shall be included in the evaluation.

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

Defining culverts:

- Culverts always carry water, with only a few exceptions. These exceptions may include ancillary structures, for utility passage, old cattle undercrossing or other purposes, where the type and scope of construction may more realistically be quantified as a culvert. Most will only be non-reportable short spans, but Regional Supervisors must be consulted on these exceptions.
- Water Detention Vaults shall be coded as culverts.
- Concrete Boxes (continuous 4-sided) with or without roadway fill that carry water are coded as culverts.
- Circular and arch shaped structures with fill and no defined abutment or approach are coded as culverts.
- For Culverts, code Deck, Superstructure and Substructure (WSBIS Items 1663, 1671, and 1676) as 9.
- Code Bridge Rails and Transitions (WSBIS Items 1684 and 1685) N if there is sufficient roadway fill that there is no attachment to the structure. Guardrails and Terminals (WSBIS Items 1686 and 1687) are to be coded 0 or 1 as appropriate.
- 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.
- Three sided rigid frames with fill greater than B/2 are coded as culverts.
- 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.

\*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 1678a Concrete Culvert Condition Rating**

WSBIS Code	Description
9	Not applicable. Structure is not a culvert.
8	No noticeable or noteworthy deficiencies which affect the condition of the culvert. Insignificant scrape marks caused by drift.
7	Shrinkage cracks, light scaling, and insignificant spalling which does not expose reinforcing steel. Insignificant damage caused by drift with no misalignment and not requiring corrective action. Some minor scouring has occurred near curtain walls, wingwalls or pipes.
6	Minor deterioration or initial disintegration, minor chloride contamination, minor cracking with some leaching, or spalls on concrete or masonry walls and slabs. Local minor scouring at curtain walls, wingwalls or pipes.
5	Moderate to major deterioration or disintegration, extensive cracking and leaching, or spalls on concrete or masonry walls and slabs. Minor settlement or misalignment. Noticeable scouring or erosion at curtain walls, wingwalls or pipes.
4	Major deterioration (large spalls, heavy scaling, wide cracks, considerable efflorescence, or opened construction joint permitting loss of backfill). Considerable settlement or misalignment. Considerable scouring or erosion at curtain walls, wingwalls or pipes.
3	Excessive deterioration (any condition described in Code 4 but which is excessive in scope). Severe movement or differential settlement of the segments, or loss of fill. Holes may exist in walls or slabs. Integral wingwalls nearly severed from culvert. Severe scour or erosion at curtain walls, wingwalls or pipes.
2	Integral wingwalls collapsed, severe settlement of roadway due to loss of fill. Section of culvert may have failed and can no longer support embankment. Complete undermining at curtain walls and pipes. Corrective action required to maintain traffic.
1	Culvert closed – corrective action may put back in light service.
0	Culvert closed – replacement necessary.

Table 1678b Metal Culvert Condition Rating

WSBIS Code	Description
9	Not applicable. Structure is not a culvert.
8	No noticeable or noteworthy deficiencies which affect the condition of the culvert. Insignificant scrape marks caused by drift. Bolts are in good condition, in place and tight.
7	Insignificant damage caused by drift with no misalignment and not requiring corrective action. Some minor scouring has occurred near wingwalls or pipes. Smooth, symmetrical curvature with superficial corrosion and no pitting. Bolts may have superficial corrosion, are in place and tight.
6	Smooth curvature, non-symmetrical shape, and significant corrosion or moderate pitting. Bolts may have significant corrosion and 10 percent of the bolts in a panel seam may be missing or loose. Local minor scouring at wingwalls or pipes.
5	Minor settlement or misalignment. Noticeable scouring or erosion at wingwalls or pipes. Significant distortion and deflection in one section. Significant corrosion or deep pitting. Bolts may have significant corrosion and 20 percent of the bolts in a panel seam may be missing or loose.
4	Considerable settlement or misalignment. Considerable scouring or erosion at wingwalls or pipes. Significant distortion and deflection throughout. Extensive corrosion or deep pitting. Bolts may have extensive corrosion and 30 percent of the bolts in a panel seam may be missing or loose.
3	Any condition described in Code 4 but which is excessive in scope. Severe movement or differential settlement of the segments, or loss of fill. Wingwalls nearly severed from culvert. Severe scour or erosion at wingwalls or pipes. Extreme distortion and deflection in one section. Extensive corrosion or deep pitting with scattered perforations. Bolts may have extensive corrosion and 40 percent of the bolts in a panel seam may be missing or loose.
2	Wingwalls collapsed, severe settlement of roadway due to loss of fill. Section of culvert may have failed and can no longer support embankment. Complete undermining at curtain walls and pipes. Corrective action required to maintain traffic. Extreme distortion and deflection throughout with extensive perforations due to corrosion. Bolts may have extensive corrosion and 50 percent of the bolts in a panel seam may be missing or loose.
1	Culvert closed – corrective action may put back in light service.
0	Culvert closed – replacement necessary.

**Table 1678c Timber Culvert Condition Rating**

WSBIS Code	Description
9	Not applicable. Structure is not a culvert.
8	No noticeable or noteworthy deficiencies which affect the condition of the culvert. Insignificant scrape marks caused by drift.
7	Insignificant damage caused by drift with no misalignment and not requiring corrective action. Some minor scouring has occurred near curtain walls, wingwalls, Insignificant decay with no structural loss.
6	Minor deterioration or decay. All primary structural elements are sound. Local minor scouring at curtain walls or wingwalls.
5	Moderate deterioration or decay. All primary structural elements are sound but have some section loss. Minor settlement or misalignment. Noticeable scouring or erosion at curtain walls or wingwalls.
4	Major deterioration or decay. Considerable scour or erosion at curtain walls or wingwalls. Advanced section loss or scour that affects the load capacity of the structure. Considerable settlement or misalignment.
3	Any condition described in Code 4 but which is excessive in scope. Severe movement or differential settlement of the segments, or loss of fill. Wingwalls nearly severed from culvert. Severe scour or erosion at curtain walls or wingwalls. Extensive deterioration or decay. Advanced section loss or scour that significantly affects the load capacity of the culvert.
2	Severe deterioration or decay. Wingwalls collapsed, severe settlement of roadway due to loss of fill. Section of culvert may have failed and can no longer support embankment. Complete undermining at curtain walls. Corrective action required to maintain traffic. Critical structural members have obvious vertical or horizontal movement affecting structural stability.
1	Culvert closed – corrective action may put back in light service.
0	Culvert closed – replacement necessary.

**WSBIS Item 1679 – Pier/Abutment Protection****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**

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.

## WSBIS Item 1680 – Scour

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:

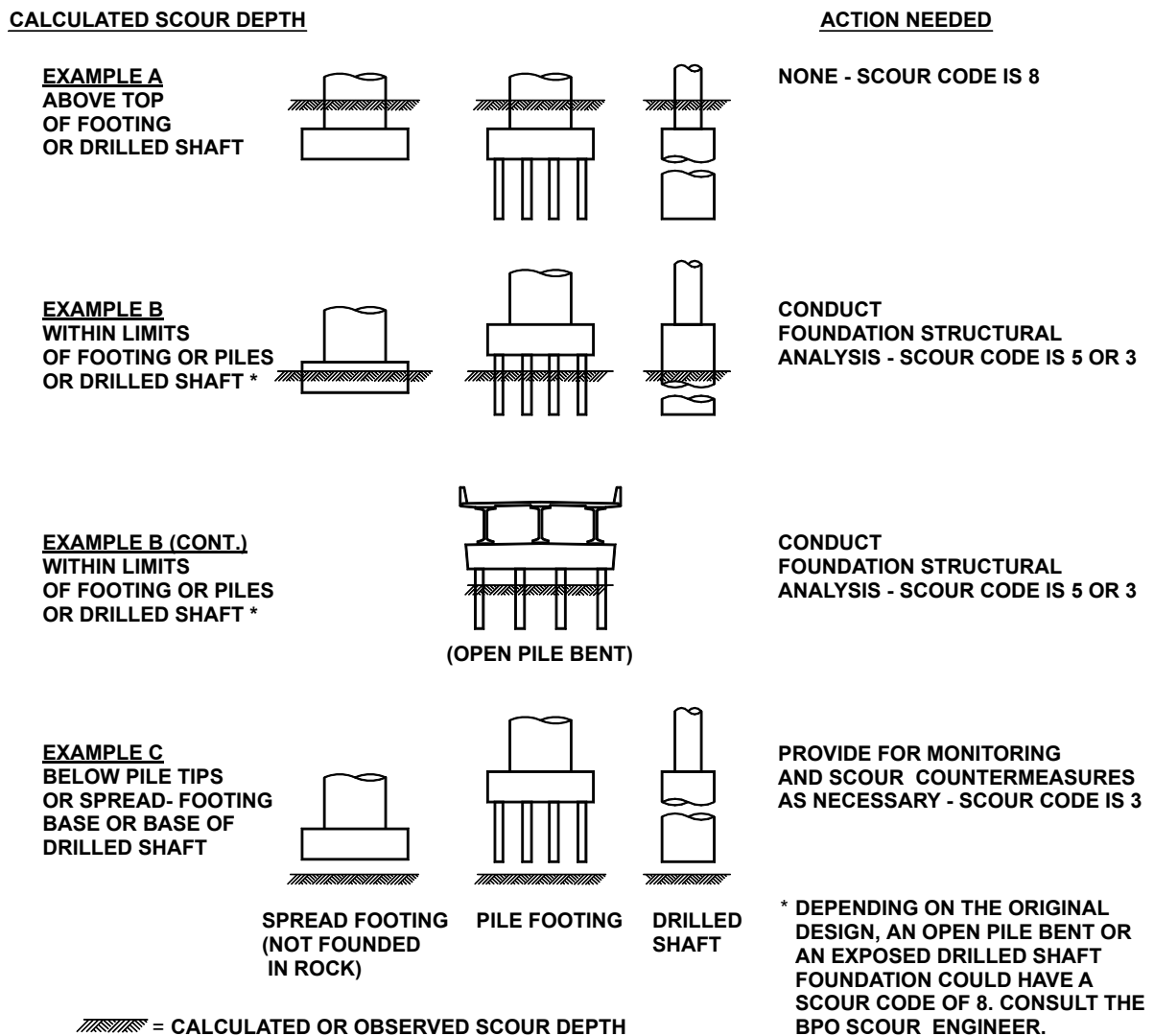
Table 1680 Scour Rating

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: <ul style="list-style-type: none"> <li>• assessment (e.g., bridge foundations are on rock formations that have been determined to resist scour within the service life of the bridge), or</li> <li>• calculation (exposed drilled shafts may be included by calculations), or</li> <li>• installation of properly designed countermeasures (see HEC 23).</li> </ul>
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: <ul style="list-style-type: none"> <li>• assessment (e.g., bridge foundations are on rock formations that have been determined to resist scour within the service life of the bridge), or</li> <li>• calculations, or</li> <li>• installation of properly designed countermeasures (see HEC 23).</li> </ul>
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: <ul style="list-style-type: none"> <li>• Scour within limits of footing or piles, or drilled shafts (Example B)</li> <li>• Scour below spread-footing base or pile tips, or base of shafts (Example C)</li> </ul>
2	Bridge is scour critical; field review indicates that extensive scour has occurred at bridge foundations, which are determined to be unstable by: <ul style="list-style-type: none"> <li>• a comparison of calculated scour and observed scour during the bridge inspection, or</li> <li>• an engineering evaluation of the observed scour condition reported by the bridge inspector in WSBIS Item 1676 – Substructure.</li> </ul>
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: <ul style="list-style-type: none"> <li>• a comparison of calculated and observed scour during the bridge inspection, or</li> <li>• an engineering evaluation of the observed scour condition reported by the bridge inspector in WSBIS Item 1676 – Substructure.</li> </ul>
0	Bridge is scour critical. Bridge has failed and is closed to traffic.

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.

Figure WSBIS 1680



\* DEPENDING ON THE ORIGINAL DESIGN, AN OPEN PILE BENT OR AN EXPOSED DRILLED SHAFT FOUNDATION COULD HAVE A SCOUR CODE OF 8. CONSULT THE BPO SCOUR 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 [www.fhwa.dot.gov/engineering/hydraulics/policymemo/revguide.cfm](http://www.fhwa.dot.gov/engineering/hydraulics/policymemo/revguide.cfm).



