



COLORADO

Department of Transportation

Colorado Specifications for the National Bridge Inventory (SNBI) Item Coding Guide

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Section 1 Introduction

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Section 1.1 History and Purpose of the Colorado Bridge Inventory Guide

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History of the Colorado Bridge Inventory Coding Guide

The earliest record of bridge inventory and inspection conducted on a Colorado structure dates back to 1921 and was done by the State Engineer's office before the Department of Highways was established. The Department established a formal bridge inspection program in 1941 under the supervision of the Staff Bridge Engineer. Extensive inventory and rating systems have been maintained since that time.

Nationwide, a formal bridge inspection program was established following the December 15th, 1967 catastrophic failure of the Silver Bridge due to the failure of one of the upper pin and eye-bar suspension chain links. The bridge spanned over the Ohio River between Point Pleasant, West Virginia and Gallipolis, Ohio. In 1971, the National Bridge Inspection Standards (NBIS) were established and defined bridge inspector qualifications, bridge inspection procedures, and bridge inspection intervals. The data to be collected and documented was prescribed in the Federal Highway Administration's (FHWA) Recording and Coding Guide for the Structure Inventory and Appraisal of the Nation's Bridges, 1995, commonly referred to as the 1995 Federal Coding Guide. In 2022, FHWA replaced the 1995 Federal Coding Guide with the Specifications for the National Bridge Inventory (SNBI).

In the 1990s, the Colorado Department of Transportation (CDOT) developed the Colorado NBI Coding Guide to supplement the 1995 Federal Coding Guide. In 2023, CDOT replaced the Colorado NBI Coding Guide with the Colorado Structure Inventory and Appraisal Coding Guide (BrM). This manual, the Colorado Specifications for the National Bridge Inventory (SNBI) Item Coding Guide, replaces the 2023 Colorado Structure Inventory and Appraisal Coding Guide (BrM) and now supplements the 2022 FHWA SNBI data requirements.



Purpose

The intent of the Colorado Specifications for the National Bridge Inventory (SNBI) Item Coding Guide is to provide definitions, explanations, and data items used to report inventory data for Major and Minor Structures in Colorado. This manual is intended to compliment and further define the material presented in the FHWA SNBI and to incorporate CDOT specific policies and procedures related to reporting structure inventory data. Additional commentary and clarification from the FHWA SNBI Errata #1 have been incorporated into this manual, however any changes to the data item codes in the FHWA SNBI Errata #1 have not been included in this manual since they have not been implemented by CDOT. This manual provides guidance on how to code structure inventory data in CDOT's inspection reporting software, System for Inspection and Management of Structural Assets (SIMSA).

This manual is only intended to provide guidance on reporting inventory data for Major Structures and Minor Structures as defined by CDOT. See below for CDOT's definitions of Major Structure, Minor Structures, and other key terms.

Public Road: As defined in 23 U.S.C. 101(a), any road or street under the jurisdiction of and maintained by a public authority and open to public travel.

Bridge: A structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads.

Culvert: A structure, conduit, or drain comprised of one or more barrels with integral inverts buried in an embankment underneath a road, railroad, or other obstruction. These structures are designed to convey water, pedestrians, vehicles, railroads, terrestrial organisms, and/or other objects through embankments.

Major Structure: A bridge or culvert carrying a public road or a private bridge or culvert connected to a public road on both ends of the structure, and having an opening measured along the center of the roadway of more than 20 feet between under copings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it includes multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.

Minor Structure: A bridge or culvert carrying a public road or a private bridge or culvert connected to a public road on both ends of the structure, and having an opening measured along the center of the roadway of greater than or equal to 4 feet and less than or equal to 20 feet between under copings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it includes multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.



CDOT Vision, Mission, and Values

When performing work for CDOT, it is important to understand CDOT's vision statement, mission statement, and values as they exist at the time of this manual's publication to provide the best possible product for the users of CDOT's assets.

CDOT VISION STATEMENT

To enhance the quality of life and the environment of the citizens of Colorado by creating an integrated transportation system that focuses on safely moving people and goods by offering convenient linkages among modal choices.

CDOT MISSION STATEMENT

To provide the best multi-modal transportation system for Colorado that most effectively and safely moves people, goods, and information.

CDOT VALUES

Safety – We work together to achieve a high performing safety culture! We promote and apply consistent, sustainable, and safe work behaviors in everything we do. We foster a safety-focused environment, which is free of discrimination and harassment.

People – We value our employees and the people of Colorado! We recognize the skills and abilities of our coworkers and communities and draw strength from our diversity and commitment to equal opportunity. We advocate for an organizational culture where employees are empowered and encouraged to participate in providing the best transportation systems for Colorado. We understand that our success depends on teamwork and collaboration with all relevant stakeholders, including government, industry partners, and the communities we are accountable to and serve.

Integrity – We earn Colorado's trust! We are honest and responsible in all that we do and hold ourselves to the highest moral and ethical standards. We work to build trust and accountability with all of our collaborations to get the work done. We are intentionally transparent, inclusive, and collaborative as transportation strategies and organizational policies are formed.

Customer Service – We strive to provide the highest level of customer satisfaction and experience! With a can-do attitude, we work together and with others to respond effectively to our internal and external customer needs. We engage diverse voices in public processes to honor the cultural and environmental integrity of Colorado communities and to better provide access to the full range of transportation resources available. We support our co-workers by recognizing and encouraging their contributions to the workplace.

Excellence – We are committed to quality! We leverage diversity to bring different ideas, experiences, and perspectives to further excellence in everything we do. We are transparent and inclusive leaders - and we hold ourselves to a high level of accountability. We continuously improve our products, services, and practices of financial, social, and environmental stewardship in our commitment to provide the best transportation systems for Colorado.

Respect – We treat everyone with respect! We are kind and civil with everyone, and we act with courage, humility, and accountability.



References

The following is a list of the regulations, manuals, and coding guides referenced throughout this manual (including this manual itself):

- Code of Federal Regulations, Title 23, Chapter I, Subchapter G, Part 650, Subpart C – National Bridge Inspection Standards (NBIS), FHWA, U.S. Department of Transportation
- Specifications for the National Bridge Inventory (SNBI) (FHWA-HIF-22-017), FHWA
- Bridge Rating Manual, CDOT
- Colorado Specifications for the National Bridge Inventory (SNBI) Item Coding Guide, CDOT
- Colorado Structure Element Level Coding Guide, CDOT
- Bridge Inspection Manual (BIM), CDOT

Certain material has been incorporated by reference in this manual from the following regulations:

- Code of Federal Regulations, Title 23, Chapter I, Subchapter G, Part 650, Subpart C – National Bridge Inspection Standards (NBIS), FHWA, U.S. Department of Transportation
- Specifications for the National Bridge Inventory (SNBI) (FHWA-HIF-22-017), FHWA



Section 1.2 Organization and Format of the Specifications

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Format..... 9



Organization of the Specification

Sections 2 through 5 of this manual are presented in the order the corresponding pages appear in an inspection in SIMSA.

- Section 2 – Elements
- Section 3 – Inspection Schedule
- Section 4 – Load Ratings
- Section 5 – Structure Inventory and Appraisal (SI&A)

The data items in each section of this manual are grouped into subsections similar to the SNBI, however the order in which they are presented follows the order they appear in SIMSA.



Format

The format used to present information for each data item is shown in *Figure 1* with each field further described below.

CDOT Item Number – CDOT Item Name		Source Item Number
FREQUENCY	SIMSA INPUT TYPE	FORMAT

SPECIFICATION

COMMENTARY

CODING EXAMPLES

Figure 1. General format used for each data item

- CDOT Item Number – CDOT number assigned to each data item
- CDOT Item Name – CDOT name assigned to each data item as shown in SIMSA
- Source | Item Number – Source of the data item and corresponding data item number, if applicable
 - SNBI – Items defined in the FHWA’s Specification for the National Bridge Inventory. The corresponding SNBI data item number is preceded by a pipe delimiter (|)
 - CDOT – Items defined by CDOT to manage the state’s structure inventory
- FREQUENCY – Identifies the frequency each data item should be verified and/or updated
 - Initial – Data item recorded initially and updated when necessary, would not typically change from inspection to inspection
 - Each Inspection – Data item verified and/or updated by the inspector during each inspection
- SIMSA INPUT TYPE – Identifies the SIMSA coding input type for each data item
 - Calculated – Data item coding is automatically populated or calculated in SIMSA
 - Drop-down Menu – Select appropriate code from list of codes
 - Manual Entry – Manually enter code(s)
 - Multiple Selection Menu – Select appropriate code(s) from list of codes
 - None – Data item is not visible in SIMSA user interface
 - Option Button – Select appropriate code from available options
- FORMAT – Identifies the format for each data item
 - AN (X) – Alphanumeric, where X is the maximum number of characters
 - Menu Selection – Select the appropriate code(s) from a drop-down menu or multiple selection menu
 - mm/dd/yyyy – Date, leading zeros are reported
 - mm/dd/yyyy hh:mm:ss AM/PM – Date and time, leading zeros are reported for date



- N (X,Y) – Numeric, where X is the maximum number of digits (excluding the decimal point) and Y is the number of decimal places
- Not Applicable – Data item is not visible in SIMSA user interface
- Option Selection – Yes or No selection
 - Note: On the SIMSA mobile application this is a True (Yes) or False (No) toggle
- yyyy-mm-dd – Date, leading zeros are reported
- SPECIFICATION – Detailed description of the data item and list of codes, if applicable
- COMMENTARY – Guidance on when and how to enter the information into SIMSA. Additional guidance on the specification, including FHWA and CDOT specific guidance
- CODING EXAMPLES – Shows examples of coding for various structures including the three structure examples shown in Appendix A

Abbreviations used throughout the manual and definitions of common terms are available in *Appendix B* and *Appendix C*, respectively.

This guide outlines how and where to code items in the CDOT's SIMSA database and is not intended to be a comprehensive outline of SIMSA. There may be options and inputs in SIMSA beyond what is listed in this guide and SIMSA is subject to change at any time. SIMSA does not typically show trailing zeros. Examples show values with trailing zero.

Address questions regarding this manual to the CDOT Bridge and Structures Asset Management Unit.



Section 2 Elements

Section 2.1 Element Identification (E)..... 12
Section 2.2 Element Condition States (CS)..... 16



Section 2.1 Element Identification (E)

E01 – Element Number 13
E02 – Element Parent Number 14
E03 – Element Total Quantity 15



E01 – Element Number	SNBI Item B.E.01
----------------------	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

The element number for each applicable element reported for the structure.

COMMENTARY

CDOT codes this item for all structures reported to FHWA based on the elements reported in the Elements tab in SIMSA.

Only National Bridge Elements and Bridge Management Elements are reported to FHWA.

Refer to the Colorado Structure Element Level Coding Guide for additional guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



E02 – Element Parent Number	SNBI Item B.E.02
-----------------------------	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

The element number of the parent element for each applicable protective system element reported for the structure.

COMMENTARY

CDOT codes this item for all structures reported to FHWA based on the elements reported in the Elements tab in SIMSA.

Only National Bridge Elements and Bridge Management Elements are reported to FHWA.

Refer to the Colorado Structure Element Level Coding Guide for additional guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



E03 – Element Total Quantity	SNBI Item B.E.03
-------------------------------------	---------------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry	N (8,0)

SPECIFICATION

The total element quantity rounded to the nearest whole unit of measure for each applicable element reported for the structure.

COMMENTARY

CDOT codes this item for all structures reported to FHWA based on the elements reported in the Elements tab in SIMSA.

Only National Bridge Elements and Bridge Management Elements are reported to FHWA.

Refer to the Colorado Structure Element Level Coding Guide for additional guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



Section 2.2 Element Condition States (CS)

CS01 – Element Quantity Condition State One..... 17
CS02 – Element Quantity Condition State Two 18
CS03 – Element Quantity Condition State Three 19
CS04 – Element Quantity Condition State Four 20



CS01 – Element Quantity Condition State One	SNBI Item B.CS.01
---	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	N (8,0)

SPECIFICATION

The element quantity assigned to condition state one rounded to the nearest whole unit of measure for each applicable element reported for the structure.

COMMENTARY

CDOT codes this item for all structures reported to FHWA based on the elements reported in the Elements tab in SIMSA.

Only National Bridge Elements and Bridge Management Elements are reported to FHWA.

Refer to the Colorado Structure Element Level Coding Guide for additional guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



CS02 – Element Quantity Condition State Two	SNBI Item B.CS.02
---	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry/Calculated	N (8,0)

SPECIFICATION

The element quantity assigned to condition state two rounded to the nearest whole unit of measure for each applicable element reported for the structure.

COMMENTARY

CDOT codes this item for all structures reported to FHWA based on the elements reported in the Elements tab in SIMSA.

Only National Bridge Elements and Bridge Management Elements are reported to FHWA.

Refer to the Colorado Structure Element Level Coding Guide for additional guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



CS03 – Element Quantity Condition State Three	SNBI Item B.CS.03
---	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry/Calculated	N (8,0)

SPECIFICATION

The element quantity assigned to condition state three rounded to the nearest whole unit of measure for each applicable element reported for the structure.

COMMENTARY

CDOT codes this item for all structures reported to FHWA based on the elements reported in the Elements tab in SIMSA.

Only National Bridge Elements and Bridge Management Elements are reported to FHWA.

Refer to the Colorado Structure Element Level Coding Guide for additional guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



CS04 – Element Quantity Condition State Four SNBI | Item B.CS.04

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry/Calculated	N (8,0)

SPECIFICATION

The element quantity assigned to condition state four rounded to the nearest whole unit of measure for each applicable element reported for the structure.

COMMENTARY

CDOT codes this item for all structures reported to FHWA based on the elements reported in the Elements tab in SIMSA.

Only National Bridge Elements and Bridge Management Elements are reported to FHWA.

Refer to the Colorado Structure Element Level Coding Guide for additional guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



Section 3 Inspection Schedule

Section 3.1 Inspection Schedule 22



Section 3.1 Inspection Schedule

Previous Inspection Date..... 23
Current Inspection Date 24
Target Date 25
Next Inspection Interval 27
Schedule String 29



Previous Inspection Date	CDOT
--------------------------	------

FREQUENCY	SIMS A INPUT TYPE	FORMAT
Each Inspection	Calculated	yyyy-mm-dd

SPECIFICATION

The date the previous inspection was performed for the corresponding inspection type.

COMMENTARY

This item is automatically populated in SIMSA with the date reported in *IE03A – Inspection Date* for the previous inspection for the corresponding inspection type.

This item is only populated for scheduled inspection types which have an inspection interval (e.g., Routine, Routine+, Underwater, Pin, Special Scheduled).

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE20A	Previous Inspection Date
F-17-IT: Routine+ Inspection performed on 8/6/2025 with a planned 24 month inspection interval	Routine+	08/06/2025	Ready for QC Review	2023-08-16
D-03-V-160: Routine+ Inspection performed on 11/27/2024 with a planned 24 month inspection interval, Special Unscheduled Inspection performed on 1/23/2025, and Special Unscheduled Inspection performed on 6/27/2025	Routine+	11/27/2024	Final	2022-11-15
	Special Unscheduled	01/23/2025	Final	Not applicable
	Special Unscheduled	06/27/2025	Final	Not applicable
	Routine+	11/15/2026	Open	2024-11-27
PAR CANTBRY-0.2: Routine Inspection performed on 2/5/2025 with a planned 24 month inspection interval	Routine	02/05/2025	Final	2023-02-06
	Routine	02/05/2027	Open	2025-02-05



Current Inspection Date	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	yyyy-mm-dd

SPECIFICATION

The date of the current inspection for the corresponding inspection type.

COMMENTARY

This item is automatically populated in SIMSA with the date reported in *IE03A – Inspection Date* for the current inspection for the corresponding inspection type.

This item is only populated for scheduled inspection types which have an inspection interval (e.g., Routine, Routine+, Underwater, Pin, Special Scheduled).

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE20A	Current Inspection Date
F-17-IT: Routine+ Inspection performed on 8/6/2025 with a planned 24 month inspection interval	Routine+	08/06/2025	Ready for QC Review	2025-08-06
D-03-V-160: Routine+ Inspection performed on 11/27/2024 with a planned 24 month inspection interval, Special Unscheduled Inspection performed on 1/23/2025, and Special Unscheduled Inspection performed on 6/27/2025	Routine+	11/27/2024	Final	2024-11-27
	Special Unscheduled	01/23/2025	Final	Not applicable
	Special Unscheduled	6/27/2025	Final	Not applicable
	Routine+	11/15/2026	Open	2026-11-15
PAR CANTBRY-0.2: Routine Inspection performed on 2/5/2025 with a planned 24 month inspection interval	Routine	02/05/2025	Final	2025-02-05
	Routine	02/05/2027	Open	2027-02-05



Target Date	CDOT
-------------	------

FREQUENCY	SIMS INPUT TYPE	FORMAT
Each Inspection	Manual Entry/Calculated	mm/dd/yyyy

SPECIFICATION

Report the date that when added with the value reported in *Next Inspection Interval* will equal the planned date of the next scheduled inspection for the corresponding inspection type.

Report “15” for the day of the month.

COMMENTARY

The intent of this field in conjunction with the *Next Inspection Interval* is to provide the planned month and year of the next scheduled inspection regardless of when the current inspection was performed. The exact day of the month that is reported in this item is just a placeholder day and does not have any meaning.

This item is automatically populated with a default value of the *Target Date* plus the *Next Inspection Interval* that were reported at the time the previous inspection was finalized. This item can also be manually updated.

Changing the date reported in this field will change the scheduled month and/or year for *IE03A – Inspection Date* and/or *IE06A – Current Target Date* for the next scheduled inspection for the corresponding inspection type.

The *Schedule String* should match the corresponding *Target Date* and *Next Inspection Interval* for the reported inspection type except for Pin and Underwater inspections on a 60-month inspection interval. For Pin and Underwater inspections that are on a 60-month inspection interval, the *Schedule String* should be coded as a 48-month interval.

This item is only populated for scheduled inspection types which have an inspection interval (e.g., Routine, Routine+, Underwater, Pin, Special Scheduled).

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE20A	Target Date Code
F-17-IT: Routine+ Inspection performed on 8/6/2025 with a planned 24 month inspection interval	Routine+	08/06/2025	Ready for QC Review	08/15/2025
D-03-V-160: Routine+ Inspection performed on 11/27/2024 with a planned 24 month inspection interval, Special Unscheduled Inspection performed on 1/23/2025, and Special Unscheduled Inspection performed on 6/27/2025	Routine+	11/27/2024	Final	11/15/2024
	Special Unscheduled	01/23/2025	Final	Not applicable
	Special Unscheduled	06/27/2025	Final	Not applicable
	Routine+	11/15/2026	Open	11/15/2026



Example	IE01	IE03A	IE20A	Target Date Code
PAR CANTBRY-0.2: Routine Inspection performed on 2/5/2025 with a planned 24 month inspection interval	Routine	02/05/2025	Final	02/15/2025
	Routine	02/05/2027	Open	02/15/2027
Routine inspection interval changed from 24 months to 12 months and an interim special inspection has been created on a 12 month interval (offset from the routine by 6 months) due to condition of exterior girders. Routine Inspection performed on 5/13/2025 with a planned 12 month inspection interval, Special Scheduled Inspection performed on 11/19/2025 with a planned 12 month inspection interval	Routine	05/13/2025	-	05/15/2025
	Special Scheduled	11/19/2025	-	11/15/2025
Last Routine Inspection performed on 11/4/2025 with a planned 24 month inspection interval, last Underwater Inspection performed on 6/20/2024 with a planned 60 month inspection interval	Routine	11/04/2025	-	11/15/2025
	Underwater	06/20/2024	-	06/15/2024
Structure on a 24-month Routine Inspection interval. Routine Inspection completed on 12/1/2024, during this inspection it was decided to change the target month for the next Routine Inspection to November.	Routine	12/01/2024	-	11/15/2024



Next Inspection Interval SNBI | Item B.IE.05

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the planned interval in number of months between the current and next scheduled inspection for the corresponding inspection type using one of the following codes.

Next Inspection Interval Codes
6
12
24
48
60
72

COMMENTARY

The intent of this item is to report the planned interval at which the structure is to be inspected.

Refer to the Colorado Bridge Inspection Manual for guidance on inspection intervals for each inspection type.

This interval should be evaluated after each inspection and adjusted as necessary.

The *Schedule String* should match the corresponding *Target Date* and *Next Inspection Interval* for the reported inspection type except for Pin and Underwater inspections on a 60-month inspection interval. For Pin and Underwater inspections that are on a 60-month inspection interval, the *Schedule String* should be reported as a 48-month interval.

Whenever the *Next Inspection Interval* is changed, a note should be added to *IE13A – Schedule Note* to document the following:

- Report the new inspection interval, target month, and/or year.
- The date the change was made.
- Reason for the change.

This item is only populated for scheduled inspection types which have an inspection interval (e.g., Routine, Routine+, Underwater, Pin, Special Scheduled).

The shortest inspection interval CDOT allows for scheduled inspection types is 6 months. If a structure requires monitoring on an interval shorter than 6 months, an individual Special Unscheduled inspection should be created and manually scheduled in SIMSA at the required interval. Upon completion of the Special Unscheduled inspection, the inspector should reassess the required inspection interval and manually create and schedule a subsequent Special Unscheduled inspection in SIMSA if needed.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.



CODING EXAMPLES

Example	IE01	IE03A	IE20A	Next Inspection Interval Code
F-17-IT: Routine+ Inspection performed on 8/6/2025 with a planned 24 month inspection interval	Routine+	8/6/2025	Ready for QC Review	24
D-03-V-160: Routine+ Inspection performed on 11/27/2024 with a planned 24 month inspection interval, Special Unscheduled Inspection performed on 1/23/2025, and Special Unscheduled Inspection performed on 6/27/2025	Routine+	11/27/2024	Final	24
	Special Unscheduled	1/3/2025	Final	Not applicable
	Special Unscheduled	6/27/2025	Final	Not applicable
	Routine+	11/15/2026	Open	24
PAR CANTBRY-0.2: Routine Inspection performed on 2/5/2025 with a planned 24 month inspection interval	Routine	2/5/2025	Final	24
	Routine	2/5/2027	Open	24
Routine inspection interval changed from 24 months to 12 months and an interim special inspection has been created on a 12 month interval (offset from the routine by 6 months) due to condition of exterior girders. Routine Inspection performed on 5/13/2025 with a planned 12 month inspection interval, Special Scheduled Inspection performed on 11/19/2025 with a planned 12 month inspection interval	Routine	05/13/2025	-	12
	Special Scheduled	11/19/2025	-	12
Last Routine Inspection performed on 11/4/2025 with a planned 24 month inspection interval, last Underwater Inspection performed on 6/20/2024 with a planned 60 month inspection interval	Routine	11/04/2025	-	24
	Underwater	06/20/2024	-	60
Structure on a 24-month Routine Inspection interval. Routine Inspection completed on 12/1/2024, during this inspection it was decided to change the target month for the next Routine Inspection to November.	Routine	12/01/2024	-	24



Schedule String	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry	AN (15)

SPECIFICATION

Report the code identifying the target inspection schedule, which includes the target inspection interval, month, and year. For On-System Major Structures, this code also identifies the inspection quarter and trip. For Off-System Major Structures, this code also identifies the inspection zone.

The *Schedule String* codes for each inspection program and scheduled inspection type are as follows:

On-System Major Structures (Routine, Routine+, Special Scheduled, and Vertical Clearance Scheduled):

Schedule String Sections	48-Month Inspection Interval	24-Month Inspection Interval	12-Month Inspection Interval	6-Month Inspection Interval
Characters 1 - 3 (Inspection Interval and Calendar or Fiscal Year)	LP0 LP1 LP2 LP3	ODD EVN	12M	06M
Character 4	(blank space)	(blank space)	(blank space)	(blank space)
Characters 5 - 7 (Inspection Month)	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN
Character 8	(blank space)	(blank space)	(blank space)	(blank space)
Characters 9 - 11 (Inspection Quarter and Trip or Inspection Month)	A## B## C## D## E## F## G## H##	A## B## C## D## E## F## G## H##	A## B## C## D## E## F## G## H##	JUL AUG SEP OCT NOV DEC
Character 12	Not Applicable	Not Applicable	(blank space)	Not Applicable
Characters 13 - 15 (Inspection Quarter and Trip)	Not Applicable	Not Applicable	A## B## C## D## E## F## G## H##	Not Applicable



Off-System Structures (Routine, Routine+, Special Scheduled, and Vertical Clearance Scheduled):

Schedule String Sections	48-Month Inspection Interval	24-Month Inspection Interval	12-Month Inspection Interval	6-Month Inspection Interval
Characters 1 - 3 (Inspection Interval and Calendar or Fiscal Year)	LP0 LP1 LP2 LP3	ODD EVN	12M	06M
Character 4	(blank space)	(blank space)	(blank space)	(blank space)
Characters 5 - 7 (Inspection Month)	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN
Character 8	(blank space)	(blank space)	(blank space)	(blank space)
Characters 9 - 11 (Inspection Zone or Inspection Month)	N_0 C_0 S_0	N_0 C_0 S_0	N_0 C_0 S_0	JUL AUG SEP OCT NOV DEC
Character 12	Not Applicable	Not Applicable	Not Applicable	(blank space)
Characters 13 - 15 (Inspection Zone)	Not Applicable	Not Applicable	Not Applicable	N_0 C_0 S_0



Minor Structures (Routine, Routine+, and Special Scheduled):

Schedule String Sections	48-Month Inspection Interval	24-Month Inspection Interval	12-Month Inspection Interval
Characters 1 - 3 (Inspection Interval and Calendar or Fiscal Year)	LP0 LP1 LP2 LP3	ODD EVN	12M
Character 4	Not Applicable	(blank space)	(blank space)
Characters 5 - 7 (Inspection Month)	Not Applicable	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Characters 8 - 15	Not Applicable	Not Applicable	Not Applicable

Pin and Underwater Inspections:

Schedule String Sections	48-Month Inspection Interval	24-Month Inspection Interval	12-Month Inspection Interval
Characters 1 - 3 (Inspection Interval and Calendar or Fiscal Year)	LP0 LP1 LP2 LP3	ODD EVN	12M
Character 4	Not Applicable	(blank space)	(blank space)
Characters 5 - 7 (Inspection Month)	Not Applicable	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC	JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
Characters 8 - 15	Not Applicable	Not Applicable	Not Applicable



The following table provides additional information about each code in the different Schedule String sections.

Inspection Year:	Inspection Month:	Inspection Quarter and Trip:	Inspection Zone:
LP0 = Leap Year LP1 = Leap Year + 1 LP2 = Leap Year + 2 LP3 = Leap Year + 3 ODD = Odd Fiscal Year EVN = Even Fiscal Year 12M = 12 Months 06M = 6 Months	JAN = January FEB = February MAR = March APR = April MAY = May JUN = June JUL = July AUG = August SEP = September OCT = October NOV = November DEC = December	Q = Quarter A to H ## = Trip Number _1 to 99	N_0 = North Zone C_0 = Central Zone S_0 = South Zone

COMMENTARY

The intent of this field is to provide a permanent target month and year that should be used to schedule inspections for the corresponding inspection type.

Once the *Schedule String* is set for a structure, it should only be changed for the following cases:

- The inspection interval changes.
- The target month and/or year needs to be permanently shifted for all future inspections.

Codes shall be entered in all caps.

CDOT Fiscal Years are numbered based on the calendar year when the fiscal year ends. Fiscal years begin July 1 and end June 30.

The *Schedule String* should match the corresponding *Target Date* and *Next Inspection Interval* for the reported inspection type except for Pin and Underwater inspections on a 60-month inspection interval. For Pin and Underwater inspections that are on a 60-month inspection interval, the *Schedule String* should be coded as a 48-month interval.

Whenever the *Schedule String* is changed, a note should be added to *IE13A – Schedule Note* to document the following:

- Report the new inspection interval, target month, and/or year.
- The date the change was made.
- Reason for the change.

This item is only populated for scheduled inspection types which have an inspection interval (e.g., Routine, Routine+, Underwater, Pin, Special Scheduled).

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.



CODING EXAMPLES

Example	IE01	IE03A	IE20A	Schedule String Code
F-17-IT: Routine+ Inspection performed on 8/6/2025 with a planned 24 month inspection interval. On-System structure	Routine+	8/6/2025	Ready for QC Review	EVN AUG G19
D-03-V-160: Routine+ Inspection performed on 11/27/2024 with a planned 24 month inspection interval, Special Unscheduled Inspection performed on 1/23/2025, and Special Unscheduled Inspection performed on 6/27/2025. Off-System Major Structure in City and County of Denver	Routine+	11/27/2024	Final	ODD NOV C_0
	Special Unscheduled	1/3/2025	Final	Not applicable
	Special Unscheduled	6/27/2025	Final	Not applicable
	Routine+	11/15/2026	Open	ODD NOV C_0
PAR CANTBRY-0.2: Routine Inspection performed on 2/5/2025 with a planned 24 month inspection interval. Off-System structure in the Town of Parker	Routine	2/5/2025	Final	ODD FEB C_0
	Routine	2/5/2027	Open	ODD FEB C_0
Routine inspection interval changed from 24 months to 12 months and an interim special inspection has been created on a 12 month interval (offset from the routine by 6 months) due to condition of exterior girders. Routine Inspection performed on 5/13/2025 with a planned 12 month inspection interval, Special Scheduled Inspection performed on 11/19/2025 with a planned 12 month inspection interval. Off-System structure in Elbert County	Routine	05/13/2025	-	12M MAY C_0
	Special Scheduled	11/19/2025	-	12M NOV C_0
Last Routine Inspection performed on 11/4/2025 with a planned 24 month inspection interval, last Underwater Inspection performed on 6/20/2024 with a planned 60 month inspection interval. On-System structure	Routine	11/04/2025	-	EVN NOV H_9
	Underwater	06/20/2024	-	LPO



Example	IE01	IE03A	IE20A	Schedule String Code
Structure on a 24-month Routine Inspection interval. Routine Inspection completed on 12/1/2024, during this inspection it was decided to change the target month for the next Routine Inspection to November.	Routine	12/01/2024	-	ODD NOV C_0



Section 4 Load Ratings

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Section 4.1 Evaluation and Posting (EP)

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EP27B – Inventory Controlling Member 73

EP28A – Rating Comment 74



EP01 – Load Configuration SNBI | Item B.EP.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the load configuration of each design load configuration, legal load configuration, and/or permit load configuration shown on the Load Rating Summary Sheet using the following codes.

EP01 Drop-down Menu	Load Rating Level Type
HS20 Inventory (RF)	Design
HS20 Inventory (Tons)	Design
HS20+ mod Inventory (RF)	Design
HS20+ mod Inventory (Tons)	Design
HL-93 Inventory (RF)	Design
HL-93 Inventory (Tons)	Design
HS20 Operating (RF)	Design
HS20 Operating (Tons)	Design
HS20+ mod Operating (RF)	Design
HS20+ mod Operating (Tons)	Design
HL-93 Operating (RF)	Design
HL-93 Operating (Tons)	Design
Type 3	Legal
Type 3S2	Legal
Type 3-2	Legal
Type 3 AASHTO	Legal
Type 3S2 AASHTO	Legal
Type 3-3 AASHTO	Legal
Type SU4	Legal
Type SU5	Legal
Type SU6	Legal
Type SU7	Legal
NRL (40T)	Screening level legal load model
EV2 (28.75T)	Legal
EV3 (43T)	Legal
Permit Truck (96T)	Permit
Modified Tandem (50T)	Permit
Lane-Type Legal	Legal

COMMENTARY

Do not code the load configuration if there is not a load rating value for the load configuration on the Load Rating Summary Sheet.

Refer to the CDOT Bridge Rating Manual for details of load configurations.

Code “HS20 Inventory (RF)”, “HS20+ mod Inventory (RF)”, or “HL-93 Inventory (RF)”, as applicable, when the controlling inventory rating value for the design load configuration on the Load Rating Summary Sheet is reported as a rating factor.



Code “HS20 Inventory (Tons)”, “HS20+ mod Inventory (Tons)”, or “HL-93 Inventory (Tons)”, as applicable, when the controlling inventory rating value for the design load configuration on the Load Rating Summary Sheet is reported in U.S. tons.

Code “HS20 Operating (RF)”, “HS20+ mod Operating (RF)”, or “HL-93 Operating (RF)”, as applicable, when the controlling operating rating value for the design load configuration on the Load Rating Summary Sheet is reported as a rating factor.

Code “HS20 Operating (Tons)”, “HS20+ mod Operating (Tons)”, or “HL-93 Operating (Tons)”, as applicable, when the controlling operating rating value for the design load configuration on the Load Rating Summary Sheet is reported in U.S. tons.

The Permit Truck and Modified Tandem load configurations do not need to be coded for Off-System structures.

The Type 3, Type 3S2, and Type 3-2 legal load configurations should be used for both the Colorado and Interstate Type 3, Type 3S2, and Type 3-2 legal load configurations.