## Traffic Safety

WSBIS Items 1684, 1685, 1686, 1687

NBI Item 36A through D

### 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

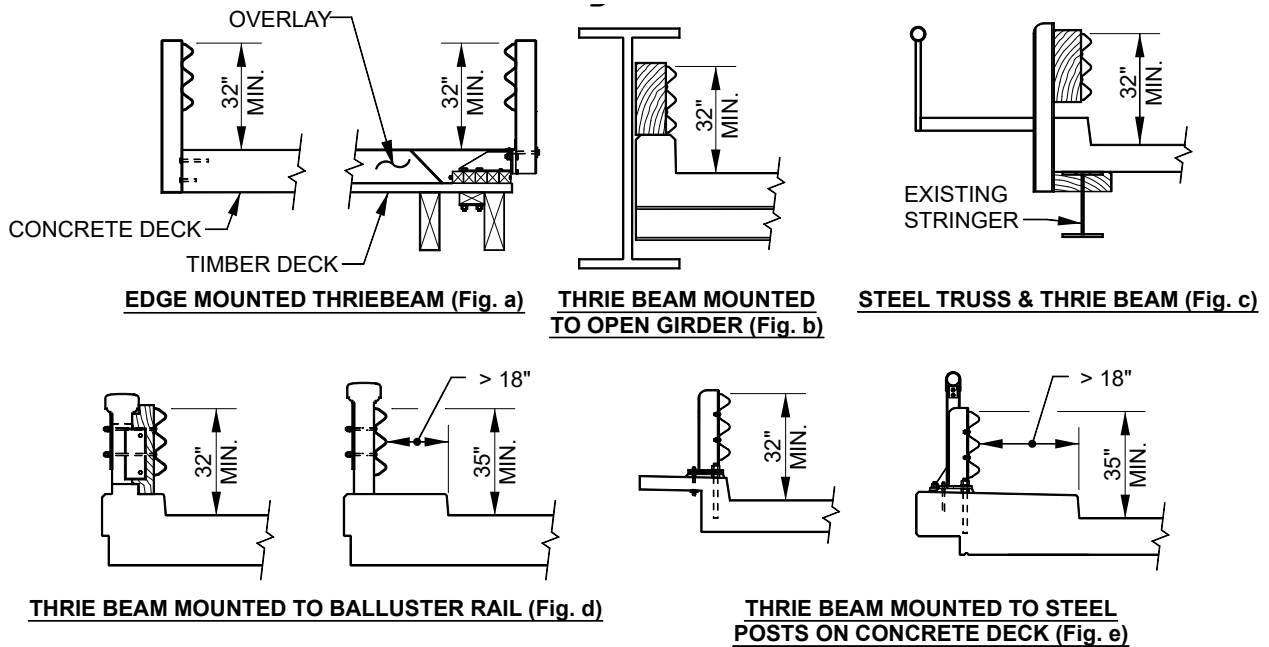
- Thrie-beam mounted to baluster rail
- Steel truss and Thrie-beam
- Edge mounted Thrie-beam
- Thrie-beam mounted to steel posts on concrete deck
- Thrie-beam mounted to open girder

#### Concrete Rail

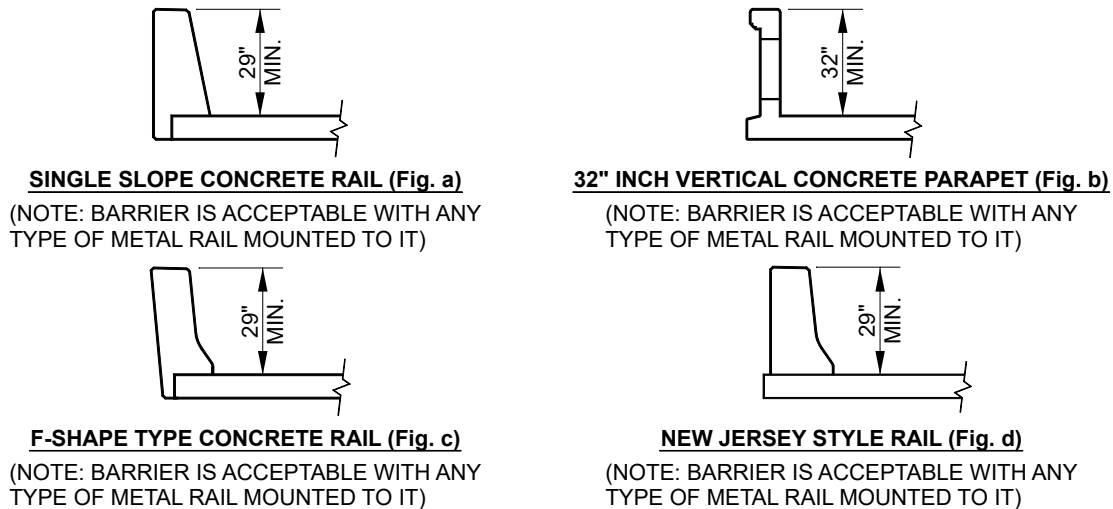
- New Jersey style rail
- F-shaped concrete rail
- Single slope concrete rail
- 32" vertical concrete parapet
- Type 7 concrete rail

Bridge rails are coded as N when there is sufficient roadway fill that there is no attachment to the structure.

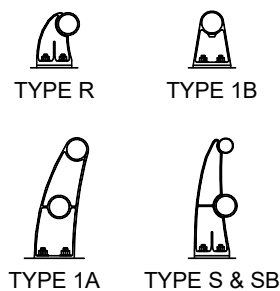
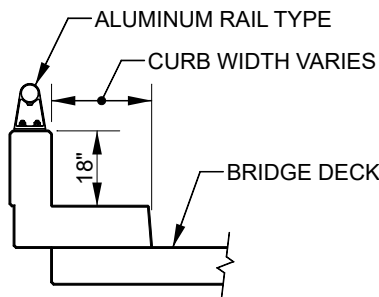
Figure WSBIS 1684



**THRIE BEAM RETROFIT**



**CONCRETE RAIL**



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

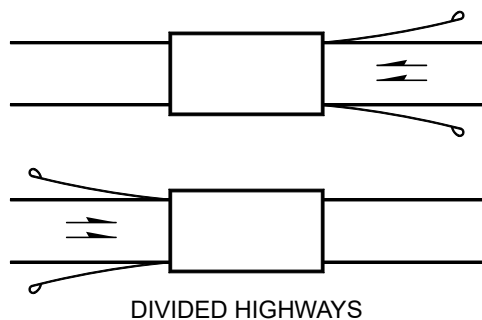
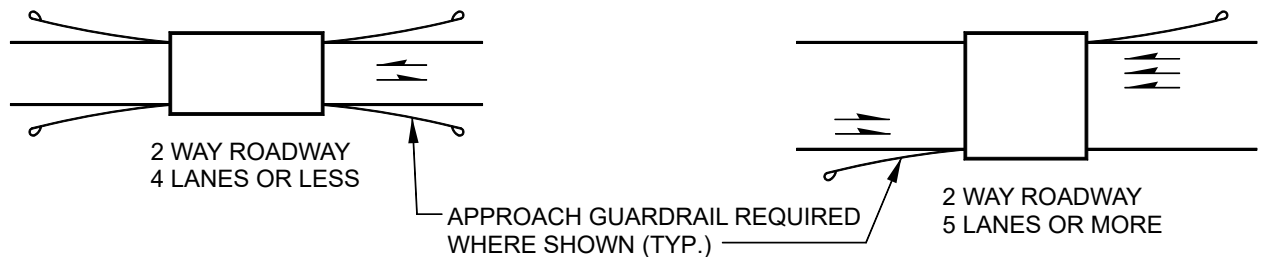
Applicable Structure Types

- Bridges & culverts carrying public roadways

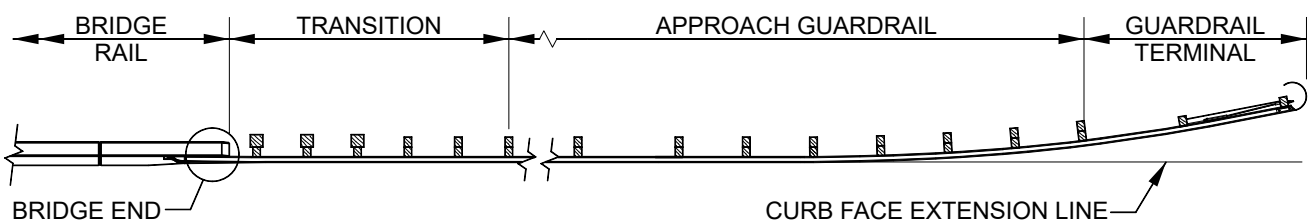
Transition details are shown in WSDOT Standard Plans Section C. Features that the inspector should note are:

- 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.

Figure WSBIS 1685



- NOTES:**
- A. APPROACH GUARDRAIL REQUIRED AT ALL CORNERS FOR REVERSIBLE LANE BRIDGES.
  - B. APPROACH GUARDRAIL MAY NOT BE REQUIRED IF THE BRIDGE IS IN AN URBAN AREA WITH SIDEWALKS CONTINUING WELL BEYOND THE BRIDGE ENDS.



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**WSBIS Item 1686 – Guardrails**

Pulldown

Item 36C

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**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.

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**WSBIS Item 1687 – Terminals**

Pulldown

Item 36D

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**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*.

**Miscellaneous Fields****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. In cases where there is ballast, such as on timber decks, enter the full thickness of ballast and asphalt.

**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.

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WSBIS Item 2614 – Subject to NBIS Flag	Pulldown
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**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 [www.fhwa.dot.gov/legregs/directives/fapg/cfr0650c.htm](http://www.fhwa.dot.gov/legregs/directives/fapg/cfr0650c.htm), and the Questions and Answers paragraphs Q303-1 through Q303-6, found at [www.fhwa.dot.gov/bridge/nbis/index.cfm](http://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 Flags

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### WSBIS Item 2688 – Revise Rating Flag Pulldown

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#### 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.

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### WSBIS Item 2691 – Photos Flag Pulldown

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#### 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

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### WSBIS Item 2693 – Soundings Flag Pulldown

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#### 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.

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<b>WSBIS Item 2694 – Clearance Flag</b>	<b>Pulldown</b>
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**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).

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<b>WSBIS Item 2695 – QA Flag</b>	<b>Pulldown</b>
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**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

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**WSBIS Item 7664 – Drain Condition**
**Pulldown**


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**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.

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**WSBIS Item 7665 – Drain Status**
**Pulldown**


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**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**

<b>WSBIS Code</b>	<b>Description</b>
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**

<b>WSBIS Code</b>	<b>Description</b>
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)**

<b>WSBIS Code</b>	<b>Description</b>
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)**

<b>WSBIS Code</b>	<b>Description</b>
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**

<b>WSBIS Code</b>	<b>Description</b>
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)**

<b>WSBIS Code</b>	<b>Description</b>
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 7710 – Sufficiency Rating****Calculated****Applicable Structure Types**

- **Local Agency Bridges & culverts carrying public roadways**

This item is calculated automatically and cannot be edited, and applies only to local agency bridges and culverts.

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.

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**WSBIS Item 7711 – Structurally Deficient/Functionally Obsolete** **Calculated**


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**Applicable Structure Types**

- **Local Agency Bridges & culverts carrying public roadways**

This item is calculated automatically and cannot be edited, and applies only to local agency bridges and culverts.

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 7711a Structurally Deficient Guide**

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 7711b Functionally Obsolete Guide**

WSBIS Item	Appraisal Rating
1657 – Structural Evaluation	3
1658 – Deck Geometry	≤ 3
1659 – Underclearances	≤ 3
1661 – Approach Roadway Alignment	≤ 3
1662 – Waterway Adequacy	3



## Bridge ID Tab

<b>WSBIS Item 1001 – Structure Identifier</b>	<b>AN(8)</b>
NBI Item 8	
NTI Item I.1	

### Applicable Structure Types

- All structure records

This field must be unique for every structure in the Washington State Bridge Inventory, and cannot change for the life of the structure. Furthermore, when a new structure replaces an old structure, a new unique structure identifier must be coded. The old identifier cannot be recycled.

The BPO and LP Data Stewards assign the structure identifier 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.

NBI and NTI Commentary:

This field is translated to the NBI by adding 7 zeroes to the end of the 8-digit WSBIS code. This translation is done automatically with the generation of the NBI text file and NTI xml file. The NBI coding guide states that all structures with a closed median should be considered one structure, not two, presumably even in cases when they are actually structurally distinct. In some instances WSDOT has coded these structures separately.

<b>WSBIS Item 2009 – Bridge Number</b>	<b>AN(13)</b>
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### 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.

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


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**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.

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**WSBIS Item 1132 – Bridge Name** **AN(50)**


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NTI Item I.2

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**Applicable Structure Types**

- All structure records

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.

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**WSBIS Item 1232 – Features Intersected**

AN(24)

NBI Item 6

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**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.

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**WSBIS Item 1256 – Facilities Carried**

AN(18)

NBI Item 7

NTI Item I.10

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**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

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**WSBIS Item 1156 – Location** **AN(25)**

NBI Item 9

**Applicable Structure Types**

- All structure records

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

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**WSBIS Item 2400 – Program Manager** **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.**

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**WSBIS Item 1286 – Custodian** **Pulldown**

NBI Item 21

NTI Item C.2

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**WSBIS Item 1019 – Owner** **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 1019 Owner and Custodian Codes

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.

**WSBIS Item 1021 – County Code**

Pulldown

NBI Item 3

NTI Item I.4

**Applicable Structure Types**

- All structure records

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 [ww.wsdot.wa.gov/data/tools/geoportal](http://ww.wsdot.wa.gov/data/tools/geoportal).

**Table 1021 County Codes**

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			

**NBI and NTI Commentary:**

The WSBIS county code is translated to the NBI county code using the formula (WSBIS Code x 2) – 1 = NBI code and as shown above.

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**WSBIS Item 2023 – City** **Pulldown**


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**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 [www.wsdot.wa.gov/data/tools/geoportal](http://www.wsdot.wa.gov/data/tools/geoportal).

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**WSBIS Item 1274 – Region Code** **Pulldown**


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NBI Item 2

NTI Item 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

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

**Table 1274    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 [www.wsdot.wa.gov/mapsdata/products/digitalmapsdata.htm](http://www.wsdot.wa.gov/mapsdata/products/digitalmapsdata.htm).

NBI and NTI Commentary:

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



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<b>WSBIS Item 1188 - Latitude</b>	<b>(XX degrees XX minutes XX.XX seconds)</b>
NBI Item 16	
NTI Item I.13	
<b>WSBIS Item 1196 - Longitude</b>	<b>(XXX degrees XX minutes XX.XX seconds)</b>
NBI Item 17	
NTI Item I.14	

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### 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.

WSBIS Item 2181 – Section	N(2)
WSBIS Item 2183 – Township	N(2)
WSBIS Item 2185 – Range	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 2181 – Section

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

#### WSBIS Item 2183 – 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 2185 – 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 [www.wsdot.wa.gov/data/tools/geoportal](http://www.wsdot.wa.gov/data/tools/geoportal).

**WSBIS Item 1276 – Federal Information Processing Standards (FIPS) Code** **AN(5)**

NBI Item 4

NTI Item I.5

**Applicable Structure Types**

- All structure records

Code all zeroes for this 5-digit field.

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:

[http://geonames.usgs.gov/docs/fips55\\_change.pdf](http://geonames.usgs.gov/docs/fips55_change.pdf)

<http://nhd.usgs.gov/gnis.html>

**WSBIS Item 1285 – Toll****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**

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.

**WSBIS Item 1288 – Parallel Structure**

Pull-down

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**

<b>WSBIS Code</b>	<b>Description</b>
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 1289 – Temporary Structure**

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**

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 – Historic Significance – NRHP**

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**

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.

**WSBIS Item 2295 – Historic Significance – HAER**

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 2295 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 – Historic Significance – Local****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**

<b>WSBIS Code</b>	<b>Description</b>
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****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****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.

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<b>WSBIS Item 2615 – Special Structures Flag</b>	<b>Pulldown</b>
<i>(Inventory Managed Operation Only)</i>	

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**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. |

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<b>WSBIS Item 2930 – Obsolete Structure Flag (Inv MO only)</b>	<b>Check Box</b>
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**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.



## Layout Tab

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<b>WSBIS Item 1332 – Year Built</b>	<b>N(4,0)</b>
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.

---

<b>WSBIS Item 1336 – Year Rebuilt</b>	<b>N(4,0)</b>
NBI Item 106	
NTI Item A.2	

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### 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).

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<b>WSBIS Item 1340 – Structure Length (feet)</b>	<b>N(6,0)</b>
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NBI Item 49

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#### Applicable Structure Types

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

The structure length is recorded in whole feet, rounded up. For example a measurement of 22.1 feet shall be coded as 23 feet.

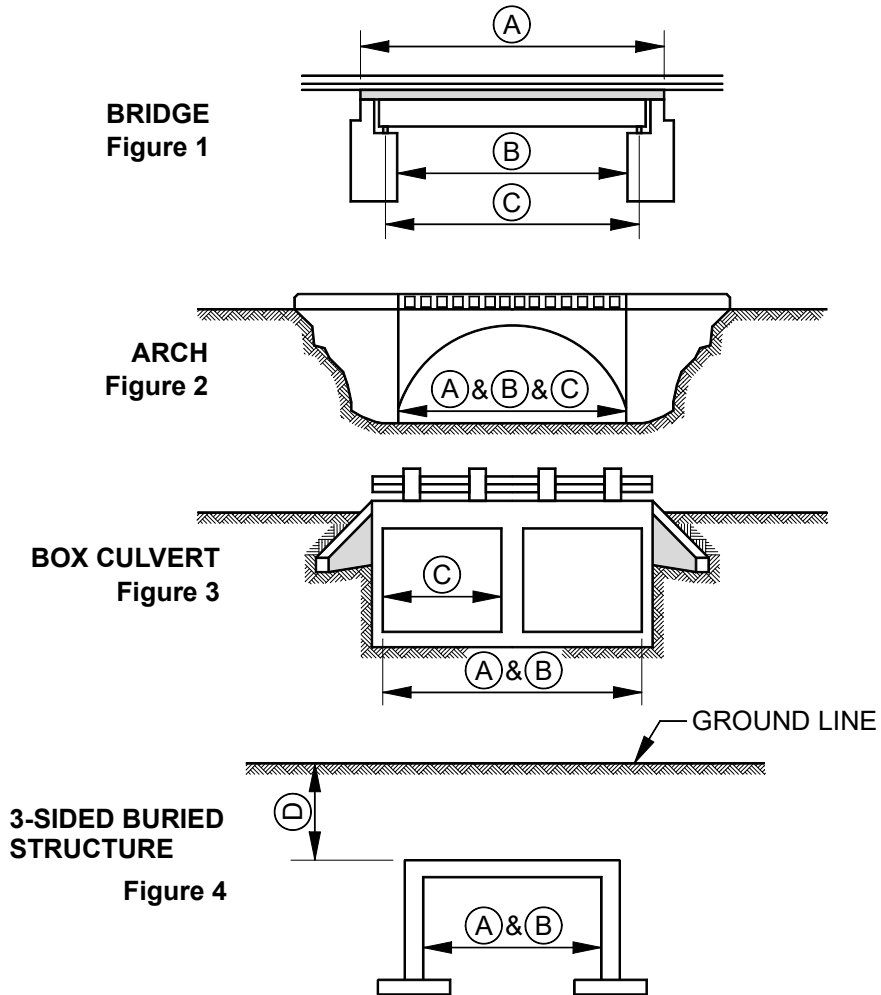
Bridge lengths (vehicular, pedestrian, RR, etc) are measured along the centerline of the bridge and back to back of backwalls of abutments or from paving notch to paving notch.

Culvert lengths are measured from inside face to inside face of the exterior walls or from spring line to spring line. When the culvert is not perpendicular to the roadway, the roadway centerline length must be calculated.

Oddly configured structures over roadways (plazas, buildings, etc) should be measured to most reasonably represent the structure length.

For tunnels, use Tunnel Length Item 1349.

Figure WSBIS 1340a



WHEN  $(D) > \frac{(B)}{2}$  CODE STRUCTURE AS CULVERT.

WHEN  $(D) \leq \frac{(B)}{2}$  CODE STRUCTURE AS BRIDGE.

- (A) = STRUCTURE LENGTH (WSBIS ITEM 1340)
- (B) = SCREENING LENGTH (WSBIS ITEM 2346) OR MAXIMUM OPENING
- (C) = MAXIMUM SPAN LENGTH (WSBIS ITEM 1348)
- (D) = FILL DEPTH

Figure WSBIS 1340b

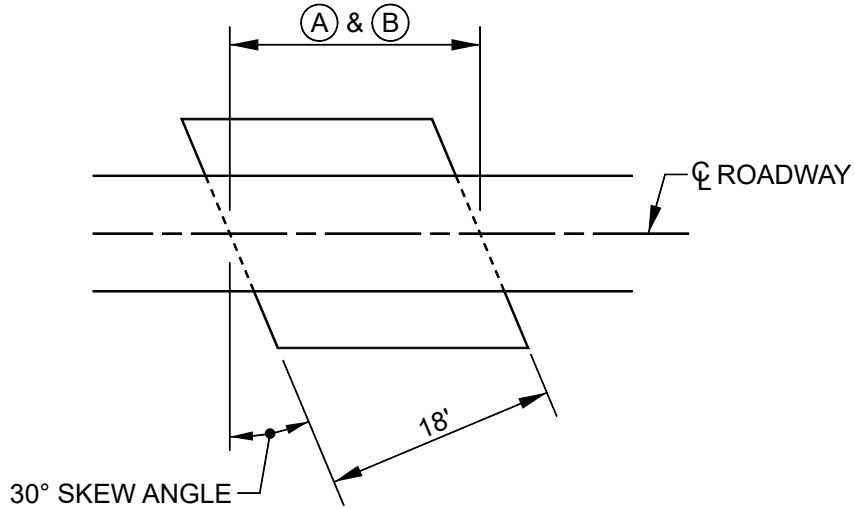


Figure 1

$$\textcircled{A} = \frac{18'}{\cos 30^\circ} = 20.78' = 21' \quad \& \quad \textcircled{B} = 20.8'$$

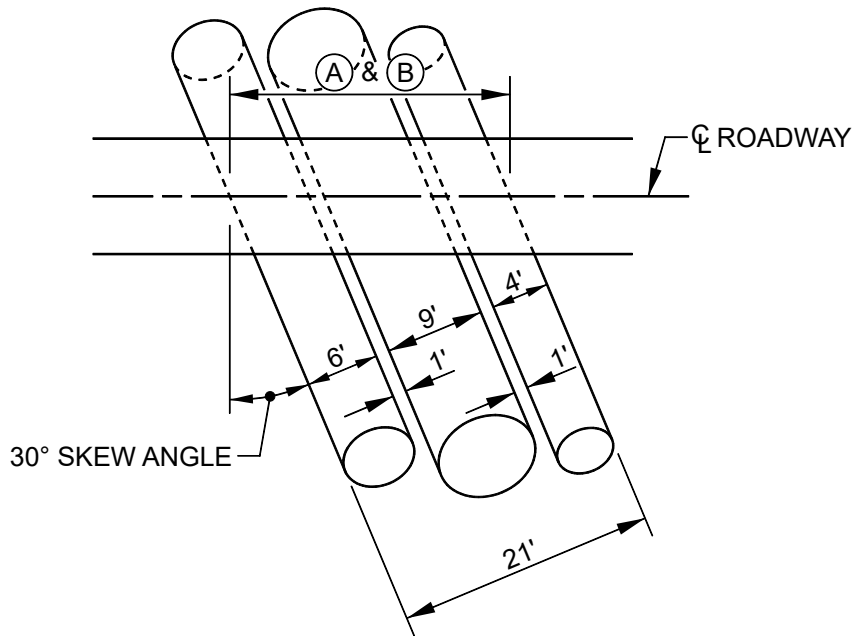


Figure 2

$$\textcircled{A} = \frac{21'}{\cos 30^\circ} = 24.25' = 25' \quad \& \quad \textcircled{B} = \text{Blank}$$

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

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<b>WSBIS Item 2346 – Screening Length (feet)</b>	<b>N(3,1)</b>
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**Applicable Structure Types**

- **Bridges & culverts carrying public roadways**

If the Structure Length is between 19 and 23 feet inclusive, the **screening** length shall be coded. If the Structure Length is outside these limits, leave this field blank.

The screening length is a measurement along the center of the roadway between undercopings of abutments, spring lines of arches, or the extreme ends of openings for multiple boxes. This measurement is coded to the nearest tenth of a foot and may be different from the measurement entered in WSBIS Item 1340 – Structure Length. See Structure Length for examples on how to determine the **screening** Length.

The NBIS criteria defines a bridge as being greater than 20 feet in length. The **screening** length is used to assist in determining if the structure meets the NBIS definition and therefore reported to FHWA.

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<b>WSBIS Item 1348 – Maximum Span Length (feet)</b>	<b>N(4,0)</b>
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NBI Item 48

**Applicable Structure Types**

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

The length of the maximum span shall be recorded in whole feet. The measurement shall be along the centerline of the bridge. Measure center to center of bearing points or clear open distance between piers, bents, or abutments otherwise.

A span that contains a drop-in span with cantilevers is counted as one span, and the length shall be measured from pier to pier.

See WSBIS Item 1340 – Structure Length for examples on how to determine the length of maximum span.

---

<b>WSBIS Item 1352 – Lanes On</b>	<b>N(2,0)</b>
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.

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<b>WSBIS Item 1356 – Curb-to-Curb Width (feet)</b>	<b>N(4,1)</b>
NBI Item 51	
NTI Item G.3	

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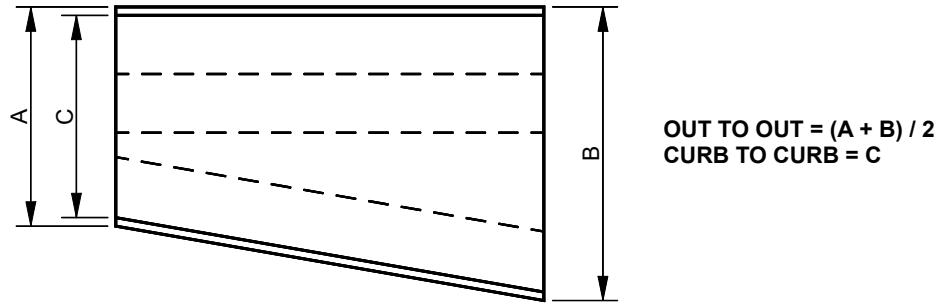
#### Applicable Structure Types

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

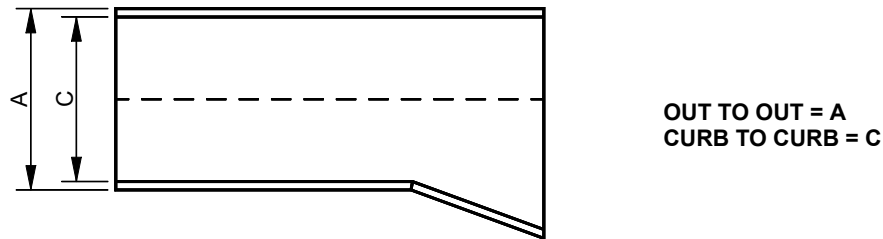
Code the curb-to-curb width to the nearest tenth of a foot. The information to be recorded is the most restrictive minimum distance between curbs or rails on the structure roadway. The measurement should be exclusive of flared areas for ramps.

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.