For information on the load rating and load posting of emergency vehicles, refer to the November 3, 2016 FHWA memorandum.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP01 Code
F-17-IT: Structure load rated with LRFR for HL-93, all legal load configurations, and permit load configurations. Inventory and operating ratings reported as a rating factor on LRSS	03/01/2023	HL-93 Inventory (RF)
		HL-93 Operating (RF)
		Type 3
		Type 3S2
		Type 3-2
		Type SU4
		Type SU5
		Type SU6
		Type SU7
		NRL (40T)
		EV2 (28.75T)
		EV3 (43T)
		Permit Truck (96T)
Modified Tandem (50T)		
D-03-V-160: Structure load rated with LFR for HS20 and all legal load configurations. Inventory and operating ratings reported in U.S. tons on LRSS	08/19/2024	HS20 Inventory (Tons)
		HS20 Operating (Tons)
		Type 3
		Type 3S2
		Type 3-2
		Type SU4
		Type SU5
		Type SU6
		Type SU7
		NRL (40T)
		EV2 (28.75T)
EV3 (43T)		



Example	LR03	EP01 Code
PAR CANTBRY-0.2: Structure load rated with LFR for HS20 only. Inventory and operating ratings reported in U.S. tons on LRSS	4/30/2007	HS20 Inventory (Tons)
		HS20 Operating (Tons)
Off-System structure load rated with Engineering Judgement for HS20, all legal load configurations, and permit load configurations. Inventory and operating ratings reported in U.S. tons on LRSS. (Example 1 in <i>Figure 2</i>)	-	HS20 Inventory (Tons)
		HS20 Operating (Tons)
		Type 3
		Type 3S2
		Type 3-2
		Type SU4
		Type SU5
		Type SU6
		Type SU7
		NRL (40T)
		EV2 (28.75T)
EV3 (43T)		
Off-System structure load rated with LFR for HS20, all legal load configurations, and permit load configurations. Inventory and operating ratings reported in U.S. tons on LRSS. (Example 2 in <i>Figure 3</i>)	-	HS20 Inventory (Tons)
		HS20 Operating (Tons)
		Type 3
		Type 3S2
		Type 3-2
		Type SU4
		Type SU5
		Type SU6
		Type SU7
		NRL (40T)
		EV2 (28.75T)
EV3 (43T)		
Off-System structure load rated with LRFR for HL-93 and all legal load configurations. Inventory and operating ratings reported as a rating factor on LRSS. (Example 3 in <i>Figure 4</i>)	-	HL-93 Inventory (RF)
		HL-93 Operating (RF)
		Type 3
		Type 3S2
		Type 3-2
		Type SU4
		Type SU5
		Type SU6
		Type SU7
		NRL (40T)
		EV2 (28.75T)
EV3 (43T)		



Structural Member	INTERIOR GIRDER					
Tons						
Inventory	21.1					
Operating	27.2					
Tons						
Type 3 truck <small>(Interstate 24T / CO 27T)</small>	26.9					
Type 3S2 truck <small>(Interstate 38T / CO 42.3T)</small>	41.4					
Type 3-2 truck <small>(Interstate 39T / CO 42.3T)</small>	43.2					
 Type 3 Type 3S2 Type 3-2						
Tons						
Type SU4 truck <small>(27T)</small>	26.8					
Type SU5 truck <small>(31T)</small>	28.7					
Type SU6 truck <small>(Interstate 35T / CO 33T)</small>	29.7					
Type SU7 truck <small>(Interstate 39T / CO 33T)</small>	31.2					
NRL <small>(40T)</small>	31.5					
 SU4 SU5 SU6 SU7						
Tons						
EV2 <small>(28.35T)</small>	28.9					
EV3 <small>(43T)</small>	28.6					
 EV2 EV3						
Tons						
Permit Truck <small>(50T)</small>	65.1					
Modified Tandem <small>(30T)</small>	35.7					

Figure 2. Engineering Judgement load rating summary sheet for Off-System structure (Example 1)

Structural Member	Int. Girder	Ext. Girder	Deck			
Tons						
Inventory	28.7	18.4	44.4			
Operating	47.4	30.7	74.1			
Tons						
Type 3 truck <small>(Interstate 24T / CO 27T)</small>	44.2	28.4				
Type 3S2 truck <small>(Interstate 38T / CO 42.3T)</small>	62.5	36.8				
Type 3-2 truck <small>(Interstate 39T / CO 42.3T)</small>	61.1	35.9				
 Type 3 Type 3S2 Type 3-2						
Tons						
Type SU4 truck <small>(27T)</small>	44.6	28.4				
Type SU5 truck <small>(31T)</small>	46.0	29.2				
Type SU6 truck <small>(Interstate 34.75T / CO 33T)</small>	48.6	29.5				
Type SU7 truck <small>(Interstate 38.75T / CO 33T)</small>	51.4	30.2				
NRL <small>(40T)</small>	52.4	29.9				
 SU4 SU5 SU6 SU7						
Tons						
EV2 <small>(28.35T)</small>	44.4	29.1				
EV3 <small>(43T)</small>	45.2	28.9				
 EV2 EV3						
Tons						
Permit Truck <small>(50T)</small>	82.0	50.5				
Modified Tandem <small>(30T)</small>	48.5	30.8				

Figure 3. LFR load rating summary sheet for Off-System structure (Example 2)



Structural Member	Int. Girder	Ext. Girder B	Ext. Girder H	Edge Beam	
Rating Factor					
Inventory	1.73	1.73	1.91	1.46	
Operating	2.24	2.24	2.82	1.89	
Tons					
Type 3 truck	85.4	87.1	107.2	66.4	
Type 3S2 truck	129.6	122.5	158.2	104.2	
Type 3-2 truck	121.2	118.8	152.1	104.6	
Type SU4 truck (27T)	85.4	87.8	107.2	67.3	
Type SU5 truck (31T)	89.4	90.4	112.3	73.1	
Type SU6 truck (35T)	89.9	95.1	112.9	78.8	
Type SU7 truck (39T)	92.2	100.3	115.7	87.2	
NRL (40T)	91.2	102.2	114.5	90.0	
Lane-Type Legal					
EV2 (28.75T)	89.9	87.5	111.1	66.4	
EV3 (43T)	87.6	88.3	110.0	68.3	
Permit Truck (96T) Multi-Lane D.F.					
Modified Tandem (50T) Multi-Lane D.F.					

Figure 4. LRFR load rating summary sheet for Off-System structure (Example 3)



EP02 – Load Rating SNBI | Item B.EP.02

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (6,2)

SPECIFICATION

Report the controlling load rating value either as a rating factor or in U.S. tons for each load configuration.

COMMENTARY

The load rating values for the inventory and operating design load configurations should be reported as a rating factor, truncated to the hundredth, when the rating values for the design load configurations are reported as a rating factor on the Load Rating Summary Sheet.

The load rating values for the inventory and operating design load configurations should be reported in U.S. tons, truncated to the tenth, when the rating values for the design load configurations are reported as U.S. tons on the Load Rating Summary Sheet.

The rating values for all legal load, permit load, and screening level legal load model configurations should be reported in U.S. tons, truncated to the tenth.

When temporary or supported conditions exist, as indicated in Item *PS01A – Load Posting Structure Status*, report the load rating value for the structure including the temporary or supported conditions.

The Permit Truck and Modified Tandem load ratings do not need to be coded for Off-System structures.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP01	EP02 Code
F-17-IT: Structure load rated with LRFR for HL-93, all legal load configurations, and permit load configurations. Inventory and operating ratings reported as a rating factor on LRSS	03/01/2023	HL-93 Inventory (RF)	0.58
		HL-93 Operating (RF)	0.76
		Type 3	95.3
		Type 3S2	79.1
		Type 3-2	78.8
		Type SU4	95.3
		Type SU5	76.4
		Type SU6	76.4
		Type SU7	76.6
		NRL (40T)	76.5
		EV2 (28.75T)	95.5
		EV3 (43T)	76.4
		Permit Truck (96T)	124.3
Modified Tandem (50T)	59.1		
D-03-V-160: Structure load rated with LFR for HS20 and all legal load configurations. Inventory and operating ratings reported in U.S. tons on LRSS	08/19/2024	HS20 Inventory (Tons)	19.4
		HS20 Operating (Tons)	32.5
		Type 3	44.1
		Type 3S2	52.0
		Type 3-2	52.5
Type SU4	43.9		



Example	LR03	EP01	EP02 Code
		Type SU5	44.8
		Type SU6	45.2
		Type SU7	45.9
		NRL (40T)	45.3
		EV2 (28.75T)	29.9
		EV3 (43T)	44.7
PAR CANTBRY-0.2: Structure load rated with LFR for HS20 only. Inventory and operating ratings reported in U.S. tons on LRSS	4/30/2007	HS20 Inventory (Tons)	40.2
		HS20 Operating (Tons)	67.2
Off-System structure load rated with Engineering Judgement for HS20, all legal load configurations, and permit load configurations. Inventory and operating ratings reported in U.S. tons on LRSS. (Example 1 in <i>Figure 2</i>)	-	HS20 Inventory (Tons)	21.1
		HS20 Operating (Tons)	27.2
		Type 3	26.9
		Type 3S2	41.4
		Type 3-2	43.2
		Type SU4	26.8
		Type SU5	28.7
		Type SU6	29.7
		Type SU7	31.2
		NRL (40T)	31.5
		EV2 (28.75T)	28.9
		EV3 (43T)	28.6
Off-System structure load rated with LFR for HS20, all legal load configurations, and permit load configurations. Inventory and operating ratings reported in U.S. tons on LRSS. (Example 2 in <i>Figure 3</i>)	-	HS20 Inventory (Tons)	18.4
		HS20 Operating (Tons)	30.7
		Type 3	28.4
		Type 3S2	36.8
		Type 3-2	35.9
		Type SU4	28.4
		Type SU5	29.2
		Type SU6	29.5
		Type SU7	30.2
		NRL (40T)	29.9
		EV2 (28.75T)	29.1
		EV3 (43T)	28.9
Off-System structure load rated with LRFR for HL-93 and all legal load configurations. Inventory and operating ratings reported as a rating factor on LRSS. (Example 3 in <i>Figure 4</i>)	-	HL-93 Inventory (RF)	1.46
		HL-93 Operating (RF)	1.89
		Type 3	66.4
		Type 3S2	104.2
		Type 3-2	104.6
		Type SU4	67.3
		Type SU5	73.1
		Type SU6	78.8
		Type SU7	87.2
		NRL (40T)	90.0
		EV2 (28.75T)	66.4
		EV3 (43T)	68.3



EP03 – Posting Type SNBI | Item B.EP.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the type of posting at the structure restricting the vehicle reported in *EP01 – Load Configuration* using one of the following codes.

EP03 Codes
G - Gross Load
A - Single Axle Load
D - Tandem Axle Load
T - Truck Load
C - No commercial vehicles
S - Speed reduction
L - Number of lanes restricted
V - Number of vehicles restricted
X - Other

COMMENTARY

Code this item when a structure is posted for a legal load configuration and the structure has been load rated for the legal load configuration.

This item is not available to code in SIMSA for legal load configurations that are not coded in *EP01 – Load Configuration*.

This item is not available to code in SIMSA for any design or permit load configurations and the Lane-Type Legal load configuration coded in *EP01 – Load Configuration*.

Leave this item blank if there is no load posting sign erected at the structure for the legal load configuration.

Leave this item blank when “NRL” is coded in *EP01 – Load Configuration*.

Only report posting signs specifically for the structure, roadway posting signs are excluded.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP01	EP02	EP03 Code
F-17-IT: No load posting signs erected at the structure	03/01/2023	HL-93 Inventory (RF)	0.58	
		HL-93 Operating (RF)	0.76	
		Type 3	95.3	
		Type 3S2	79.1	
		Type 3-2	78.8	
		Type SU4	95.3	
		Type SU5	76.4	
		Type SU6	76.4	
		Type SU7	76.6	



Example	LR03	EP01	EP02	EP03 Code
		NRL (40T)	76.5	
		EV2 (28.75T)	95.5	
		EV3 (43T)	76.4	
		Permit Truck (96T)	124.3	
		Modified Tandem (50T)	59.1	
D-03-V-160: No load posting signs erected at the structure	08/19/2024	HS20 Inventory (Tons)	19.4	
		HS20 Operating (Tons)	32.5	
		Type 3	44.1	
		Type 3S2	52.0	
		Type 3-2	52.5	
		Type SU4	43.9	
		Type SU5	44.8	
		Type SU6	45.2	
		Type SU7	45.9	
		NRL (40T)	45.3	
		EV2 (28.75T)	29.9	
		EV3 (43T)	44.7	
PAR CANTBRY-0.2: No load posting signs erected at the structure	4/30/2007	HS20 Inventory (Tons)	40.2	
		HS20 Operating (Tons)	67.2	
Off-System structure with load posting signs erected at both ends of the structure, gross load 27 Tons. (Example 1 in Figure 5)	-	HS20 Inventory (Tons)	21.1	
		HS20 Operating (Tons)	27.2	
		Type 3	26.9	G - Gross Load
		Type 3S2	41.4	G - Gross Load
		Type 3-2	43.2	G - Gross Load
		Type SU4	26.8	G - Gross Load
		Type SU5	28.7	G - Gross Load
		Type SU6	29.7	G - Gross Load
		Type SU7	31.2	G - Gross Load
		NRL (40T)	31.5	
		EV2 (28.75T)	28.9	G - Gross Load
EV3 (43T)	28.6	G - Gross Load		
Off-System structure with load posting signs for all legal load configurations erected at both ends of the structure. (Example 2 in Figure 6)	-	HS20 Inventory (Tons)	18.4	
		HS20 Operating (Tons)	30.7	
		Type 3	28.4	T - Truck Load
		Type 3S2	36.8	T - Truck Load
		Type 3-2	35.9	T - Truck Load
		Type SU4	28.4	T - Truck Load
		Type SU5	29.2	T - Truck Load
		Type SU6	29.5	T - Truck Load
		Type SU7	30.2	T - Truck Load
		NRL (40T)	29.9	
		EV2 (28.75T)	29.1	T - Truck Load
EV3 (43T)	28.9	T - Truck Load		
Off-System structure with "No Trucks" (MUTCD R5-2) signs erected both ends of the structure. (Example 3 in Figure 7)	-	HL-93 Inventory (RF)	1.46	
		HL-93 Operating (RF)	1.89	
		Type 3	66.4	X - Other
		Type 3S2	104.2	X - Other
		Type 3-2	104.6	X - Other
		Type SU4	67.3	X - Other



Example	LR03	EP01	EP02	EP03 Code
		Type SU5	73.1	X - Other
		Type SU6	78.8	X - Other
		Type SU7	87.2	X - Other
		NRL (40T)	90.0	
		EV2 (28.75T)	66.4	X - Other
		EV3 (43T)	68.3	X - Other



Figure 5. Load posting sign erected at Off-System structure (Example 1)



Figure 6. Load posting sign erected at Off-System structure (Example 2)



Figure 7. "No Trucks" (MUTCD R5-2) sign erected at Off-System structure (Example 3)



EP04 – Posting Value SNBI | Item B.EP.04

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry	N (2,0)

SPECIFICATION

Report the weight limit value shown on the load posting sign for the vehicle reported in *EP01 – Load Configuration* rounded down to the nearest U.S. ton.

COMMENTARY

Code this item when a structure is posted for a legal load configuration and the structure has been load rated for the legal load configuration.

This item is not available to code in SIMSA for legal load configurations that are not coded in *EP01 – Load Configuration*.

This item is not available to code in SIMSA for any design or permit load configurations and the Lane-Type Legal load configuration coded in *EP01 – Load Configuration*.

Leave this item blank if there is no load posting sign erected at the structure for the legal load configuration.

Leave this item blank when “NRL” is coded in *EP01 – Load Configuration*.

Leave this item blank when *EP03 – Posting Type* is coded “C”, “S”, “L”, or “V”.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP01	EP02	EP03	EP04 Code
F-17-IT: No load posting sign erected at the structure for the legal load configuration	03/01/2023	HL-93 Inventory (RF)	0.58		
		HL-93 Operating (RF)	0.76		
		Type 3	95.3		
		Type 3S2	79.1		
		Type 3-2	78.8		
		Type SU4	95.3		
		Type SU5	76.4		
		Type SU6	76.4		
		Type SU7	76.6		
		NRL (40T)	76.5		
		EV2 (28.75T)	95.5		
		EV3 (43T)	76.4		
		Permit Truck (96T)	124.3		
Modified Tandem (50T)	59.1				
D-03-V-160: No load posting sign erected at the structure for the legal load configuration	08/19/2024	HS20 Inventory (Tons)	19.4		
		HS20 Operating (Tons)	32.5		
		Type 3	44.1		
		Type 3S2	52.0		
		Type 3-2	52.5		
Type SU4	43.9				



Example	LR03	EP01	EP02	EP03	EP04 Code
		Type SU5	44.8		
		Type SU6	45.2		
		Type SU7	45.9		
		NRL (40T)	45.3		
		EV2 (28.75T)	29.9		
		EV3 (43T)	44.7		
PAR CANTBRY-0.2: No load posting sign erected at the structure for the legal load configuration	4/30/2007	HS20 Inventory (Tons)	40.2		
		HS20 Operating (Tons)	67.2		
Off-System structure with load posting signs erected at both ends of the structure, gross load 27 Tons. (Example 1 in Figure 5)	-	HS20 Inventory (Tons)	21.1		
		HS20 Operating (Tons)	27.2		
		Type 3	26.9	G - Gross Load	27
		Type 3S2	41.4	G - Gross Load	27
		Type 3-2	43.2	G - Gross Load	27
		Type SU4	26.8	G - Gross Load	27
		Type SU5	28.7	G - Gross Load	27
		Type SU6	29.7	G - Gross Load	27
		Type SU7	31.2	G - Gross Load	27
		NRL (40T)	31.5		
		EV2 (28.75T)	28.9	G - Gross Load	27
EV3 (43T)	28.6	G - Gross Load	27		
Off-System structure with load posting signs for all legal load configurations erected at both ends of the structure. (Example 2 in Figure 6)	-	HS20 Inventory (Tons)	18.4		
		HS20 Operating (Tons)	30.7		
		Type 3	28.4	T - Truck Load	27
		Type 3S2	36.8	T - Truck Load	36
		Type 3-2	35.9	T - Truck Load	35
		Type SU4	28.4	T - Truck Load	27
		Type SU5	29.2	T - Truck Load	29
		Type SU6	29.5	T - Truck Load	29
		Type SU7	30.2	T - Truck Load	29
		NRL (40T)	29.9		
		EV2 (28.75T)	29.1	T - Truck Load	28
EV3 (43T)	28.9	T - Truck Load	28		
Off-System structure with "No Trucks" (MUTCD R5-2) signs erected both ends of the structure. (Example 3 in Figure 7)	-	HL-93 Inventory (RF)	1.46		
		HL-93 Operating (RF)	1.89		
		Type 3	66.4	X - Other	
		Type 3S2	104.2	X - Other	
		Type 3-2	104.6	X - Other	
		Type SU4	67.3	X - Other	
		Type SU5	73.1	X - Other	
		Type SU6	78.8	X - Other	
		Type SU7	87.2	X - Other	
		NRL (40T)	90.0		
		EV2 (28.75T)	66.4	X - Other	
EV3 (43T)	68.3	X - Other			



EPO5A – Posting	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the structure’s load level capacity category for the legal load configuration with the lowest (controlling) rating factor using one of the following codes.

EPO5A Codes
0 - > 39.9% below
1 - 30.0 - 39.9% below
2 - 20.0 - 29.9% below
3 - 10.0 - 19.9% below
4 - 0.1 - 9.9% below
5 - Equal to or above legal loads

COMMENTARY

This item evaluates the load capacity of a structure in comparison to the legal load configurations.

The safe load capacity is based on the results of the load rating in accordance with the CDOT Bridge Rating Manual.

When temporary or supported conditions exist, as indicated in Item *PS01A – Load Posting Structure Status*, the actual operating rating of the temporary or supported structure should be used to determine this item. However, the structure may be posted at a lower level.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EPO5A Code
F-17-IT: Load rating values for all legal trucks are above the gross vehicle weight limits, no posting required per LRSS	3/1/2023	5 - Equal to or above legal loads
D-03-V-160: Load rating values for all legal trucks are above the gross vehicle weight limits, no posting required per LRSS	8/19/2024	5 - Equal to or above legal loads
PAR CANTBRY-0.2: Legal trucks are not load rated, no posting required per LRSS	4/30/2007	5 - Equal to or above legal loads
Off-System structure requires load posting for several legal load configurations. Structure not within 1 mile of an interstate. Lowest rating factor of 0.89. (Example 1 in <i>Figure 2</i>)	-	3 - 10.0 - 19.9% below
Off-System structure requires load posting for several legal load configurations. Structure not within 1 mile of an interstate. Lowest rating factor of 0.84. (Example 2 in <i>Figure 3</i>)	-	3 - 10.0 - 19.9% below



EP06A – Load Rating Organization	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the name of the organization that completed the load rating.

COMMENTARY

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP06A Code
F-17-IT: Per LRSS, rating completed by Company A	3/1/2023	Company A
D-03-V-160: Per LRSS, rating completed by Company B	8/19/2024	Company B
PAR CANTBRY-0.2: Per load rating package, rating completed by Company C	4/30/2007	Company C



EP07A – Load Rater Name	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the first and last name of the individual who completed the load rating and signed the “Rated by” section of the Load Rating Summary Sheet.

COMMENTARY

Report the initials of the individual who completed the rating when only initials are provided in the “Rated by” section of the Load Rating Summary Sheet.

Leave this item blank when there is no signature or initials in the “Rated by” section of the Load Rating Summary Sheet.

Leave this item blank if the signature and/or initials in the “Rated by” section of the Load Rating Summary Sheet are illegible and add a note to *EP28A – Rating Comment*.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP07A Code
F-17-IT: Per LRSS, structure rated by Kathy Potter	3/1/2023	Kathy Potter
D-03-V-160: Per LRSS, structure rated by Larry Diaz	8/19/2024	Larry Diaz
PAR CANTBRY-0.2: Per LRSS, structure rated by Martin Murry	4/30/2007	Martin Murry



EP08A – Load Rater Initials	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the initials of the individual who signed the “Rated by” section of the Load Rating Summary Sheet.

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



EP09A – Checker Name	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the first and last name of the individual who checked the rating and signed the “Checked by” section of the Load Rating Summary Sheet.

COMMENTARY

Report the initials of the individual who checked the rating when only initials are provided in the “Checked by” section of the Load Rating Summary Sheet.

Leave this item blank when there is no signature or initials in the “Checked by” section of the Load Rating Summary Sheet.

Leave this item blank when the signature and/or initials in the “Checked by” section of the Load Rating Summary Sheet are illegible and add a note to *EP28A – Rating Comment*.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP09A Code
F-17-IT: Per LRSS, load rating checked by Martin Merklinger	3/1/2023	Matthew Miller
D-03-V-160: Per LRSS, load rating checked by Jacob Alvarez	8/19/2024	Jacob Alvarez
PAR CANTBRY-0.2: Checked by signature on LRSS is partially illegible	4/30/2007	



EP10A – Checker Initials	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the initials of the individual who signed the “Checked by” section of the Load Rating Summary Sheet.

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



EP11A – Rating Package Review Date	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	mm/dd/yyyy

SPECIFICATION

Report the date the load rating package review was completed by the CDOT Bridge Project Support, Load Ratings, and Overloads Unit following the requirements outlined in the CDOT Bridge Rating Manual.

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



EP12A – Rating Package Reviewer	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the first initial and last name of the individual who provides quality control for the final rating.

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



EP13A – Rating Calculations Complete	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the structure load rating calculations are complete and per the CDOT Bridge Rating Manual using one of the following codes.

EP13A Codes	Description
Yes	Load rating calculations completed per the CDOT Bridge Rating Manual
No	Load rating calculations incomplete or not completed per the CDOT Bridge Rating Manual

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



EP14A – Rating Package Complete	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the structure load rating package is complete per the CDOT Bridge Rating Manual using one of the following codes.

EP14A Codes	Description
Yes	Load rating package complete
No	Load rating package not complete

COMMENTARY

The intent of this item is to document if the load rating package is complete per the CDOT Bridge Rating Manual Section 1.13 Rating Package Requirements and Section 1.14 Reporting the Results of Rating Calculations.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP14A Code
F-17-IT: Load rating package follows CDOT BRM	3/1/2023	Yes
D-03-V-160: Load rating package follows CDOT BRM	8/19/2024	Yes
PAR CANTBRY-0.2: Load rating package does not follow CDOT BRM	4/30/2007	No



EP15A – Entire Structure Rated	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether a structure load rating represents the rating of the entire structure using one of the following codes.

EP15A Codes	Description
Yes	Load rating represents entire structure, including Engineering Judgement (visual) ratings
No	Load rating does not represent entire structure

COMMENTARY

Code "Yes" for a structure when the load rating evaluates the entire deck (when applicable) and superstructure components.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP15A Code
F-17-IT: Load rating represents entire structure	3/1/2023	Yes
D-03-V-160: Load rating represents entire structure	8/19/2024	Yes
PAR CANTBRY-0.2: Load rating represents entire structure	4/30/2007	Yes



EP16A – Rating Input Files Archived	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the rating input files have been archived using one of the following codes.

EP16A Codes	Description
Yes	Load rating input files archived
No	Load rating input files not archived

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



EP17A – Rating Output Files Archived	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the rating output files have been archived using one of the following codes.

EP17A Codes	Description
Yes	Load rating output files archived
No	Load rating output files not archived

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



EP18A – Rating Assigned To	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the initials of the individual who the load rating is assigned to followed by the 4-digit fiscal year the rating was assigned to the rater.

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



EP19A – Rating Software Used	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the software used to generate the load rating using one of the following codes.

EP19A Codes
1 - BrR (non-NSG)
2 - Hand Calcs
3 - Other
4 - BrR (NSG)
5 - CANDE
6 - CMP Spreadsheet
7 - Engineering Judgment
8 - Load Test
Not Assigned

COMMENTARY

Code the software used for rating the controlling member identified in *EP27A – Operating Controlling Member*.

Code “Not Assigned” when rating software is not noted on the Rating Summary Sheet or cannot otherwise be identified.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP19A Code
F-17-IT: Per LRSS, BrR was used. NSG used for permit truck	3/1/2023	4 - BrR (NSG)
D-03-V-160: Per LRSS, BrR was used. NSG was not used	8/19/2024	1 - BrR (non-NSG)
PAR CANTBRY-0.2: LRSS does not document what software was used. Calculations in load rating package from a software not listed	4/30/2007	3 - Other



EP20A – BrR Rating Runs	CDOT
-------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report the run level of the AASHTOWare Bridge Rating (BrR) rating using one of the following codes.

EP20A Codes	Description
Yes	BrR file runs at the top level
No	BrR file does not run at the top level

COMMENTARY

This item is only to be coded by the CDOT Bridge Project Support, Load Ratings, and Overloads Unit.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

None.



EP21A – BrR Rating Analysis	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the AASHTOWare Bridge Rating (BrR) analysis matches the signed Load Rating Summary Sheet using one of the following codes.

EP21A Codes	Description
Yes	BrR analysis values match the Load Rating Summary Sheet values
No	BrR analysis values do not match the Load Rating Summary Sheet values

COMMENTARY

This item is only to be coded by the CDOT Bridge Project Support, Load Ratings, and Overloads Unit.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

None.



EP22A – BrR Rating System Based	CDOT
---------------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the AASHTOWare Bridge Rating (BrR) rating superstructure definition is system based using one of the following codes.

EP22A Codes	Description
Yes	BrR rating superstructure definition is system based
No	BrR rating superstructure definition is not system based

COMMENTARY

Code “No” for line based or multi-cell box superstructures.

Code “No” when BrR was not used to load rate the structure or no BrR file exists.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP22A Code
F-17-IT: Structure rated with BrR. Superstructure definition is system based	3/1/2023	Yes
D-03-V-160: Structure rated with BrR. Superstructure definition is system based	8/19/2024	Yes
PAR CANTBRY-0.2: Structure not rated with BrR	4/30/2007	No



EP23A – Rating Asphalt Thickness	CDOT
----------------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (4,1)

SPECIFICATION

Report the asphalt/overlay thickness or fill height on the structure used for the load rating calculations to the nearest tenth of an inch.

COMMENTARY

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP23A Code
F-17-IT: 2.5 inches of asphalt on deck, structure load rated for 3.0 inches of asphalt on deck	3/1/2023	3.0
D-03-V-160: 2.0 inches of asphalt on deck, structure load rated for 3.0 inches of asphalt on deck	8/19/2024	3.0
PAR CANTBRY-0.2: 103 inches of fill/asphalt over culvert, load rated for 8.74 feet (105 inches) of fill	4/30/2007	105.0



EP24A – Girder Operating Rating, Tons	CDOT
---------------------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (5,1)

SPECIFICATION

Report the most restrictive girder operating rating of the structure rounded down to the nearest tenth of a U.S. ton.

COMMENTARY

This item is only to be coded by the CDOT Bridge Project Support, Load Ratings, and Overloads Unit.

Only code a controlling exterior girder if the girder directly carries wheel loads.

Leave this item blank for railroad loading, pedestrian loading, and tunnels.

Leave this item blank for structures that have not been load rated.

Code “40.0” for structures that have been visually rated and load reductions are not required.

Code “0.0” for a closed or temporary structure and/or a structure that cannot carry any live load. A structure shored up or repaired on a temporary basis is considered a temporary structure but coded with the girder operating rating for the repaired condition.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP24A Code
F-17-IT: Per LRSS, most restrictive girder operating rating factor is 0.76	3/1/2023	27.3
D-03-V-160: Per LRSS, most restrictive girder operating rating is 32.5 tons	8/19/2024	32.5
PAR CANTBRY-0.2: Structure is a culvert, girder rating is not applicable	4/30/2007	



EP25A – Overload Color Code	CDOT
------------------------------------	-------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the overload color assigned to a structure indicating the load carrying capacity at operating stress level using one of the following codes.

EP25A Codes	Modified Tandem Truck Operating Rating	Permit Truck Operating Rating
0 - White	50 tons or more	96 tons or more
1 - Black	Less than 42 tons	Less than 80.5 tons
2 - Orange	Between 42 tons and 45.99 tons	Between 80.5 tons and 88.49 tons
3 - Yellow	Between 46 tons and 49.99 tons	Between 88.5 tons and 95.99 tons
N - Not applicable	Not applicable	Not applicable

COMMENTARY

This item is only to be coded by the CDOT Bridge Project Support, Load Ratings, and Overloads Unit.

This item is only to be coded for On-System Major Structure.

The overload color code should be noted on the Load Rating Summary Sheet.

Only code this item based on a controlling exterior girder when the girder directly carries wheel loads.

Decks shall not be used to determine the overload color code.

Code “N” for Off-System Major Structures and Minor Structures.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP25A Code
F-17-IT: On-System structure. Per LRSS, Color Code is White	3/1/2023	0 - White
D-03-V-160: Off-System structure	8/19/2024	N - Not applicable
PAR CANTBRY-0.2: Off-System structure	4/30/2007	N - Not applicable



EP26A – Overload Color Code Live Load	CDOT
---------------------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the type of overload truck used to determine the color code in *EP25A – Overload Color Code* using one of the following codes.

EP26A Codes
0 - None
1 - Modified Tandem
2 - Permit Vehicle
3 - Permit Vehicle and Modified Tandem
N - Not applicable

COMMENTARY

This item is only to be coded by the CDOT Bridge Project Support, Load Ratings, and Overloads Unit.

This item is only to be coded for On-System Major Structures.

The Load Rating Summary Sheet will show if the modified tandem and/or permit trucks were analyzed.

Code “N” for Off-System Major Structures and Minor Structures.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP26A Code
F-17-IT: On-System structure. Permit truck rating used to determine color code	3/1/2023	2 - Permit Vehicle
D-03-V-160: Off-System structure	8/19/2024	N - Not applicable
PAR CANTBRY-0.2: Off-System structure	4/30/2007	N - Not applicable



EP27A – Operating Controlling Member	CDOT
--------------------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the load carrying member controlling the operating load rating recorded in *LR06 – Operating Load Rating* using one of the following codes.

EP27A Codes
A - Not checked
E - Exterior girder
F - Floor Beam
G - Gusset plate
I - Interior girder
N - Not applicable
O - Other (pin, hanger, etc)
P - Metal or Timber Deck
R - Arch
S - Slab
T - Truss
U - Substructure
X - Culvert or non-slab

COMMENTARY

Code “N” for structures that don't carry a vehicular highway.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP27A Code
F-17-IT: Per LRSS, load rating controlled by exterior girder	3/1/2023	E - Exterior girder
D-03-V-160: Per LRSS, load rating controlled by exterior girder	8/19/2024	E - Exterior girder
PAR CANTBRY-0.2: Per LRSS, load rating controlled by culvert	4/30/2007	X - Culvert or non-slab



EP27B – Inventory Controlling Member	CDOT
--------------------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the load carrying member controlling the inventory load rating recorded in *LR05 – Inventory Load Rating* using one of the following codes.

EP27B Codes
A - Not checked
E - Exterior girder
F - Floor Beam
G - Gusset plate
I - Interior girder
N - Not applicable
O - Other (pin, hanger, etc)
P - Metal or Timber Deck
R - Arch
S - Slab
T - Truss
U - Substructure
X - Culvert or non-slab

COMMENTARY

Code “N” for structures that don't carry a vehicular highway.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP27B Code
F-17-IT: Per LRSS, load rating controlled by exterior girder	3/1/2023	E - Exterior girder
D-03-V-160: Per LRSS, load rating controlled by exterior girder	8/19/2024	E - Exterior girder
PAR CANTBRY-0.2: Per LRSS, load rating controlled by culvert	4/30/2007	X - Culvert or non-slab



EP28A – Rating Comment	CDOT
------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (300+)

SPECIFICATION

Report notes identifying load rating information and assumptions.

COMMENTARY

This item is to only be updated by the load rater or load rating organization unless otherwise directed by CDOT.

Notes should include Load Rating Summary Sheet comments section information.

When the signature and/or initials in the “Rated by” and/or “Checked by” sections of the Load Rating Summary Sheet are illegible a note should be added to this item.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	EP28A Code
F-17-IT	3/1/2023	(2) continuous steel box girders with 8.25 in composite deck. Modeled box girder webs as steel plate girders, manually entered compression flange capacity in negative moment regions. Exterior girder controls in compression flange flexure stress. Splices not included in rating. Ext. Box Average Rating = $0.5 * (63.07 \text{ tons} + 113.93 \text{ tons}) = 88.5 \text{ tons}$ Ext. Box 1 NSG Avg. Rating = $0.5 * (96.40 + 152.36 \text{ tons}) = 124.38 \text{ tons}$ Girders rated using LRFR method. Deck rated using LFR method. No Posting Required. Color Code: White. Rated by: Company A Girders rated using AASHTOWare BrR version 7.2.0.3001.
D-03-V-160	8/19/2024	3" asphalt over 7" thick composite concrete deck. 19 Spans: 1 @ 61'-6", 10 @ 60'-0", 1 @ 71'-0", 1 @ 87'-0", 1 @ 96'-6", 1 @ 99'-0", 1 @ 80'-0", 1 @ 85'-0", 1 @ 80'-0", 1 @ 81'-6"; (6-W30x108 in Spans 1 to 11), (6-W36x150 in Spans 12 and 16 to 19), (6-W36x194 in Spans 13 to 15). Deck f'c = 5,000 psi, fy = 40,000 psi. Structural Steel fy = 36,000 psi. Rating based on 8/21/1957 original plans, 1/26/2008 rehabilitation plans and 11/15/2022 inspection report and inspection sketch. Rated in BrR v 7.2.0.3001 by Company B Controlling member: Exterior Girder. Load posting is not required.
PAR CANTBRY-0.2	4/30/2007	This culvert was rated using project specific plan details. A fill height of 8.74 ft. on top of a 12" concrete slab was determined from the plans. Checked by signature illegible on rating summary sheet.



Section 4.2 Load Rating (LR)

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LR01 – Design Load SNBI | Item B.LR.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the live load for which the structure was designed using one of the following codes.

LR01 Codes
H-10
H-15
H-20
HS-15
HS-20
HS20M - HS-20 and Military
HS20Plus - Greater than HS-20
HL-93
HL93Plus - Greater than HL-93
RR - Railroad
U - Unknown
X - Other

COMMENTARY

The design live load description can usually be found on the title sheet of the structure design plans.

For widened or rehabilitated structures, code the most restrictive design load governing any portion of the structure.

Code “HS20M” when the structure is designed to accommodate both the HS-20 and the alternate military load.

Code “HS20Plus” or “HL93Plus” when the HS-20 or HL-93 design load configuration is increased proportionally above that specified in the AASHTO design specifications.

Code “U” when the design plans are not available and the likely design load cannot be inferred from design characteristics of the structure or agency policy at the time the structure was built. A code other than “U” can be coded when design plans are not available, but the design load can be inferred from design characteristics of the structure or agency policy at the time the structure was built.

Code “X” when the design load is known but is not based on AASHTO or railroad design load configurations.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.