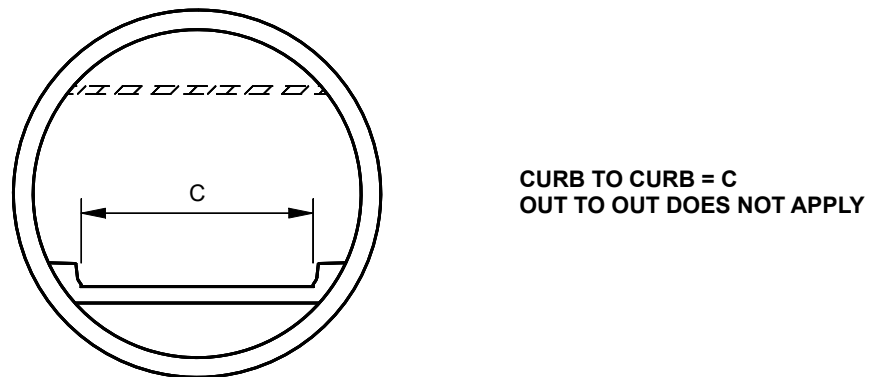
Figure WSBIS 1356a



EXAMPLE 1



EXAMPLE 2



EXAMPLE 3 (TUNNEL)

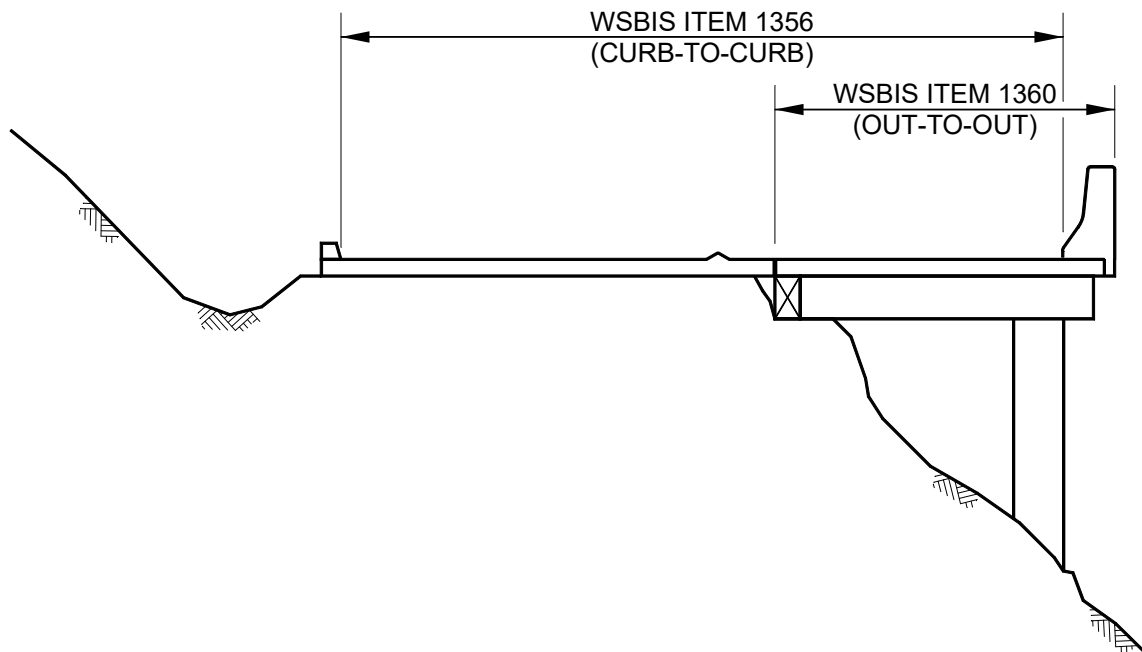
Where traffic runs directly on the top slab (or wearing surface) of a culvert-type structure (e.g., an R/C box without fill), code the actual roadway width (curb-to-curb or rail-to-rail). This will also apply where the fill is minimal and headwalls or parapets affect the flow of traffic.

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 1356b



WSBIS Item 1360 - Out-to-Out Deck Width (feet)

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.

For a 3 sided structure with a determined amount of fill on the deck less than B/2:  
Code the out-to-out deck width by measuring the extents of the bridge width perpendicular to the centerline of the roadway above.



<b>WSBIS Item 1364 - Sidewalk/Curb Width Left (feet)</b>	<b>N(3,1)</b>
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NBI Item 50A

NTI Item G.4

<b>WSBIS Item 1367 - Sidewalk/Curb Width Right (feet)</b>	<b>N(3,1)</b>
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NBI Item 50B

NTI Item G.5

### Applicable Structure Types

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

Code the widths of the left and right curbs or sidewalks to the nearest tenth of a foot, with left and right determined by bridge orientation, not route orientation. Code 0 when there are no curbs or sidewalks.

Figure WSBIS 1364a

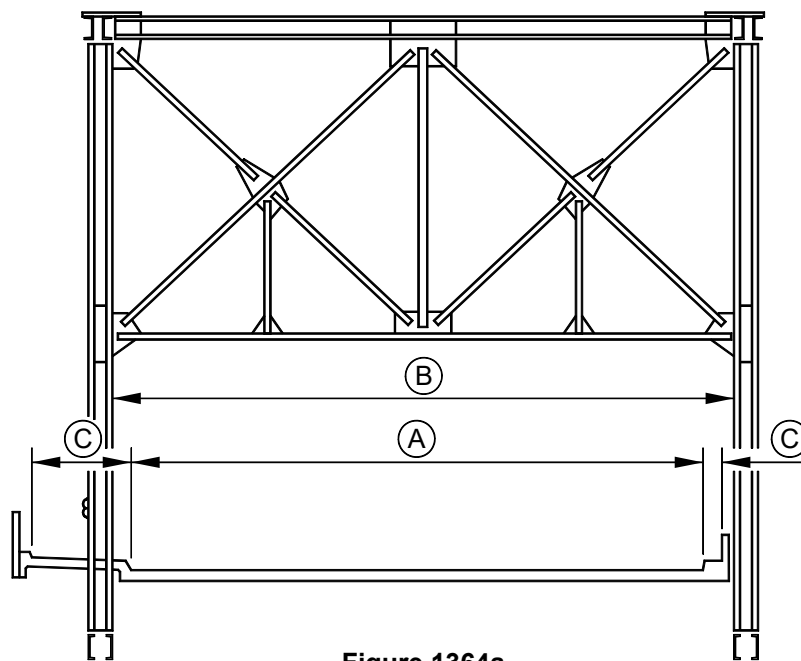


Figure 1364a

- (A) WSBIS 1356 - ROADWAY WIDTH, CURB-TO-CURB
- (B) WSBIS 1360 - DECK WIDTH, OUT-TO-OUT
- (C) WSBIS 1364 AND 1367 - CURB OR SIDEWALK WIDTH

Figure WSBIS 1364b

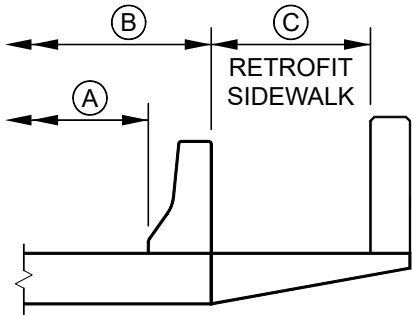


Figure 1

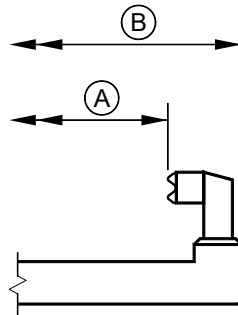


Figure 2

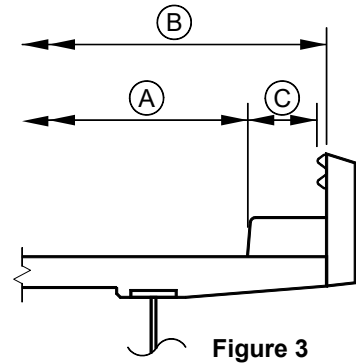


Figure 3

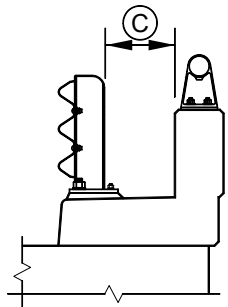


Figure 4

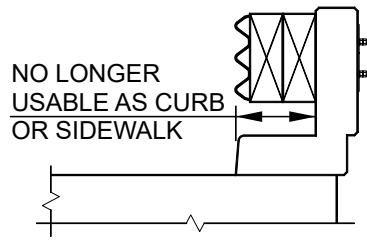


Figure 5

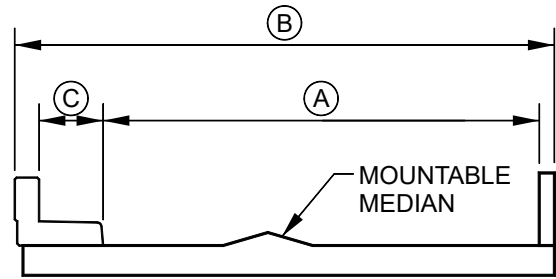


Figure 6

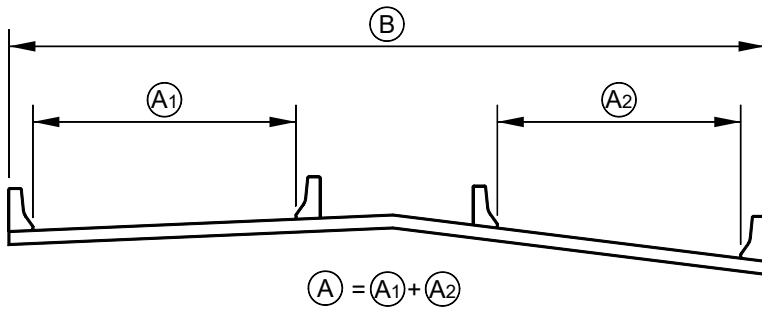


Figure 7

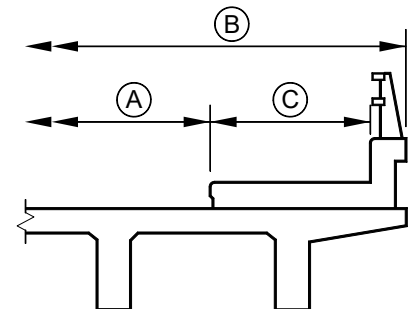


Figure 8

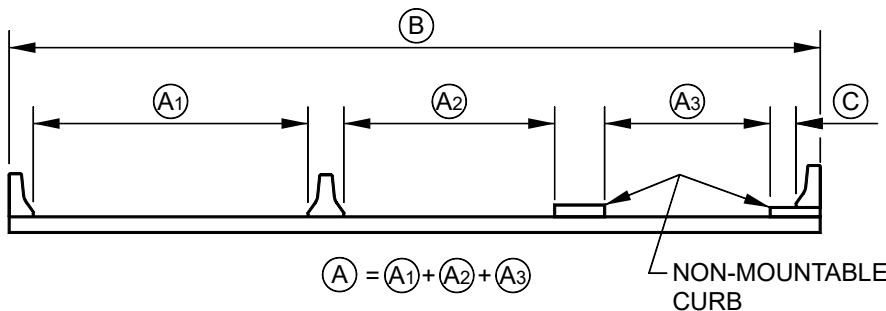


Figure 9

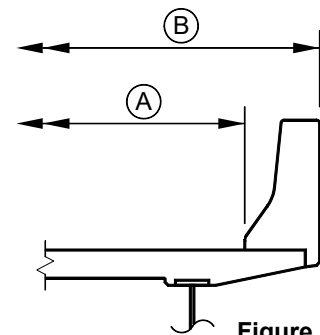


Figure 10

- (A) WSBIS 1356 - ROADWAY WIDTH, CURB-TO-CURB
- (B) WSBIS 1360 - DECK WIDTH, OUT-TO-OUT
- (C) WSBIS 1364 AND 1367 - CURB OR SIDEWALK WIDTH

Figure WSBIS 1364c

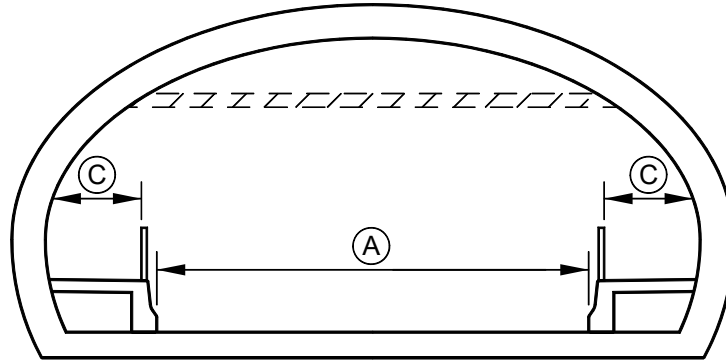


Figure 1364c

- (A) WSBIS 1356 - ROADWAY WIDTH, CURB-TO-CURB  
 (C) WSBIS 1364 AND 1367 - CURB OR SIDEWALK WIDTH

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 WSBIS Item 1310 - Skew (degrees)

N(2,0)

NBI Item 34

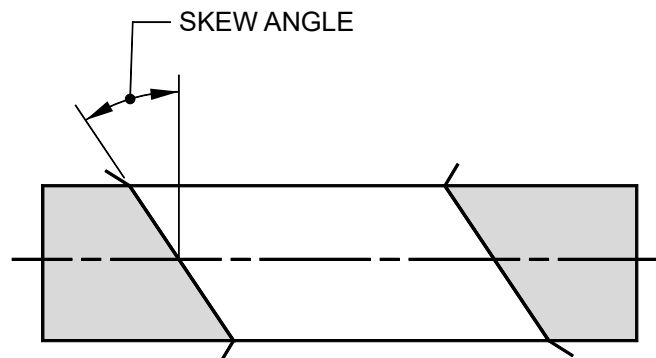
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**Applicable Structure Types**

- 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



**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 1370 - Minimum Vertical Clearance Over Deck (feet & inches)**

**N(4,0)**

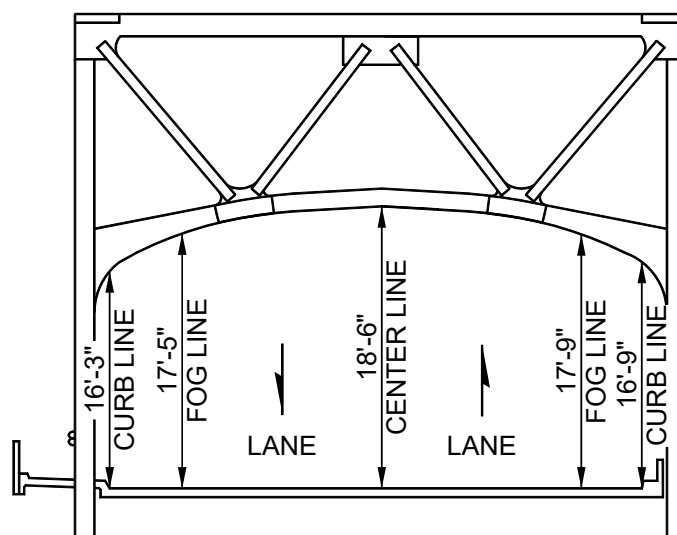
NBI Item 53

**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' 3¼" 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**

---

<b>WSBIS Item 1374 – Minimum Vertical Clearance Under Bridge (feet &amp; inches)</b>	<b>N(4,0)</b>
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.