CODING EXAMPLES

Example	LR03	LR01 Code
F-17-IT: Per 1986 as-built plans, design live load is HS-20	3/1/2023	HS-20
D-03-V-160: Per 1957 as-built plans, design live load is H-20	8/19/2024	H-20
PAR CANTBRY-0.2: Per 2003 as-built plans, design live load is HS-20	4/30/2007	HS-20
Design live load is HL-93	-	HL-93



LR02 – Design Method SNBI | Item B.LR.02

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the method by which the structure was designed using one of the following codes.

LR02 Codes
ASD
LFD
LRFD
Other
Unknown
Railroad

COMMENTARY

The design method can usually be found on the title sheet of the structure design plans.

The codes describe the design methods used in accordance with AASHTO design specifications.

For widened or rehabilitated structures, code the design method associated with the code in *LR01 – Design Load*.

Code “Unknown” when the design plans are not available and the likely design method cannot be inferred from design characteristics of the structure or agency policy at the time the structure was built. A code other than “Unknown” can be reported when design plans are not available, but the design method can be inferred from design characteristics of the structure or agency policy at the time the structure was built.

Code “Other” when the design method is known but is not based on AASHTO or railroad design load configurations.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	LR02 Code
F-17-IT: Per 1986 as-built plans, designed by Load Factor Design	3/1/2023	LFD
D-03-V-160: Designed by Allowable Stress Design	8/19/2024	ASD
PAR CANTBRY-0.2: Designed by Load Factor Design	4/30/2007	LFD
A structure designed by Load and Resistance Factor Design	-	LRFD



LR03 – Load Rating Date	SNBI Item B.LR.03
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	mm/dd/yyyy

SPECIFICATION

Report the date of the load rating.

COMMENTARY

The date coded should be the date the Load Rating Summary sheet was stamped by a Professional Engineer in the State of Colorado. When there is no Professional Engineer Stamp date on the Load Rating Summary Sheet, the "Checked By" date should be coded. When there is no Professional Engineer Stamp date or "Checked By" date, the "Rated By" date should be coded.

Leave this item blank if no rating analysis or evaluation has been performed.

The load rating may be performed independently and at a different date than the inspection.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03 Code
F-17-IT: Load rating summary sheet stamped by a Colorado PE on 3/1/2023	03/01/2023
D-03-V-160: Load rating summary sheet stamped by a Colorado PE on 8/19/2024	08/19/2024
PAR CANTBRY-0.2: Load rating summary sheet "Checked by" signed and dated 4/30/2007	04/30/2007
Load rating summary sheet "Rated by" signed and dated 8/1/1995, no PE stamp or "Checked by" signature or date	08/01/1995



LR03A – Load Rating Check Date	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	mm/dd/yyyy

SPECIFICATION

Report the date in the “Checked by” section of the Load Rating Summary Sheet.

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



LR04 – Operating Rating Method SNBI | Item B.LR.04

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the method used to calculate the operating rating for the design load configuration using one of the following codes.

LR04 Codes
0 - Field Eval
1 - LF
2 - AS
3 - LRFR
4 - Load Testing
5 - No Rating
6 - LF RF w MS 18
7 - AS RF w MS 18
8 - LRFR RF w HL 93

COMMENTARY

When different portions of a structure are load rated using different methods, code the rating method associated with the controlling operating rating coded in *EP02 – Load Rating* for the design load configuration.

Code “0” is typically used when plans or field measurements are not available to complete a load rating, or in cases of severe deterioration. Field evaluation and engineering judgement ratings must be documented. Refer to the latest edition of the CDOT Bridge Rating Manual for documentation requirements.

Code “5” when the structure has not been load rated or load rating documentation does not exist in the structure record.

Code “1”, “2”, or “3”, as applicable, when the design load configuration reported in *EP01 – Load Configuration* indicates that the rating values should be reported in U.S. tons and the rating value in *EP02 – Load Rating* is reported in U.S. tons for the operating rating.

Code “6”, “7”, or “8”, as applicable, when the design load configuration reported in *EP01 – Load Configuration* indicates that a rating factor should be reported and a rating factor is reported in *EP02 – Load Rating* for the operating rating.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	LR04 Code
F-17-IT: Load and Resistance Factor Rating used for controlling operating rating, rating factor reported on LRSS	3/1/2023	8 - LRFR RF w HL 93
D-03-V-160: Load Factor Rating used for controlling operating rating, rating value in U.S. tons reported on LRSS	8/19/2024	1 - LF



Example	LR03	LR04 Code
PAR CANTBRY-0.2: Load Factor Rating used for controlling operating rating, rating value in U.S. tons reported on LRSS	4/30/2007	1 - LF
Load and Resistance Factor Rating used for controlling operating rating, rating value in U.S. tons reported on LRSS	-	3 - LRFR
Structure load rated based on field evaluation	-	0 - Field Eval



LR04A – Inventory Rating Method	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the method used to calculate the inventory rating for the design load configuration using one of the following codes.

LR04A Codes
0 - Field Eval
1 - LF
2 - AS
3 - LRFR
4 - Load Testing
5 - No Rating
6 - LF RF w MS 18
7 - AS RF w MS 18
8 - LRFR RF w HL 93

COMMENTARY

When different portions of a structure are load rated using different methods, code the rating method associated with the controlling operating rating coded in *EP02 – Load Rating* for the design load configuration.

Code “0” is typically used when plans or field measurements are not available to complete a load rating, or in cases of severe deterioration. Field evaluation and engineering judgement ratings must be documented. Refer to the latest edition of the CDOT Bridge Rating Manual for documentation requirements.

Code “5” when the structure has not been load rated or load rating documentation does not exist in the structure record.

Code “1”, “2”, or “3”, as applicable, when the design load configuration reported in *EP01 – Load Configuration* indicates that the rating values should be reported in U.S. tons and the rating value in *EP02 – Load Rating* is reported in U.S. tons for the inventory rating.

Code “6”, “7”, or “8”, as applicable, when the design load configuration reported in *EP01 – Load Configuration* indicates that a rating factor should be reported and a rating factor is reported in *EP02 – Load Rating* for the inventory rating.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	LR04A Code
F-17-IT: Load and Resistance Factor Rating used for controlling inventory rating, rating factor reported on LRSS	3/1/2023	8 - LRFR RF w HL 93
D-03-V-160: Load Factor Rating used for controlling inventory rating, rating value in U.S. tons reported on LRSS	8/19/2024	1 - LF



Example	LR03	LR04A Code
PAR CANTBRY-0.2: Load Factor Rating used for controlling inventory rating, rating value in U.S. tons reported on LRSS	4/30/2007	1 - LF
Load and Resistance Factor Rating used for controlling inventory rating, rating value in U.S. tons reported on LRSS	-	3 - LRFR
Structure load rated based on field evaluation	-	0 - Field Eval



LR05 – Inventory Load Rating SNBI | Item B.LR.05

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	None	Not Applicable

SPECIFICATION

The inventory load rating factor, truncated to the hundredth, for the standard AASHTO HS-20 or HL-93 loadings, whichever is applicable based on the inventory design load configuration reported in *EP01 – Load Configuration* and inventory rating method reported in *LR04A – Inventory Rating Method*.

COMMENTARY

This item is not available to code in SIMSA.

This item corresponds to the value reported in *EP02 – Load Rating* for the inventory design load configuration.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

None.



LR06 – Operating Load Rating	SNBI Item B.LR.06
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	None	Not Applicable

SPECIFICATION

The operating load rating factor, truncated to the hundredth, for the standard AASHTO HS-20 or HL-93 loadings, whichever is applicable based on the operating design load configuration reported in *EP01 – Load Configuration* and operating rating method reported in *LR04 – Operating Rating Method*.

COMMENTARY

This item is not available to code in SIMSA.

This item corresponds to the value reported in *EP02 – Load Rating* for the operating design load configuration.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

None.



LR07 – Controlling Legal Load Rating Factor	SNBI Item B.LR.07
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	None	Not Applicable

SPECIFICATION

The lowest (controlling) rating factor, truncated to the hundredth, for the legal load configurations reported in *EP01 – Load Configuration*.

COMMENTARY

This item is not available to code in SIMSA.

CDOT codes this item for all structures reported to FHWA based on information reported in *EP01 – Load Configuration* and *EP02 – Load Rating*.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

None.



LR08 – Routine Permit Loads	SNBI Item B.LR.08
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	None	Not Applicable

SPECIFICATION

Report whether the structure carries routine permit loads or whether routine permit loads are restricted from the structure using one of the following codes.

LR08 Codes
A - Bridge carries routine permit loads. Load capacity is adequate for all routine permit loads; no routine permit loads are restricted.
B - Bridge carries routine permit loads. Load capacity is adequate for some routine permit loads but some routine permit loads are restricted.
C - Bridge does not carry routine permit loads. Routine permit loads are restricted from the bridge.
N - Bridge does not carry routine permit loads. Agency does not issue routine permits.

COMMENTARY

This item is not available to code in SIMSA.

CDOT codes this item for all structures reported to FHWA based on *EP25A – Overload Color Code*.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

None.



LR09A – Within 1 Mile	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the structure is within one road-mile or reasonable access of an interstate highway using one of the following codes.

LR09A Codes	Description
Yes	Bridge is within 1 roadway mile of an interstate
No	Bridge is not within 1 roadway mile of an interstate

COMMENTARY

The intent of this item is to document whether a structure is within one road-mile or reasonable access of an interstate highway.

Code “Yes” if any of the following are true:

- The structure carries an interstate highway.
- The structure is within one road-mile of an interstate highway or access ramp to an interstate highway.
- The structure is more than one road-mile from an interstate highway, but it is located between an interstate highway and facilities for food, fuel, repairs, or rest which are a reasonable distance from the interstate highway.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	LR09A Code
F-17-IT: Structure is within 1 mile of I-25	3/1/2023	Yes
D-03-V-160: Structure is within 1 mile of I-25	8/19/2024	Yes
PAR CANTBRY-0.2: Structure is not within 1 mile of an interstate	4/30/2007	No



LR10A – BrR Structure Number	CDOT
------------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (15)

SPECIFICATION

Report the structure number listed in AASHTOWare Bridge Rating (BrR) software.

COMMENTARY

This item is only to be coded by the CDOT Bridge Project Support, Load Ratings, and Overloads Unit.

Leave this item blank when AASHTOWare Bridge Rating (BrR) software was not used to complete the load rating.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	LR10A Code
F-17-IT: Structure number listed in BrR is F-17-IT	3/1/2023	F-17-IT
D-03-V-160: Structure not listed in BrR	8/19/2024	
PAR CANTBRY-0.2: Structure not rated using BrR	4/30/2007	



LR11A – Plans Available	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether there is enough information on the available structure plans to perform a load rating of the structure using one of the following codes.

LR11A Codes	Description
Yes	Plans and/or shop drawings are available
No	Plans and/or shop drawings are not available

COMMENTARY

Code "No" when plans are available but there is not enough information in the plans to perform a load rating of the structure.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	LR11A Code
F-17-IT: Plans with enough information to load rate structure available in SIMSA	3/1/2023	Yes
D-03-V-160: Plans with enough information to load rate structure available in SIMSA	8/19/2024	Yes
PAR CANTBRY-0.2: Plans with enough information to load rate structure available in SIMSA	4/30/2007	Yes
Design plans for prestressed concrete girder structure available in SIMSA. Plans do not have prestressing information for girders	-	No



LR12A – Overload Critical Structure	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the structure is overload critical using one of the following codes.

LR12A Codes	Description
Yes	Structure is overload critical
No	Structure is not overload critical

COMMENTARY

This item is only to be coded by the CDOT Bridge Project Support, Load Ratings, and Overloads Unit.

This item is only to be coded for On-System Major Structures.

A structure is considered an overload critical structure when *EP25A – Overload Color Code* is coded “1”, “2”, or “3”.

Code “No” for Off-System Major Structures and Minor Structures.

This item is specific to each individual load rating. This item is linked live across inspection types and carried forward from inspection to inspection. This item is not carried forward from load rating to load rating.

CODING EXAMPLES

Example	LR03	LR12A Code
F-17-IT: On-System structure that is not overload critical	3/1/2023	No
D-03-V-160: Off-System structure	8/19/2024	No
PAR CANTBRY-0.2: Off-System structure	4/30/2007	No



Section 4.3 Posting Status (PS)

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PS01A – Load Posting Structure Status SNBI | Item B.PS.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the operational status of the structure using one of the following codes.

PS01A Codes
P - Permanent
T - Temporary, structure in place to carry traffic while permanent bridge is closed
S - Supported, permanent bridge with temporary shoring
N - New, not open to traffic
C - Closed to all traffic
PA-T - TEMP, Posting Need. A, D, M*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

When temporary or supported conditions exist ensure that data items related to physical characteristics of the structure (e.g., geometry, clearances, condition, and load rating) represent those characteristics of the temporary or supported structure.

Terms:

Permanent (P) – Permanent structure in place with no temporary supports.

Temporary (T) – Temporary structure in place to carry traffic while the permanent structure is closed and awaiting repair, rehabilitation, or replacement.

Supported (S) – Structure with temporary shoring, supports, repairs, or supplemental members in place to keep the structure open pending the completion of active or imminent repair, or replacement projects.

Code “S” when 25% or more of the timber girders have been repaired. Timber girders which have been sistered with a new girder are considered permanently replaced and should not be included when determining the operational status of the structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	PS01A Code
F-17-IT: Permanent structure in place with no temporary supports	Routine+	8/6/2025	P - Permanent
D-03-V-160: Permanent structure in place with no temporary supports	Special Unscheduled	6/27/2025	P - Permanent
PAR CANTBRY-0.2: Permanent structure in place with no temporary supports	Routine	2/5/2025	P - Permanent
Structure closed to all traffic; concrete barriers at both ends of structure	-	-	C - Closed to all traffic
Timber girder structure with more than 25% of the girders lag bolted for repair	-	-	S - Supported, permanent bridge with temporary shoring



PS01B – Load Posting Status Code SNBI | Item B.PS.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the load posting status of the structure using one of the following codes.

PS01B Codes
O - Open - No Restriction
A - Needs Action (Unposted and requires posting)
P - Posted for weight
R - Posted for other restriction
D - Needs Reduction (Insufficiently posted)
M - Missing (Previous posting is missing)
N - New, not open to traffic
C - Closed to all traffic
PA-T - TEMP, Posting Need. A, D, M*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

The intent of this item is to document the load posting status for the entire structure.

Advanced warning load posting signs should not affect the code for this item.

When both a weight and other load restriction exist at the structure, use the code for the weight restriction.

Code “A” when load posting is required but there are no load posting signs erected at the structure. Add a clarifying note in *L14A – Structure Note*.

Code “P” when load posting is required, all required load posting signs are erected at the structure, and load posting signs show values at or below the required values.

Code “P” when load posting is not required but there are load posting signs erected at the structure. Add a clarifying note in *L14A – Structure Note*.

Code “R” when load posting is not required but a posting sign or other traffic control device(s) is erected at the structure that reduces loading by reducing speed (to reduce impact), limits the number of lanes or vehicles, or restricts commercial vehicles in general. Add a clarifying note in *L14A – Structure Note*.

Code “D” when load posting is required but one or more load posting signs erected at the structure show values above the required values. Add a clarifying note in *L14A – Structure Note*.

Code “M” when load posting is required but one or more required load posting signs are missing or illegible. Add a clarifying note in *L14A – Structure Note*.

Code “N” when a structure is newly constructed and not yet open to traffic but is expected to be open within 12 months.

When *LRO9A – Within 1 Mile* is coded "No", the load posting requirements for the EV2 and EV3 legal load configurations should not affect the code for this item.



Refer to the CDOT Bridge Rating Manual and the Structure's Load Rating Summary Sheet to determine load posting requirements for the structure.

When this item needs to be changed in SIMSA, use the following two cases to determine where to make the change in SIMSA:

- If the *IE20A – Inspection Status* for the current inspection is anywhere in the SIMSA workflow from “In Field” to “QA Approved”, change this item in the current inspection.
- If the *IE20A – Inspection Status* for the current inspection is anywhere in the SIMSA workflow from “Open” to “Ready to Inspect”, change this item in a “Posting Status Change Unscheduled” inspection.

For special or unique circumstances (e.g., load posting requirements do not follow Load Rating Summary Sheet), add clarifying note in *L14A – Structure Note*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	PS01B Code
F-17-IT: Load posting not required; no load posting signs erected at the structure	Routine+	8/6/2025	O - Open - No Restriction
D-03-V-160: Load posting not required; no load posting signs erected at the structure	Special Unscheduled	6/27/2025	O - Open - No Restriction
PAR CANTBRY-0.2: Load posting not required; no load posting signs erected at the structure	Routine	2/5/2025	O - Open - No Restriction
Structure requires load posting for Type 3S2, Type 3-2, SU4, SU5, SU6, and SU7; load posting signs erected at both ends of structure for all truck loads as required	-	-	P - Posted for weight
Structure requires load posting for Type 3, Type 32, Type 3-2, SU4, SU5, SU6, and SU7; load posting signs erected at both ends of structure for Type 3, Type 3S2, and Type 3-2 as required, but no load posting signs for SU4, SU5, SU6, and SU7	-	-	A - Needs Action (Unposted and requires posting)
Structure load rated for all CO Type 3 trucks, SHVs, and EVs. Structure does not require load posting; “No Trucks” (MUTCD R5-2) signs erected both ends of the structure	-	-	R - Posted for other restriction
Structure load rated for all CO Type 3s, SHVs, and EVs; load rating factors for all legal load configurations except the EV3 are above 1; no load posting signs erected at the structure; structure is not located within 1 mile of an interstate	-	-	O - Open - No Restriction



PS02 – Posting Status Change Date	SNBI Item B.PS.02
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	None	Not Applicable

SPECIFICATION

The date the structure entered the status reported in *PS01A – Load Posting Structure Status* and *PS01B – Load Posting Status Code*.

COMMENTARY

This is not available to code in SIMSA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



PS03A – Posting - CO Legal Trucks	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the operational status of the structure regarding load carrying capacity of the Colorado or Interstate Type 3, Type 3S2, and Type 3-2 legal load configurations using one of the following codes.

PS03A Codes
A - No restriction
B - Posting or posting reduction recommended, but not implemented
D - Would be posted or closed, but temporary shoring allows for unrestricted traffic
E - Temporary structure in place to carry legal loads while structure is closed awaiting replacement or rehab
G - New structure not opened to traffic
K - Closed to all traffic
P - Posted with weight limit sign(s)
R - Posted with other load restriction sign(s)

COMMENTARY

The intent of this item is to document the structure's load posting status only in regards to the Colorado or Interstate Type 3, Type 3S2, and Type 3-2 legal load configurations.

Advanced warning load posting signs should not affect the code for this item.

This item should be based on whichever set of Type 3, Type 3S2, and Type 3-2 load configurations the structure has been load rated for, either Colorado or Interstate.

Refer to the CDOT Bridge Rating Manual for details of Colorado or Interstate Type 3, Type 3S2, and Type 3-2 legal load configurations.

Code “A” when the operating rating factor or rating value reported in *EPO2 – Load Rating* for the design load configuration is equal to or greater than 1 or 36 U.S. tons, respectively, and the Colorado or Interstate Type 3, Type 3S2, and Type 3-2 legal load configurations have not been rated.

Code “B” when load posting is required for any of the Colorado or Interstate Type 3, Type 3S2, and Type 3-2 legal load configurations and one of the following is true:

- There are no load posting signs erected at the structure.
- One or more load posting signs erected at the structure show values above the required values.
- One or more required load posting signs are missing.
- One or more required load posting signs are illegible.

Code “D” for structures with timber girders when 25% or more of the timber girders have been repaired. Timber girders which have been sistered with a new girder are considered permanently replaced and should not be included when determining the operational status of the structure.

Code “P” when load posting is required for any of the Colorado or Interstate Type 3, Type 3S2, and Type 3-2 legal load configurations and load posting signs show values at or below the required values.

Code “P” when load posting is not required for any of the Colorado or Interstate Type 3, Type 3S2, and Type 3-2 legal load configurations but there are posting signs erected at the structure.



Code “R” when load posting is not required for any of the Colorado or Interstate Type 3, Type 3S2, and Type 3-2 legal load configurations but a posting sign or other traffic control device(s) is erected at the structure that reduces loading by reducing speed (to reduce impact), limits the number of lanes or vehicles, or restricts commercial vehicles in general.

Refer to the CDOT Bridge Rating Manual and the Structure's Load Rating Summary Sheet to determine load posting requirements for the structure.

For special or unique circumstances (e.g., load posting requirements do not follow Load Rating Summary Sheet), add a clarifying note in *L14A – Structure Note*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	PS03A Code
F-17-IT: Structure load rated for CO Type 3 trucks; load posting not required for CO Type 3 trucks; no load posting signs erected at the structure	Routine+	8/6/2025	A - No restriction
D-03-V-160: Structure load rated for CO Type 3 trucks; load posting not required for CO Type 3 trucks; no load posting signs erected at the structure	Special Unscheduled	6/27/2025	A - No restriction
PAR CANTBRY-0.2: Structure not load rated for CO Type 3 trucks, but operating rating greater than 36 tons; no load posting signs erected at the structure	Routine	2/5/2025	A - No restriction
Structure load rated for all CO Type 3 trucks, SHVs, and EVs; requires load posting for Type 3S2, Type 3-2, SU4, SU5, SU6, and SU7; load posting signs erected at both ends of structure for all truck loads as required	-	-	P - Posted with weight limit sign(s)
Structure load rated for all CO Type 3 trucks and SHVs; requires load posting for Type 3, Type 32, Type 3-2, SU4, SU5, SU6, and SU7; load posting signs erected at both ends of structure for Type 3, Type 3S2, and Type 3-2 as required, but no load posting signs for SU4, SU5, SU6, and SU7	-	-	P - Posted with weight limit sign(s)
Structure load rated for all CO Type 3 trucks, SHVs, and EVs. Structure does not require load posting; “No Trucks” (MUTCD R5-2) signs erected both ends of the structure	-	-	R - Posted for other restriction



PS03B – Posting - SHV Trucks CDOT

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the operational status of the structure regarding load carrying capacity of the Specialized Hauling Vehicles using one of the following codes.

PS03B Codes
A - No restriction
B - Posting or posting reduction recommended, but not implemented
D - Would be posted or closed, but temporary shoring allows for unrestricted traffic
E - Temporary structure in place to carry legal loads while structure is closed awaiting replacement or rehab
G - New structure not opened to traffic
K - Closed to all traffic
P - Posted with weight limit sign(s)
R - Posted with other load restriction sign(s)

COMMENTARY

The intent of this item is to document the structure's load posting status only in regards to the SU4, SU5, SU6, and SU7 legal load configurations.

Advanced warning load posting signs should not affect the code for this item.

Refer to the CDOT Bridge Rating Manual for details of SU4, SU5, SU6, and SU7 legal load configurations.

Leave this item blank when the structure has not been load rated for the individual Single Unit Trucks of SU4, SU5, SU6, and SU7 or the Notional Rating Load.

Code “A” if the structure has not been rated for the individual Single Unit Trucks of SU4, SU5, SU6, and SU7 but the structure has been rated for the Notional Rating Load and the rating factor is equal to or greater than 1.

Code “B” when load posting is required for any of the SU4, SU5, SU6, and SU7 legal load configurations and one of the following is true:

- There are no load posting signs erected at the structure.
- One or more load posting signs show values above the required values.
- One or more load posting signs are missing.
- One or more load posting signs are illegible.

Code “D” for structures with timber girders when 25% or more of the timber girders have been repaired. Timber girders which have been sistered with a new girder are considered permanently replaced and should not be included when determining the operational status of the structure.

Code “P” when load posting is required for any of the SU4, SU5, SU6, and SU7 legal load configurations and load posting signs show values at or below the required values.

Code “P” when load posting is not required for any of the SU4, SU5, SU6, and SU7 legal load configurations but there are load posting signs erected at the structure.



Code “R” when load posting is not required for any of the SU4, SU5, SU6, and SU7 legal load configurations but a posting sign or other traffic control device(s) is erected at the structure that reduces loading by reducing speed (to reduce impact), limits the number of lanes or vehicles, or restricts commercial vehicles in general.

Refer to the CDOT Bridge Rating Manual and the Structure's Load Rating Summary Sheet to determine load posting requirements for the structure.

For special or unique circumstances (e.g., load posting requirements do not follow Load Rating Summary Sheet), add a clarifying note in *L14A – Structure Note*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	PS03B Code
F-17-IT: Structure load rated for SHV trucks; load posting not required for SHV trucks; no load posting signs erected at the structure	Routine+	8/6/2025	A - No restriction
D-03-V-160: Structure load rated for SHV trucks; load posting not required for SHV trucks; no load posting signs erected at the structure	Special Unscheduled	6/27/2025	A - No restriction
PAR CANTBRY-0.2: Structure not load rated for SHV trucks	Routine	2/5/2025	
Structure load rated for all CO Type 3 trucks, SHVs, and EVs; requires load posting for Type 3S2, Type 3-2, SU4, SU5, SU6, and SU7; load posting signs erected at both ends of structure for all truck loads as required	-	-	P - Posted with weight limit sign(s)
Structure load rated for all CO Type 3 trucks and SHVs; requires load posting for Type 3, Type 32, Type 3-2, SU4, SU5, SU6, and SU7; load posting signs erected at both ends of structure for Type 3, Type 3S2, and Type 3-2 as required, but no load posting signs for SU4, SU5, SU6, and SU7	-	-	B - Posting or posting reduction recommended, but not implemented
Structure load rated for all CO Type 3 trucks, SHVs, and EVs. Structure does not require load posing; “No Trucks” (MUTCD R5-2) signs erected both ends of the structure	-	-	R - Posted for other restriction



PS03C – Posting - EV Trucks CDOT

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the operational status of the structure regarding load carrying capacity of the Emergency Vehicles (EVs) using one of the following codes.

PS03C Codes
A - No restriction
B - Posting or posting reduction recommended, but not implemented
D - Would be posted or closed, but temporary shoring allows for unrestricted traffic
E - Temporary structure in place to carry legal loads while structure is closed awaiting replacement or rehab
G - New structure not opened to traffic
K - Closed to all traffic
P - Posted with weight limit sign(s)
R - Posted with other load restriction sign(s)

COMMENTARY

The intent of this item is to document the structure's load posting status only in regards to the EV2 and EV3 legal load configurations.

Advanced warning load posting signs should not affect the code for this item.

Refer to the CDOT Bridge Rating Manual for details of EV2 and EV3 legal load configurations.

Leave this item blank when the structure has not been load rated for the EVs.

Code “B” when load posting is required for any of the EV2 and EV3 legal load configurations and one of the following is true:

- There are no load posting signs erected at the structure.
- One or more load posting signs erected at the structure show values above the required values.
- One or more load posting signs erected at the structure are missing.
- One or more load posting signs erected at the structure are illegible.

Code “D” for structures with timber girders when 25% or more of the timber girders have been repaired. Timber girders which have been sistered with a new girder are considered permanently replaced and should not be included when determining the operational status of the structure.

Code “P” when load posting is required for any of the EV2 and EV3 legal load configurations and load posting signs show values at or below the required values.

Code “P” when load posting is not required for any of the EV2 and EV3 legal load configurations but there are load posting signs erected at the structure.

Code “R” when load posting is not required for any of the EV2 and EV3 legal load configurations but a posting sign or other traffic control device(s) is erected at the structure that reduces loading by reducing speed (to reduce impact), limits the number of lanes or vehicles, or restricts commercial vehicles in general.



Whether or not the structure is coded "Yes" in *LR09A – Within 1 Mile* should not affect how this item is coded. Therefore, when *LR09A – Within 1 Mile* is coded "No", the value coded in this item may differ from the load posting requirements per the CDOT Bridge Rating Manual and Load Rating Summary Sheet. When *LR09A – Within 1 Mile* is coded "No", this item should not affect the code in *PS01B – Load Posting Status Code*.

Refer to the CDOT Bridge Rating Manual and the Structure's Load Rating Summary Sheet to determine load posting requirements for the structure.

For special circumstances or unique circumstances (e.g., load posting does not follow Load Rating Summary Sheet), summarize discrepancy in *L14A – Structure Note*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	PS03C Code
F-17-IT: Structure load rated for EV trucks; load posting not required for EV trucks; no load posting signs erected at the structure	Routine+	8/6/2025	A - No restriction
D-03-V-160: Structure load rated for EV trucks; load posting not required for EV trucks; no load posting signs erected at the structure	Special Unscheduled	6/27/2025	A - No restriction
PAR CANTBRY-0.2: Structure not load rated for EV trucks	Routine	2/5/2025	
Structure load rated for all CO Type 3 trucks, SHVs, and EVs; requires load posting for Type 3S2, Type 3-2, SU4, SU5, SU6, and SU7; load posting signs erected at both ends of structure for all legal load configurations as required	-	-	P - Posted with weight limit sign(s)
Structure load rated for all CO Type 3 trucks and SHVs; requires load posting for Type 3, Type 32, Type 3-2, SU4, SU5, SU6, and SU7; load posting signs erected at both ends of structure for Type 3, Type 3S2, and Type 3-2 as required, but no load posting signs for SU4, SU5, SU6, and SU7	-	-	
Structure load rated for all CO Type 3 trucks, SHVs, and EVs. Structure does not require load posting; "No Trucks" (MUTCD R5-2) signs erected both ends of the structure	-	-	R - Posted for other restriction
Structure load rated for all CO Type 3 trucks, SHVs, and EVs; load rating factors for all legal load configurations except the EV3 are above 1; no load posting signs erected at the structure; structure is not located within 1 mile of an interstate	-	-	B - Posting or posting reduction recommended, but not implemented



PS03D – Temporary Structure	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether temporary structures or conditions exist using one of the following codes.

PS03D Codes	Description
Yes	Temporary structure or repairs exist
No	Temporary structure or repairs do not exist

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



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Section 5.1 Appraisal (AP)

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AP01 – Approach Alignment Rating SNBI | Item B.AP.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the speed reduction at the structure using one of the following codes.

AP01 Codes
G - Good
F - Fair
P - Poor

COMMENTARY

This item identifies structures that do not function adequately due to the horizontal or vertical alignment of the structure and approach roadway. It is not intended that the alignment be compared to current standards, but rather to the existing roadway alignment.

The basic criterion is how the alignment of the structure and approach roadway relates to the general highway alignment for the section of highway the structure carries.

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

The posted speed at the structure is compared to the posted speed of the general highway segment. Operating speed at the structure is used in place of posted speed at the structure when a posted speed is not present at the structure. Operating speed of the general highway segment is used in place of posted speed of the general highway segment when a posted speed is not present on the general highway segment.

Code “G” when the speed is no different at the structure than the rest of the highway segment that crosses the structure.

Code “F” when the speed is noticeably different at the structure than the rest of the highway segment that crosses the structure.

Code “P” when the speed is substantially different at the structure than the rest of the highway segment that crosses the structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	AP01 Code
F-17-IT: Structure on horizontal curve. No speed reduction required	G - Good
D-03-V-160: Curve at east approach. No speed reduction required	G - Good
PAR CANTBRY-0.2: Structure on vertical and horizontal curve. No speed reduction required	G - Good
Structure has a significant horizontal curve at east approach. Noticeable speed reduction required	F - Fair
Structure has sharp horizontal curves at both approaches. Substantial speed reduction required	P - Poor



AP02 – Overtopping Likelihood SNBI | Item B.AP.02

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the likelihood of the waterway overtopping the structure using one of the following codes.

AP02 Codes
0 - Never
1 - Remote, once every 100 years or less frequently
2 - Very low, once every 51 to 99 years
3 - Low, once every 26 to 50 years
4 - Moderate, once every 11 to 25 years
5 - High, once every 3 to 10 years
6 - Very High, once every 2 years or more frequently
HVH-T - TEMP, High to very high. 5, 6*
VLM-T - TEMP, Very low to moderate. 2, 3, 4*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

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

Structure overtopping likelihood, since the year built (*W01 – Year Built*), is typically determined from historical structure inspection or maintenance records, hydraulic studies, local residents/landowners, and/or site indicators including highwater marks on the structure or its surroundings, debris remains on structure upper members, etc.

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

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

Leave this item blank if the structure does not cross over a waterway as indicated in *F01A – Feature Type*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	AP02 Code
F-17-IT: Structure does not cross over a waterway	
D-03-V-160: Structure does not cross over a waterway	
PAR CANTBRY-0.2: Remote chance of overtopping	1 - Remote, once every 100 years or less frequently
Evidence of water on girders with no freeboard	5 - High, once every 3 to 10 years



AP03 – Scour Vulnerability SNBI | Item B.AP.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

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

AP03 Codes
0 - Scour appraisal has not been completed
A - Scour appraisal completed. Bridge determined to be stable for scour
B - Scour appraisal completed. Bridge determined to be stable for scour, dependent upon designed, and functioning countermeasures
C - Scour appraisal completed. Bridge could become unstable for scour. Temporary (not designed) countermeasure installed to mitigate scour. Bridge is scour critical
D - Scour appraisal completed. Bridge is, or may become, unstable for scour. Bridge is scour critical
E - Scour appraisal has not been completed. Temporary (not designed) countermeasure installed to mitigate scour
U - Scour appraisal has not been completed due to unknown foundations
AB-T - TEMP, Stable for scour, possibly dependent on countermeasures. A, B*
BCE-T - TEMP, Undesigned scour countermeasures installed. B, C, E*
CD-T - TEMP, Unstable for theoretical scour, regardless of any undesigned countermeasures. C, D*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

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

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

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

Refer to item *C11 – Scour Condition Rating* to address field observed scour conditions and the effect on structure components.

Leave this item blank if the structure does not cross over a waterway as indicated in *FO1A – Feature Type*.

Code “B” when designed, installed, and functioning countermeasures are used to address potential scour and to maintain structure stability for new or existing structures, or structures with unknown foundations.

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



Code “C” for structures that could become unstable for the potential scour, and temporary countermeasures are installed that were not designed.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



AP04 – Scour Plan of Action SNBI | Item B.AP.04

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

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

AP04 Codes
0 - A scour POA is not required
N - A scour POA is required, but not implemented
Y - A scour POA is required and implemented
Y-T - TEMP, A scour POA is required and implemented*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

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

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

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

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

Leave this item blank if the structure does not cross over a waterway as indicated in *F01A – Feature Type*.

Code “0” if a structure was considered scour critical, but now has designed, installed, and fully functional scour countermeasures.

More information on scour POA can be found at the FHWA Hydraulics Engineering website.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



AP04A – Scour Documentation	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether scour documentation exists for the structure using one of the following codes.

AP04A Codes	Description
Yes	Scour documentation exists for the structure
No	Scour documentation does not exist for the structure

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



AP04B – Monitoring Comment	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (300+)

SPECIFICATION

Report notes identifying the scour summary for structures on the On-System Scour Critical Watchlist.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

Leave this item blank when *AP04F – Scour Watch* is coded “No”.

When *AP04F – Scour Watch* is coded “Yes”, Monitoring Comment notes should minimally include:

- Date of last inspection with a summary of scour conditions during the inspection.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



AP04C – Monitoring Trigger	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (300+)

SPECIFICATION

Report notes identifying monitoring triggers for structures on the On-System Scour Critical Watchlist and the Off-System Scour Vulnerable Watchlist.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

Leave this item blank when *AP04F – Scour Watch* is coded “No”.

When *AP04F – Scour Watch* is coded “Yes”, Monitoring Trigger notes should minimally include:

- List of events or circumstances triggering a special inspection for scour assessment.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



AP04D – Closure Trigger	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (300+)

SPECIFICATION

Report notes identifying structure closure triggers for structures on the On-System Scour Critical Watchlist and the Off-System Scour Vulnerable Watchlist.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

Leave this item blank when *AP04F – Scour Watch* is coded “No”.

When *AP04F – Scour Watch* is coded “Yes”, the Closure Trigger notes should minimally include:

- List of events or circumstances triggering the structure to be closed temporarily or permanently.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



AP04E – Mobilize Trigger	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (300+)

SPECIFICATION

Report notes identifying mobilization triggers for structures on the On-System Scour Critical Watchlist.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

Leave this item blank when *AP04F – Scour Watch* is coded “No”.

When *AP04F – Scour Watch* is coded “Yes”, the Mobilization Trigger notes should minimally include:

- List of events or circumstances triggering local live monitoring until the event or circumstance has ended.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



AP04F – Scour Watch	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the structure requires monitoring during or after a high-water event using one of the following codes.

AP04F Codes	Description
Yes	Structure requires monitoring during or after a high-water event
No	Structure does not require monitoring during or after a high-water event

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



AP05 – Seismic Vulnerability SNBI | Item B.AP.05

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

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

AP05 Codes
0 - Seismic evaluation not completed
N - Bridge does not require seismic evaluation due to low anticipated ground motion or agency prioritization
A - Seismic evaluation completed. Bridge determined to meet the agency’s performance criteria established for the evaluation without need for retrofit
B - Seismic evaluation completed. Satisfactory performance is dependent upon a designed, installed, and functioning retrofit. Retrofit is in place
C - Seismic evaluation completed. Satisfactory performance is dependent upon a designed, installed, and functioning retrofit. Partial retrofit is in place
D - Seismic evaluation completed. Satisfactory performance is dependent upon a designed, installed, and functioning retrofit. Retrofit is not in place

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

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

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

Code “A” when the structure is designed to meet applicable performance criteria established by the design specifications in effect at the time of construction and structure would be expected to meet current agency established performance criteria.

Code “C” when only certain portions of the structure have been retrofitted but not all portions of the structure have been retrofitted to meet agency performance criteria.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	AP05 Code
F-17-IT	N - Bridge does not require seismic evaluation due to low anticipated ground motion or agency prioritization
D-03-V-160	N - Bridge does not require seismic evaluation due to low anticipated ground motion or agency prioritization
PAR CANTBRY-0.2	N - Bridge does not require seismic evaluation due to low anticipated ground motion or agency prioritization



AP12A – SNBI Deskside Review Complete	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether a deskside review of the structure has been completed and new SNBI items have been coded for the structure using one of the following codes.

AP12A Codes	Description
Yes	A deskside review has been completed and new SNBI items have been populated
No	A deskside review has not been completed and new SNBI items have not been populated

COMMENTARY

The SNBI deskside review is completed by CDOT for existing structures.

The SNBI deskside review consists of reviewing plans, previous inspection reports, and inspection sketches to code new SNBI data items and update existing data to follow the new SNBI standards.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	AP12A Code
F-17-IT: SNBI deskside review completed by CDOT	Yes
D-03-V-160: SNBI deskside review completed by CDOT	Yes
PAR CANTBRY-0.2: SNBI deskside review completed by CDOT	Yes



AP12B – SNBI Field Verification Complete	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the new SNBI items that were coded during the deskside review for the structure have been verified in the field using one of the following codes.

AP12B Codes	Description
Yes	New SNBI codes have been verified in the field
No	New SNBI codes have not been verified in the field

COMMENTARY

The field verification is a visual comparison of the structure to the new SNBI codes. The intent of this item is to confirm that the new SNBI items coded during the deskside review match what is in the field.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	AP12B Code
F-17-IT: New SNBI codes have been field verified	Yes
D-03-V-160: New SNBI codes have not been field verified	No
PAR CANTBRY-0.2: New SNBI codes have not been field verified	No



Section 5.2 Condition (C)

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C01 – Deck Rating SNBI | Item B.C.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

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

C01 Codes	Description
N - Not applicable	Component does not exist.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Strength and performance of the component are not affected.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Strength and/or performance of the component is affected.
3 - Serious	Isolated to widespread major (CS4) defects. Strength and/or performance of the component is seriously affected. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Component is severely compromised. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the structure open.
1 - Imminent failure	Structure is closed to traffic due to component condition. Repair or rehabilitation may return the structure to service.
0 - Failed	Structure is closed due to component condition, and is beyond corrective action. Replacement is required to restore service.

CDOT has changed some of the condition rating code descriptions from Table 20 in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

This item represents the condition of the deck as determined from the inspection of all deck surfaces (top, underside, and edges).

Visual assessments may be supplemented with non-destructive or destructive testing results.

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

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

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



For structures with integral decks/top flanges (e.g., rigid frames, decked girders or tee beams, voided slab beams, box girders), the deck condition may affect the superstructure condition rating (*C02 – Superstructure Rating*); however, the superstructure condition does not affect the deck condition rating.

For solid slab bridges, the deck and superstructure (*C02 – Superstructure Rating*) condition ratings are to be coded with the same condition value.

For girders where traffic travels directly on the superstructure top flange, or a concrete topping slab less than 4 inches thick, the top flange shall be evaluated as the deck element.

Code “N” when *SP09 – Deck Material and Type* is coded “0”.

When this item is equal to or less than 3, the Routine or Routine+ inspection interval should be less than or equal to 12 months.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C01 Code
F-17-IT: Concrete deck has isolated minor (CS2) defects and very isolated moderate (CS3) defects	Routine+	8/6/2025	7 - Good
D-03-V-160: Concrete deck has isolated to some minor (CS2) defects and isolated moderate (CS3) defects	Special Unscheduled	6/27/2025	6 - Satisfactory
PAR CANTBRY-0.2: Culvert, no deck; SP09 coded “0”	Routine	2/5/2025	N - Not applicable
Corrugated metal deck has widespread R3 rust (CS3) at seams and isolated tears (CS4) along beam line; strength affected	-	-	4 - Poor
Concrete deck has open holes with exposed bars with R3 to R4 rust (CS4); strength is seriously affected and corrective action is required	-	-	3 - Serious



C02 – Superstructure Rating SNBI | Item B.C.02

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

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

C02 Codes	Description
N - Not applicable	Component does not exist.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Strength and performance of the component are not affected.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Strength and/or performance of the component is affected.
3 - Serious	Isolated to widespread major (CS4) defects. Strength and/or performance of the component is seriously affected. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Component is severely compromised. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the structure open.
1 - Imminent failure	Structure is closed to traffic due to component condition. Repair or rehabilitation may return the structure to service.
0 - Failed	Structure is closed due to component condition, and is beyond corrective action. Replacement is required to restore service.

CDOT has changed some of the condition rating code descriptions from Table 20 in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

This item represents the condition of the superstructure as determined from the inspection of all superstructure members.

Consider primary load carrying members when determining the condition rating code for this item. Consider secondary members only if they adversely impact the primary members. Visual assessments may be supplemented with non-destructive or destructive testing results.

The superstructure includes:

- Members above the bearings for bridges with non-integral superstructure and substructure
- Girders/beams for bridges with integral superstructure and substructure
- Members above the spring line for arch bridges
- Slabs of concrete rigid frame bridges
- Legs, knees and girders for concrete and steel rigid K-Frame or Delta-Frame bridges

Consider the condition of headwalls and spandrel walls that are integral with the superstructure. Consider the condition of wingwalls that are integral with the superstructure (continuation of the superstructure), to the first expansion joint.

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

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

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

Superstructure types without substructures may be affected by scour. When observed conditions are not consistent with the scour design or the assumptions used in the scour appraisal, scour is considered when reporting the code for this item. In this case, observed conditions also indicate a need to reevaluate *AP03 – Scour Vulnerability*. Observed scour that is less than the tolerable limit determined in the scour appraisal does not affect this item.

For structures with integral decks/top flanges (e.g., rigid frames, decked girders or tee beams, voided slab beams, box girders), the deck condition may affect the superstructure condition rating; however, the superstructure condition does not affect the deck condition rating (*C01 – Deck Rating*).

For solid slab bridges, the deck (*C01 – Deck Rating*) and superstructure condition ratings are to be coded with the same condition value.

Code “N” when *SP01A – Span Configuration* is only coded “C” and/or “V”.

When this item is equal to or less than 3, the Routine or Routine+ inspection interval should be equal to or less than 12 months.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C02 Code
F-17-IT: Steel box girders have isolated minor (CS2) defects	Routine+	8/6/2025	7 - Good
D-03-V-160: Steel girders have some minor (CS2) defects	Special Unscheduled	6/27/2025	7 - Good
PAR CANTBRY-0.2: Culvert; SP01A coded “C”	Routine	2/5/2025	N - Not applicable
Steel girders have widespread measurable section loss (CS3); strength not affected	-	-	5 - Fair
Concrete girders have widespread moderate spalls (CS3) with exposed corroded structural reinforcement (CS3); strength is affected	-	-	4 - Poor
Timber girder in a wheel line is cracked and the adjacent girder is split (CS4); strength is seriously affected with load restrictions	-	-	3 - Serious



C03 – Substructure Rating SNBI | Item B.C.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

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

C03 Codes	Description
N - Not applicable	Component does not exist.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Strength and performance of the component are not affected.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Strength and/or performance of the component is affected.
3 - Serious	Isolated to widespread major (CS4) defects. Strength and/or performance of the component is seriously affected. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Component is severely compromised. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the structure open.
1 - Imminent failure	Structure is closed to traffic due to component condition. Repair or rehabilitation may return the structure to service.
0 - Failed	Structure is closed due to component condition, and is beyond corrective action. Replacement is required to restore service.

CDOT has changed some of the condition rating code descriptions from Table 20 in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

This item addresses the condition of piers, abutments, piles, footings, and other substructure members.

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

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

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

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



The substructure includes:

- Backwalls and the members below the bearings for bridges with non-integral superstructure and substructure
- Members below the girders/beams for bridges with integral superstructures and substructure
- Thrust blocks and other members below the spring line for arch bridges
- Legs of concrete rigid frame bridges
- Abutments and footings/foundations below the leg bearings for concrete and steel rigid K-Frame or Delta-Frame bridges
- Foundation piles exposed by erosion or scour

When observed conditions are not consistent with the scour design or the assumptions used in the scour appraisal, scour is considered in the coding of this item. In this case, observed conditions also indicate a need to reevaluate *AP03 – Scour Vulnerability*. Observed scour that is less than the tolerable limit determined in the scour appraisal does not affect this item.

Code “N” when *SP01A – Span Configuration* is only coded “C” and/or “V”.

When this item is equal to or less than 3, the Routine or Routine+ inspection interval should be equal to or less than 12 months.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C03 Code
F-17-IT: Concrete abutments have some minor (CS2) defects and isolated moderate (CS3) defects. Concrete pier walls and caps have isolated to some minor defects	Routine+	8/6/2025	7 - Good
D-03-V-160: Concrete abutments have some minor (CS2) defects and isolated moderate (CS3) defects. Concrete columns, concrete pier caps, and steel pier caps have some to widespread minor (CS2) defects	Special Unscheduled	6/27/2025	5 - Fair
PAR CANTBRY-0.2: Culvert; SP01A coded “C”	Routine	2/5/2025	N - Not applicable
Steel piles have widespread measurable section loss (CS3) and isolated small corrosion holes (CS4); overall strength of the bridge is not affected	-	-	5 - Fair
Several timber piles have shell rot; strength is affected	-	-	4 - Poor
Pier footing is severely compromised due to undermining from scour and requires monthly monitoring until correct action is taken	-	-	2 - Critical



C04 – Culvert Rating SNBI | Item B.C.04

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

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

C04 Codes	Description
N - Not applicable	Component does not exist.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Strength and performance of the component are not affected.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Strength and/or performance of the component is affected.
3 - Serious	Isolated to widespread major (CS4) defects. Strength and/or performance of the component is seriously affected. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Component is severely compromised. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the structure open.
1 - Imminent failure	Structure is closed to traffic due to component condition. Repair or rehabilitation may return the structure to service.
0 - Failed	Structure is closed due to component condition, and is beyond corrective action. Replacement is required to restore service.

CDOT has changed some of the condition rating code descriptions from Table 20 in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

This item addresses the condition of culverts. The condition assessment includes footings, piles, and other foundation members when present.

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

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

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

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



The culvert includes:

- Full length of all barrels
- Foundations exposed by erosion or scour

When observed conditions are not consistent with the scour design or the assumptions used in the scour appraisal, scour is considered in the coding of this item. In this case, observed conditions also indicate a need to reevaluate *AP03 – Scour Vulnerability*. Observed scour that is less than the tolerable limit determined in the scour appraisal does not affect this item.

Code “N” when *SP01A – Span Configuration* is coded “M”, “A” or “W”.

Buried structures with no structural floor, such as an open bottom 3-sided rigid frame, will be appraised as a bridge and condition codes should be completed for *C01 – Deck Rating*, *C02 – Superstructure Rating* and *C03 – Substructure Rating*.

When this item is equal to or less than 3, the Routine inspection interval should be equal to or less than 12 months.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C04 Code
F-17-IT: Structure is not a culvert; SP01A coded “M”	Routine+	8/6/2025	N - Not applicable
D-03-V-160: Structure is not a culvert; SP01A coded “M”	Special Unscheduled	6/27/2025	N - Not applicable
PAR CANTBRY-0.2: Culvert has some minor (CS2) and some moderate (CS3) defects	Routine	2/5/2025	5 - Fair
CMP invert with R4 rust holes (CS4) throughout. Channel is flowing under pipe	-	-	4 - Poor



C05 – Railing Condition Rating SNBI | Item B.C.05

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

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

C05 Codes	Description
N - Not applicable	Component does not exist.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Strength and performance of the component are not affected.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Strength and/or performance of the component is affected.
3 - Serious	Isolated to widespread major (CS4) defects. Strength and/or performance of the component is seriously affected. Condition typically necessitates more frequent monitoring and/or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Railing(s) are severely compromised or have failed. Condition typically necessitates temporary railings and/or other corrective actions in order to keep the structure open.
1 - Imminent failure	Structure is closed due to failed railing(s) which presents a safety hazard. Replacement of railing(s) is required to restore service.
0 - Failed	Structure is closed due to failed railing(s) which presents a safety hazard. Replacement of railing(s) is required to restore service. Replacement of railing(s) requires rehabilitation or replacement of deck, superstructure, or portions of a culvert.

CDOT has changed some of the condition rating code descriptions from Table 20 in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

This item addresses the condition of all types and shapes of structure railings (parapets, median barriers, or structure mounted) located on the structure or that cross over buried structures. The condition assessment includes the portions of the railings, posts, blocking, and curbs that are part of the structure railing system.

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

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

Code “N” when there are no structure railings present.

Do not consider the crash-test level of the railing when determining the condition rating code for this item.



This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C05 Code
F-17-IT: Concrete bridge rails have some to widespread minor (CS2) defects and very isolated moderate (CS3) defects	Routine+	8/6/2025	6 - Satisfactory
D-03-V-160: Concrete bridge rails have some to widespread minor (CS2) defects and very isolated moderate (CS3) defects	Special Unscheduled	6/27/2025	6 - Satisfactory
PAR CANTBRY-0.2: W-beam rail in fill over culvert has some insignificant (CS1) defects	Routine	2/5/2025	8 - Very good
Steel W-beam bridge rail has damage-induced distortion with three posts no longer connected to the deck (CS4); strength affected	-	-	4 - Poor



C06 – Railing Transition Condition Rating SNBI | Item B.C.06

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the structure railing transitions condition rating using one of the following codes. The entire code description must be satisfied for the code to apply.

C06 Codes	Description
N - Not applicable	Component does not exist.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Strength and performance of the component are not affected.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Strength and/or performance of the component is affected.
3 - Serious	Isolated to widespread major (CS4) defects. Strength and/or performance of the component is seriously affected. Condition typically necessitates more frequent monitoring and/or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Railing transition(s) are severely compromised or have failed. Condition typically necessitates temporary railings and/or other corrective actions in order to keep the structure open.
1 - Imminent failure	Structure is closed due to failed railing(s) which presents a safety hazard. Replacement of railing(s) is required to restore service.
0 - Failed	Structure is closed due to failed railing(s) which presents a safety hazard. Replacement of railing(s) is required to restore service. Replacement of railing(s) requires rehabilitation or replacement of deck, superstructure, or portions of a culvert.

CDOT has changed some of the condition rating code descriptions from Table 20 in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

This item addresses the condition of the transition from the structure railing to the approach railing. The condition assessment includes the portions of the railings, posts, blocking, and curbs that are part of the structure railing transitions.

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

The approach railing transition length to be considered for this item should typically be the lesser of half the length of the approach railing or 25 feet.

Code a condition rating as long as the approach railing is attached to the structure railing.

Do not consider the crash-test level of the railing when determining the condition rating code for this item.

Code “N” when there are no structure railing transitions present.



This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C06 Code
F-17-IT: Rear right transition has isolated moderate (CS3) defects	Routine+	8/6/2025	6 - Satisfactory
D-03-V-160: Concrete transitions have some minor (CS2) defects	Special Unscheduled	6/27/2025	7 - Good
PAR CANTBRY-0.2: W-beam transition in fill has some insignificant (CS1) defects	Routine	2/5/2025	8 - Very good
Lower portion of Thrie beam transitions have R4 rust and perforations (CS4)	-	-	4 - Poor



C07 – Bearing Condition Rating SNBI | Item B.C.07

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

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

C07 Codes	Description
N - Not applicable	Component does not exist.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Strength and performance of the component are not affected.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Strength and/or performance of the component is affected.
3 - Serious	Isolated to widespread major (CS4) defects. Strength and/or performance of the component is seriously affected. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Component is severely compromised. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the structure open.
1 - Imminent failure	Structure is closed to traffic due to component condition. Repair or rehabilitation may return the structure to service.
0 - Failed	Structure is closed due to component condition, and is beyond corrective action. Replacement is required to restore service.

CDOT has changed some of the condition rating code descriptions from Table 20 in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

This item addresses the condition of all types and shapes of structure bearings.

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

In cases where the bearing device is not visible, the condition can be assessed based on alignment, grade across the joint, or other indirect indicators of the condition.

For bridges with an integral superstructure and substructure, leveling pads under girders are typically not considered bearings.

Code “N” for structures without bearings.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	IE01	IE03A	C07 Code
F-17-IT: Bearings have some minor (CS2) defects and isolated moderate (CS3) defects	Routine+	8/6/2025	6 - Satisfactory
D-03-V-160: Bearings have some inherent (CS1) defects	Special Unscheduled	6/27/2025	8 - Very good
PAR CANTBRY-0.2: No bearings	Routine	2/5/2025	N - Not applicable
20 of 20 bearings have surface rust with no section loss (CS2) and no other defects	-	-	6 - Satisfactory
5 of 25 bearings have 10% bearing area loss (CS3) not affecting performance	-	-	5 - Fair
8 of 20 bearings are rotated beyond performance limits with the anchor bolts bent and the nuts loose at these locations (CS4); corrective actions are required	-	-	3 - Serious



C08 – Joint Condition Rating SNBI | Item B.C.08

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

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

C08 Codes	Description
N - Not applicable	Structure does not have deck joints.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some moderate (CS3) defects.
4 - Poor	Widespread moderate (CS3) or isolated major (CS4) defects.
3 - Serious	Some major (CS4) defects.
2 - Critical	Widespread major (CS4) defects.
1 - Imminent failure	Joints have failed and are ineffective.
0 - Failed	Joints have failed and present a safety hazard.

CDOT has changed some of the condition rating code descriptions from the table in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

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

This item does not include the condition of approach joints or joints outside of the bridge limits.

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

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

In cases where the joint is not visible, the condition can be assessed based on other indirect indicators of the condition.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C08 Code
F-17-IT: Joints have some minor (CS2) defects and some moderate (CS3) defects	Routine+	8/6/2025	6 - Satisfactory
D-03-V-160: Joints have widespread minor (CS2) defects	Special Unscheduled	6/27/2025	6 - Satisfactory
PAR CANTBRY-0.2: No joints	Routine	2/5/2025	N - Not applicable



Example	IE01	IE03A	C08 Code
Joint header has an isolated moderate spall with exposed rebar (CS3); joint is loose but intact and functioning	-	-	6 - Satisfactory
All compression joint seals are torn and partially pulled out for the full length; performance of the joint is affected	-	-	4 - Poor



C09 – Channel Condition Rating SNBI | Item B.C.09

FREQUENCY	SIMS INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

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

C09 Codes	Description
N - Not applicable	Structure does not cross over water.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Structure and approach roadway are not threatened.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Structure and/or approach roadway is threatened.
3 - Serious	Isolated to widespread major (CS4) defects. Structure or approach roadway is seriously threatened. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Structure or approach roadway is severely threatened. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the structure open.
1 - Imminent failure	Structure is closed to traffic due to channel condition. Channel rehabilitation may return the structure to service.
0 - Failed	Structure is closed due to channel condition, and is beyond corrective action. Structure location or design can no longer accommodate the channel, and structure replacement is needed to restore service.

CDOT has changed some of the condition rating code descriptions from the table in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

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

Rate the physical conditions associated with the flow of water through the structure and the condition of the channel. Note visible signs of excessive water velocity such as scour, undermining or erosion, and/or channel migration.

The condition of channel protection devices is addressed under a separate item; *C10 – Channel Protection Rating*.

For concrete lined channels, channel defects typically do not apply, except for aggradation and debris. The condition of the channel lining would be addressed by *C10 – Channel Protection Rating*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	IE01	IE03A	C09 Code
F-17-IT: Structure does not cross over a waterway	Routine+	8/6/2025	N - Not applicable
D-03-V-160: Structure does not cross over a waterway	Special Unscheduled	6/27/2025	N - Not applicable
PAR CANTBRY-0.2: Channel has some inherent/insignificant (CS1) defects	Routine	2/5/2025	8 - Very good
The thalweg has migrated such that flow is directed at one abutment and threatens the approach roadway (CS3), but the stability of the structure is not impacted	-	-	4 - Poor
Concrete box culvert, Cell 1 opening has silted in with 2-3 feet of build-up. Cell 2 has partially silted in along Wall 3. Reduced hydraulic capacity but not to the extent of threatening the structure or approach roadway.	-	-	5 - Fair



C10 – Channel Protection Rating SNBI | Item B.C.10

FREQUENCY	SIMS INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

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

C10 Codes	Description
N - Not applicable	Structure does not cross over water or channel protection devices do not exist.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Performance of the channel protection is not affected.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Performance of channel protection is affected.
3 - Serious	Isolated to widespread major (CS4) defects. Performance of channel protection is seriously affected. Condition typically necessitates more frequent monitoring or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Channel protection is severely compromised. Condition typically necessitates more frequent monitoring or corrective actions.
1 - Imminent failure	Channel protection has failed, but corrective action could restore it to working condition.
0 - Failed	Channel protection is beyond repair and must be replaced.

CDOT has changed some of the condition rating code descriptions from the table in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

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

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

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

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

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

For structures that have countermeasures not visible for inspection, use appropriate visual condition indicators to determine the applicable code. These may include measurements taken at the structure



face(s) during every inspection to help determine degree of degradation, aggradation, and/or channel migration.

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

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C10 Code
F-17-IT: Structure does not cross over a waterway	Routine+	8/6/2025	N - Not applicable
D-03-V-160: Structure does not cross over a waterway	Special Unscheduled	6/27/2025	N - Not applicable
PAR CANTBRY-0.2: Channel protection has some inherent/insignificant (CS1) defects	Routine	2/5/2025	8 - Very good
At culvert outlet, grouted riprap is broken up and 80% is washed out	-	-	4 - Poor
Large riprap along banks. Toe of slopes, minor displacement of riprap and minor scour.	-	-	6 - Satisfactory
Structure crosses over a waterway but there are no channel protection devices at the structure	-	-	N - Not applicable



C11 – Scour Condition Rating SNBI | Item B.C.11

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

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

C11 Codes
N - Structure does not cross over water
9 - No scour
8 - Insignificant scour
7 - Some minor scour
6 - Widespread minor or isolated moderate scour
5 - Moderate scour; strength and stability of the structure are not affected
4 - Widespread moderate or isolated major scour; strength and/or stability of the structure is affected
3 - Major scour; strength / stability of structure is seriously affected. Frequent monitoring, load restrictions, and/or corrective actions required
2 - Major scour; strength / stability of structure is severely compromised. Frequent monitoring, significant load restrictions, and/or corrective actions required to keep the structure open
1 - Structure is closed to traffic due to scour condition. Channel rehabilitation may return the structure to service
0 - Structure is closed due to scour condition, and is beyond corrective action. Structure replacement is needed to restore service
MA-T - TEMP, Scour has affected strength and/or stability*
MI-T - TEMP, Scour may exist but has not affected strength or stability. 5, 6, 7, 8, 9*
MO-T - TEMP, Scour is significant but has not affected strength or stability*
N-T - TEMP, Not Applicable*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

Refer to *AP03 – Scour Vulnerability* to verify if the structure has been determined to be stable or unstable for appraised scour conditions.

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

When observed conditions are not consistent with the scour design or the assumptions used in the scour appraisal, this indicates a need to reevaluate *AP03 – Scour Vulnerability*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C11 Code
F-17-IT: Structure does not cross over a waterway	Routine+	8/6/2025	N - Structure does not cross over water
D-03-V-160: Structure does not cross over a waterway	Special Unscheduled	6/27/2025	N - Structure does not cross over water



Example	IE01	IE03A	C11 Code
PAR CANTBRY-0.2: Insignificant scour	Routine	2/5/2025	8 - Insignificant scour
Three span scour critical structure founded on spread footings not on bedrock. The scour elevation for three spread footings at Pier 2 is at the bottom of the footings with one footing having one foot of undermining at one corner. Agency plans to monitor more frequently to keep the structure open until repairs are completed	-	-	3 - Major scour
Four span scour critical structure with streambed cross section well above scour critical limit. Minor scour at Pier 3	-	-	7 - Some minor scour



C12 – Overall Condition	SNBI Item B.C.12
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	Menu Selection

SPECIFICATION

The structure condition classification based on one of the following codes.

C12 Codes	Lowest Condition Rating
Good	7, 8, or 9
Fair	5 or 6
Poor	4, 3, 2, 1, or 0

COMMENTARY

This item is automatically populated in SIMSA based on the minimum (i.e. lowest) condition rating code from the following items:

- *C01 – Deck Rating*
- *C02 – Superstructure Rating*
- *C03 – Substructure Rating*
- *C04 – Culvert Rating*

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C12 Code
F-17-IT: Lowest condition rating of 7	Routine+	8/6/2025	Good
D-03-V-160: Lowest condition rating of 5	Special Unscheduled	6/27/2025	Fair
PAR CANTBRY-0.2: Lowest condition rating of 5	Routine	2/5/2025	Fair
Structure with C01 = 3, C02 = 6, and C03 = 5	-	-	Poor



C13 – Lowest Condition Rating	SNBI Item B.C.13
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	AN (1)

SPECIFICATION

The lowest condition rating code from the following items:

- *C01 – Deck Rating*
- *C02 – Superstructure Rating*
- *C03 – Substructure Rating*
- *C04 – Culvert Rating*

COMMENTARY

This item is automatically populated in SIMSA based on the minimum (i.e. lowest) condition rating code from the following items:

- *C01 – Deck Rating*
- *C02 – Superstructure Rating*
- *C03 – Substructure Rating*
- *C04 – Culvert Rating*

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C13 Code
F-17-IT: Lowest condition rating of 7	Routine+	8/6/2025	7
D-03-V-160: Lowest condition rating of 5	Special Unscheduled	6/27/2025	5
PAR CANTBRY-0.2: Lowest condition rating of 5	Routine	2/5/2025	5
Structure with C01 = 3, C02 = 6, and C03 = 5	-	-	3



C14 – NSTM Inspection Rating SNBI | Item B.C.14

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the condition rating of the Non-Redundant Steel Tension Members (NSTM) using one of the following codes. The entire code description must be satisfied for the code to apply.

C14 Codes	Description
N - Not applicable	Component does not exist.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Strength and performance of the component are not affected.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Strength and/or performance of the component is affected.
3 - Serious	Isolated to widespread major (CS4) defects. Strength and/or performance of the component is seriously affected. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Component is severely compromised. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the structure open.
1 - Imminent failure	Structure is closed to traffic due to component condition. Repair or rehabilitation may return the structure to service.
0 - Failed	Structure is closed due to component condition, and is beyond corrective action. Replacement is required to restore service.

CDOT has changed some of the condition rating code descriptions from Table 20 in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

This item represents the condition of NSTM(s) identified to be inspected in the NSTM inspection procedures, and incorporated into the superstructure or substructure condition rating.

For a bridge with NSTM(s) in both the superstructure and substructure, report only the lower of the two condition values for the condition of the NSTM(s).

Leave this item blank when *IR01 – NSTM Required* is coded “N”.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	C14 Code
F-17-IT: NSTMs have isolated to some minor (CS2) defects	Routine+	8/6/2025	7 - Good
D-03-V-160: NSTMs have some minor (CS2) defects	Special Unscheduled	6/27/2025	7 - Good



Example	IE01	IE03A	C14 Code
PAR CANTBRY-0.2: Structure does not have any NSTMs; IR01 coded "N"	Routine	2/5/2025	
NSTMs have minor (CS2) and moderate (CS3) defects throughout. NSTM Floor Beam has a crack in the connection (CS4); strength is affected	-	-	4 - Poor



C15 – Underwater Condition Rating SNBI | Item B.C.15

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the condition rating of the underwater members of the substructure or culvert based on the underwater inspection using one of the following codes. The entire code description must be satisfied for the code to apply.

C15 Codes	Description
N - Not applicable	Component does not exist.
9 - Excellent	Isolated inherent/insignificant (CS1) defects.
8 - Very good	Some inherent/insignificant (CS1) or isolated minor (CS2) defects.
7 - Good	Widespread inherent/insignificant (CS1) or some minor (CS2) defects.
6 - Satisfactory	Widespread minor (CS2) or isolated moderate (CS3) defects.
5 - Fair	Some to widespread moderate (CS3) or isolated to some major (CS4) defects. Strength and performance of the component are not affected.
4 - Poor	Widespread moderate (CS3) or isolated to widespread major (CS4) defects. Strength and/or performance of the component is affected.
3 - Serious	Isolated to widespread major (CS4) defects. Strength and/or performance of the component is seriously affected. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
2 - Critical	Isolated to widespread major (CS4) defects. Component is severely compromised. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the structure open.
1 - Imminent failure	Structure is closed to traffic due to component condition. Repair or rehabilitation may return the structure to service.
0 - Failed	Structure is closed due to component condition, and is beyond corrective action. Replacement is required to restore service.

CDOT has changed some of the condition rating code descriptions from Table 20 in the SNBI to follow current CDOT policies. Overall, the changes to the description do not significantly change the condition code ratings.

COMMENTARY

This item represents the condition of underwater members identified to be inspected in the underwater inspection procedures, and incorporated into the substructure or culvert condition rating.

If this item has previously been reported because an underwater inspection is generally required, it should continue to be reported even for instances of unusually low flow where all portions of the substructure can be inspected by wading and probing, and an underwater inspection is not required. This applies only if the low flow condition is truly unusual and is not likely to reoccur during the next inspection interval.

The requirement to report this item may change in the rare circumstance where long-term environmental conditions change for inspection access to underwater portions of the substructure or culvert.

Leave this item blank when *IR03 – UW Required* is coded “No”.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	IE01	IE03A	C15 Code
F-17-IT: Underwater inspection not required; IR03 coded "No"	Routine+	8/6/2025	
D-03-V-160: Underwater inspection not required; IR03 coded "No"	Special Unscheduled	6/27/2025	
PAR CANTBRY-0.2: Underwater inspection not required; IR03 coded "No"	Routine	2/5/2025	
Three-span structure with moderate scour holes at upstream end of both piers, no undermining	-	-	6 - Satisfactory



Section 5.3 Classification (CL)

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CL01 – Owner	SNBI Item B.CL.01
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

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

CL01 Codes
S01 - State Transportation Department
S02 - State park, forest, or reservation agency
S03 - State toll authority
SX - Other State agency
L01 - County highway agency
L02 - Town or township highway agency
L03 - City or municipal highway agency
L04 - Local park, forest, or reservation agency
L05 - Local toll authority
LX - Other local agency
FL01 - Bureau of Indian Affairs (BIA)
FL02 - Bureau of Land Management (BLM)
FL03 - Bureau of Reclamation (USBR)
FL04 - U.S. Fish and Wildlife Service (FWS)
FL05 - National Park Service (NPS)
FL06 - U.S. Army Corps of Engineers (USACE)
FL07 - U.S. Forest Service (USFS)
FLOX - Other Federal Lands Management Agency
FX - Other Federal agency
I - Indian Tribal Government
D01 - Air Force
D02 - Army
D03 - Navy/Marines
DX - Other Department of Defense
T - Transit agency/authority
P - Private
R - Railroad
U - Unknown

COMMENTARY

Use the hierarchy of State, Federal, county, city, railroad, transit, and other private entity for multiple owners of a structure.

Use “FL” codes (“FL01” through “FLOX”) for Federal Lands Management agencies.

Use “D” codes (“D01” through “DX”) for structures owned by the Department of Defense.

Code “T” for transit agency or authority for air, bus, light rail, and port regardless of whether the entity is considered State, local, or private.



Code “P” for private owners other than railroad or transit.

Code “R” for highway structures owned by railroad entities that are not considered a transit agency or authority.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL01 Code
F-17-IT: Structure is owned by CDOT	S01 - State Transportation Department
D-03-V-160: Structure is owned by the City and County of Denver	L03 - City or municipal highway agency
PAR CANTBRY-0.2: Structure is owned by the Town of Parker	L02 - Town or township highway agency
Structure is owned by U.S. Forest Service	FL07 - U.S. Forest Service (USFS)
Structure is owned by a private entity that is not a railroad	P - Private



CL01A – Responsible Party	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the name of the agency that has primary responsibility of the structure using one of the available codes in *Appendix E*.

COMMENTARY

The intent of this item is to identify the agency that has primary ownership and/or maintenance responsibility of the structure.

If an agency is not available in the drop-down menu in SIMSA, contact the CDOT Bridge and Structures Asset Management Unit.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL01A Code
F-17-IT: CDOT is responsible for the structure	CDOT
D-03-V-160: The City and County of Denver is responsible for the structure	City & County of Denver
PAR CANTBRY-0.2: The Town of Parker is responsible for the structure	Town of Parker



CL02 – Maintenance Responsibility SNBI | Item B.CL.02

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the agency that has primary maintenance responsibility for the structure using one of the following codes.