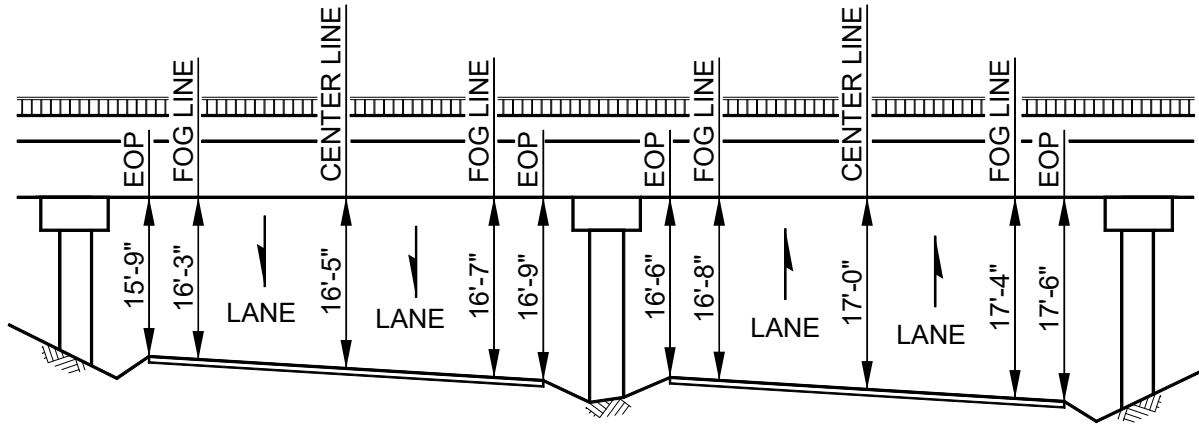
If the bridge crosses both a highway and a railroad, code the highway clearance UNLESS the railroad has a substandard clearance based on current design criteria and the roadway is NOT substandard.

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.

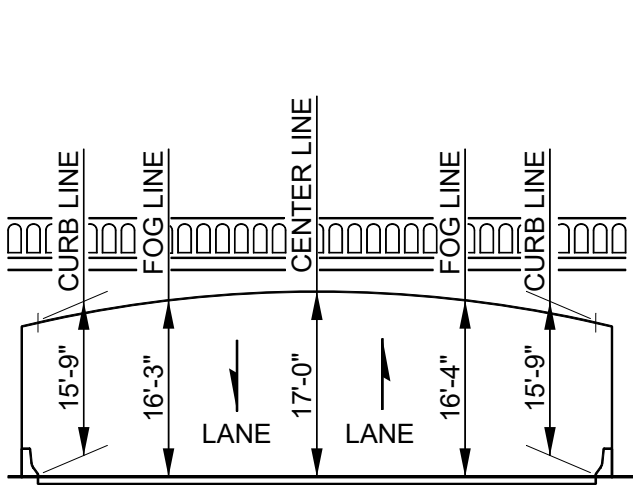
If the feature is not a highway or railroad, code the minimum vertical clearance 0. A highway is to be considered any functionally classified, public road. Private roads are not to be included.

\* 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.

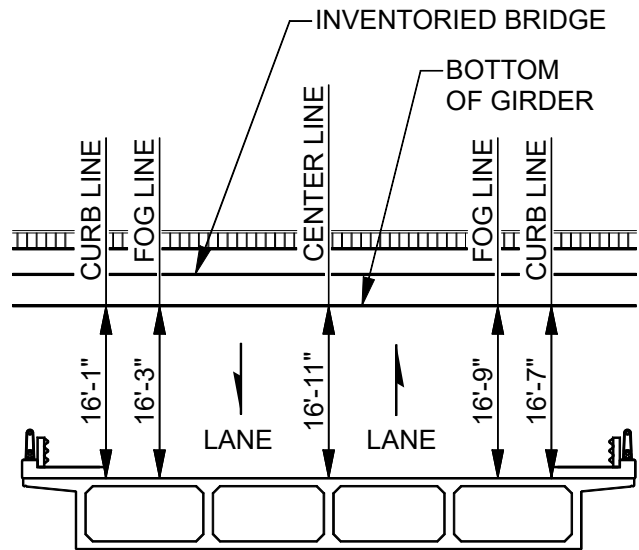
Figure WSBIS 1374



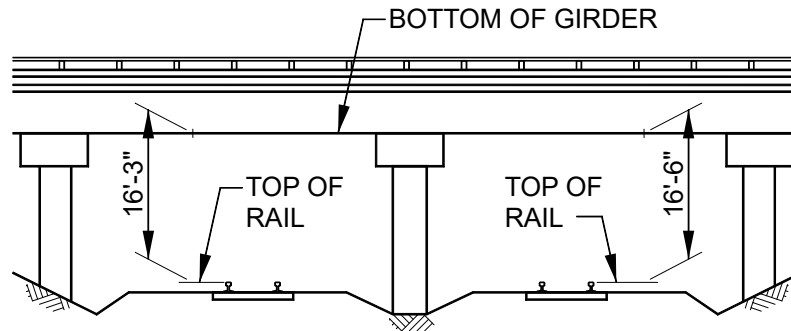
**DIVIDED HIGHWAY (Fig. 1374a)**  
CODE: 1603



**UNDIVIDED HIGHWAY (Fig. 1374b)**  
CODE: 1603



**BRIDGE OVER BRIDGE (Fig. 1374c)**  
CODE: 1603



**RAILROAD (Fig. 1374d)**  
CODE: 1603

<b>WSBIS Item 1378 – Vertical Underclearance Code</b>	<b>Pulldown</b>
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:

**Table 1378 Vertical Underclearance Code**

<b>WSBIS Code</b>	<b>Description</b>
H	Highway beneath structure
R	Railroad beneath structure
N	Feature not a highway or railroad

<b>WSBIS Item 1379 – Minimum Lateral Underclearance Right (feet)</b>	<b>N(3,1)</b>
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 most critical dimension.

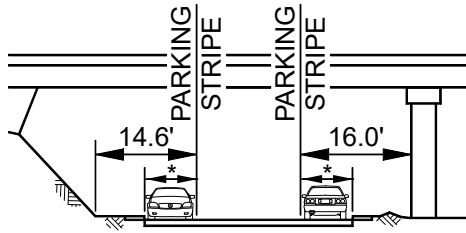
The lateral clearance should be measured from the right edge of the roadway excluding shoulders (fog line) or from the centerline (between rails) of the right-hand track of a railroad to the nearest substructure unit (pier, abutment, etc.), a retaining wall or to a slope. If no fog line exists on the 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.

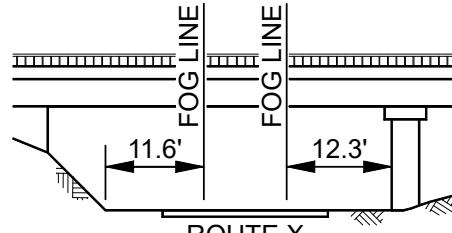
The presence of ramps and acceleration or turning lanes is not considered in this item; therefore, the minimum lateral clearance on the right should be measured from the right edge of the through roadway.

Figure WSBIS 1379a



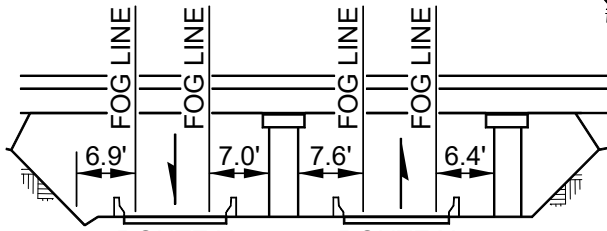
**ROUTE X  
CITY STREET (Figure 1)**

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.

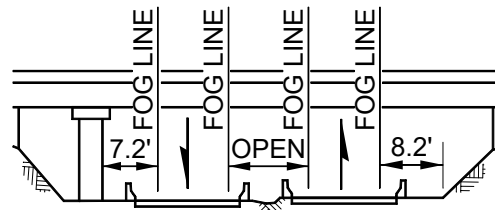


**ROUTE X  
HIGHWAY (Figure 2)**

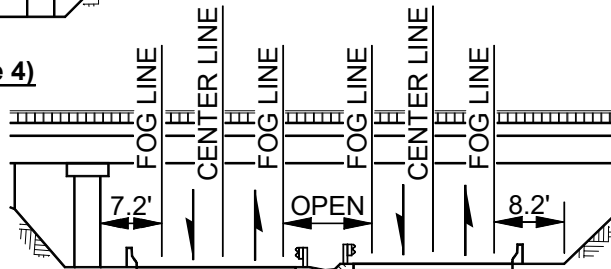
2-WAY TRAFFIC: RT. = 11.6 LT. = 0.0  
 1-WAY TRAFFIC LOOKING IN THE  
 DIRECTION OF TRAFFIC:  
 RT. = 12.3 LT. = 11.6



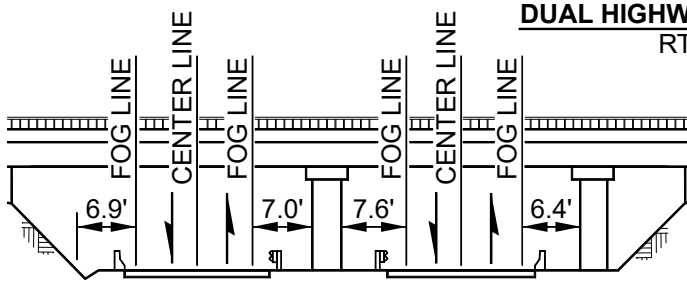
**ROUTE X ROUTE X  
FREEWAY PIER MEDIAN (Figure 4)**  
 RT. = 6.4 LT. = 7.0



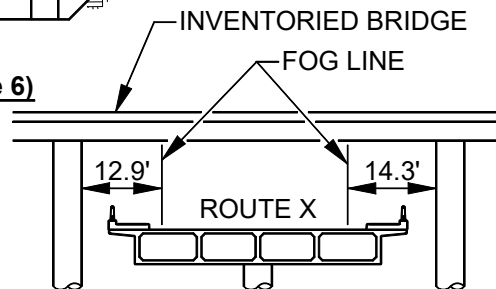
**ROUTE X ROUTE X  
FREEWAY OPEN MEDIAN (Figure 3)**  
 RT. = 7.2 LT. = 99.9



**ROUTE X ROUTE Y  
DUAL HIGHWAY OPEN MEDIAN (Figure 5)**  
 RT. = 7.2 LT. = 99.9



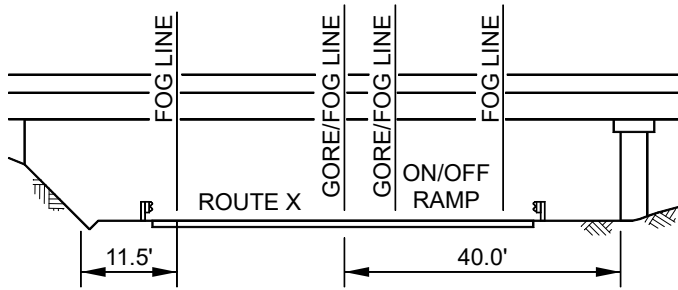
**ROUTE X ROUTE Y  
DUAL HIGHWAY PIER MEDIAN (Figure 6)**  
 RT. = 6.4 LT. = 0.0



**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

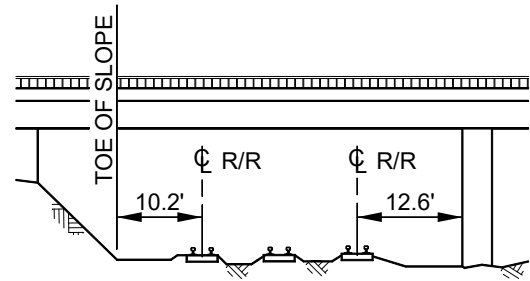


Figure WSBIS 1379b



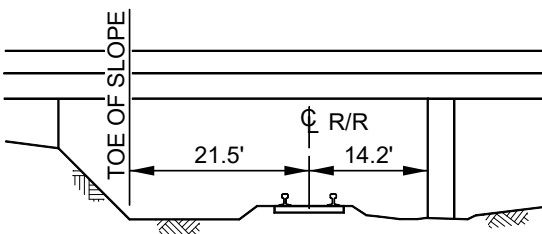
**FREEWAY ON/OFF RAMP (Figure 1)**

2-WAY TRAFFIC: RT. = 11.5 LT. = 0.0  
 1-WAY TRAFFIC LOOKING IN THE DIRECTION OF TRAFFIC: RT. = 40.0 LT. = 11.5



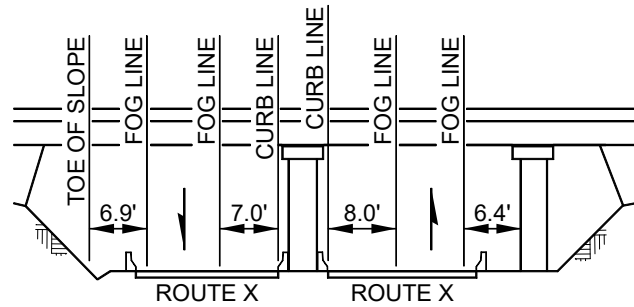
**RAILROAD MULTIPLE TRACK (Figure 2)**

RT. = 10.2 LT. = 0.0



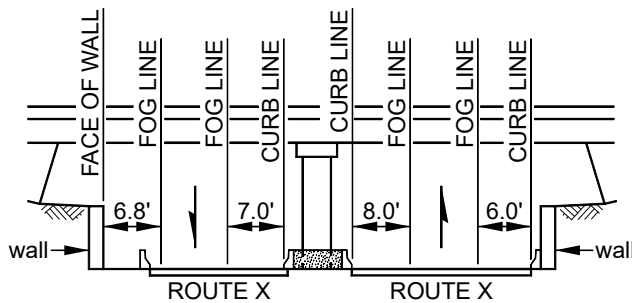
**RAILROAD SINGLE TRACK (Figure 3)**

RT. = 14.2 LT. = 0.0



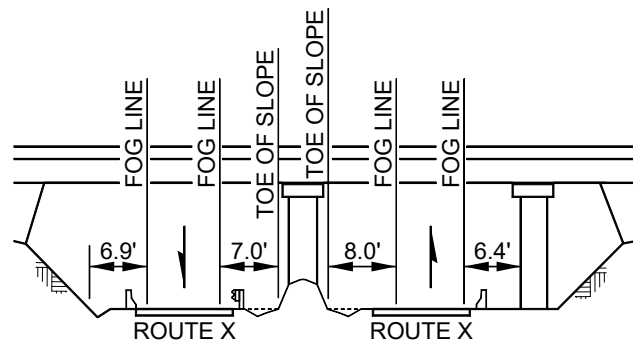
**FREEWAY PIER MEDIAN WITH BARRIER ADJACENT TO SUBSTRUCTURE (Figure 4)**

RT. = 6.4 LT. = 7.0



**FREEWAY PIER MEDIAN WITH CONCRETE/DIRT FILL BETWEEN BARRIERS AROUND SUBSTRUCTURE (Figure 5)**

RT. = 6.0 LT. = 7.0



**FREEWAY PIER MEDIAN WITH MOUNDED DIRT AROUND SUBSTRUCTURE (Figure 6)**

RT. = 6.4 LT. = 7.0

**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.

<b>WSBIS Item 1382 – Lateral Underclearance Code</b>	<b>Pulldown</b>
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.

**Table 1382 Lateral Underclearance Code**

WSBIS Code	Description
H	Highway beneath structure
R	Railroad beneath structure
N	Neither highway or railroad beneath structure

<b>WSBIS Item 1383 – Minimum Lateral Underclearance Left (feet)</b>	<b>N(3,1)</b>
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 the roadway (excluding shoulders) 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**

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.

---

<b>WSBIS Item 1387 – Navigation Vertical Clearance (feet)</b>	<b>N(3,0)</b>
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.

---

<b>WSBIS Item 1390 – Navigation Horizontal Clearance (feet)</b>	<b>N(4,0)</b>
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 1291 - Median**

Pulldown

NBI Item 33

**Applicable Structure Types**

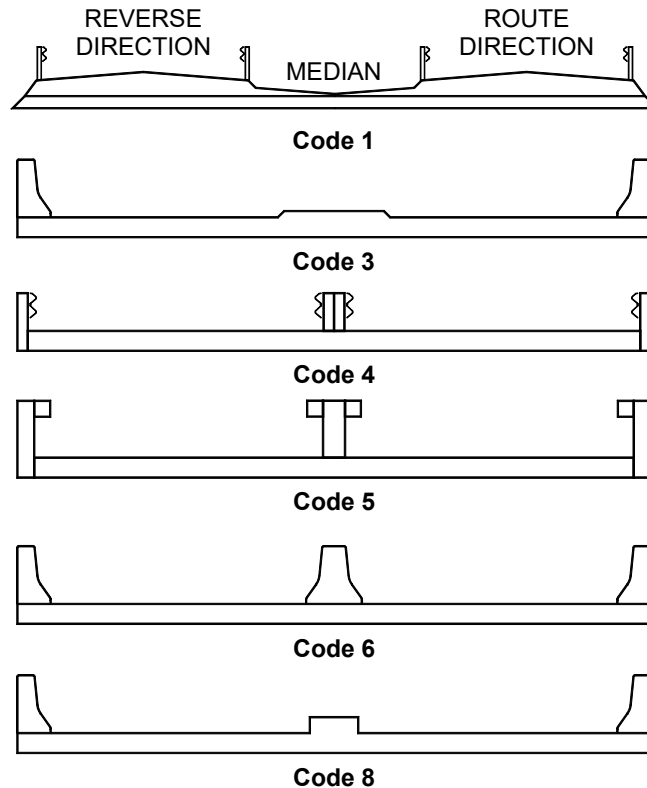
- Bridges & culverts carrying public roadways

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**

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**



**NBI Commentary:**

This coding guide split out various types of medians that are translated to the NBI coding guide as described above.

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**WSBIS Item 1397 – Approach Roadway Width (feet)** **N(3,0)**


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NBI Item 32

**Applicable Structure Types**

- Bridges & culverts carrying public roadways

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.

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**WSBIS Item 2368 – Min. Vertical Clearance Over Deck Override (feet & inches)** **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' 3<sup>3</sup>/<sub>4</sub>" is to be coded 1603).





## Crossing Tab

### WSBIS Items 1432, 1433, 1434, and 1435

NBI Item 5

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
1433	5B	l.9	Route Signing Prefix
1434	5C	n/a	Designated Level of Service
1435	5D	l.7	Route Number

### WSBIS Item 1432 - Inventory Route On/Under

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
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. Code 2 for a single route under a bridge and for all tunnels. If two or more routes go under a bridge, code A, B, C, D, etc., consecutively for multiple routes on separate roadways under the same structure. STRAHNET routes shall be listed first. 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 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.

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#### WSBIS Item 1433 – Inventory Route Highway Class

Pulldown

NBI Item 5B

NTI Item I.9

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#### Applicable Structure Types

- All structure records

Identify the highway class for the inventory route using one of the following codes:

**Table 1433** Inventory Route Highway Class

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 – Inventory Route Service Level**

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 Inventory Route Service Level**

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 1435 – Route**

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.

---

<b>WSBIS Item 2440 – Milepost (miles)</b>	<b>N(5,2)</b>
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**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.**

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<b>WSBIS Item 1445 – ADT</b>	<b>N(6,0)</b>
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NBI Item 29

NTI Item 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

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 is available at

<https://www.wsdot.wa.gov/data/tools/geoportal/?config=traffic>.

---

**WSBIS Item 1451 – ADT Truck Percentage** 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

---

**WSBIS Item 1453 – ADT Year** N(4,0)

NBI Item 30

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

Record the year represented by the ADT in WSBIS Item 1445. Code all four digits of the year.

ADT Year information is available at the link in WSBIS Item 1445.

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<b>WSBIS Item 1457 – Future ADT</b>	<b>N(6,0)</b>
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**

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).

---

<b>WSBIS Item 1463 – Future ADT Year</b>	<b>N(6,0)</b>
NBI Item 115	

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#### 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 represented by the future ADT in WSBIS Item 1457. The projected year of future ADT shall be at least 17 years but no more than 22 years from the year of routine, short span, or safety inspection.

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**WSBIS Item 1467 – Linear Referencing System Route** **AN(12)**

NBI Item 13A

NTI Item I.11

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**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.

<b>WSBIS Item 1469 - LRS Milepost (miles)</b>	<b>N(5,2)</b>
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 1483 – National Highway System**

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 NHS Code**

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.

<b>WSBIS Item 1484 – Base Highway Network</b>	<b>Pulldown</b>
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**

WSBIS Code	Description
0	Inventory Route is not on the Base Network
1	Inventory Route is on the Base Network

<b>WSBIS Item 1485 – STRAHNET Highway</b>	<b>Pulldown</b>
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**

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

NTI Commentary:

Codes translated for the NTI as shown in the table above.

**WSBIS Item 1486 – Federal Lands Highways****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	4	Both IRR and FH
1	Indian Reservation Road (IRR)	5	Both IRR and LMHS
2	Forest Highway (FH)	6	Both FH and LMHS
3	Land Management Highway System (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.

<b>WSBIS Item 1487 – Functional Classification</b>	<b>Pulldown</b>
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**

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 [www.wsdot.wa.gov/data/tools/geoportal](http://www.wsdot.wa.gov/data/tools/geoportal).

#### NBI and NTI Commentary:

Functional Classification codes are translated for the NBI and NTI as shown in the table above.

**WSBIS Item 1489 – National Truck Network**

Pulldown

NBI Item 110

**Applicable Structure Types**

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

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 1489 National Truck 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 1490 – Lane Use Direction**

Pulldown

NBI Item 102

NTI Item C.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 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 highway traffic on inventory route
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.

<b>WSBIS Item 1354 – Lanes Under</b>	<b>N(2,0)</b>
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.

<b>WSBIS Item 1491 – Horizontal Clearance, Route Direction (feet &amp; inches)</b>	<b>N(4,0)</b>
<b>WSBIS Item 1495 – Horizontal Clearance, Reverse Direction (feet &amp; inches)</b>	<b>N(4,0)</b>
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.

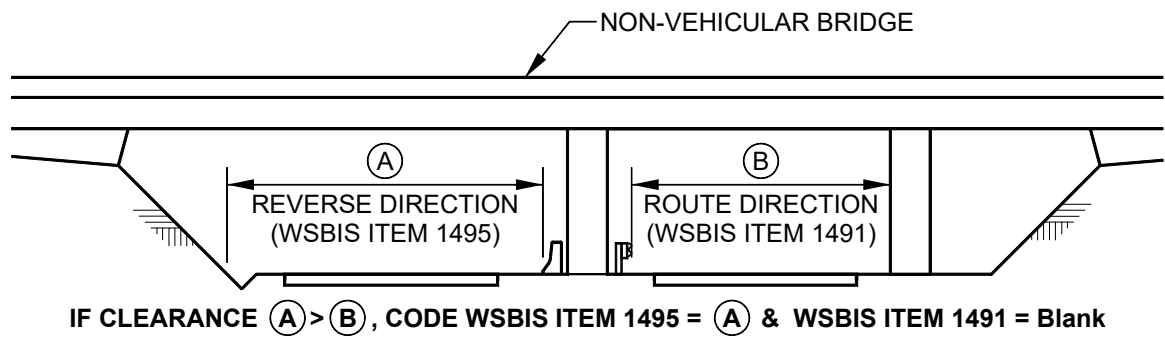
When the inventory route consists of two parallel bridges carrying a divided route, for the bridge carrying the increasing route direction code WSBIS Item 1491 as measured and WSBIS Item 1495 is blank. For the bridge carrying the decreasing route direction, WSBIS Item 1491 is blank and code WSBIS Item 1495 as measured.

When a restriction is 100 feet or greater, code 9912.

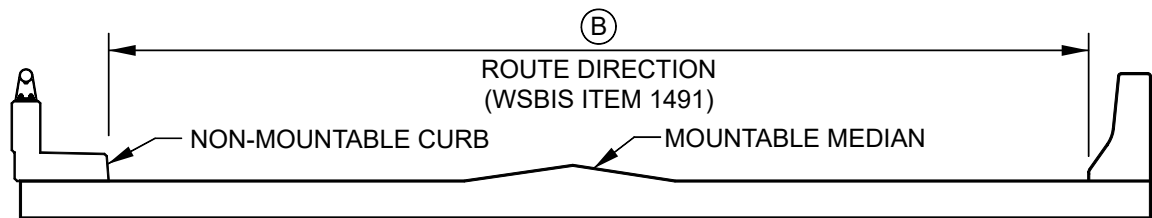
**NBI Commentary:**

The minimum horizontal clearance for each route is reported to the NBI, regardless of route direction.

**Figure 1495**

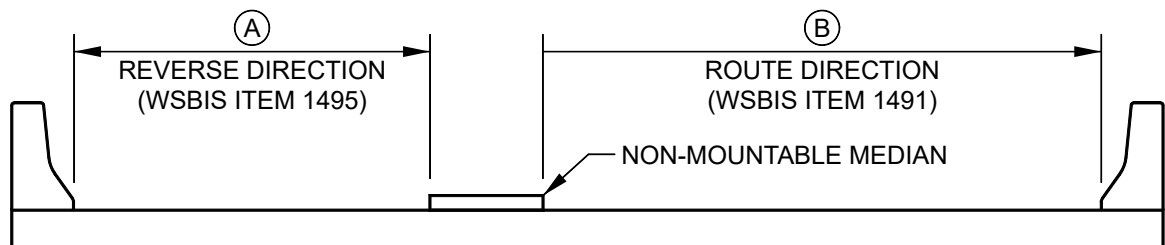


**Figure 1**



**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**

**NBI Commentary:**

The NBI requires coding only the maximum horizontal clearance for divided highways. WSBIS has two fields. When the NBI submittal is prepared, the largest dimension is selected and reported.

**WSBIS Item 1413 – Detour Length**

N(2,0)

NBI Item 19

NTI Item 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

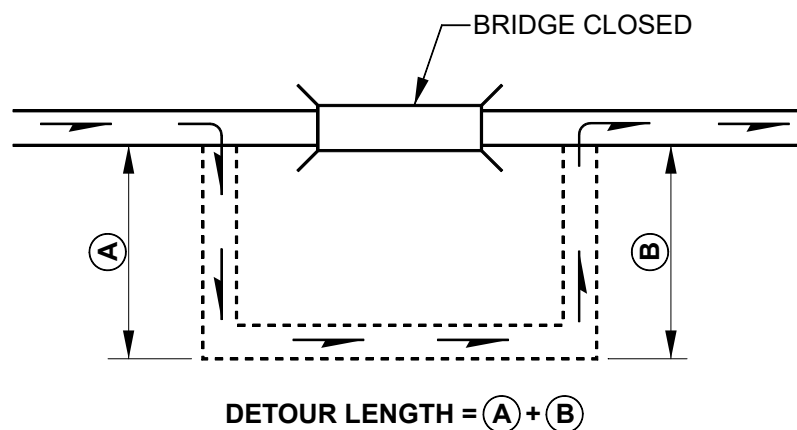
Indicate the actual length to the nearest mile of the detour length, which is considered the additional travel needed to return to the original route if the structure is closed.

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 1413****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 1499 – Maximum Vertical Clearance Route Direction (feet & inches)	N(4,0)
WSBIS Item 2501 – Maximum Vertical Clearance Reverse Direction (feet & inches)	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.