CL02 Codes
S01 - State Transportation Department
S02 - State park, forest, or reservation agency
S03 - State toll authority
SX - Other State agency
L01 - County highway agency
L02 - Town or township highway agency
L03 - City or municipal highway agency
L04 - Local park, forest, or reservation agency
L05 - Local toll authority
LX - Other local agency
FL01 - Bureau of Indian Affairs (BIA)
FL02 - Bureau of Land Management (BLM)
FL03 - Bureau of Reclamation (USBR)
FL04 - U.S. Fish and Wildlife Service (FWS)
FL05 - National Park Service (NPS)
FL06 - U.S. Army Corps of Engineers (USACE)
FL07 - U.S. Forest Service (USFS)
FL0X - Other Federal Lands Management Agency
FX - Other Federal agency
I - Indian Tribal Government
D01 - Air Force
D02 - Army
D03 - Navy/Marines
DX - Other Department of Defense
T - Transit agency/authority
P - Private
R - Railroad
U - Unknown

COMMENTARY

Use the hierarchy of State, Federal, county, city, railroad, and other private entity for determining primary responsibility for maintenance of a structure.

Use “FL” codes (“FL01” through “FL0X”) for Federal Lands Management agencies.

Use “D” codes (“D01” through “DX”) for structures maintained by the Department of Defense.



Code “T” for transit agency or authority for air, bus, light rail, and port regardless of whether the entity is considered State, local, or private.

Code “P” for private entities other than railroad or transit.

Code “R” for highway structures maintained by railroad entities that are not considered a transit agency or authority.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL02 Code
F-17-IT: Structure is maintained by CDOT	S01 - State Transportation Department
D-03-V-160: Structure is maintained by the City and County of Denver	L03 - City or municipal highway agency
PAR CANTBRY-0.2: Structure is maintained by the Town of Parker	L02 - Town or township highway agency
Structure is maintained by U.S. Forest Service	FL07 - U.S. Forest Service (USFS)
Structure is maintained by a private entity that is not a railroad	P - Private



CL03 – Federal or Tribal Land Access SNBI | Item B.CL.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Multiple Selection Menu	Menu Selection

SPECIFICATION

Report the Federally managed and/or Indian Tribal Government lands using one or more of the following codes, for the structure owned by a State or local agency and carrying a highway that leads to or traverses through the Federal or Tribal lands.

CL03 Codes
N - Not applicable
BIA - Indian Tribal Government or Bureau of Indian Affairs
BLM - Bureau of Land Management
NPS - National Park Service
USACE - U.S. Army Corps of Engineers
USBR - Bureau of Reclamation
USFS - U.S. Forest Service
USFWS - U.S. Fish and Wildlife Service
X - Other

COMMENTARY

This item is used to identify structures owned by State or local agencies on highways that lead to and/or traverse through any Federally managed land or Tribal government property. These structures may be eligible to receive funding from the Federal Lands Access Program under 23 U.S.C. 204 and may require unique identification coding.

Consider those structures that are located on the identified highway to the nearest intersecting highway owned by a State or local agency.

For assistance in locating Federal properties, contact Federal Lands Highway.

Code “N” when the highway carried by the structure is not owned by a State or local agency and/or does not lead to or traverse through Federal or Tribal lands.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL03 Code
F-17-IT: Highway carried on structure does not lead to or traverse through Federal or Tribal lands	N - Not applicable
D-03-V-160: Highway carried on structure does not lead to or traverse through Federal or Tribal lands	N - Not applicable
PAR CANTBRY-0.2: Highway carried on structure does not lead to or traverse through Federal or Tribal lands	N - Not applicable



CL04 – Historical Significance SNBI | Item B.CL.04

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the historic significance of the structure using one of the following codes.

CL04 Codes
N - Bridge is not eligible for the National Register, and is not in a historic district eligible for the National Register
1 - Bridge is on the National Register
2 - Bridge is eligible for the National Register
3 - Bridge is in a historic district that is on or eligible for the National Register, and contributes to the eligibility of the district
4 - Bridge is in a historic district that is on or eligible for the National Register, but does not contribute to the eligibility of the district
5 - Bridge is potentially eligible for the National Register, or potentially contributes to a historic district, but has not been evaluated according to the criteria for listing
6 - Bridge is on a State or local historic register, but is not eligible for the National Register
7 - Historic significance of the bridge has not been determined
T - TEMP, 3, 4, 5, 6*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

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

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

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

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

CDOT has completed four statewide historic structure inventories since 1983. These studies include evaluations of all On-System structures built through 1968 and a subset of Off-System structures built through 1958. Additional statewide historic structure inventories may take place in the future.



Structures were evaluated to determine when they meet NRHP Criteria A through D, which are summarized below.

- A – Association with events that have made a significant contribution to the broad patterns of history
- B – Association with the lives of persons significant in our past
- C – Embody distinctive characteristics of a type, period or method of construction or represent the work of a master or possess high artistic values
- D – Yield or may be likely to yield information important to prehistory or history

Most structures that are determined eligible to the NRHP will be historically significant under Criteria A or C, either for association with important events in history, such the development of transportation in a region (Criterion A), or as a good example of a structure type or for engineering (Criterion C).

Code “2” when the structure has been determined to be eligible for listing on the National Register even though the nomination and listing process have not concluded or are not being pursued.

Code “5” when the structure has attributes that may make it historically significant as indicated by the National Register criteria for evaluation and listing. This code may also apply when a structure was previously evaluated but requires reevaluation because its current attributes, such as age, may make it historically significant.

Code “6” when a structure has local historic value but has been determined to be not eligible for the National Register. Undertakings may be subject to the Section 4(f) process, but without the same level of consultation as prescribed by Section 106.

Code “N” when the other codes do not apply.

Codes are based on the CDOT statewide historic structure inventories and can only be changed by the CDOT History Program staff, which maintains and updates this information.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL04 Code
F-17-IT: Structure is not eligible for National Register and is not in an eligible historic district	N - Bridge is not eligible for the National Register, and is not in a historic district eligible for National Register
D-03-V-160: Structure is not eligible for National Register and is not in an eligible historic district	N - Bridge is not eligible for the National Register, and is not in a historic district eligible for National Register
PAR CANTBRY-0.2: Structure is not eligible for National Register and is not in an eligible historic district	N - Bridge is not eligible for the National Register, and is not in a historic district eligible for National Register
Structure is of unique engineering design, but evaluation has not been completed	5 - Bridge is potentially eligible for the National Register, or potentially contributes to a historic district, but has not been evaluated according to the criteria for listing



CL05 – Toll SNBI | Item B.CL.05

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the toll status of the structure using one of the following codes.

CL05 Codes
N - Bridge does not carry a toll road and is not a toll bridge
1 - Toll bridge not under FHWA Toll Agreement
2 - Toll bridge under FHWA Toll Agreement
3 - Bridge carries a toll road not under FHWA Toll Agreement
4 - Bridge carries a toll road under FHWA Toll Agreement

COMMENTARY

Report this item if only a portion of the structure is tolled such as if an HOV Toll lane is on the same structure as a freeway.

Code “1” when tolls on a toll structure are paid specifically to use the structure and not part of a facility which requires an FHWA Toll Agreement (23 U.S.C. 129).

Code “2” when an interstate highway toll structure is under a FHWA Toll Agreement (23 U.S.C. 129). Structure has a separate agreement from the highway segment.

Code “3” when the tolls on a toll road are paid to use the facility, which includes the roadway and the structure. No FHWA Toll Agreement or unknown whether a toll agreement exists.

Code “4” when the structure is on an interstate toll highway segment under a FHWA Toll Agreement (23 U.S.C. 129). Structure is a part of the toll segment.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL05 Code
F-17-IT: Structure is not on a toll road and is not a tolled structure	N - Bridge does not carry a toll road and is not a toll bridge
D-03-V-160: Structure is not on a toll road and is not a tolled structure	N - Bridge does not carry a toll road and is not a toll bridge
PAR CANTBRY-0.2: Structure is not on a toll road and is not a tolled structure	N - Bridge does not carry a toll road and is not a toll bridge
Structure carries E470	3 - Bridge carries a toll road not under FHWA Toll Agreement



CL06 – Emergency Evacuation Designation	SNBI Item B.CL.06
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report whether the route carried on the structure is an emergency evacuation route using one of the following codes.

CL06 Codes
N - Not an Emergency Evacuation Route
Y - Emergency evacuation route

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

This item is used by FHWA with other items, as per 23 U.S.C. 144(b), to classify structures according to serviceability, safety, and essentiality for public use and considers the potential impacts to emergency evacuation routes and to regional and national freight and passenger mobility if the serviceability of the structure is restricted or diminished.

Emergency evacuation routes may be designated for various events such as hurricanes, earthquakes, tsunami, dam failure, and other hazardous events.

Refer to the State Emergency Management Agency for designated emergency evacuation routes.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



CL07A – Structure Status	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the structure operational status using one of the following codes.

CL07A Codes
1 - Inactive
2 - Closed
3 - Active
4 - Proposed
6 - Open, Ready for Inspection

COMMENTARY

This item is automatically populated to “4” when a new structure is created in SIMSA.

This item is automatically populated to “6” when a structure is “Approved” and an Initial Inspection is created in SIMSA.

The following commentary is presented in order of a typical life cycle of a structure, not the order listed in the Specification.

Code "4" when a new structure has been created in SIMSA, the structure is not open to traffic yet, and an initial inspection has not been completed yet.

Code "6" when a new structure is open to traffic, but an initial inspection has not been completed yet.

Code “3” when a structure is open to traffic and an initial inspection has been completed.

Code “1” when a structure has been removed and no longer exists.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL07A Code
F-17-IT: Structure is open to traffic	3 - Active
D-03-V-160: Structure is open to traffic	3 - Active
PAR CANTBRY-0.2: Structure is open to traffic	3 - Active
New structure is under construction and not open to traffic	4 - Proposed
Structure is open to traffic; initial inspection is scheduled but has not been completed	6 - Open, Ready for Inspection



CL08A – Structure Class	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the structure class using one of the following codes.

CL08A Codes	Description
Bridge	Bridge structure
Culvert	Culvert structure
Luminaire	High mast light structure*
Miscellaneous	Miscellaneous structure*
Sign	Sign structure*
Signal	Signal structure*
Tunnel	Tunnel structure*
Wall	Wall structure*

*Code should not be used for Major or Minor Structures. Code is used for other asset types (e.g., signs, signals, high mast lights, tunnels, walls)

COMMENTARY

The code for this item must match the code in item *SP01A – Span Configuration*. When this item is coded “Culvert”, *SP01A – Span Configuration* shall only be coded “C” and/or “V”. When this item is coded “Bridge”, *SP01A – Span Configuration* shall not be coded “C” or “V”.

Code “Culvert” for all pipes, four-sided frames, three-sided frames that have an integral invert, slabs that have an integral invert, and arches that have an integral invert; this is regardless of the amount of fill above the structure.

Code “Bridge” for structures that have an open invert.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL08A Code
F-17-IT: Structure is a bridge; SP01A coded “M”	Bridge
D-03-V-160: Structure is a bridge; SP01A coded “M”	Bridge
PAR CANTBRY-0.2: Structure is a culvert; SP01A coded “C”	Culvert



CL09A – Structure Type	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the CDOT design and material type of the main span of the structure using one of the following codes.

CL09A Codes	Corresponding CL08A Code
AA - Aluminum Arch	Bridge
AAC - Aluminum Arch Culvert	Culvert
B - Bridge Wall	Wall*
CA - Concrete Arch	Bridge
CAC - Concrete Arch Culvert	Culvert
CBC - Concrete Box Culvert	Culvert
CBG - Concrete Box Girder	Bridge
CBGC - Concrete Box Girder Continuous	Bridge
CBGCP - Concrete Box Girder, Continuous Prestressed	Bridge
CBGP - Concrete Box Girder, Prestressed	Bridge
CBGS - Concrete Box Girder, Segmented	Bridge
CDTPG - Concrete Double T Prestressed Girder	Bridge
CI - Concrete on I-Beam	Bridge
CIC - Concrete on I-Beam, Continuous	Bridge
CICK - Concrete on I-Beam, Continuous and Composite	Bridge
CICKP - Concrete on I-Beam, Continuous, Composite, Prestressed	Bridge
CIK - Concrete on I-Beam, Composite	Bridge
CIKP - Concrete on I-Beam, Composite, Prestressed	Bridge
CMP - Corrugated Metal Pipe	Culvert
CPG - Concrete Prestressed Girder	Bridge
CPGC - Concrete Prestressed Girder, Continuous	Bridge
CPP - Corrugated Plastic Pipe	Culvert
CRF - Concrete Rigid Frame	Bridge
CS - Concrete Slab	Bridge
CSC - Concrete Slab Continuous	Bridge
CSCP - Concrete Slab, Continuous Prestressed	Bridge
CSG - Concrete Slab and Girder	Bridge
CSGC - Concrete Slab and Girder Continuous	Bridge
CSGCP - Concrete Slab and Girder, Continuous, Prestressed	Bridge
CSGP - Concrete Slab and Girder, Prestressed	Bridge
CSP - Concrete Slab, Prestressed	Bridge
CTGC - Concrete Tub Girder, Continuous	Bridge
CTGCP - Concrete Tub Girder, Continuous Prestressed	Bridge
CTGP - Concrete Tub Girder, Prestressed	Bridge
HML - High-Level	Luminaire*
N - Noise Wall	Wall*



CL09A Codes	Corresponding CL08A Code
O - Other Wall	Wall*
OP - Overhead Pipe	Miscellaneous*
PCBC - Precast Concrete Box Culvert	Culvert
R - Retaining Wall	Wall*
RA - Rubble Arch	Bridge
RAC - Rubble Arch Culvert	Culvert
RCPC - Reinforced Concrete Pipe Culvert	Culvert
RE - Reinforced Earth	Culvert
RG - Riveted Girder	Bridge
RGC - Riveted Girder, Continuous	Bridge
SA - Steel Arch	Bridge
SAC - Steel Arch Culvert/Multiplate Arch Culvert	Culvert
SBG - Steel Box Girder	Bridge
SBGC - Steel Box Girder, Continuous	Bridge
SBGCP - Steel Box Girder, Continuous Prestressed	Bridge
SBGP - Steel Box Girder, Prestressed	Bridge
SDG - Steel Deck Girder	Bridge
SDGC - Steel Deck Girder, Continuous	Bridge
SDT - Steel Deck Truss	Bridge
SGNAL - Cantilever Arm	Signal*
SIGN - Overhead Bridge	Sign*
SIGNB - Overhead Balanced Cantilever	Sign*
SIGNC - Overhead Cantilever	Sign*
SIGND - Overhead Bridge with Cantilever	Sign*
SLT - Steel Low Truss	Bridge
SSE - Steel Stringer, Earth Fill (using 1/2 CMP)	Bridge
SSM - Steel Stringer, Metal Plank Floor	Bridge
SSMC - Steel Stringer, Metal Plank Floor, Continuous	Bridge
SSS - Steel Stringer, Timber Floor	Bridge
SSSC - Steel Stringer, Continuous, Timber Floor	Bridge
STA - Steel Thru Arch	Bridge
STG - Steel Thru Girder	Bridge
STT - Steel Thru Truss	Bridge
SUSP - Suspension Bridge	Bridge
SW - Span Wire	Signal*
TBC - Timber Box Culvert	Culvert
TD - Timber Stringer with Concrete Deck	Bridge
TLA - Timber Laminated Arch (Gluelam)	Bridge
TLS - Timber Laminated Girder (Gluelam)	Bridge
TLT - Timber Low Truss	Bridge
TM - Timber with Metal Deck	Bridge
TSLAB - Timber Slab	Bridge
TTD - Treated Timber Stringer with Concrete Deck	Bridge
TTM - Treated Timber Stringer with Metal Plank Deck	Bridge



CL09A Codes	Corresponding CL08A Code
TTS - Timber Stringer with Timber Deck	Bridge
TTT - Timber Thru Truss	Bridge
TUNC - Concrete Lined	Tunnel*
TUNR - No Lining	Tunnel*
UNK - Unknown Structure Type	Not Applicable
WG - Welded Girder	Bridge
WGC - Welded Girder, Continuous	Bridge
WGCK - Welded Girder, Continuous, Composite	Bridge
WGK - Welded Girder, Composite	Bridge

*Code should not be used for Major or Minor Structures. Code applies to other asset types (e.g., signs, signals, high mast lights, tunnels, walls)

COMMENTARY

When a structure has a main span and approach span(s), use the code for the main span.

When a structure has different main span types, use the code for the predominant main span.

The code for this item must correspond with the code in *CL08A – Structure Class*.

Code “CSP” or “CSCP”, as applicable, for precast, prestressed concrete slab girders that have shear keys between the precast slab girders, either visible or confirmed with plans. When this item is coded “CSP” or “CSCP”, *SP06 – Span Type* for the main span should be coded “S01” or “S02”, as applicable.

Code “CBGP” or “CBGCP”, as applicable, for precast, prestressed concrete slab girders that do not have shear keys between the precast slab girders or if shear keys are not visible and plans are not available. When this item is coded “CBGP” or “CBGCP”, *SP06 – Span Type* for the main span should be coded “B02”.

For structures with transverse post-tensioned rods connecting members together, code as a slab.

Appendix F provides an example photo and section view for each structure type.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL09A Code
F-17-IT: Structure consists of two continuous steel box girders with composite CIP concrete deck	SBGC - Steel Box Girder, Continuous
D-03-V-160: Structure consists of six continuous wide flange steel girders with composite CIP concrete deck	CICK - Concrete on I-Beam, Continuous and Composite
PAR CANTBRY-0.2: Structure is a two-cell four-sided CIP concrete box culvert under fill	CBC - Concrete Box Culvert
Structure consists of continuous prestressed G 68 girders	CPGC - Concrete Prestressed Girder, Continuous
Structure consists of continuous concrete parabolic T beams	CSGC - Concrete Slab and Girder Continuous
Structure consists of a pin connected thru truss	STT - Steel Thru Truss
Structure consists of eight continuous adjacent precast, prestressed concrete solid slab girders with no shear keys between girders	CBGCP - Concrete Box Girder, Continuous Prestressed



Example	CL09A Code
Structure consists of 10 adjacent precast, prestressed concrete solid slab girders with shear keys between girders	CSP - Concrete Slab, Prestressed



CL10A – Construction Type	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the construction type of the main span of the structure using one of the following codes.

CL10A Codes
01 - Precast
02 - Poured in Place
03 - Pre-tensioned
04 - Post-tensioned
05 - Parabolic
06 - Cantilevered
10 - Curved
20 - Concrete 'T' Girder, Prestressed
21 - Concrete Twin 'T' Girder, Prestressed
25 - AASHTO Type I, Prestressed
26 - AASHTO Type II, Prestressed
27 - AASHTO Type III, Prestressed
28 - AASHTO Type IV, Prestressed
30 - Colorado Type G-54, Prestressed, Simple Span
31 - Colorado Type G-54, Prestressed, Continuous Spans
32 - Colorado Type G-68, Prestressed, Simple Span
33 - Colorado Type G-68, Prestressed, Continuous Spans
34 - Colorado Type G-70, Prestressed, Simple Span
35 - Colorado Type G-70, Prestressed, Continuous Spans
36 - Colorado Type G-78, Prestressed, Simple Span
37 - Colorado Type G-78, Prestressed, Continuous Spans
38 - Colorado Type G-72, Prestressed, Simple Span
39 - Colorado Type G-72, Prestressed, Continuous Spans
40 - BULBT, Simple Span
41 - BULBT, Continuous Span
50 - Riveted Plate Girder
51 - Slant Leg
60 - Super Span
80 - SI/Pin & Link, w/Category III UWI (Water depth 4 to 6 ft)
81 - SI/Pin & Link w/Category II UWI (Water depth 7 to 10 ft)
82 - SI/Pin & Link w/Category I UWI (Water depth > 10 ft)
83 - SI/Pin & Link connections
90 - Research Required
91 - Experimental Bridge
99 - Multi-type Girder System



COMMENTARY

When a structure has a main span and approach span(s), use the code for the main span.

When a structure has different main span types, use the code for the predominant main span.

Leave this item blank when none of the other construction type codes apply.

Appendix G provides an example photo and section view for each construction type.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL10A Code
F-17-IT: Curved structure	10 - Curved
D-03-V-160: No construction codes apply	
PAR CANTBRY-0.2: Cast in place concrete	02 - Poured in Place
Parabolic T beam	05 - Parabolic
Pin connected steel thru truss over an 8 foot deep river	81 - Sl/Pin & Link w/Category II UWI(Water depth 7 to 10 ft)



CL11A – Features Intersected	CDOT
------------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the feature(s) intersected by the structure.

COMMENTARY

When more than one feature is intersected by the structure, list the feature names in order using the following hierarchy:

- Highway - signed number or name
- Railroad - abbreviated as RR
- Waterway - common or local name

Periods may be omitted for extra space and a pipe (|) delimiter or comma may be used between features.

Appendix B provides common abbreviations or spellings to be used for this item. It is suggested that these common abbreviations be used as often as possible to facilitate database searches.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL11A Code
F-17-IT: Structure goes over I-25 NB/SB, C470 WB/EB, and RTD tracks	I 25, SH 470 ML, RTD
D-03-V-160: Structure goes over Mariposa St., Lipan St., UP RR tracks, and RTD tracks	MARIPOSA ST LIPAN ST UP RR RTD
PAR CANTBRY-0.2: Structure goes over Tallman Gulch	TALLMAN GULCH
Structure goes over D&RGW Railroad	D&RGW RR
Structure goes over Interstate 25	I 25 ML
Structure goes over Platte River	S. PLATTE RIVER



CL11B – Feature Carried	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the facility (or facilities) carried by the structure.

COMMENTARY

When more than one facility is carried by the structure, list the facility names in order using the following hierarchy:

- Highway - signed number or name
- Railroad - abbreviated as RR
- Waterway - common or local name

Periods may be omitted for extra space and a plus (+) sign or comma may be used for the word "and".

Appendix B provides common abbreviations or spellings to be used for this item. It is suggested that these common abbreviations be used as often as possible to facilitate database searches.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL11B Code
F-17-IT: Structure carries the ramp from EB C470 to NB I-25	C470 EB RAMP TO I 25
D-03-V-160: Structure carries WB 6th Avenue	WB 6TH AVE
PAR CANTBRY-0.2: Structure carries both directions of Canterbury Parkway	CANTERBERRY PARKWAY
Structure carries I 25 Mainline, Southbound	I 25 ML SBND
Structure carries Otero Street & D&RGW RR	OTERO ST + G&RGW RR
Structure carries County Road 82	COUNTY ROAD 82



CL12A – Service Type On	CDOT
--------------------------------	-------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the type of service on the structure using one of the following codes.

CL12A Codes
0 - Other
1 - Highway
2 - Railroad
3 - Pedestrian and bicycle
4 - Highway and railroad
5 - Highway and pedestrian
6 - Second level interchange
7 - Third level interchange
8 - Fourth level interchange
9 - Building or plaza

COMMENTARY

Code “6” for interchange structures where traffic may change from one route to another by a system of ramps or a cloverleaf, rather than a grade separation, which would be coded “1”.

Code “0” when the service is unknown, until a determination can be made at the site. No code exists for unknown.

Sidewalks must have a minimum 3-foot clear distance to be considered as carrying pedestrian traffic.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL12A Code
F-17-IT: Structure carries C470 EB ramp to I-25 NB over both directions of I-25, both directions of C470/E470, RTD light rail track, and C470 trail; two structures carrying ramps cross over the structure	7 - Third level interchange
D-03-V-160: Structure carries WB 6th Avenue over Lipan Street, Mariposa Street, UP RR tracks, RTD light rail tracks, and a parking lot	1 - Highway
PAR CANTBRY-0.2: Structure carries highway and pathway features	5 - Highway and pedestrian
Structure carries I 25 over Platte River	1 - Highway
Structure carries I 225 Interchange with ramps under I 76	6 - Second level interchange
Structure carries U.S. 40 over D&RGW RR	1 - Highway



CL13A – Service Type Under	CDOT
-----------------------------------	-------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the type of service under the structure using one of the following codes.

CL13A Codes
1 - Highway with or without pedestrian
2 - Railroad
3 - Pedestrian and bicycle
4 - Highway and railroad
5 - Waterway
6 - Highway and waterway
7 - Railroad and waterway
8 - Highway and waterway and railroad
9 - Relief for waterway
0 - Other

COMMENTARY

Code “0” when the service is unknown, until a determination can be made at the site. No code exists for unknown.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL13A Code
F-17-IT: Structure carries C470 EB ramp to I-25 NB over both directions of I-25, both directions of C470/E470, RTD light rail track, and C470 trail; two structures carrying ramps cross over the structure	4 - Highway and railroad
D-03-V-160: Structure carries WB 6th Avenue over Lipan Street, Mariposa Street, UP RR tracks, RTD light rail tracks, and a parking lot	4 - Highway and railroad
PAR CANTBRY-0.2: Structure carries highway and pathway features	5 - Waterway
Structure carries I 25 over Platte River	5 - Waterway
Structure carries I 225 Interchange with ramps under I 76	1 - Highway with or without pedestrian
Structure carries U.S. 40 over D&RGW RR	2 - Railroad



CL14A – BTE Eligibility	CDOT
--------------------------------	-------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the status of the structure as it relates to the Statewide Bridge and Tunnel Enterprise (BTE) using one of the following codes.

CL14A Codes
Eligible
Owned
Not applicable

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL14A Code
F-17-IT: Structure is not owned or eligible for the BTE	Not applicable
D-03-V-160: Structure is not owned or eligible for the BTE	Not applicable
PAR CANTBRY-0.2: Structure is not owned or eligible for the BTE	Not applicable



CL15A – Federal Submission	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report if a structure carries vehicular traffic using one of the following codes.

CL15A Codes	Description
MAJOR VEHICULAR	Major structure carries vehicular traffic and submitted to FHWA
MAJOR VEHICULAR-NO TAPE	Major structure carries vehicular traffic but not submitted to FHWA
NON MAJOR VEHICULAR	Minor structure or structure does not carry vehicular traffic (i.e. railroad or pedestrian)

COMMENTARY

Code “MAJOR VEHICULAR” for Major Structures that CDOT reports to FHWA. This includes Major Structures which are a part of the Central 70, E470, Northwest Parkway, Off System, and On System inspection programs.

Code “MAJOR VEHICULAR-NO TAPE” for Major Structures that CDOT does not report to FHWA. This includes Major Structures which are coded as "Inventory Only" in *IR07A – Inspection Program*.

Code “NON MAJOR VEHICULAR” for Minor Structures or other bridges or culverts that do not carry vehicular traffic (e.g., structures that carry pedestrians or railroads over public roadways or waterways).

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	CL15A Code
F-17-IT: Structure is a major structure that carries vehicular traffic and is submitted to FHWA	MAJOR VEHICULAR
D-03-V-160: Structure is a major structure that carries vehicular traffic and is submitted to FHWA	MAJOR VEHICULAR
PAR CANTBRY-0.2: Structure is a major structure that carries vehicular traffic and is submitted to FHWA	MAJOR VEHICULAR
Structure is a major structure that carries vehicular traffic but is not submitted to FHWA by CDOT; structure owned and maintained by the Bureau of Reclamation	MAJOR VEHICULAR-NO TAPE
Minor structure owned by CDOT	NON MAJOR VEHICULAR
Pedestrian bridge over a public roadway	NON MAJOR VEHICULAR



Section 5.4 Features (F)

F01A – Feature Type 176
F01B – Feature Designation..... 179
F02 – Feature Location 181
F03 – Feature Name 183



F01A – Feature Type SNBI | Item B.F.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the feature type that is above, below, or carried on the structure using one of the following codes.

F01A Codes
H - Highway
R - Railroad
P - Pathway
W - Waterway
F - Relief for waterway
B - Urban feature
D - Dry terrain or side slope
X - Other

COMMENTARY

All structures have at least one feature carried on the structure and one feature below the structure. Some structures have several features that are above, below, or carried on the structure.

This item does not include ancillary structures and utilities.

For a double deck bridge that is inventoried with one unique structure number, code a feature for each deck level.

For multi-level interchanges, code highway features directly above and below the structure.

Code one highway feature for a highway that is designated with two or more route numbers.

Code multiple highway features when the highway is divided at the structure.

Typically, a highway feature carried on the structure is considered divided when a non-mountable median is present for the full structure length or the majority of the structure length (when *G10 – Median* is coded “3”). If a highway feature carried on the structure does not have a median or has a flush or mountable median for the full length of the structure, the highway should not be considered divided (when *G10 – Median* is coded “0” or “2”).

For highway features below a structure, the highway is typically considered divided when piers are present that separate the directions of traffic or a non-mountable median is present for the full width of the structure.

A curb greater than 6 inches high is considered non-mountable.

Sidewalks must have a minimum 3-foot clear distance to be considered a pathway.

Sidewalks along a roadway and separate bike/pedestrian paths should be coded as separate pathway features.

Sidewalks along both sides of the roadway carried on the structure, can be coded as one pathway feature; similarly, sidewalks along both sides of a roadway or multiple roadways below the structure can be coded as one pathway feature.



Multiple bike/pedestrian paths carried on a structure can be coded as one pathway feature; similarly, multiple bike/pedestrian paths below a structure can be coded as one pathway feature.

Code a railroad feature for each separate railroad service type, as identified in *RR01 – Railroad Service Type*, that is carried on or passes below the structure. When multiple tracks with the same railroad service type pass below a structure in different spans, code a separate railroad feature for the track(s) in each span. When multiple tracks carry the same railroad service type(s) within the same span, code only one feature. When a track carries multiple railroad service types, code only one feature.

Coding more than one Urban feature or Other feature is optional.

Code “R” for each railroad service type listed in *RR01 – Railroad Service Type*.

Code “P” for separated pathways dedicated for pedestrian, bicycle, equestrian, or other non-highway modes of human transportation not covered in other codes.

Code “W” for each unique waterway. Do not use for roadside ditches or pipes that typically only carry roadway runoff from rain events.

Code “F” for structures where one or more spans provide waterway openings for flow only during flood stages to provide additional hydraulic capacity, such as relief channels.

Code “B” for urban features such as buildings, parking lots, etc.

Code “D” for features such as a natural depression or sidehill slope when there is no discernable waterway channel and none of the other feature codes apply.

Code “X” when no other code applies for features that exist below the structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	Description of Feature	F01A Code
F-17-IT: Structure carries C470 EB ramp to I-25 NB over both directions of I-25, both directions of C470/E470, RTD light rail track, and C470 trail; two structures carrying ramps cross over the structure	C470 EB RAMP TO I 25 NB on structure	H - Highway
	C470 ML WB below structure	H - Highway
	C470 ML EB below structure	H - Highway
	I 25 ML NB below structure	H - Highway
	I 25 ML SB below structure	H - Highway
	I25 NB Ramp to C470 WB above structure	H - Highway
	I25 SB ramp to E470 EB above structure	H - Highway
	RTD Light Rail below structure	R - Railroad
D-03-V-160: Structure carries WB 6th Avenue over Lipan Street, Mariposa Street, UP RR tracks, RTD light rail tracks, and a parking lot	C470 Trail along C470 WB below structure	P - Pathway
	WB 6TH AVE on structure	H - Highway
	Lipan St below structure	H - Highway
	Mariposa St below structure	H - Highway
	UP RR tracks in Span 1 below structure	R - Railroad
	UP RR tracks in Span 2 below structure	R - Railroad
RTD Tracks below structure	R - Railroad	



Example	Description of Feature	F01A Code
	UP RR tracks in Span 7 below structure	R - Railroad
	Parking Lot in Spans 11-15 below structure	B - Urban feature
PAR CANTBRY-0.2: Structure carries both directions of Canterbury Parkway over Tallman Gulch and Tallman Gulch trail; sidewalks on both sides of Canterbury Parkway	CANTERBERRY PKWY SB on structure	H - Highway
	CANTERBERRY PKWY NB on structure	H - Highway
	Sidewalks on both sides on structure	P - Pathway
	Tallman Gulch Trail below structure	P - Pathway
	Tallman Gulch below structure	W - Waterway



F01B – Feature Designation SNBI | Item B.F.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the feature designation for each feature type reported in *F01A – Feature Type* using one of the following codes.

F01B Codes
1
2
3
4
5
6
7
8
9
10
11
12
13
14

COMMENTARY

Each feature type is numbered sequentially, starting with one (H – “1”, H – “2”, R – “1”, P – “1”, etc.). Highway features should be numbered beginning with the features carried on the structure, followed by those below and above (H – “1”, H – “2”, H – “3”, etc.).

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	Description of Feature	F01A	F01B Code
F-17-IT: Structure carries C470 EB ramp to I-25 NB over both directions of I-25, both directions of C470/E470, RTD light rail track, and C470 trail; two structures carrying ramps cross over the structure	C470 EB RAMP TO I 25 NB on structure	H - Highway	1
	C470 ML WB below structure	H - Highway	2
	C470 ML EB below structure	H - Highway	3
	I 25 ML NB below structure	H - Highway	4
	I 25 ML SB below structure	H - Highway	5
	I25 NB Ramp to C470 WB above structure	H - Highway	6
	I25 SB ramp to E470 EB above structure	H - Highway	7
	RTD Light Rail below structure	R - Railroad	1
	C470 Trail along C470 WB below structure	P - Pathway	1



Example	Description of Feature	F01A	F01B Code
D-03-V-160: Structure carries WB 6th Avenue over Lipan Street, Mariposa Street, UP RR tracks, RTD light rail tracks, and a parking lot	WB 6TH AVE on structure	H - Highway	1
	Lipan St below structure	H - Highway	2
	Mariposa St below structure	H - Highway	3
	UP RR tracks in Span 1 below structure	R - Railroad	1
	UP RR tracks in Span 2 below structure	R - Railroad	2
	RTD Tracks below structure	R - Railroad	3
	UP RR tracks in Span 7 below structure	R - Railroad	4
	Parking Lot in Spans 11-15 below structure	B - Urban feature	1
PAR CANTBRY-0.2: Structure carries both directions of Canterbury Parkway over Tallman Gulch and Tallman Gulch trail; sidewalks on both sides of Canterbury Parkway	CANTERBERRY PKWY SB on structure	H - Highway	1
	CANTERBERRY PKWY NB on structure	H - Highway	2
	Sidewalks on both sides on structure	P - Pathway	1
	Tallman Gulch Trail below structure	P - Pathway	2
	Tallman Gulch below structure	W - Waterway	1



F02 – Feature Location SNBI | Item B.F.02

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the location for each feature reported in *F01A – Feature Type* and *F01B – Feature Designation* that is above, below, or carried on the structure using one of the following codes.

F02 Codes
C - Carried on structure
B - Below structure
A - Above structure
T - Top level
L - Lower level

COMMENTARY

Code “T” for the top level of a double deck bridge that is inventoried using one unique structure number.