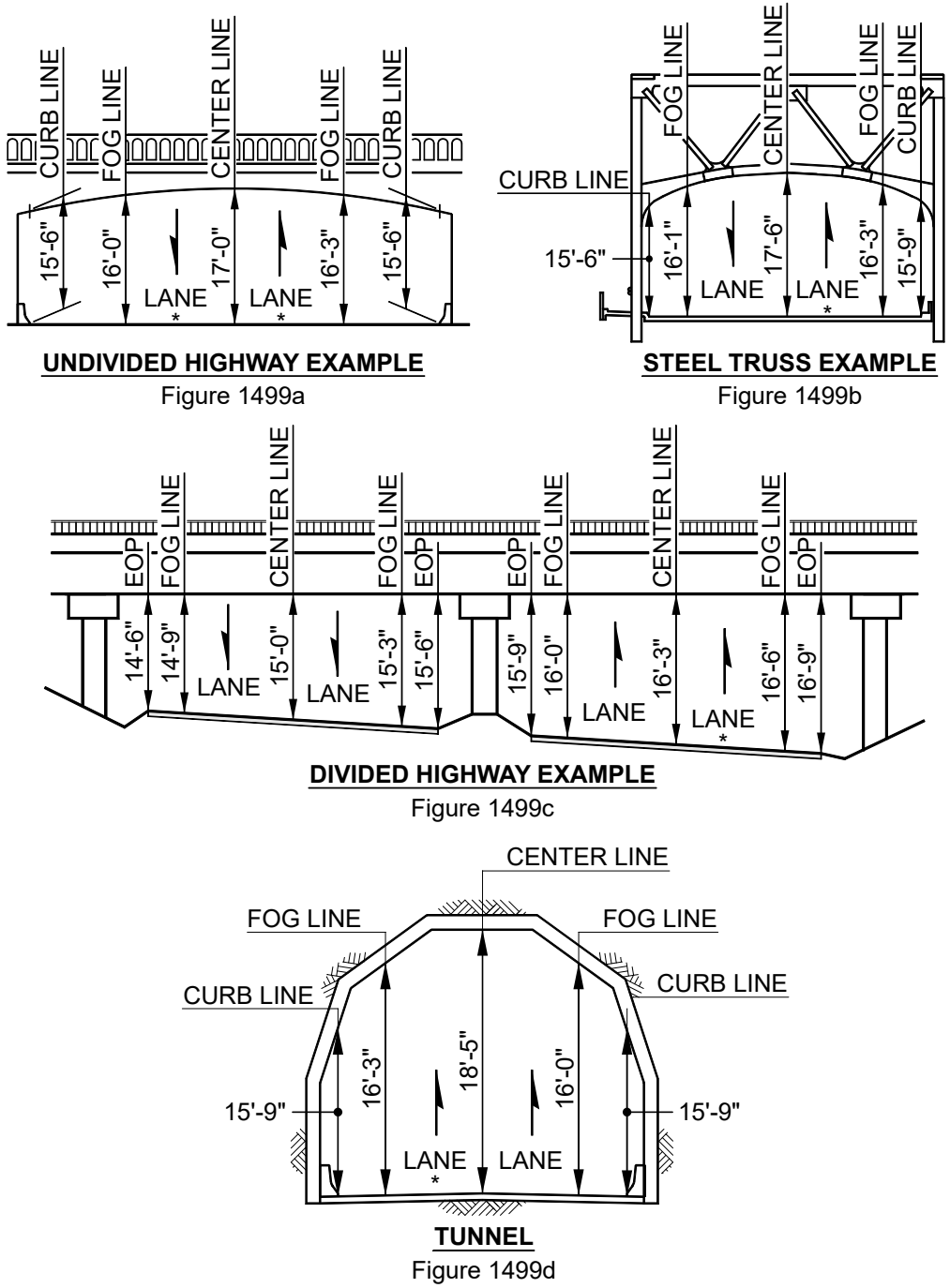
When a restriction is 100 feet or greater, code 9912.

**\* 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 1499



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.

---

<b>WSBIS Item 2409 – NTI Reportable Flag</b>	<b>Pulldown</b>
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---

**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.

---

<b>WSBIS Item 2410 – NBI Reportable Flag</b>	<b>Pulldown</b>
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---

**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.

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<b>WSBIS Item 7479 – Federal Aid Route Number</b>	<b>AN(4)</b>
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**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 [www.wsdot.wa.gov/data/tools/geoportal](http://www.wsdot.wa.gov/data/tools/geoportal).**

If the bridge is not on a federal aid highway, the field should be filled with zeros.

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<b>WSBIS Item 7441 – Speed Limit (mph)</b>	<b>Integer</b>
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**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

Code the speed limit in miles per hour for the inventory route **at the bridge site**.

## Crossing Tab Supplement

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<b>WSBIS Item 2000 – Main Listing Flag</b>	<b>Pulldown</b>
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### 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.

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<b>WSBIS Item 2401– Crossing Manager</b>	<b>Uniqueidentifier</b>
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### 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.

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<b>WSBIS Item 2402 – Crossing Description</b>	<b>AN(30)</b>
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### 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.

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<b>WSBIS Item 2500 – Minimum Vertical Clearance Route Direction (feet &amp; inches)</b>	<b>N(4,0)</b>
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<b>WSBIS Item 2502 – Minimum Vertical Clearance Reverse Direction (feet &amp; inches)</b>	<b>N(4,0)</b>
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### 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.

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**WSBIS Item 2411 – Bridge List** **Pulldown**


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**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 2411 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.

---

**WSBIS Item 2436 – Route Sequencer** **Integer**


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**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.

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**WSBIS Item 2437 – Bridge List Milepost Override (miles)** **N(5,2)**


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**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.

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<b>WSBIS Item 2438 – Milepost Sequencer</b>	<b>Integer</b>
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**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.

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<b>WSBIS Item 2468 – Directional Indicator</b>	<b>Pulldown</b>
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**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.

- |   |                            |
|---|----------------------------|
| I | Increasing                 |
| D | Decreasing                 |
| B | Both                       |
| * | Null field, 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.

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<b>WSBIS Item 2470 – Ahead/Back Indicator</b>	<b>Pulldown</b>
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**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.

- |   |  |
|---|--|
| B | Back milepost  |
| * | Null field, 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.





## Design Tab

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 WSBIS Item 1532 – Main Span Material
 

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 Pulldown
 

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 NBI Item 43A
 

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### Applicable Structure Types

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

Indicate the kind of material and/or design for the main span.

**Table 1532 Main Span Material Code**

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

Pulldown

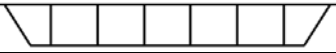

NBI Item 43B

## Applicable Structure Types

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

Indicate the predominant type of design and/or type of construction.

Table 1533 Main Span Design Code

WSBIS Code	Description
01	Slab
02	Multibeam or Girder
03	Girder and Floorbeam System
04	Tee Beam
05	Box Beam or Girders – Multiple 
06	Box Beam or Girders – Single or Spread 
07	Frame (except frame culverts)
08	Orthotropic
09	Truss – Deck
10	Truss – Thru
11	Arch – Deck
12	Arch – Thru
13	Suspension
14	Stayed Girder
15	Movable – Lift
16	Movable – Bascule
17	Movable – Swing
18	Tunnel (this code designates reporting to the NTI instead of the NBI)
19	Culvert (includes frame culverts)
20*	Mixed types
21	Segmental Box Girder
22	Channel Beam (Bathtub Unit)
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 1535 – Approach Span Material**

Pulldown

NBI Item 44A

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**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**

Pulldown

NBI Item 44B

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**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.

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**WSBIS Item 2537 – Alpha Span Type (INV MO only)**

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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 entered as follows: STrus TTC CTB

Table 2537 Alpha Span Type Codes

Alpha Span Type	Description	Alpha Span Type	Description
3SCCulv	3 Sided Concrete Culvert	PTCSeg	Post-Tensioned Segmental Box Girder
3STCulv	3 Sided Timber Culvert	PTCTB	Post-Tensioned Concrete T-Beam
BAS	Bascule Lift Span	SA	Steel Arch
CA	Concrete Arch	SBox	Steel Box Girder
CBox	Concrete Box Girder	SCulv	Steel Culvert
CCulv	Concrete Culvert	SFP	Steel Floating Pontoon
CEFA	Concrete Earth Filled Arch	SG	Steel Girder (weld or rivet)
CESB	Concrete Encased Steel Beam	SLS	Steel Lift Span
CFP	Concrete Floating Pontoon	SRB	Steel Rolled Beam
CG	Concrete Girder	SSCG	Steel Stayed Concrete Girder
CLTun	Concrete Lined Tunnel	SSusS	Steel Suspension Span
CS	Concrete Slab	SSwS	Steel Swing Span
CSS	Cable Stayed Span	STA	Steel Tied Arch
CSTP	Concrete Slab on Timber Piling	STrus	Steel Truss
CTB	Concrete T-Beam	TCulv	Timber Culvert
CTrus	Concrete Truss	TLTun	Timber Lined Tunnel
CVS	Concrete Voided Slab	TS	Timber Slab
LIDTun	Cut and Cover (LID) Tunnel	TTC	Treated Timber (Creosote) Bridge
MCulv	Masonry Culvert	TTLB	Treated Timber Laminated Beam
PCBTG	Prestressed Concrete Bulb-T Girder	TTS	Treated Timber (Salts) Bridge
PCG	Prestressed Concrete Girder	TTTrus	Treated Timber Truss
PCMWG	Prestressed Concrete Multi-Web Girder	UT	Untreated Timber Bridge
PCS	Prestressed Concrete Slab	UTLB	Untreated Timber Laminated Beam
PCTG	Prestressed Concrete Trapezoidal Girder	UTTrus	Untreated Timber Truss
Plaza	Park Plaza Structures	UTun	Unlined Tunnel
PRCB	Precast Reinforced Concrete Beam	WSBox	Weathering Steel Box Girder
PTCBox	Post-Tensioned Concrete Box Girder	WSG	Weathering Steel Girder

---

**WSBIS Item 1538 – Number of Main Spans** 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 1541 – Number of Approach Spans** 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 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  
NBI Item 42B

Pulldown

**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

**WSBIS Item 1546 – Deck Type**

Pull-down

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**

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
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**

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**

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**

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**

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**

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

**WSBIS Item 1550 – Design Load**

Pulldown

NBI Item 31

**Applicable Structure Types**

- **Bridges & culverts carrying public roadways**

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**

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 [www.fhwa.dot.gov/bridge/110202.cfm](http://www.fhwa.dot.gov/bridge/110202.cfm).

**WSBIS Item 1585 – Border Bridge State Code**

Pulldown

NBI Item 98A

**Applicable Structure Types**

- **Bridges & culverts carrying public roadways**

Use this item to indicate structures crossing to Oregon or Idaho. Code a 3-digit number specifying the border state. See WSBIM Appendix 2-F for a listing of border bridges on the Washington State inventory.

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

The neighboring state codes are:

Oregon	410
Idaho	160

NBI Commentary:

This field has been limited to codes relevant to Washington State.

WSBIS Items 1585, 1588 and 1590 reflect the intent of the February 9, 2018 FHWA Memo entitled “Border Bridges in the NBI.”

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<b>WSBIS Item 1588 – Border Bridge Percent</b>	<b>N(2,0)</b>
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NBI Item 98B

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**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.

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<b>WSBIS Item 1590 – Border Bridge Structure Identifier</b>	<b>AN(15)</b>
---	---------------

NBI Item 99

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**Applicable Structure Types**

- **Bridges & culverts carrying public roadways**

Code the neighboring State's 15-digit National Bridge Inventory structure number for any structure noted in WSBIS Item 1585 – Border Bridge. This number must match exactly the neighboring State's submitted NBI structure number. The entire 15-digit field must be accounted for including zeroes and blank spaces whether they are leading, trailing, or embedded in the 15-digit field.

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

---

<b>WSBIS Item 7557 – Design Exception Date</b>	<b>Date</b>
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**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.

## Load Rating Tab

---

<b>WSBIS Item 2580 – Reference Inspection Date</b>	<b>Date</b>
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### 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.

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<b>WSBIS Item 2581 – Load Rating Date</b>	<b>Date</b>
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### Applicable Structure Types

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

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.

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<b>WSBIS Item 2582 – Rated By</b>	<b>AN(16)</b>
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### 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 1551 – Operating Rating Method NBI Item 63	Pulldown
WSBIS Item 1554 – Inventory Rating Method NBI Item 65 NTI Item L.1	Pulldown

### 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](http://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 NBI Item 64	N(3,0)
WSBIS Item 1555 – Inventory Rating Tons NBI Item 66	N(3,0)

### 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](http://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.

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<b>WSBIS Item 1553 – Operating Rating Factor</b>	<b>N(4,2)</b>
NBI Item 64	
NTI Item L.3	
<b>WSBIS Item 1556 – Inventory Rating Factor</b>	<b>N(4,2)</b>
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.

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<b>WSBIS Item 2587 – Type 3 Rating Factor</b>	<b>N(4,2)</b>
<b>WSBIS Item 2588 – Type 3S2 Rating Factor</b>	<b>N(4,2)</b>
<b>WSBIS Item 2589 – Type 3-3 Rating Factor</b>	<b>N(4,2)</b>
<b>WSBIS Item 2590 – Notional Rating Load (NRL) Rating Factor</b>	<b>N(4,2)</b>

---

#### 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.

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.

## Waterway Tab

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### WSBIS Item 7832 – Water Type

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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

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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**


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**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**


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**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  | 6 | Lined Canal  |
| 2 | Sediment | 7 | Vegetation   |
| 3 | Gravel   | 8 | Alluvial Fan |
| 4 | Sand     | 9 | Unknown      |
| 5 | Cobbles  |   |              |

Leave blank if not over water.