Code “L” for the lower level of a double deck bridge that is inventoried using one unique structure number.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	Description of Feature	F01A	F01B	F02 Code
F-17-IT	C470 EB RAMP TO I 25 NB on structure	H - Highway	1	C - Carried on structure
	C470 ML WB below structure	H - Highway	2	B - Below structure
	C470 ML EB below structure	H - Highway	3	B - Below structure
	I 25 ML NB below structure	H - Highway	4	B - Below structure
	I 25 ML SB below structure	H - Highway	5	B - Below structure
	I25 NB Ramp to C470 WB above structure	H - Highway	6	A - Above structure
	I25 SB ramp to E470 EB above structure	H - Highway	7	A - Above structure
	RTD Light Rail below structure	R - Railroad	1	B - Below structure
	C470 Trail along C470 WB below structure	P - Pathway	1	B - Below structure
D-03-V-160	WB 6TH AVE on structure	H - Highway	1	C - Carried on structure
	Lipan St below structure	H - Highway	2	B - Below structure
	Mariposa St below structure	H - Highway	3	B - Below structure
	UP RR tracks in Span 1 below structure	R - Railroad	1	B - Below structure
	UP RR tracks in Span 2 below structure	R - Railroad	2	B - Below structure
	RTD Tracks below structure	R - Railroad	3	B - Below structure
	UP RR tracks in Span 7 below structure	R - Railroad	4	B - Below structure
	Parking Lot in Spans 11-15 below structure	B - Urban feature	1	B - Below structure



Example	Description of Feature	F01A	F01B	F02 Code
PAR CANTBRY-0.2	CANTERBERRY PKWY SB on structure	H - Highway	1	C - Carried on structure
	CANTERBERRY PKWY NB on structure	H - Highway	2	C - Carried on structure
	Sidewalks on both sides on structure	P - Pathway	1	C - Carried on structure
	Tallman Gulch Trail below structure	P - Pathway	2	B - Below structure
	Tallman Gulch below structure	W - Waterway	1	B - Below structure



F03 – Feature Name SNBI | Item B.F.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the commonly known name(s) for each feature reported in *F01A – Feature Type* and *F01B – Feature Designation*. If the feature has no commonly known name, provide a general description.

COMMENTARY

For more than one name, report all names with the most common name first.

When applicable, report the route number first followed by other names.

For railroad features, it is preferred that the span in which the railroad is located is included in the name.

Report multiple names separated by pipe (|) delimiters.

The owner may include directional or other descriptive information in this field. Official names and local names may be included.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	Description of Feature	F01A	F01B	F03 Code
F-17-IT	C470 EB RAMP TO I 25 NB on structure	H - Highway	1	C470 EB RAMP TO I 25 NB
	C470 ML WB below structure	H - Highway	2	C470 ML WB
	C470 ML EB below structure	H - Highway	3	C470 ML EB
	I 25 ML NB below structure	H - Highway	4	I 25 ML NB
	I 25 ML SB below structure	H - Highway	5	I 25 ML SB
	I25 NB Ramp to C470 WB above structure	H - Highway	6	I25 NB Ramp to C470 WB
	I25 SB ramp to E470 EB above structure	H - Highway	7	I25 SB ramp to E470 EB
	RTD Light Rail below structure	R - Railroad	1	RTD Light Rail
	C470 Trail along C470 WB below structure	P - Pathway	1	C-470 Trail along C470 WB
D-03-V-160	WB 6TH AVE on structure	H - Highway	1	WB 6TH AVE
	Lipan St below structure	H - Highway	2	Lipan St
	Mariposa St below structure	H - Highway	3	Mariposa St
	UP RR tracks in Span 1 below structure	R - Railroad	1	UP RR in Span 1
	UP RR tracks in Span 2 below structure	R - Railroad	2	UP RR in Span 2
	RTD Tracks below structure	R - Railroad	3	RTD LRT in Span 7
	UP RR tracks in Span 7 below structure	R - Railroad	4	UP RR in Span 7
Parking Lot in Spans 11-15 below structure	B - Urban feature	1	Parking Lot/Alley in Spans 11-15	



Example	Description of Feature	F01A	F01B	F03 Code
PAR CANTBRY-0.2	CANTERBERRY PKWY SB on structure	H - Highway	1	CANTERBERRY PKWY SB
	CANTERBERRY PKWY NB on structure	H - Highway	2	CANTERBERRY PKWY NB
	Sidewalks on both sides on structure	P - Pathway	1	Sidewalks on east and west sides
	Tallman Gulch Trail below structure	P - Pathway	2	Tallman Gulch Trail
	Tallman Gulch below structure	W - Waterway	1	Tallman Gulch



Section 5.5 Routes (RT)

RT01A – Route Designation	186
RT02 – Route Number	188
RT03 – Route Direction	189
RT03C – Primary Routelog.....	191
RT04 – Route Type	192
RT05 – Level of Service.....	194



RT01A – Route Designation	SNBI Item B.RT.01
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the assigned route designation for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* using one of the following codes.

RT01A Codes
1
2
3
4
5
6
7
8
9
10
11
12
13
14

COMMENTARY

This item captures how routes that share the reported highway feature are designated.

Each highway feature has at least one route designation.

Code all routes for each highway feature that is carried on the structure or that passes above or below the structure, regardless of if the highway feature is carried by another structure.

Code sequential numbers assigned to each unique route designation carried on the highway feature (e.g., “1”, “2”).

If a highway feature carries multiple routes, report only those routes that have a route number. If a highway feature carries only routes without route numbers, report one route designation.

Typically, the route with the highest-class route type is listed first, using the hierarchy shown in *RT04 – Route Type*. An interstate is considered the highest-class route.

If the highway feature is carried on a ramp structure, code all applicable routes for the highways that are being connected.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	F03 Feature Name	Route Name	RT01A Code
F-17-IT	C470 EB RAMP TO I 25 NB	I-25	1
		C470	2
	C470 ML WB	C470	1
	C470 ML EB	C470	1
	I 25 ML NB	I-25	1
	I 25 ML SB	I-25	1
	I25 NB Ramp to C470 WB	I-25	1
		C470	2
I25 SB ramp to E470 EB	I-25	1	
	E470	2	
D-03-V-160	WB 6TH AVE	WB 6TH AVE	1
	Lipan St	Lipan St	1
	Mariposa St	Mariposa St	1
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	CANTERBERRY PKWY SB	1
	CANTERBERRY PKWY NB	CANTERBERRY PKWY NB	1



RT02 – Route Number	SNBI Item B.RT.02
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the route number for each route reported in *RT01A – Route Designation* using one of the codes in *Appendix H*.

COMMENTARY

Include letters that are used as part of the route numbers.

Code “0” for routes without route numbers.

For divided highways, do not report the route direction. Identify that information in *RT03 – Route Direction*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	Route Name	RT01A	RT02 Code
F-17-IT	C470 EB RAMP TO I 25 NB	I-25	1	025A
		C470	2	470A
	C470 ML WB	C470	1	470A
	C470 ML EB	C470	1	470A
	I 25 ML NB	I-25	1	025A
	I 25 ML SB	I-25	1	025A
	I25 NB Ramp to C470 WB	I-25	1	025A
		C470	2	470A
I25 SB ramp to E470 EB	I-25	1	025A	
	E470	2	470B	
D-03-V-160	WB 6TH AVE	WB 6TH AVE	1	0
	Lipan St	Lipan St	1	0
	Mariposa St	Mariposa St	1	0
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	CANTERBERRY PKWY SB	1	0
	CANTERBERRY PKWY NB	CANTERBERRY PKWY NB	1	0



RT03 – Route Direction SNBI | Item B.RT.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the designated route direction for each route reported in *RT01A – Route Designation* using one of the following codes.

RT03 Codes
NB - Northbound
EB - Eastbound
SB - Southbound
WB - Westbound
NS - Northbound and Southbound
EW - Eastbound and Westbound
1-T - TEMP, One-way traffic*
2-T - TEMP, Two-way traffic*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

Route direction typically aligns with the structure's inventory direction. The route direction may differ from the actual cardinal direction depending on the structure's location and orientation.

Code “NS” when the route is not divided at the structure, and carries traffic in both north and south directions.

Code “EW” when the route is not divided at the structure, and carries traffic in both east and west directions.

Use the designated route direction for the departure or entrance route when a structure only carries a ramp; i.e., *RT05 – Level of Service* is coded “7”.

Use the most applicable code when a route does not have a designated route direction.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	RT01A	RT02	RT03 Code
F-17-IT	C470 EB RAMP TO I 25 NB	1	025A	NB - Northbound
		2	470A	EB - Eastbound
	C470 ML WB	1	470A	WB - Westbound
	C470 ML EB	1	470A	EB - Eastbound
	I 25 ML NB	1	025A	NB - Northbound
	I 25 ML SB	1	025A	SB - Southbound
	I25 NB Ramp to C470 WB	1	025A	NB - Northbound
		2	470A	WB - Westbound
	I25 SB ramp to E470 EB	1	025A	SB - Southbound
		2	470B	EB - Eastbound
D-03-V-160	WB 6TH AVE	1	0	WB - Westbound
	Lipan St	1	0	NS - Northbound and Southbound



Example	F03 Feature Name	RT01A	RT02	RT03 Code
	Mariposa St	1	0	NS - Northbound and Southbound
PAR CANTBRY- 0.2	CANTERBERRY PKWY SB	1	0	SB - Southbound
	CANTERBERRY PKWY NB	1	0	NB - Northbound



RT03C – Primary Routelog	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (1,0)

SPECIFICATION

Report “1” for the route that is used to determine the highway and milepoint for where the structure is located.

COMMENTARY

This item is primarily used for On-System structures that have multiple highway features both carried on and below the structure to identify the highway and milepoint that is used to locate the structure.

Only one route for the structure should have this item coded “1”. This item should be left blank for all other routes coded for the structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	RT01A	RT02	RT03C Code
F-17-IT	C470 EB RAMP TO I 25 NB	1	025A	
		2	470A	1
	C470 ML WB	1	470A	
	C470 ML EB	1	470A	
	I 25 ML NB	1	025A	
	I 25 ML SB	1	025A	
	I25 NB Ramp to C470 WB	1	025A	
		2	470A	
I25 SB ramp to E470 EB	1	025A		
	2	470B		
D-03-V-160	WB 6TH AVE	1	0	1
	Lipan St	1	0	
	Mariposa St	1	0	
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	1	0	1
	CANTERBERRY PKWY NB	1	0	



RT04 – Route Type SNBI | Item B.RT.04

FREQUENCY	SIMS INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the route type for each route reported in *RT01A – Route Designation* using one of the following codes.

RT04 Codes
1 - Interstate
2 - US Numbered
3 - State
4 - County
5 - City
6 - Federal lands
7 - State lands
X - Other

COMMENTARY

Code “4” for parish routes or other county route equivalents.

Code “5” for city or other municipal streets.

Code “6” when a public highway passes through Federal lands such as national parks, national forests, or DOD facilities and does not meet the description of codes 1 through 5.

Code “7” when a public highway passes through State lands such as State parks or State forests and does not meet the description of codes 1 through 5.

Code “X” when a public highway is not designated as one of the defined route type codes.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	RT01A	RT02	RT04 Code
F-17-IT	C470 EB RAMP TO I 25 NB	1	025A	1 - Interstate
	C470 ML WB	2	470A	3 - State
	C470 ML EB	1	470A	3 - State
	I 25 ML NB	1	470A	3 - State
	I 25 ML SB	1	025A	1 - Interstate
	I25 NB Ramp to C470 WB	1	025A	1 - Interstate
		2	470A	3 - State
	I25 SB ramp to E470 EB	1	025A	1 - Interstate
	2	470B	3 - State	
D-03-V-160	WB 6TH AVE	1	0	5 - City
	Lipan St	1	0	5 - City
	Mariposa St	1	0	5 - City



Example	F03 Feature Name	RT01A	RT02	RT04 Code
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	1	0	5 - City
	CANTERBERRY PKWY NB	1	0	5 - City



RT05 – Level of Service SNBI | Item B.RT.05

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the designated service type for each route reported in *RT01A – Route Designation*, using one of the following codes.

RT05 Codes
1 - Mainline
2 - Alternate
3 - Bypass
4 - Spur
6 - Business
7 - Ramp
8 - Service Road
X - Other

COMMENTARY

The service type designation is determined by the agency, and typically included as part of the signage for the route.

Code “7” for all types, arrangements, and sizes of turning roadways that connect two or more highways at an interchange.

Code “8” for frontage roads. These are typically parallel to the traveled way, may be provided on one or both sides of the mainline, and may or may not be continuous. A frontage road may include a U-turn lane.

For Federal agency roads, code the most logical description of the service type compared to other routes within the facility.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	RT01A	RT02	RT05 Code
F-17-IT	C470 EB RAMP TO I 25 NB	1	025A	7 - Ramp
		2	470A	7 - Ramp
	C470 ML WB	1	470A	1 - Mainline
	C470 ML EB	1	470A	1 - Mainline
	I 25 ML NB	1	025A	1 - Mainline
	I 25 ML SB	1	025A	1 - Mainline
	I25 NB Ramp to C470 WB	1	025A	7 - Ramp
		2	470A	7 - Ramp
I25 SB ramp to E470 EB	1	025A	7 - Ramp	
	2	470B	7 - Ramp	
D-03-V-160	WB 6TH AVE	1	0	1 - Mainline
	Lipan St	1	0	1 - Mainline
	Mariposa St	1	0	1 - Mainline



Example	F03 Feature Name	RT01A	RT02	RT05 Code
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	1	0	1 - Mainline
	CANTERBERRY PKWY NB	1	0	1 - Mainline



Section 5.6 Highways (H)

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H01 – Functional Classification SNBI | Item B.H.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu/Calculated	Menu Selection

SPECIFICATION

Report the functional classification for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* using one of the following codes.

H01 Codes
1 - Interstate
2 - Principal Arterial - Other Freeways or Expressways
3 - Principal Arterial - Other
4 - Minor Arterial
5 - Major Collector
6 - Minor Collector
7 - Local
C-T - TEMP, collector. 5,6*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

This item is automatically populated in SIMSA for highway features that are on a LRS route based on the LRS route reported in *H06 – LRS Route* and the location of the structure reported in *L05 – Latitude* and *L06 – Longitude*.

If the highway feature is not on a LRS route, this item will need to be manually coded by selecting the appropriate code from the drop-down menu.

If this item is updated by manually selecting a code from the drop-down menu for highway features that are on a LRS route, the item will be updated overnight back to the automatically populated code based on the LRS route and location of the structure.

Functional classifications result from the grouping of highways by the character of service they provide.

Ensure that the functional classification designated in this item is consistent with the HPMS.

When one highway feature carries multiple route types, code for the highest-class route following the hierarchy in the codes; Interstate being the highest class.

When the structure carries a ramp, frontage road, or access road and carries the main line number, then it must be coded with the same *H01 – Functional Classification* as the main line.

Code “7” for State or Federal parkways and other park roads unless there is a through highway designated at a higher classification.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	F03	H01 Code
F-17-IT	C470 EB RAMP TO I 25 NB	1 - Interstate
	C470 ML WB	2 - Principal Arterial - Other Freeways or Expressways
	C470 ML EB	2 - Principal Arterial - Other Freeways or Expressways
	I 25 ML NB	1 - Interstate
	I 25 ML SB	1 - Interstate
	I25 NB Ramp to C470 WB	1 - Interstate
	I25 SB ramp to E470 EB	1 - Interstate
D-03-V-160	WB 6TH AVE	3 - Principal Arterial - Other
	Lipan St	7 - Local
	Mariposa St	7 - Local
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	7 - Local
	CANTERBERRY PKWY NB	7 - Local



H02 – Urban Code SNBI | Item B.H.02

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu/Calculated	Menu Selection

SPECIFICATION

Report the urbanized area code consistent with the State’s HPMS urban boundaries for each highway feature reported in F01A – *Feature Type* and F01B – *Feature Designation* at the structure using one of the following codes.

H02 Codes
00847 - Alamosa
03520 - Aspen
05410 - Basalt
05734 - Battlement Mesa
09298 - Boulder
09811 - Breckenridge
11080 - Brush
11242 - Buena Vista
13267 - Cañon City
13564 - Carbondale
14563 - Castle Rock
18856 - Colorado Springs
20368 - Cortez
20827 - Craig
23230 - Delta
23527 - Denver--Aurora
25147 - Durango
25390 - Eagle
25930 - Eaton
26275 - Edwards--Avon
27928 - Estes Park
28441 - Evergreen
28995 - Falcon
29775 - Firestone--Frederick
30628 - Fort Collins
30755 - Fort Lupton
30817 - Fort Morgan
31478 - Fraser
31889 - Frisco
33652 - Glenwood Springs
34273 - Grand Junction

H02 Codes
34286 - Grand Lake
34786 - Greeley
36001 - Gunnison
36136 - Gypsum
43253 - Johnstown
46126 - Lafayette--Erie--Louisville
46450 - La Junta
47287 - Lamar
48448 - Leadville
51175 - Longmont
58951 - Montrose
62110 - New Castle
66889 - Pagosa Springs
72613 - Pueblo
72620 - Pueblo West
74935 - Rifle
76528 - Roxborough Park
78256 - Salida
80704 - Severance
82090 - Silverthorne--Keystone
82701 - Snowmass Village
84682 - Steamboat Springs
84790 - Sterling
86984 - Telluride--Mountain Village
87269 - The Pinery
88516 - Trinidad
89920 - Vail
93673 - Wellington
97048 - Woodland Park
99998 - Small Urban Area
99999 - Rural Area

COMMENTARY

This item is automatically populated in SIMSA for highway features that are on a LRS route based on the location of the structure reported in L05 – *Latitude* and L06 – *Longitude* and urban and city boundaries.



If the highway feature is not on a LRS route, this item will need to be manually coded by selecting the appropriate code from the drop-down menu.

If this item is updated by manually selecting a code from the drop-down menu for highway features that are on a LRS route, the item will be updated overnight back to the automatically populated code based on the LRS route and location of the structure.

For structures outside urbanized areas, code “99999” for rural areas with population less than 5,000 and code “99998” for small urban areas with population 5,000 to 49,999 in accordance with the HPMS Field Manual.

FHWA approves adjusted urban boundaries submitted by State DOT planning offices. State’s HPMS urban boundaries are based on the FHWA-approved adjusted urban boundaries.

State maps of the unadjusted U.S. Census urban boundaries with highways (map layers: Labels, Transportation, and Urban Areas checked) can be found on the U.S. Census Bureau TIGERweb website.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H02 Code
F-17-IT	C470 EB RAMP TO I 25 NB	23527 - Denver--Aurora
	C470 ML WB	23527 - Denver--Aurora
	C470 ML EB	23527 - Denver--Aurora
	I 25 ML NB	23527 - Denver--Aurora
	I 25 ML SB	23527 - Denver--Aurora
	I25 NB Ramp to C470 WB	23527 - Denver--Aurora
	I25 SB ramp to E470 EB	23527 - Denver--Aurora
D-03-V-160	WB 6TH AVE	23527 - Denver--Aurora
	Lipan St	23527 - Denver--Aurora
	Mariposa St	23527 - Denver--Aurora
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	23527 - Denver--Aurora
	CANTERBERRY PKWY NB	23527 - Denver--Aurora



H03 – NHS	SNBI Item B.H.03
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu/Calculated	Menu Selection

SPECIFICATION

Report the National Highway System (NHS) designation for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* using one of the following codes.

H03 Codes
Y - On NHS
N - Not on NHS

COMMENTARY

This item is automatically populated in SIMSA for highway features that are on a LRS route based on the LRS route reported in *H06 – LRS Route* and the location of the structure reported in *L05 – Latitude* and *L06 – Longitude*.

If the highway feature is not on a LRS route, this item will need to be manually coded by selecting the appropriate code from the drop-down menu.

If this item is updated by manually selecting a code from the drop-down menu for highway features that are on a LRS route, the item will be updated overnight back to the automatically populated code based on the LRS route and location of the structure.

The National Highway System includes the Interstate Highway System as well as other roads important to the nation's economy, defense, and mobility. The National Highway System was developed by the U.S. Department of Transportation in cooperation with the states, local officials, and metropolitan planning organizations. The National Highway System includes the following subsystems of highways:

- Interstate
- Other principal arterials
- Strategic Highway Network (STRAHNET)
- Major STRAHNET connectors
- Intermodal connectors, which are highways that provide access between major intermodal passenger and freight facilities and the other four subsystems making up the NHS.

Ramps connecting a highway feature on the National Highway System to a highway feature not on the National Highway System are considered to be on the National Highway System.

National Highway System routes and connectors are identified in the HPMS.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	F03 Feature Name	H03 Code
F-17-IT	C470 EB RAMP TO I 25 NB	Y - On NHS
	C470 ML WB	Y - On NHS
	C470 ML EB	Y - On NHS
	I 25 ML NB	Y - On NHS
	I 25 ML SB	Y - On NHS
	I25 NB Ramp to C470 WB	Y - On NHS
	I25 SB ramp to E470 EB	Y - On NHS
D-03-V-160	WB 6TH AVE	Y - On NHS
	Lipan St	N - Not on NHS
	Mariposa St	N - Not on NHS
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	N - Not on NHS
	CANTERBERRY PKWY NB	N - Not on NHS



H04 – National Highway Freight Network SNBI | Item B.H.04

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu/Calculated	Menu Selection

SPECIFICATION

Report the National Highway Freight Network (NHFN) designation for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* using one of the following codes.

H04 Codes
1 - Primary Highway Freight System
2 - Interstate portions not on the Primary Highway Freight System
3 - Critical Rural Freight Corridor
4 - Critical Urban Freight Corridor
N - Not on the NHFN
Y-T - TEMP, On the NHFN. 1, 2, 3, 4*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

This item is automatically populated in SIMSA for highway features that are on a LRS route based on the LRS route reported in *H06 – LRS Route* and the location of the structure reported in *L05 – Latitude* and *L06 – Longitude*.

If the highway feature is not on a LRS route, this item will need to be manually coded by selecting the appropriate code from the drop-down menu.

If this item is updated by manually selecting a code from the drop-down menu for highway features that are on a LRS route, the item will be updated overnight back to the automatically populated code based on the LRS route and location of the structure.

This item is used to identify the National Highway Freight Network and to report to Congress on the conditions and performance of the network. This item is also used with other items to classify structures according to serviceability, safety, and essentiality for public use and considers the potential impacts to emergency evacuation routes and to regional and national freight and passenger mobility if the serviceability of the structure is restricted or diminished.

Ramps connecting two highway features are only considered to be on the National Highway Freight Network when both connecting highway features are on the National Highway Freight Network.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	F03 Feature Name	H04 Code
F-17-IT	C470 EB RAMP TO I 25 NB	N - Not on the NHFN
	C470 ML WB	N - Not on the NHFN
	C470 ML EB	N - Not on the NHFN
	I 25 ML NB	1 - Primary Highway Freight System
	I 25 ML SB	1 - Primary Highway Freight System
	I25 NB Ramp to C470 WB	N - Not on the NHFN
	I25 SB ramp to E470 EB	N - Not on the NHFN
D-03-V-160	WB 6TH AVE	N - Not on the NHFN
	Lipan St	N - Not on the NHFN
	Mariposa St	N - Not on the NHFN
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	N - Not on the NHFN
	CANTERBERRY PKWY NB	N - Not on the NHFN



H05 – STRAHNET Designation SNBI | Item B.H.05

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu/Calculated	Menu Selection

SPECIFICATION

Report the Strategic Highway Network (STRAHNET) designation for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* using one of the following codes.

H05 Codes
1 - STRAHNET route
2 - STRAHNET Connector route
N - Not a STRAHNET route

COMMENTARY

This item is automatically populated in SIMSA for highway features that are on a LRS route based on the LRS route reported in *H06 – LRS Route* and the location of the structure reported in *L05 – Latitude* and *L06 – Longitude*.

If the highway feature is not on a LRS route, this item will need to be manually coded by selecting the appropriate code from the drop-down menu.

If this item is updated by manually selecting a code from the drop-down menu for highway features that are on a LRS route, the item will be updated overnight back to the automatically populated code based on the LRS route and location of the structure.

The STRAHNET is a system of Interstate and primary highways and connectors that provide access to major US military installations and strategic ports, and provides continuity and emergency capabilities for defense purposes. The STRAHNET is determined by the Military Surface Deployment and Distribution Command in coordination with FHWA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H05 Code
F-17-IT	C470 EB RAMP TO I 25 NB	N - Not a STRAHNET route
	C470 ML WB	N - Not a STRAHNET route
	C470 ML EB	N - Not a STRAHNET route
	I 25 ML NB	1 - STRAHNET route
	I 25 ML SB	1 - STRAHNET route
	I25 NB Ramp to C470 WB	N - Not a STRAHNET route
	I25 SB ramp to E470 EB	N - Not a STRAHNET route
D-03-V-160	WB 6TH AVE	N - Not a STRAHNET route
	Lipan St	N - Not a STRAHNET route
	Mariposa St	N - Not a STRAHNET route
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	N - Not a STRAHNET route
	CANTERBERRY PKWY NB	N - Not a STRAHNET route



H06 – LRS Route	SNBI Item B.H.06
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (120)

SPECIFICATION

Report the LRS Route ID that is reported to the HPMS for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

The LRS Route ID must match the HPMS data exactly.

The LRS Route ID is not necessarily the same as the route number posted along the highway, but is a number used to uniquely identify a route within a county or a State for GIS analysis and mapping purposes.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H06 Code
F-17-IT	C470 EB RAMP TO I 25 NB	025A_G_2271
	C470 ML WB	470A
	C470 ML EB	470A
	I 25 ML NB	025A
	I 25 ML SB	025A
	I25 NB Ramp to C470 WB	025A_H_2285
	I25 SB ramp to E470 EB	025A_F_102
D-03-V-160	WB 6TH AVE	031-0-2013-4204
	Lipan St	031-0-2013-1955
	Mariposa St	031-0-2013-2051
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	035-0-2013-4262
	CANTERBERRY PKWY NB	035-0-2013-4262



H07 – LRS Mile Point	SNBI Item B.H.07
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (8,3)

SPECIFICATION

Report the LRS mile point for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* to the nearest thousandth of a mile. The mile point must be consistent with the LRS route and mile point system for the HPMS.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

The LRS mile point is used to establish the location of the structure along the LRS route.

For highway features that carry an LRS route, code the mile point at the beginning of the structure.

When the LRS route passes below the structure, code the mile point on the LRS route where the structure is first encountered.

Code the most appropriate mile point if the highway does not carry an LRS route.

Code “0” for county roads, city streets, or other roads that do not record a mile point or establish a local system to input to this field.

When parallel structures at the same location appear in the highway system, the structure carrying traffic in the direction of inventory is identified as the first reference point. The parallel structure in the opposite direction of inventory will be coded with a reference point one thousandth (0.001) of a mile larger.

On-System Structures:

- The Reference Point System has been established for State highways to identify the location of a structure on a route based on the mileage measured from the beginning of the route. The beginning of a route is usually the western or southern state line, or it may be the junction with another highway. Reference points for odd numbered highways increase from south to north, reference points for even numbered highways increase from west to east.
- Stub routes are measured from their southern or western beginning intersection with another highway.
- Intermittent routes merge, and diverge, with higher numbered highways through portions of their length. Sections are identified with a letter added to the end of the route number.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	F03 Feature Name	H07 Code
F-17-IT	C470 EB RAMP TO I 25 NB	0.142
	C470 ML WB	26.217
	C470 ML EB	26.217
	I 25 ML NB	194.14
	I 25 ML SB	194.14
	I25 NB Ramp to C470 WB	0.257
	I25 SB ramp to E470 EB	0.239
D-03-V-160	WB 6TH AVE	0.31
	Lipan St	0.207
	Mariposa St	0
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	2.571
	CANTERBERRY PKWY NB	2.571



H08 – Lanes on Highway SNBI | Item B.H.08

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (2,0)

SPECIFICATION

Report the number of highway traffic lanes for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*.

COMMENTARY

For highway features carried on the structure, include all lanes that are striped or otherwise operated as full width highway traffic lanes, auxiliary lanes (e.g., merge lanes, ramp lanes, and turn lanes), and special use lanes that run the entire length of the structure, independent of direction of travel.

For highway features below the structure that are not carried on another structure, include all lanes that are striped or otherwise operated as full width highway traffic lanes, auxiliary lanes (e.g., merge lanes, ramp lanes, and turn lanes), and special use lanes that pass below the entire width of the structure, independent of direction of travel.

Do not include pedestrian sidewalks, bike paths, or railroad tracks as lanes, unless the railroad tracks are concurrent with the highway lanes.

For double deck structures and parallel structures, code the number of lanes consistent with the highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*.

For sidehill structures, code the total number of lanes for the highway feature regardless if carried on the structure or terrain/earth material.

Code “1” when a highway is signed or striped for one-lane, but carries two-way traffic.

Code “1” for a highway feature carried on the structure when *G06 – Width Curb to Curb* is less than 16 feet and the structure is not striped for full width traffic lanes.

Code “1” when only one set of runners is placed on the structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H08 Code
F-17-IT	C470 EB RAMP TO I 25 NB	2
	C470 ML WB	2
	C470 ML EB	2
	I 25 ML NB	4
	I 25 ML SB	4
	I25 NB Ramp to C470 WB	1
	I25 SB ramp to E470 EB	2
D-03-V-160	WB 6TH AVE	3
	Lipan St	2
	Mariposa St	2
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	2
	CANTERBERRY PKWY NB	1



H09 – AADT SNBI | Item B.H.09

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (8,0)

SPECIFICATION

Report the Annual Average Daily Traffic (AADT) from the most recent count for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

The AADT must be compatible with the other items reported for the highway feature.

Report the design AADT for a newly inventoried highway feature when actual AADT information is not yet available.

Report the last open AADT for a highway feature that is temporarily closed until repair or replacement can be completed.

All traffic, including trucks, is counted in the AADT. The number of trucks counted in the AADT is reported in *H10 – Average Annual Daily Truck Traffic*.

This item may be coded “0” for highway features that pass above or below the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H09 Code
F-17-IT	C470 EB RAMP TO I 25 NB	20000
	C470 ML WB	112000
	C470 ML EB	112000
	I 25 ML NB	176000
	I 25 ML SB	176000
	I25 NB Ramp to C470 WB	0
	I25 SB ramp to E470 EB	0
D-03-V-160	WB 6TH AVE	31795
	Lipan St	4907
	Mariposa St	472
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	6121
	CANTERBERRY PKWY NB	6121



H10 – Average Annual Daily Truck Traffic SNBI | Item B.H.10

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (8,0)

SPECIFICATION

Report the Annual Average Daily Truck Traffic (AADTT) from the most recent count for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

The AADTT must be compatible with the other items reported for the highway feature.

Report the design AADTT for a newly inventoried highway feature when actual AADTT information is not yet available.

Report the last open AADTT for a highway feature that is temporarily closed until repair or replacement can be completed.

Do not include vans, pickup trucks, and other light delivery trucks in the AADTT.

The AADTT represents vehicle classes 4-13 as described in FHWA’s Traffic Monitoring Guide.

This item may be coded “0” when *H10A – AADTT Percent* is reported.

This item may be coded “0” for highway features that pass above or below the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H10 Code
F-17-IT	C470 EB RAMP TO I 25 NB	1200
	C470 ML WB	3360
	C470 ML EB	3360
	I 25 ML NB	10560
	I 25 ML SB	10560
	I25 NB Ramp to C470 WB	0
	I25 SB ramp to E470 EB	0
D-03-V-160	WB 6TH AVE	1590
	Lipan St	98
	Mariposa St	0
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	122
	CANTERBERRY PKWY NB	122



H10A – AADTT Percent	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (2,0)

SPECIFICATION

Report the percentage of *H09 – AADT* attributed to truck traffic for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* to the nearest percent.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

When truck traffic information is not available, an estimated average percentage of the AADT attributed to truck traffic based on the functional classification (*H01 – Functional Classification*) of the reported highway feature may be used from the following table:

H10A Codes	Functional Classification
10	Interstate
10	Principal Arterial - Other Freeways or Expressways
10	Principal Arterial - Other
8	Minor Arterial
5	Major Collector
1	Minor Collector
0	Local

Do not include vans, pickup trucks, and other light delivery trucks in the AADTT.

The AADTT represents vehicle classes 4-13 as described in FHWA’s Traffic Monitoring Guide.

This item may be coded “0” when *H09 – AADT* is not greater than 100.

This item may be coded “0” when *H10 – Average Annual Daily Truck Traffic* is reported.

This item may be coded “0” for highway features that pass above or below the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H10A Code
F-17-IT	C470 EB RAMP TO I 25 NB	6
	C470 ML WB	3
	C470 ML EB	3
	I 25 ML NB	6
	I 25 ML SB	6
	I25 NB Ramp to C470 WB	0
	I25 SB ramp to E470 EB	0
D-03-V-160	WB 6TH AVE	5
	Lipan St	2
	Mariposa St	0



Example	F03 Feature Name	H10A Code
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	2
	CANTERBERRY PKWY NB	2



H11 – Year of AADT	SNBI Item B.H.11
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (4,0)

SPECIFICATION

Report the year associated with the data reported in *H09 – AADT* for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H11 Code
F-17-IT	C470 EB RAMP TO I 25 NB	2023
	C470 ML WB	2023
	C470 ML EB	2023
	I 25 ML NB	2023
	I 25 ML SB	2023
	I25 NB Ramp to C470 WB	2023
	I25 SB ramp to E470 EB	2023
D-03-V-160	WB 6TH AVE	2021
	Lipan St	2009
	Mariposa St	2025
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	2021
	CANTERBERRY PKWY NB	2021



H12 – Maximum Vertical Clearance SNBI | Item B.H.12

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	N (12,10)

SPECIFICATION

The minimum vertical clearance for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*, measured over the 10-foot-wide envelope of the traveled part of the highway, that provides for the maximum usable clearance envelope.

COMMENTARY

This item is automatically populated in SIMSA based on the vertical clearances reported for each Stripe # for the reported highway feature in the Vertical Clearance tab of SIMSA. Refer to the Colorado Bridge Inspection Manual for guidance on reporting information in the Vertical Clearance tab in SIMSA.

This item identifies the maximum height of a notional 10-foot wide vehicle that can pass on the reported highway feature. This information is sometimes used for preliminary military routing.

The traveled part of the highway feature does not include shoulders.

This item may not represent the absolute minimum clearance over the highway feature. Refer to *H13 – Minimum Vertical Clearance* for the absolute minimum clearance.

Measure the vertical clearance plumb from the deck or highway surface to the lowest structure member restriction, appurtenance (signs, utilities, etc.) attached to the structure, or other structure.

For a double decked bridge inventoried as one bridge, report this information for each highway feature on each level of the bridge.

Update field measurements when alterations are made to the structure or highway that affect the previously measured clearance.

Clearance measurements taken using a laser-based measurement system (e.g., Clearance Master or LiDAR) should be reported to the same number of decimal places that was reported by the measuring device. Vertical clearance measurements taken with handheld devices (e.g., laser distance measuring tool or Disto) should be rounded down to the nearest hundredth of a foot.

Clearances greater than 30 feet may be estimated.

Code “99.9” when the clearance is 100 feet or greater, no restriction exists above the reported highway feature, or the reported highway feature is more than one interchange level below the structure (i.e., the maximum vertical clearance for the reported highway feature is controlled by a structure one level or more below the inventoried structure at an interchange).

This item is not coded for highway features that pass above the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	F03 Feature Name	H12 Code
F-17-IT	C470 EB RAMP TO I 25 NB	18.52
	C470 ML WB	99.9
	C470 ML EB	99.9
	I 25 ML NB	20.6692913386
	I 25 ML SB	17.8280839895
	I25 NB Ramp to C470 WB	
	I25 SB ramp to E470 EB	
D-03-V-160	WB 6TH AVE	99.9
	Lipan St	16.75
	Mariposa St	21.66
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	99.9
	CANTERBERRY PKWY NB	99.9



H13 – Minimum Vertical Clearance SNBI | Item B.H.13

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	N (12,10)

SPECIFICATION

The minimum vertical clearance measured over each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*.

COMMENTARY

This item is automatically populated in SIMSA based on the vertical clearances reported for Edge of Asphalt Left, each Stripe #, and Edge of Asphalt Right for the reported highway feature in the Vertical Clearance tab of SIMSA. Refer to the Colorado Bridge Inspection Manual for guidance on reporting information on the Vertical Clearance tab in SIMSA.

Shoulders must be contiguous with the traveled way and must be structurally adequate for all weather and traffic conditions consistent with the facility carried. Unstabilized grass or dirt, with no base course, flush with and beside the traffic lane is not to be considered a shoulder for this item. When it is not readily known if stabilized construction details were used, the presence of rutting, heaving, water retention, or other distress may be used as indicators that the shoulder is not stabilized.

Measure the vertical clearance plumb from the deck or highway surface (including paved or stabilized shoulders) to the lowest structure member restriction, appurtenance (signs, utilities, etc.) attached to the structure, or other structure.

Update field measurements when alterations are made to the structure or highway that affect the previously measured clearance.

Clearance measurements taken using a laser-based measurement system (e.g., Clearance Master or LiDAR) should be reported to the same number of decimal places that was reported by the measuring device. Vertical clearance measurements taken with handheld devices (e.g., laser distance measuring tool or Disto) should be rounded down to the nearest hundredth of a foot.

Clearances greater than 30 feet may be estimated.

Code “99.9” when the clearance is 100 feet or greater, no restriction exists above the reported highway feature, or the reported highway feature is more than one interchange level below the structure (i.e., the minimum vertical clearance for the reported highway feature is controlled by a structure one level or more below the inventoried structure at an interchange).

This item is not coded for highway features that pass above the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	F03 Feature Name	H13 Code
F-17-IT	C470 EB RAMP TO I 25 NB	17.76
	C470 ML WB	99.9
	C470 ML EB	99.9
	I 25 ML NB	18.5072178478
	I 25 ML SB	17.3097112861
	I25 NB Ramp to C470 WB	
	I25 SB ramp to E470 EB	
D-03-V-160	WB 6TH AVE	99.9
	Lipan St	16.66
	Mariposa St	21.58
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	99.9
	CANTERBERRY PKWY NB	99.9



H14 – Minimum Horizontal Clearance Left SNBI | Item B.H.14

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry	N (12,10)

SPECIFICATION

Report the minimum horizontal clearance on the left for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* below the structure.

COMMENTARY

Measure from the left edge line of the highway (excluding shoulders, turn lanes, acceleration, or deceleration lanes) in the direction of travel to the nearest substructure unit, rigid barrier, oncoming traffic lane, or toe of slope that is steeper than 1 to 3 (vertical to horizontal).

Reinforced concrete and masonry traffic safety features are considered rigid barriers; metal and timber railings are not considered rigid barriers.

Clearance measurements taken using a laser-based measurement system (e.g., Clearance Master or LiDAR) should be reported to the same number of decimal places that was reported by the measuring device. Horizontal clearance measurements taken with handheld devices (e.g., laser distance measuring tool or Disto) should be rounded down to the nearest hundredth of a foot.

Clearances greater than 30 feet may be estimated.

Leave this item blank for reported highway feature(s) carried on the structure.

Code “0” when the reported highway feature is a two-way highway that is not divided at the structure. Highways undivided at the structure are reported as “0” due to the adjacent oncoming traffic lane which provides no horizontal clearance to the left.

Code “99.9” when the clearance is 100 feet or greater or the minimum horizontal clearance for the reported highway feature is controlled by another structure.

This item may be left blank for highway features that pass above or below the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H14 Code
F-17-IT	C470 EB RAMP TO I 25 NB	
	C470 ML WB	99.9
	C470 ML EB	99.9
	I 25 ML NB	4.00
	I 25 ML SB	4.00
	I25 NB Ramp to C470 WB	
	I25 SB ramp to E470 EB	
D-03-V-160	WB 6TH AVE	
	Lipan St	0.00
	Mariposa St	0.00
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	
	CANTERBERRY PKWY NB	



Example	F03 Feature Name	H14 Code
Example 1 in Figure 8	1-way Road	20.00
Example 2 in Figure 9	2-way Road	0.00
Example 3 in Figure 10	Southbound	18.08
	Northbound	19.08
Example 4 in Figure 11	Westbound	35.50
	Eastbound	35.50

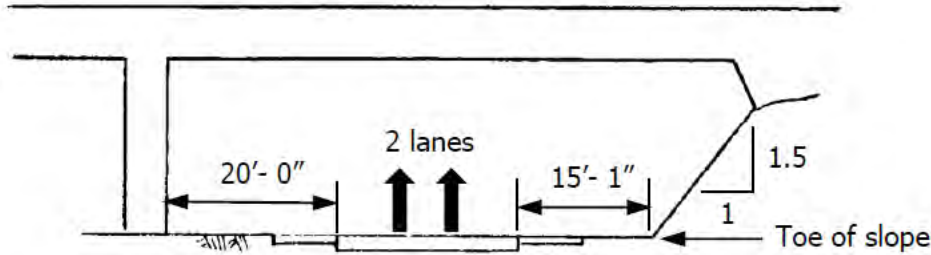


Figure 8. Bridge elevation view with one highway feature below the bridge carries 1-way traffic, looking in direction of traffic (Example 1)

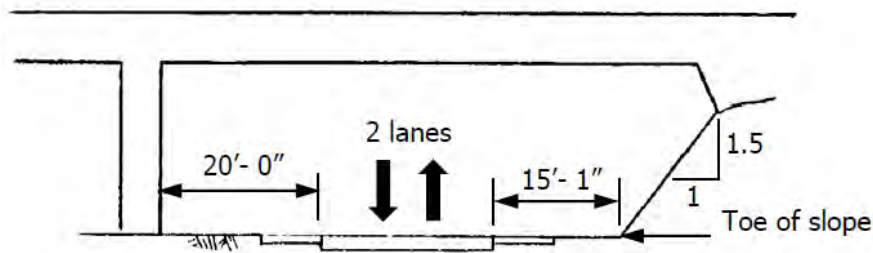


Figure 9. Bridge elevation view with one highway feature below the bridge carries 2-way traffic (Example 2)

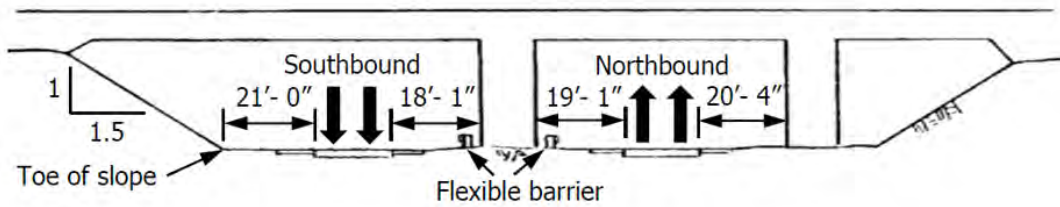


Figure 10. Bridge elevation view with two highway features below the bridge for a highway that is divided at the bridge (Example 3)

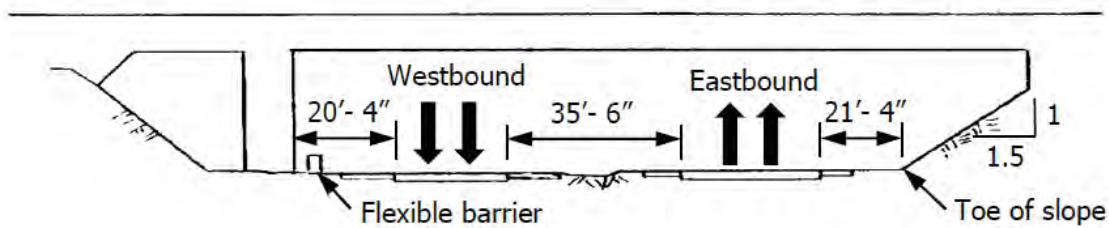


Figure 11. Bridge elevation view with two highway features below the bridge for a highway that is divided at the bridge (Example 4)



H15 – Minimum Horizontal Clearance Right SNBI | Item B.H.15

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry	N (12,10)

SPECIFICATION

Report the minimum horizontal clearance on the right for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* below the structure.

COMMENTARY

Measure from the right edge line of the highway (excluding shoulders, turn lanes, acceleration, or deceleration lanes) in the direction of travel to the nearest substructure unit, rigid barrier, oncoming traffic lane or toe of slope that is steeper than 1 to 3 (vertical to horizontal).

Reinforced concrete and masonry traffic safety features are considered rigid barriers; metal and timber railings are not considered rigid barriers.

Clearance measurements taken using a laser-based measurement system (e.g., Clearance Master or LiDAR) should be reported to the same number of decimal places that was reported by the measuring device. Horizontal clearance measurements taken with handheld devices (e.g., laser distance measuring tool or Disto) should be rounded down to the nearest hundredth of a foot.

Clearances greater than 30 feet may be estimated.

Leave this item blank for highway feature(s) carried on the structure.

Code “99.9” when the clearances are 100 feet or greater or the minimum horizontal clearance for the reported highway feature is controlled by another structure.

This item may be left blank for highway features that pass above or below the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H14 Code
F-17-IT	C470 EB RAMP TO I 25 NB	
	C470 ML WB	99.9
	C470 ML EB	99.9
	I 25 ML NB	12.00
	I 25 ML SB	12.00
	I25 NB Ramp to C470 WB	
	I25 SB ramp to E470 EB	
D-03-V-160	WB 6TH AVE	
	Lipan St	5.00
	Mariposa St	14.50
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	
	CANTERBERRY PKWY NB	
Example 1 in Figure 8	1-way Road	15.08
Example 2 in Figure 9	2-way Road	15.08
Example 3 in Figure 10	Southbound	21.00
	Northbound	20.33



Example	F03 Feature Name	H14 Code
Example 4 in <i>Figure 11</i>	Westbound	20.33
	Eastbound	21.33



H16 – Maximum Usable Surface Width SNBI | Item B.H.16

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (3,1)

SPECIFICATION

Report the maximum usable surface width for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* that passes below or is carried on the structure, rounded down to the nearest tenth of a foot.

COMMENTARY

Measure the width perpendicular to the centerline of the highway (including paved or stabilized shoulders).

Shoulders are included when they are contiguous with the traveled way and structurally adequate for all weather and traffic conditions consistent with the facility carried. Unstabilized grass or dirt, with no base course, flush with and beside the traffic lane is not considered a shoulder for this item. When it is not readily known if stabilized construction details were used, the presence of rutting, heaving, water retention, or other distress may be used as indicators that the shoulder is not stabilized.

Flush (striped) and mountable medians are not considered restrictions.

A curb greater than 6 inches high is considered non-mountable.

Code the most restrictive portion for flared structures.

Use the least restrictive configuration when movable rigid barriers are used to accommodate reversible lanes for non-construction-related applications.

Buried structures follow the same procedure as non-buried structures.

Code “99.9” when the surface width is 100 feet or greater.

This item may be coded “0” for highway features that pass above or below the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 12* through *Figure 14* for examples of the maximum usable surface width measurement (A):

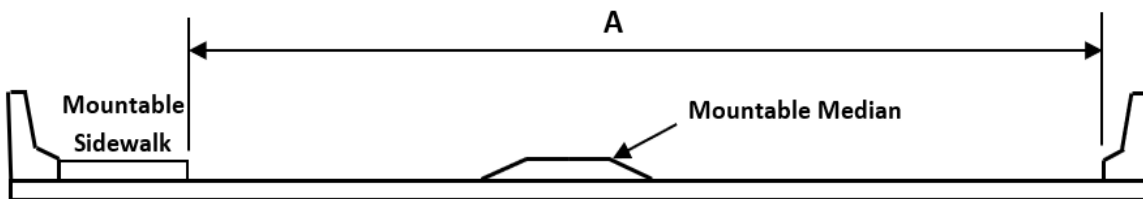


Figure 12. Cross-section view of a highway feature carried on the bridge with a mountable median

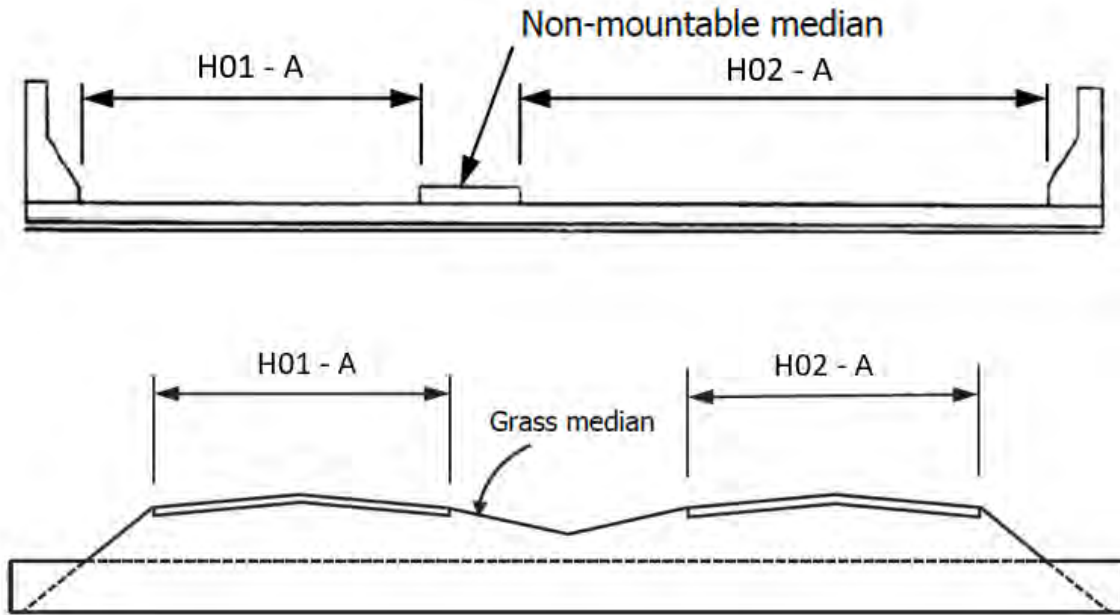


Figure 13. Cross-section view of two highway features carried on a bridge or culvert with various median types

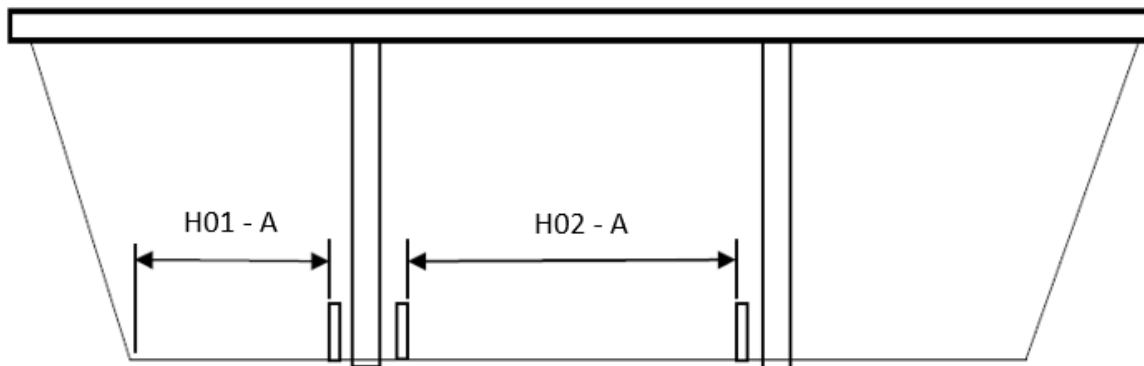


Figure 14. Cross-section view of two highway features below a bridge

CODING EXAMPLES

Example	F03 Feature Name	H16 Code
F-17-IT	C470 EB RAMP TO I 25 NB	38.0
	C470 ML WB	55.0
	C470 ML EB	55.0
	I 25 ML NB	67.8
	I 25 ML SB	67.7
	I25 NB Ramp to C470 WB	0
	I25 SB ramp to E470 EB	0
D-03-V-160	WB 6TH AVE	33.7
	Lipan St	28.0
	Mariposa St	39.5
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	27.0
	CANTERBERRY PKWY NB	20.0



H17 – Detour Length SNBI | Item B.H.17

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (3,0)

SPECIFICATION

Report the length to the nearest mile of the total additional travel for a vehicle to bypass the structure for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*, that passes below or is carried on the structure.

COMMENTARY

This item should identify the total additional travel for a vehicle which would result from closing of the structure. This additional travel will usually be the sum of the distance traveled perpendicular to the route the structure is located on. The parallel distance traveled is not to be counted as part of the detour length.

Determine bypass detour length by evaluating the potential to move traffic, including military vehicles and trucks, around structures.

- Avoid detour routes that have load, height, or capacity limitations unacceptable for the additional traffic detoured onto them.
- Consider using the parallel structure of dual bridges or temporary culverts if emergency detours can be constructed with a reasonable amount of grading within the existing right-of-way.
- Consider using ramps and/or frontage roads in interchanges.
- Review plans for strategic structure detour routes.

Colorado allows any paved roadway to be used as a detour route for State highway structures when the route can carry state legal loads. Any passable roadway can be used for Off-System structures. These detours may or may not allow overloads depending on the roadway condition.

When determining if a bypass is available at the site, vehicles (including military vehicles) must be able to move around the structure. For instance, a bypass would be available for a diamond interchange, an interchange where a service road is available, or other interchanges where the positioning and layout of the ramps is such that they could be used without difficulty to get around the structure.

Code “999” where a detour does not exist.

Code “0” for available ground level bypass.

Code “1” when the highway feature is carried by a structure, is not at an interchange, and a parallel structure can be used as a temporary bypass with a reasonable amount of crossover grading.

This item may be left blank for highway features that pass above or below the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H17 Code
F-17-IT	C470 EB RAMP TO I 25 NB	1
	C470 ML WB	1
	C470 ML EB	1
	I 25 ML NB	2
	I 25 ML SB	2
	I25 NB Ramp to C470 WB	
	I25 SB ramp to E470 EB	
D-03-V-160	WB 6TH AVE	1
	Lipan St	1
	Mariposa St	1
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	2
	CANTERBERRY PKWY NB	2
Example 1 in Figure 15	Highway feature on structure	1
Example 2 in Figure 16	Highway feature on structure	4
Example 3 in Figure 17	Highway feature below structure	0



Figure 15. Detour map for a highway feature carried on the structure with temporary crossover bypass (Example 1)

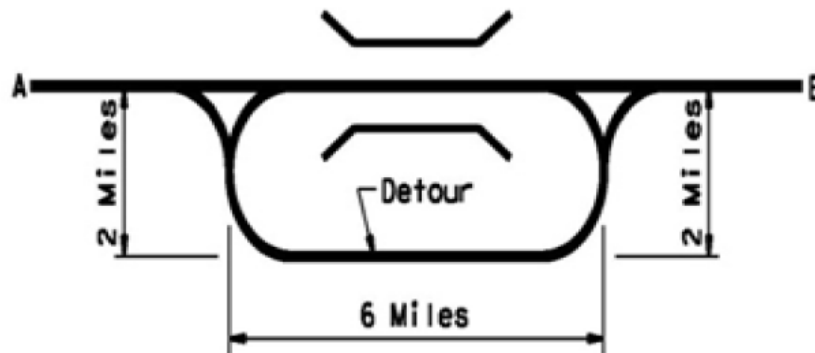


Figure 16. Detour map for a highway feature carried on the structure (Example 2)

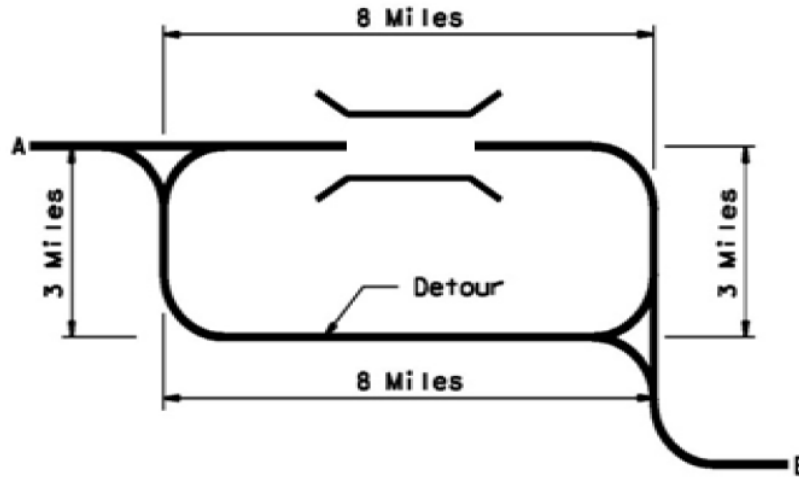


Figure 17. Detour map for a highway feature that passes below the structure (Example 3)



H18 – Crossing Structure Number	SNBI Item B.H.18
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (15)

SPECIFICATION

Report the exact structure number as assigned in *ID01 – Structure Number* for each structure carrying the highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* that is located directly above or below the inventoried structure.

COMMENTARY

The intent of this item is to capture the structure number for structures of a multi-level interchange, where structures pass directly above or below other structures.

Leave this item blank when the structures does not pass above or below another structure, or passes above or below a structure that is not reportable to the NBI.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H18 Code
F-17-IT	C470 EB RAMP TO I 25 NB	
	C470 ML WB	
	C470 ML EB	
	I 25 ML NB	F-17-JV
	I 25 ML SB	F-17-JU
	I25 NB Ramp to C470 WB	F-17-IQ
	I25 SB ramp to E470 EB	F-17-JX
D-03-V-160	WB 6TH AVE	
	Lipan St	
	Mariposa St	
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	
	CANTERBERRY PKWY NB	



H20A – Legacy Milepoint	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (8,3)

SPECIFICATION

Report the Legacy Milepoint where each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* intersects the structure to the nearest thousandth of a mile.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

When parallel structures at the same location appear in the highway system, the structure carrying traffic in the direction of inventory is identified as the first reference point. The parallel structure in the opposite direction of inventory will be identified with a reference point one thousandth of a mile larger. For intermittent routes, see the dissertation below.

On-System Structures:

- The Reference Point System has been established for state highways to identify the location of a structure on a route based on the mileage measured from the beginning of the route. The beginning of a route is usually the western or southern state line, or it may be the junction with another highway. Reference points for odd numbered highways increase from south to north, reference points for even numbered highways increase from west to east.
- Stub routes are measured from their southern or western beginning intersection with another highway.
- Intermittent routes merge, and diverge, with higher numbered highways through portions of their length. Sections are identified with a letter added to the end of the route number.

Off-System Structures:

- Code “0” for county roads, city streets or other roads that do not record a mile point, or establish a local system to input to this field.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H20A Code
F-17-IT	C470 EB RAMP TO I 25 NB	26.138
	C470 ML WB	26.138
	C470 ML EB	26.138
	I 25 ML NB	194.283
	I 25 ML SB	194.283
	I25 NB Ramp to C470 WB	194.283
	I25 SB ramp to E470 EB	194.283
D-03-V-160	WB 6TH AVE	0
	Lipan St	0
	Mariposa St	0
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	0
	CANTERBERRY PKWY NB	0



H21A – Base Highway Network	CDOT
-----------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report whether each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* is on the Base Highway Network using one of the following codes.

H21A Codes
0 - Not on the Base Network
1 - On the Base Network

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

The Base Highway Network includes the through-lane (mainline) portions of the NHS, rural/urban principal arterial system and rural minor arterial system. Ramps, frontage roads and other roadways are not included in the Base Highway Network.

This item may be left blank for highway features that pass above or below the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from ins inspection.

CODING EXAMPLES

Example	F03 Feature Name	H21A Code
F-17-IT	C470 EB RAMP TO I 25 NB	1 - On the Base Network
	C470 ML WB	1 - On the Base Network
	C470 ML EB	1 - On the Base Network
	I 25 ML NB	1 - On the Base Network
	I 25 ML SB	1 - On the Base Network
	I25 NB Ramp to C470 WB	
	I25 SB ramp to E470 EB	
D-03-V-160	WB 6TH AVE	0 - Not on the Base Network
	Lipan St	0 - Not on the Base Network
	Mariposa St	0 - Not on the Base Network
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	0 - Not on the Base Network
	CANTERBERRY PKWY NB	0 - Not on the Base Network



H22A – Future AADT	CDOT
--------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (8,0)

SPECIFICATION

Report the Annual Average Daily Traffic (AADT) projected for the year listed in *H22B – Year of Future AADT* for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

The intent of this item is to provide an estimated AADT for a 20-year forecast.

The future AADT must be compatible with the other items reported for the highway feature.

This shall be projected at least 17 years but no more than 22 years from the year of inspection. This item may be updated anytime but must be updated when the forecast falls below the 17-year limit.

When planning data is not available, use the best estimate based on site familiarity.

This item may be coded “0” for highway features that pass above or below the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H22A Code
F-17-IT	C470 EB RAMP TO I 25 NB	110400
	C470 ML WB	137760
	C470 ML EB	137760
	I 25 ML NB	223520
	I 25 ML SB	223520
	I25 NB Ramp to C470 WB	0
	I25 SB ramp to E470 EB	0
D-03-V-160	WB 6TH AVE	61020
	Lipan St	5658
	Mariposa St	544
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	7645
	CANTERBERRY PKWY NB	7645



H22B – Year of Future AADT	CDOT
----------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (4,0)

SPECIFICATION

Report the year the future AADT value in *H22A – Future AADT* was projected for each highway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*.

COMMENTARY

This item is to be coded by the CDOT Bridge and Structures Asset Management Unit.

The projected year shall be at least 17 years, but no more than 22 years from the year of inspection. This item may be updated anytime but must be updated when the forecast falls below the 17-year limit.

This item may be coded “0” for highway features that pass above or below the structure and are carried by another structure, i.e., when a structure number is reported in *H18 – Crossing Structure Number*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03 Feature Name	H22B Code
F-17-IT	C470 EB RAMP TO I 25 NB	2043
	C470 ML WB	2043
	C470 ML EB	2043
	I 25 ML NB	2043
	I 25 ML SB	2043
	I25 NB Ramp to C470 WB	0
	I25 SB ramp to E470 EB	0
D-03-V-160	WB 6TH AVE	2045
	Lipan St	2045
	Mariposa St	2045
PAR CANTBRY-0.2	CANTERBERRY PKWY SB	2044
	CANTERBERRY PKWY NB	2044



Section 5.7 Railroads (RR)

RR01 – Railroad Service Type 234
RR02 – Railroad Minimum Vertical Clearance..... 235
RR03 – Railroad Minimum Horizontal Offset 237



RR01 – Railroad Service Type SNBI | Item B.RR.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the designated railroad service type for each railroad feature reported in *F01A – Feature Type* and *F01B – Feature Designation* using one of the following codes.

RR01 Codes
F - Freight
FE - Freight, electrified
P - Passenger
PE - Passenger, electrified
M - Multiple services, conventional
ME - Multiple services, electrified
I - Inactive

COMMENTARY

Electrified is intended for electricity-powered rail lines and third-rails, but not for battery or fuel cell powered lines.

Code “M” when multiple rail services (such as freight and passenger rail) use the same tracks and both services are not electrified.

Code “ME” when multiple rail services (such as freight and passenger rail) use the same tracks, and at least one is electrified.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03	RR01 Code
F-17-IT	RTD Light Rail	PE - Passenger, electrified
D-03-V-160	UP RR in Span 1	F - Freight
	UP RR in Span 2	F - Freight
	RTD LRT in Span 7	PE - Passenger, electrified
	UP RR in Span 7	F - Freight
PAR CANTBRY-0.2: No railroad feature	-	-



RR02 – Railroad Minimum Vertical Clearance	SNBI Item B.RR.02
--	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (3,1)

SPECIFICATION

Report the minimum vertical clearance for each railroad feature reported in *F01A – Feature Type* and *F01B – Feature Designation*, rounded down to the nearest tenth of a foot.

COMMENTARY

Measure plumb from the top of rails to the lowest structure restriction or appurtenance (signs, utilities, etc.) attached to the structure. Appurtenances attached to the structure that serve only a railroad purpose, such as catenary systems, are excluded from the measurement and do not reduce the vertical clearance measurement.

Several measurements may need to be made to determine the minimum vertical clearance for each railroad feature when one or more railroad tracks pass below the structure. However, only the minimum measurement is reported.

Update measurements when alterations are made to the structure or railroad tracks that affect the previously measured clearance.

Code “99.9” when the clearance is 100 feet or greater.

Code this item only when *F02 – Feature Location* for the reported railroad feature is coded “B”.

Clearances greater than 30 feet may be estimated.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03	RR02 Code
F-17-IT: Vertical clearance estimated at 16’-6”	RTD Light Rail	16.5
D-03-V-160: Vertical clearances on sketch for each railroad	UP RR in Span 1	21.1
	UP RR in Span 2	22.9
	RTD LRT in Span 7	24.5
	UP RR in Span 7	24.5
PAR CANTBRY-0.2: No railroad feature	-	-
Example 1 in <i>Figure 18</i>	Freight/Passenger Rail	31.2
Example 2 in <i>Figure 19</i>	Passenger Rail	20.2
	Freight Rail	21.2

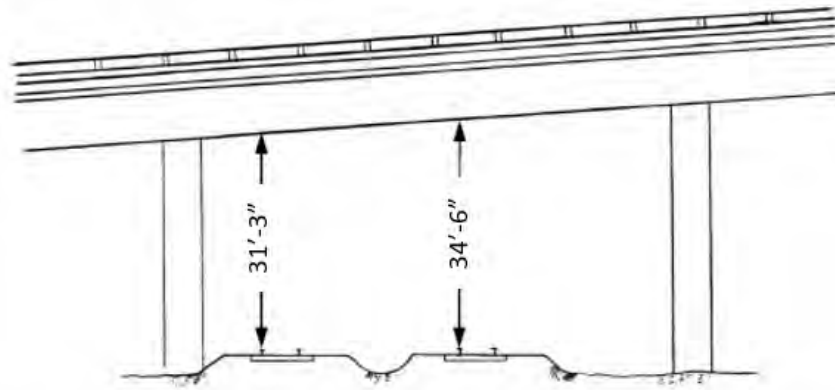


Figure 18. Bridge elevation view with two freight/passenger rail tracks below the bridge (Example 1)

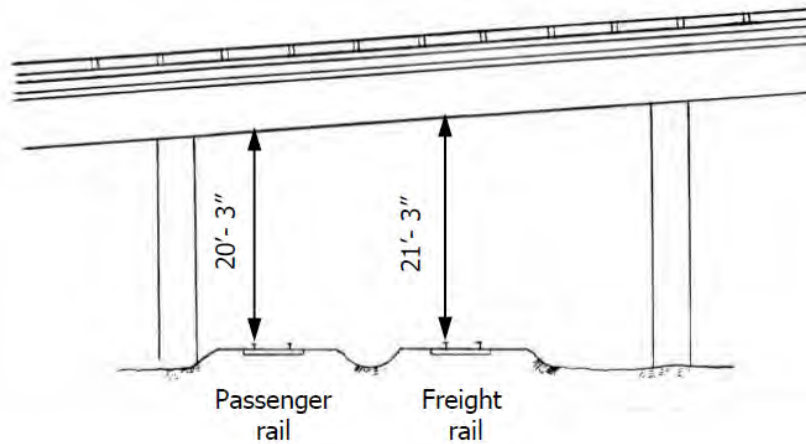


Figure 19. Bridge elevation view with one passenger rail and one freight rail track below the bridge (Example 2)



RR03 – Railroad Minimum Horizontal Offset SNBI | Item B.RR.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (3,1)

SPECIFICATION

Report the minimum horizontal offset for each railroad feature reported in *F01A – Feature Type* and *F01B – Feature Designation*, rounded down to the nearest tenth of a foot.

COMMENTARY

The intent of this item is to collect the minimum distance from the centerline of the railroad track to a structure related obstruction.

Measure perpendicular from the centerline of the tracks to the nearest substructure unit or toe of slope that is steeper than 1 to 3 (vertical to horizontal).

For multiple tracks with the same railroad service type, report the minimum distance after measuring the offsets in both directions from all tracks.

Code “99.9” when the minimum horizontal offset is 100 feet or greater.

Code this item only when *F02 – Feature Location* for the reported railroad feature is coded “B”.

Offsets greater than 30 feet may be estimated.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	F03	RR03 Code
F-17-IT: Horizontal clearance estimated at 24'-6"	RTD Light Rail	24.5
D-03-V-160: Vertical clearances on sketch for each railroad	UP RR in Span 1	16.4
	UP RR in Span 2	14.1
	RTD LRT in Span 7	13.5
	UP RR in Span 7	31.7
PAR CANTBRY-0.2: No railroad feature	-	-
Example 1 in Figure 20	Railroad Track	20.3
Example 2 in Figure 21	Freight Tracks	18.5

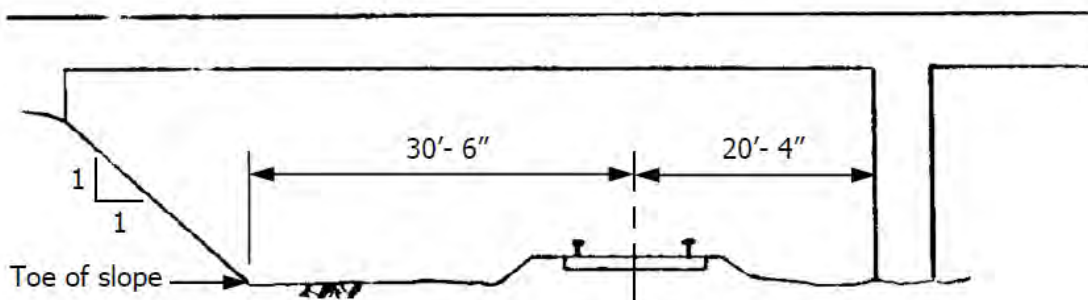


Figure 20. Bridge elevation view with one railroad track below the bridge (Example 1)

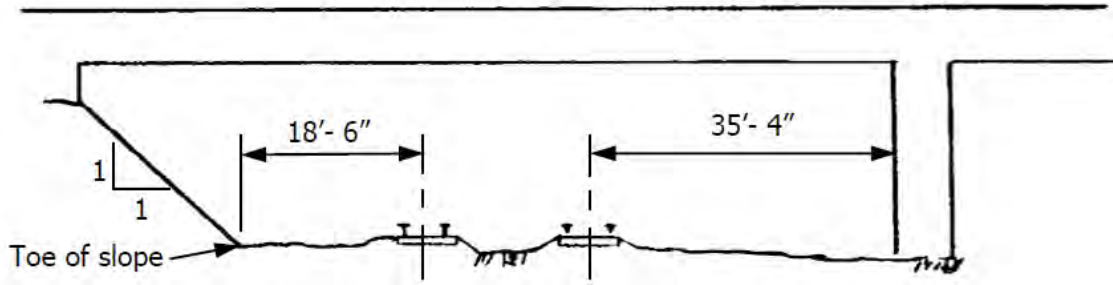


Figure 21. Bridge elevation view with two railroad tracks that both carry freight below the bridge (Example 2)



Section 5.8 Navigable Waterways (N)

N01 – Navigable Waterway	240
N02 – Navigable Minimum Vertical Clearance	241
N03 – Movable Bridge Maximum Navigation Vertical Clearance	242
N04 – Navigation Channel Width.....	243
N05 – Navigation Channel Minimum Horizontal Clearance	244
N06 – Substructure Navigation Protection.....	245



N01 – Navigable Waterway	SNBI Item B.N.01
--------------------------	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	None	Not Applicable

SPECIFICATION

Report whether the waterway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* is considered navigable waters of the United States using one of the following codes.