---

**WSBIS Item 7837 – Substructure Stability** **Pulldown**


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**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.      | 5 | Bedrock, simple spans.     |
| 2 | Spread footing, continuous spans.  | 6 | Bedrock, continuous spans. |
| 3 | Pile foundation, simple spans.     | 7 | Unknown, simple spans.     |
| 4 | Pile foundation, continuous 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 Aggregation.
- G No conditions influencing scour exist.
- H Streambed conditions are unknown.

Leave blank if not over water.

**WSBIS Item 7840 – Streambed Anabran****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 anabran 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.

## Proposed Improvements Tab

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### WSBIS Item 2883 – Proposed Improvement Calculation

Check Box

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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 = \$800 (as of 2014)

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 = \$400 (as of 2014)

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)

<b>WSBIS Item 1844 – Work Type</b>	<b>Pulldown</b>
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.

<b>WSBIS Item 1846 – Work Method</b>	<b>Pulldown</b>
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 Work Method Code**

WSBIS Code	Description
2	Work to be done by owner's forces
1	Work to be done by contract

<b>WSBIS Item 1847 – Structure Length (feet)</b>	<b>N(6,0)</b>
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.



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<b>WSBIS Item 2853 – Roadway Width (feet)</b>	<b>N(6,0)</b>
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Code the curb-to-curb width of the roadway on the proposed bridge. This measurement is coded to the nearest foot.

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<b>WSBIS Item 2860 – Cost per S.F. of Deck (dollars)</b>	<b>N6,0)</b>
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Code the estimated cost per square foot of proposed deck. For State bridges, this number is provided by the WSDOT Bridge Management Engineer.

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<b>WSBIS Item 1867 – Structure Cost (thousand dollars)</b>	<b>N(7,0)</b>
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NBI Item 94

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**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.

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<b>WSBIS Item 1873 – Roadway Cost (thousand dollars)</b>	<b>N(7,0)</b>
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NBI Item 95

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**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.

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<b>WSBIS Item 2870 – Engineering and Miscellaneous Cost (thousand dollars)</b>	<b>N(7,0)</b>
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---

Code the estimated cost of engineering and other miscellaneous items. For State bridges, this number is provided by the WSDOT Bridge Management Engineer.

---

<b>WSBIS Item 1861 – Total Cost (thousand dollars)</b>	<b>N(7,0)</b>
--	---------------

NBI Item 96

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**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.

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<b>WSBIS Item 1879 – Estimate Year</b>	<b>N(4,0)</b>
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NBI Item 97

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**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.

## Tunnel Supplement Tab

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WSBIS Item 1992 - Routine Inspection Target Date	Date
NTI Item D.1	

---

### Applicable Structure Types

- Tunnels carrying public roadways within

The target date is set by the program manager and cannot be modified without prior notification to the FHWA division office.

This date is intended to provide the baseline for scheduling future routine inspections. Routine inspection dates should be within 2 months (+/-) of this target month. The year represents the target date was set.



## Tunnel ID Tab

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 WSBIS Item 1022 - Urban Code
 

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 Pulldown
 

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### Applicable Structure Types

- Tunnels carrying public roadways within

Record the urbanized area code:

**Table 1022 Urban Code**

WSBIS Code	Urban Area Name
<b>Urban Areas with Populations of 50,000 or more as of 2017</b>	
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
<b>Urban Areas with Populations of 5,000 - 49,000 as of 2017</b>	
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

Table 1022 Urban Code

WSBIS Code	Urban Area Name
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
<b>All Other Locations</b>	
99999	Non Urbanized area

## Load Rating Tab Supplement

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WSBIS Item 1560 - Posted Load - Gross	N(2,0)
NTI Item L.5	
WSBIS Item 1561 - Posted Load - Axle	N(2,0)
NTI Item L.6	
WSBIS Item 1562 - Posted Load - Type 3	N(2,0)
NTI Item L.7	
WSBIS Item 1563 - Posted Load - Type 3S2	N(2,0)
NTI Item L.8	
WSBIS Item 1564 - Posted Load - Type 3-3	N(2,0)
NTI Item L.9	

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### Applicable Structure Types

- Tunnels carrying public roadways within

Record the gross weight limits shown on the load posting sign or signs rounded down to the nearest US ton. Leave this item blank if there is no load posting sign.

Layout Tab Supplement

**WSBIS Item 1543 – Service In Tunnel**

Pull-down

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**

WSBIS Code	Description
1	Highway
2	Highway and Railroad
3	Highway and Pedestrian
4	Highway, Railroad, and Pedestrian
5	Other

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.

**WSBIS Item 1349 – Tunnel Length (feet)**

N(5,0)

NTI Item G.1

**Applicable Structure Types**

- Tunnels carrying public roadways within

Record the length of the tunnel to the nearest foot 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.



WSBIS Item 1510 - Number of Tunnel Bores  
NTI Item S.1

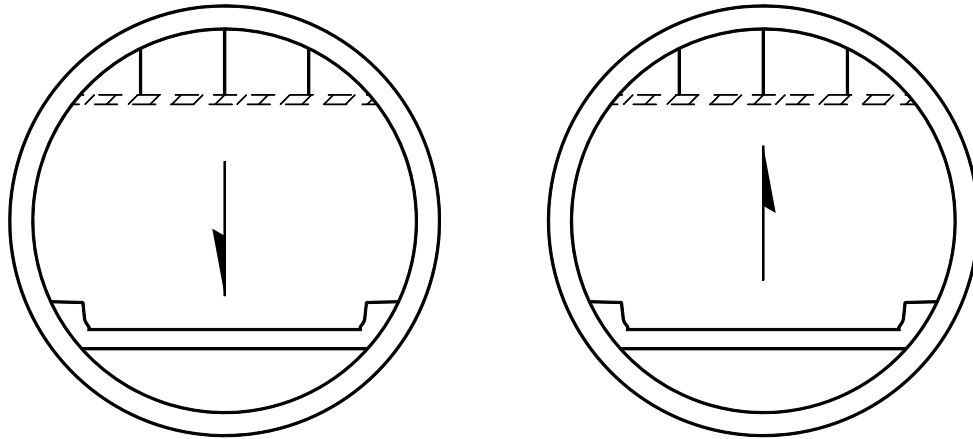
Pulldown

**Applicable Structure Types**

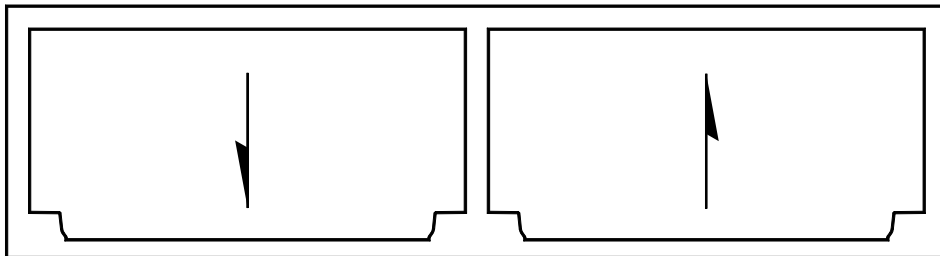
- Tunnels carrying public roadways within

Record the number of bores in the tunnel.

**Figure WSBIS 1510a Two Bores**



**Figure WSBIS 1510b One Bore**



**WSBIS Item 1511 - Tunnel Shape**

Pulldown

NTI Item S.2

**Applicable Structure Types**

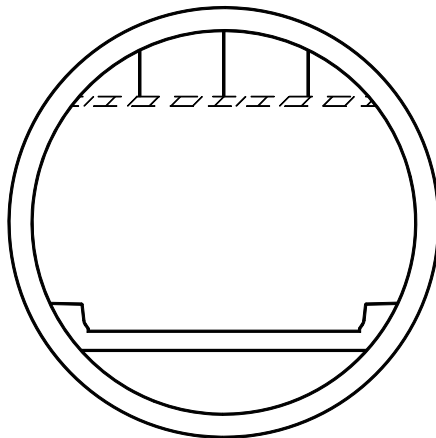
- Tunnels carrying public roadways within

Record the tunnel shape using one of the following codes:

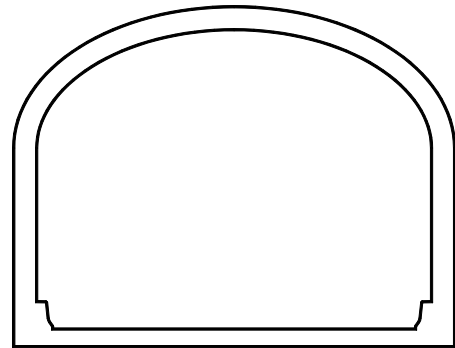
**Table 1511 Tunnel Shape Code**

WSBIS Code	Description
1	Oval
2	Horseshoe
3	Rectangular
4	Circular

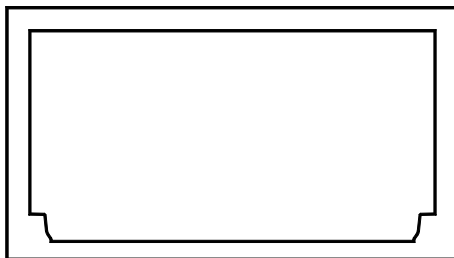
**Figure WSBIS 1511a Circular Tunnel**



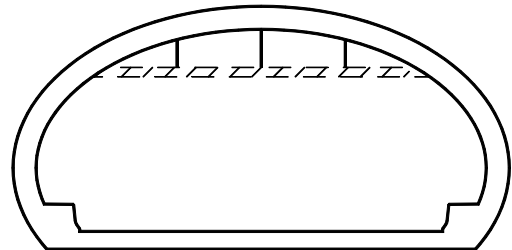
**Figure WSBIS 1511b Horseshoe Tunnel**



**Figure WSBIS 1511c Rectangular Tunnel**



**Figure WSBIS 1511d Oval Tunnel**



**WSBIS Item 1512 – Portal Shape**

Pulldown

NTI Item S.3

**Applicable Structure Types**

- Tunnels carrying public roadways within

Record the portal shape using one of the following codes:

**Table 1512 Portal Shape Code**

WSBIS Code	Description
1	Oval
2	Horseshoe
3	Rectangular
4	Circular
5	Other

See example shapes shown for WSBIS 1511 Tunnel Shape.

**WSBIS Item 1513 – Ground Conditions**

Pulldown

NTI Item S.4

**Applicable Structure Types**

- Tunnels carrying public roadways within

Record the ground conditions using one of the following codes:

**Table 1513 Ground Conditions Code**

WSBIS Code	Description
1	Soil
2	Rock
3	Mixed Face

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.

**WSBIS Item 1514 - Complex Tunnel**

Pulldown

NTI Item S.5

**Applicable Structure Types**

- Tunnels carrying public roadways within

Record whether the tunnel is complex using one of the following codes:

**Table 1514 Complex Tunnel Code**

WSBIS Code	Description
0	The tunnel is not complex
1	The tunnel is complex

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 shorter, not actively ventilated, and may or may not have lighting installed.

**WSBIS Item 1401 - Minimum Vertical Clearance Over Tunnel Roadway (feet)**

N(5,1)

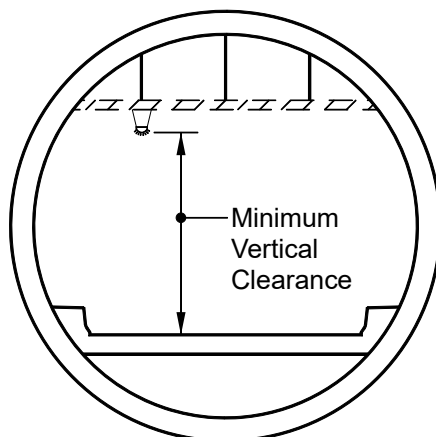
NTI Item G.2

**Applicable Structure Types**

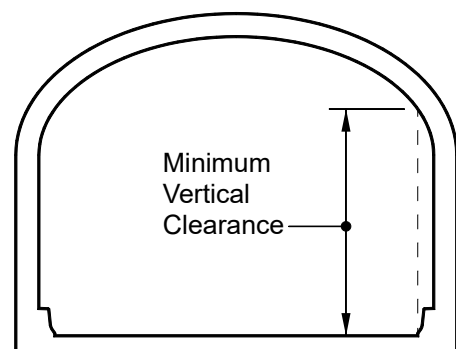
- Tunnels carrying public roadways within

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**



**WSBIS Item 1402 – Tunnel Height Restriction**

Pulldown

NTI Item L.10

**Applicable Structure Types**

- Tunnels carrying public roadways within

Record the height restriction status for the route in the tunnel using one of the following codes:

**Table 1402 Tunnel Height Restriction Code**

WSBIS Code	Description
1	Yes, there is a height restriction
2	No, there is no height restriction

**WSBIS Item 1408 – Tunnel Hazardous Material Restriction**

Pulldown

NTI Item L.11

**Applicable Structure Types**

- Tunnels carrying public roadways within

Record the hazardous material restriction status for the route in the tunnel using one of the following codes:

**Table 1408 Tunnel Hazardous Material Code**

WSBIS Code	Description
1	Yes, there is a hazardous material restriction
2	No, there is no hazardous material restriction

**WSBIS Item 1409 - Other Tunnel Restrictions**

Pulldown

NTI Item L.12

**Applicable Structure Types**

- Tunnels carrying public roadways within

Record any other restriction status (not including height or hazardous material restrictions) for the route in the tunnel using one of the following codes:

**Table 1409 Other Tunnel Restriction Code**

WSBIS Code	Description
1	Yes, there are other restrictions
2	No, there are no other restrictions

## Route Tab Supplement

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WSBIS Item 1436 – Tunnel Route Direction

Pulldown

NBI Item I.8

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### 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 Tunnel 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.

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### NBI and NTI Items not maintained in the WSBIS

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#### FHWA Item 1 and NTI Item I.3 – State Code

The Washington State Code is 530, and is created automatically for insertion in NBI 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.

#### FHWA 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.