N01 Codes
N - Not navigable waters
Y - Navigable waters
U - Navigable waters designation is undetermined

COMMENTARY

This item is not available to code in SIMSA for waterway features reported in *F01A – Feature Type* and *F01B – Feature Designation*.

There are no navigable waters in Colorado. CDOT codes this item “N” for all structures reported to FHWA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



N02 – Navigable Minimum Vertical Clearance	SNBI Item B.N.02
--	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	None	Not Applicable

SPECIFICATION

Report the minimum vertical clearance over the waterway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*, rounded down to the nearest tenth of a foot.

COMMENTARY

This item is not available to code in SIMSA for waterway features reported in *F01A – Feature Type* and *F01B – Feature Designation*.

There are no navigable waters in Colorado. This item does not get reported to FHWA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



N03 – Movable Bridge Maximum Navigation Vertical Clearance	SNBI Item B.N.03
--	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	None	Not Applicable

SPECIFICATION

Report the maximum vertical clearance over the waterway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*, rounded down to the nearest tenth of a foot.

COMMENTARY

This item is not available to code in SIMSA for waterway features reported in *F01A – Feature Type* and *F01B – Feature Designation*.

There are no navigable waters in Colorado. This item does not get reported to FHWA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



N04 – Navigation Channel Width	SNBI Item B.N.04
--------------------------------	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	None	Not Applicable

SPECIFICATION

Report the navigation channel width for the waterway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*, rounded down to the nearest tenth of a foot.

COMMENTARY

This item is not available to code in SIMSA for waterway features reported in *F01A – Feature Type* and *F01B – Feature Designation*.

There are no navigable waters in Colorado. This item does not get reported to FHWA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



N05 – Navigation Channel Minimum Horizontal Clearance	SNBI Item B.N.05
---	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	None	Not Applicable

SPECIFICATION

Report the minimum horizontal clearance for the waterway feature reported in *F01A – Feature Type* and *F01B – Feature Designation*, rounded down to the nearest tenth of a foot.

COMMENTARY

This item is not available to code in SIMSA for waterway features reported in *F01A – Feature Type* and *F01B – Feature Designation*.

There are no navigable waters in Colorado. This item does not get reported to FHWA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



N06 – Substructure Navigation Protection	SNBI Item B.N.06
--	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	None	Not Applicable

SPECIFICATION

Report the presence and adequacy of substructure navigation protection for the waterway feature reported in *F01A – Feature Type* and *F01B – Feature Designation* using one of the following codes.

N06 Codes
0 - Navigation protection not required; bridge has been designed or assessed to have adequate capacity to resist anticipated impact loads without collapse
1 - Navigation protection not required; assessment of navigation opening and vessel traffic has determined that there is a low probability that an errant vessel could impact the bridge
2 - Protective system in place and functioning
3 - Protective system in place, but damage or deterioration impacts ability to protect
4 - Protective system in place, but reevaluation of design suggested
5 - No protective system in place, but reevaluation of the need for a protective system is recommended

COMMENTARY

This item is not available to code in SIMSA for waterway features reported in *F01A – Feature Type* and *F01B – Feature Designation*.

There are no navigable waters in Colorado. This item does not get reported to FHWA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



Section 5.9 Geometry (G)

G01 – NBIS Length.....	247
G02 – Total Length	249
G03 – Maximum Span	252
G04 – Minimum Span.....	254
G05 – Out to Out.....	256
G06 – Width Curb to Curb	259
G07 – Left Curb or Sidewalk	262
G08 – Right Curb or Sidewalk	264
G09 – Approach Roadway Width.....	266
G10 – Median	268
G11 – Skew	270
G12 – Curved Bridge.....	272
G13 – Maximum Height.....	274
G14 – Sidehill Bridge	275
G15 – Irregular Deck Area	276
G16 – Federal Deck Area	277
G17A – Asphalt / Fill Thickness.....	278
G18A – Expansion Device Type.....	279



G01 – NBIS Length SNBI | Item B.G.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (7,1)

SPECIFICATION

Report the NBIS length to the nearest tenth of a foot measured along the roadway centerline.

COMMENTARY

Measure along the roadway centerline between undercopings of abutments or spring lines of arches.

The roadway centerline is the physical center of the portion of the roadway for the movement of vehicles, regardless of striping, and exclusive of shoulders. The length for curved structures would be measured along the curved centerline.

For filled or closed spandrel arches, measure along the roadway centerline from inside faces of exterior spring lines.

For other structures under fill, measure along the roadway centerline from inside faces of exterior walls; this includes multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.

Vaulted abutments and enclosed spans or sections are included in the NBIS length.

Code the field measured NBIS length when *G02 – Total Length* is less than 30 feet.

When *G02 – Total Length* is greater than 30.0 feet the value for this item may be estimated from plans or drawings, or estimated using the observed difference between *G02 – Total Length* or *G03 – Maximum Span* and the NBIS bridge definition.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 22* and *Figure 23* for several examples of the NBIS length measurement (A):

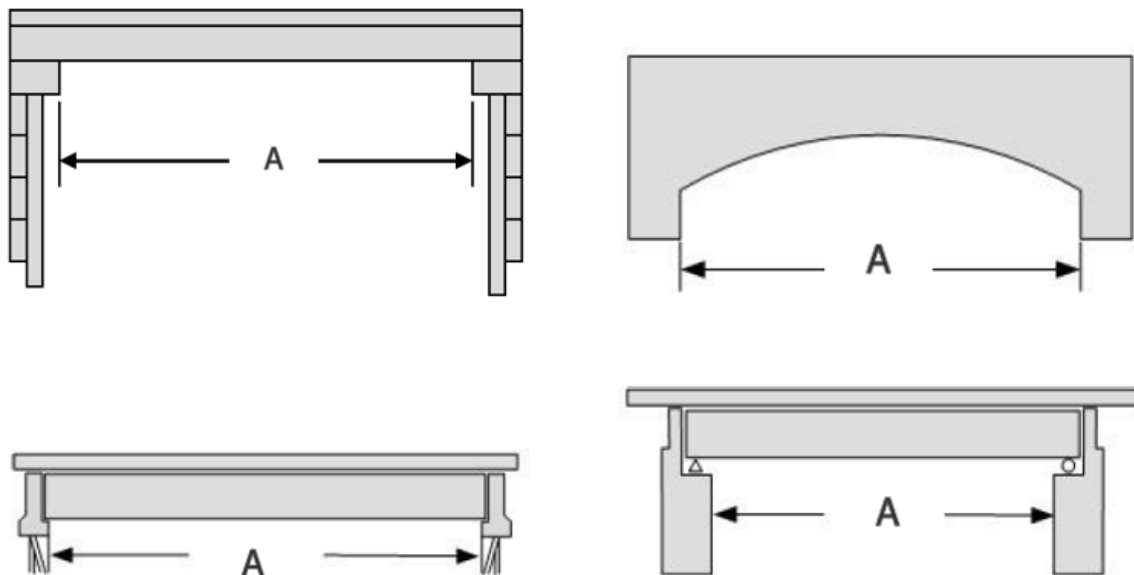


Figure 22. Profile views of various single span bridges

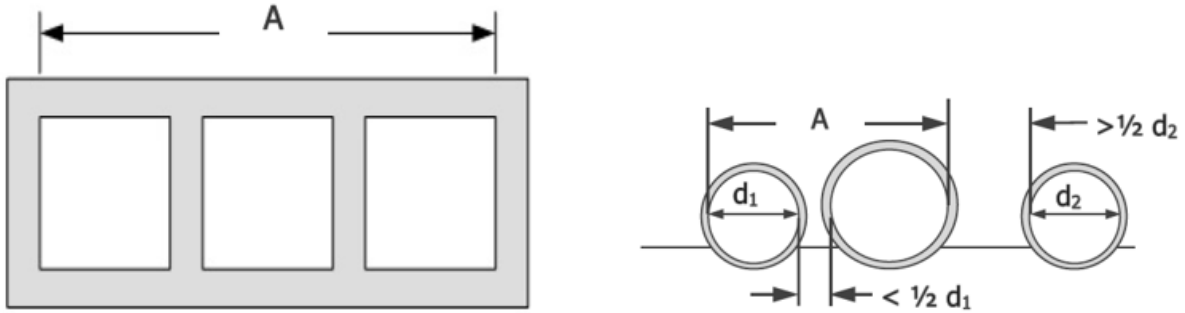


Figure 23. Profile views of various culverts under fill

CODING EXAMPLES

Example	G01 Code
F-17-IT: NBIS length is 625'-6"	625.5
D-03-V-160: NBIS length is 1338'-3"	1338.3
PAR CANTBRY-0.2: NBIS length is 20'-11"	20.9
Example 1 in Figure 24	20.9

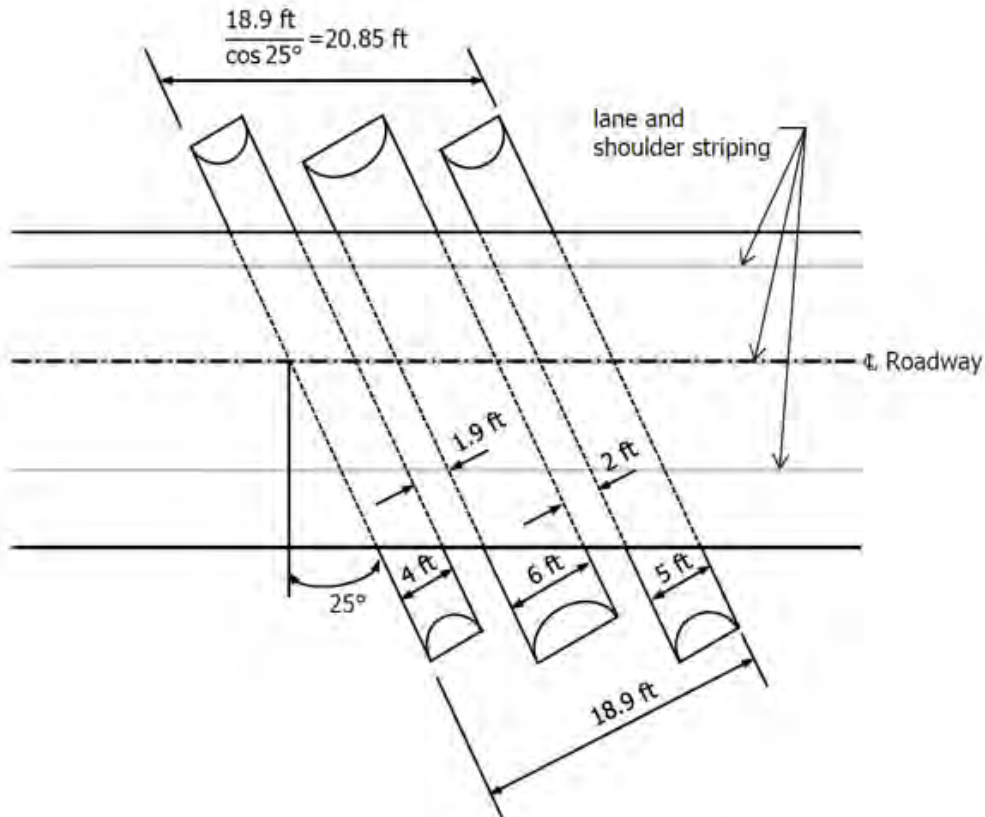


Figure 24. Plan view of a skewed, multi-pipe culvert under fill (Example 1)



G02 – Total Length	SNBI Item B.G.02
--------------------	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (7,1)

SPECIFICATION

Report the total length of the structure to the nearest tenth of a foot measured along the roadway centerline.

COMMENTARY

Measure along the roadway centerline from back-to-back of backwalls or from paving notch to paving notch at abutments.

The roadway centerline is the physical center of the portion of the roadway for the movement of vehicles, regardless of striping, and exclusive of shoulders. The total length for curved structures is measured along the curved centerline.

For filled or closed spandrel arches, measure along the roadway centerline from inside faces of exterior spring lines when well-defined backwalls or paving notches do not exist.

For other structures under fill, measure along the roadway centerline from inside faces of exterior walls. Multiple pipes are considered contiguous when the clear distance between openings is less than half of the smaller contiguous opening.

For structures with vaulted abutments and enclosed spans or sections, measure from back-to-back of backwalls or from paving notch to paving notch inclusive of the vaulted abutments and enclosed spans.

The total length measurement can be used with *G05 – Out to Out* to calculate an estimated deck area, *G16 – Federal Deck Area*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 25* and *Figure 26* for several examples of the total length measurement (A):

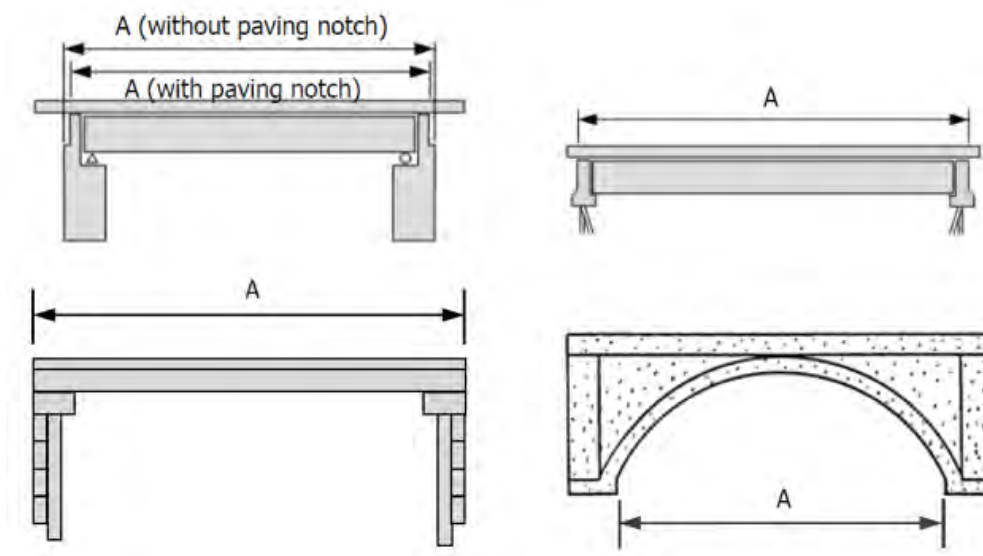


Figure 25. Profile views of various single span bridges

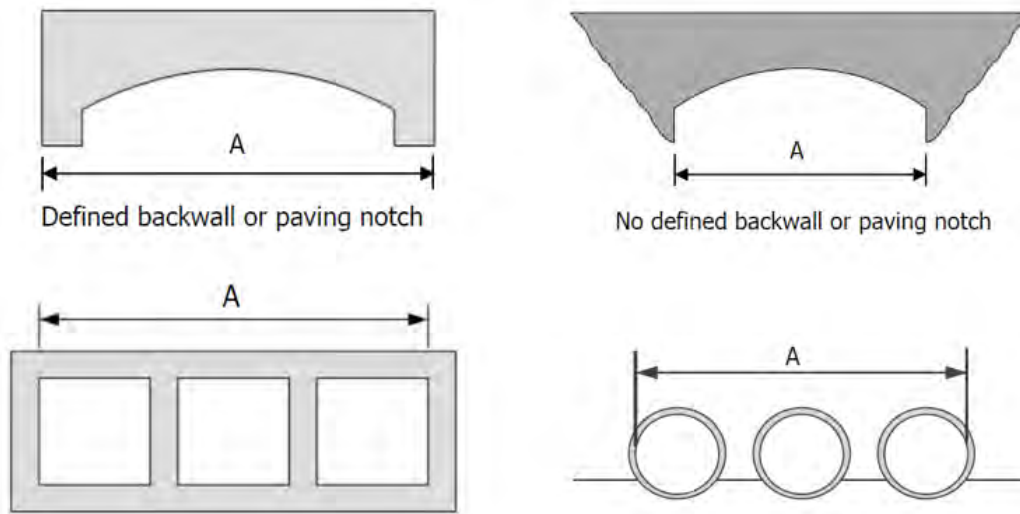


Figure 26. Profile views of various spandrel arches and culverts under fill

CODING EXAMPLES

Example	G02 Code
F-17-IT: Total length is 636'-6"	636.5
D-03-V-160: Total length is 1344'-8"	1344.7
PAR CANTBRY-0.2: Total length is 20'-11"	20.9
Example 1 in Figure 27	477.6
Example 2 in Figure 28	504.0
Example 3 in Figure 29	20.9

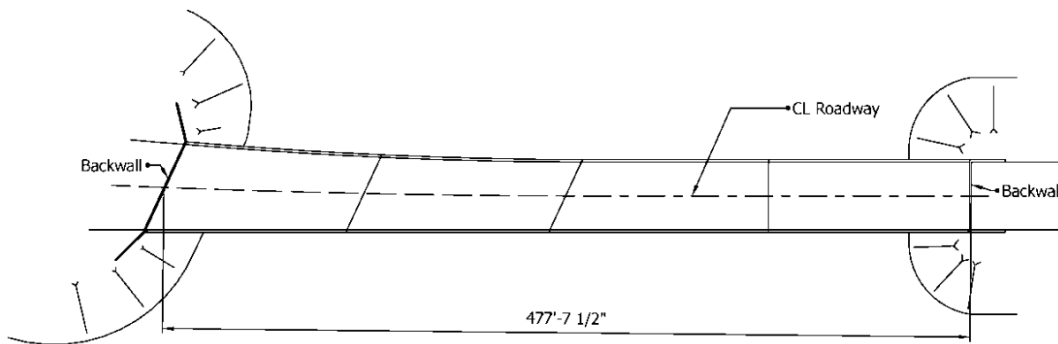


Figure 27. Plan view of a four-span bridge with variable skews (Example 1)

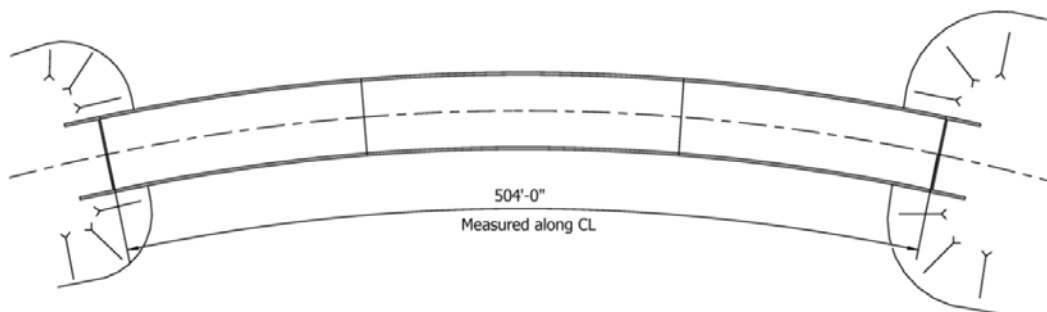


Figure 28. Plan view of a three-span curved bridge (Example 2)

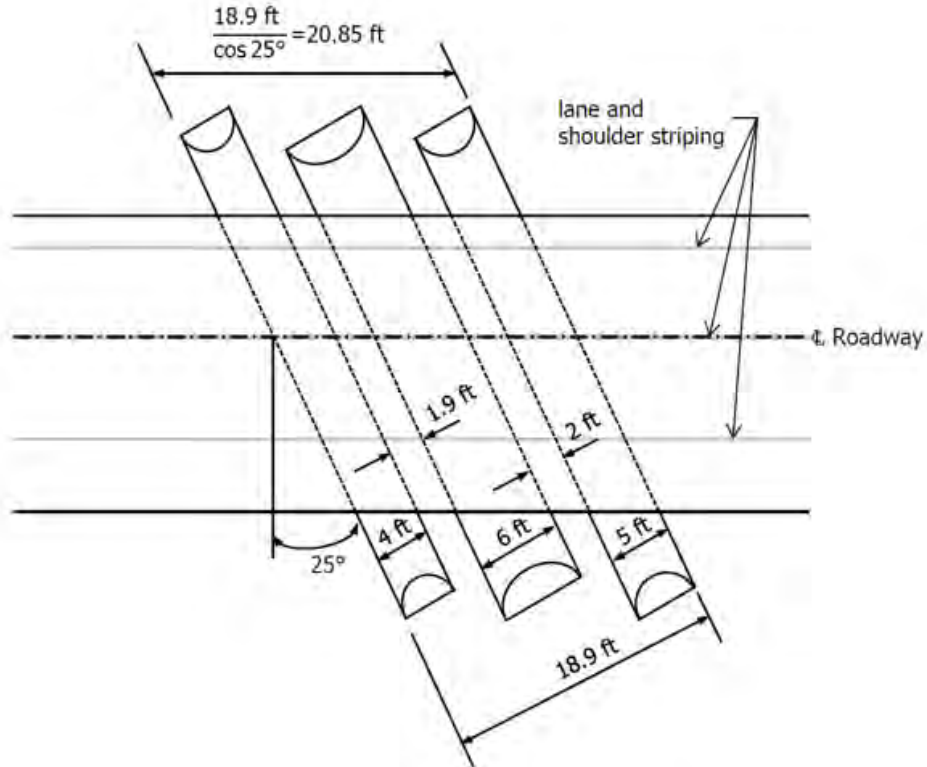


Figure 29. Plan view of a skewed, multi-pipe culvert under fill (Example 3)



G03 – Maximum Span		SNBI Item B.G.03
--------------------	--	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (5,1)

SPECIFICATION

Report the length of the maximum span to the nearest tenth of foot, measured from centerline of bearing to centerline of bearing, along the roadway centerline.

COMMENTARY

For rigid frames, arches, pipes, integral abutments, or similar type structures where there is not a clear centerline of bearing, use the clear open distance between piers, bents, walls, or abutments.

The roadway centerline is the physical center of the portion of the roadway for the movement of vehicles, regardless of striping, and exclusive of shoulders. The length for curved structures would be measured along the curved centerline.

For structures with in-span hinges or bearings, measure from centerline of substructure bearing to centerline of substructure bearing, or clear open distance between substructure units when there is not a clear centerline of bearing.

For structures with single spans this item has the same value as *G04 – Minimum Span*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 30* for several examples of the maximum span measurement (A):

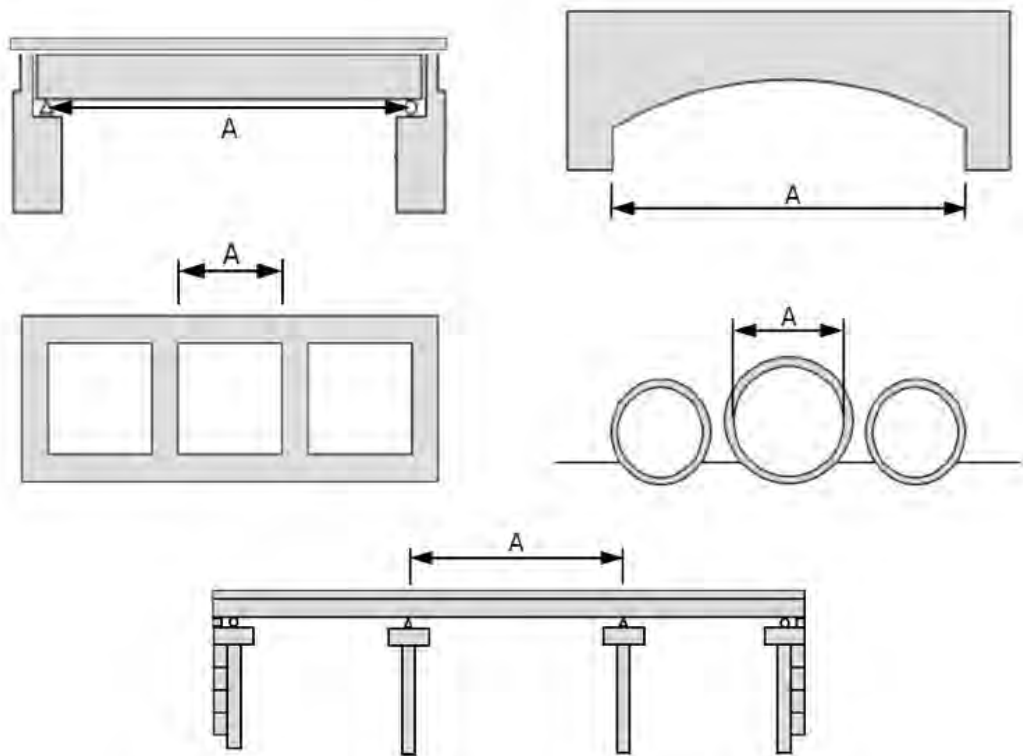


Figure 30. Profile views of various structures



CODING EXAMPLES

Example	G03 Code
F-17-IT: Maximum span length is 185'-1 1/2"	185.1
D-03-V-160: Maximum span length is 99'-0"	99.0
PAR CANTBRY-0.2: Maximum span length is 10'-0"	10.0
Example 1 in Figure 31	120.1
Example 2 in Figure 32	190.0

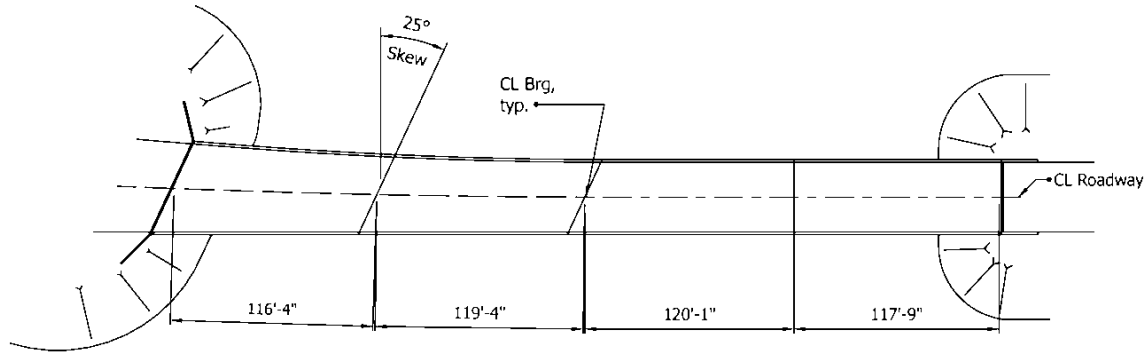


Figure 31. Plan view of a four-span bridge with variable skews (Example 1)

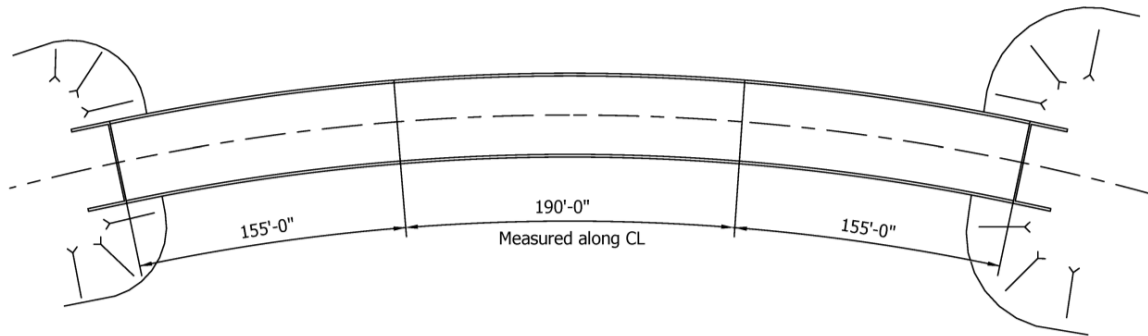


Figure 32. Plan view of a three-span curved bridge (Example 2)



G04 – Minimum Span SNBI | Item B.G.04

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (5,1)

SPECIFICATION

Report the length of the minimum span to the nearest tenth of foot, measured from centerline of bearing to centerline of bearing, along the roadway centerline.

COMMENTARY

For rigid frames, arches, pipes, integral abutments, or similar type structures where there is not a clear centerline of bearing, use the clear open distance between piers, bents, or abutments.

The roadway centerline is the physical center of the portion of the roadway for the movement of vehicles, regardless of striping, and exclusive of shoulders. The length for curved structures is measured along the curved centerline.

For bridges with in-span hinges or bearings, measure from centerline of substructure bearing to centerline of substructure bearing, or clear open distance between substructure units when there is not a clear centerline of bearing.

For structures with single spans this item has the same value as *G03 – Maximum Span*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 33* for several examples of the minimum span measurement (A):

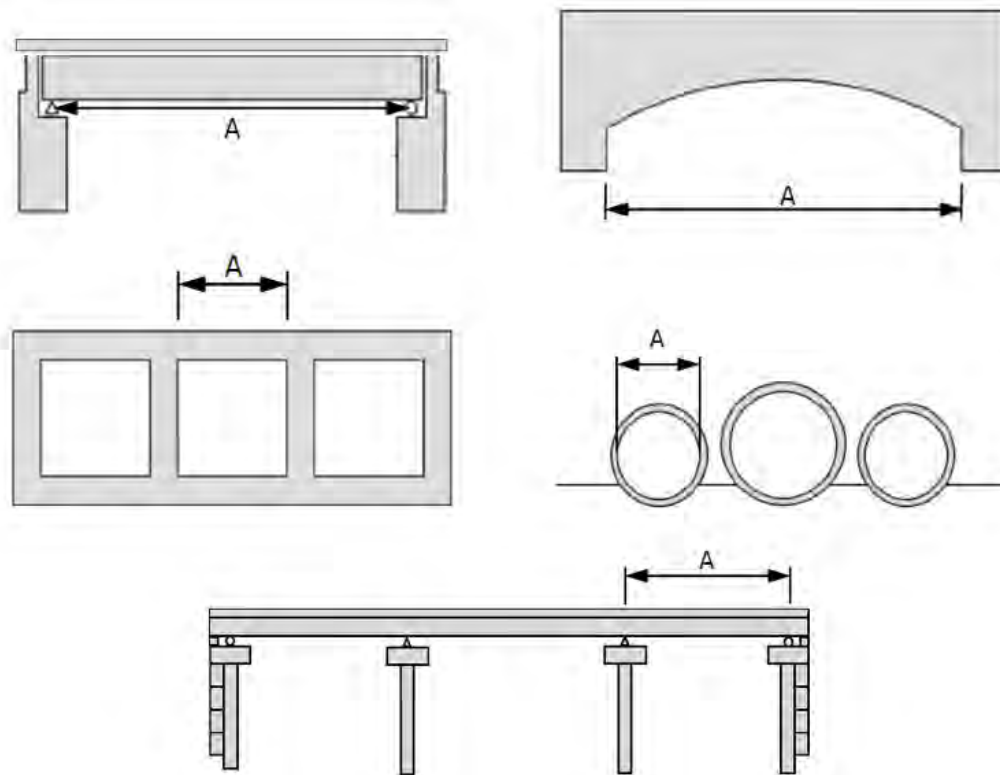


Figure 33. Profile views of various structures



CODING EXAMPLES

Example	G04 Code
F-17-IT: Minimum span length is 130'-0"	130.0
D-03-V-160: Minimum span length is 57'-1"	57.1
PAR CANTBRY-0.2: Minimum span length is 10'-0"	10.0
Example 1 in Figure 34	116.3
Example 2 in Figure 35	155.0

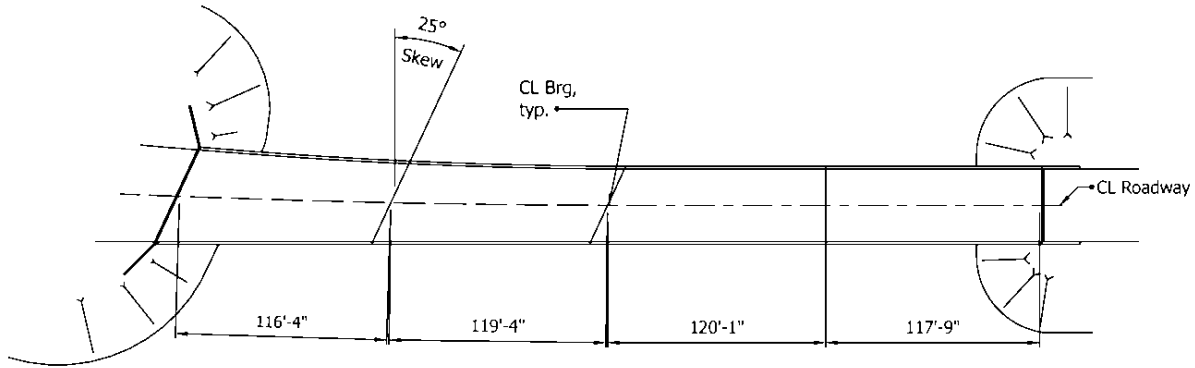


Figure 34. Plan view of a four-span bridge with variable skews (Example 1)

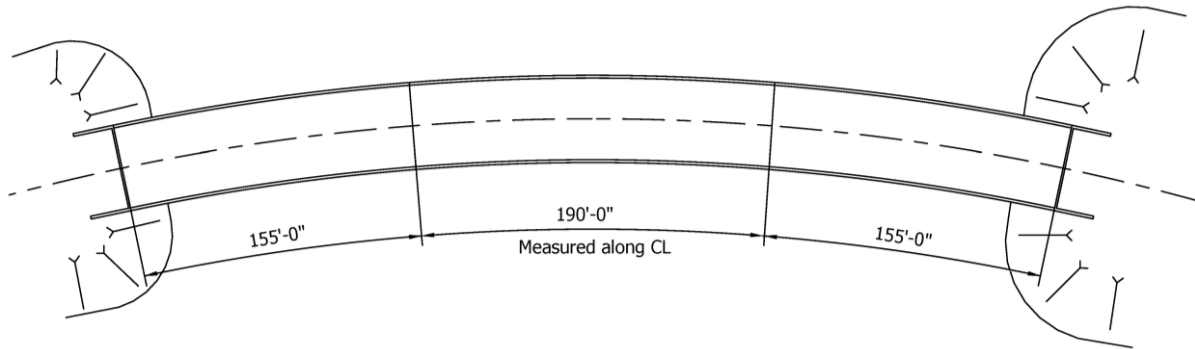


Figure 35. Plan view of a three-span curved bridge (Example 2)



G05 – Out to Out SNBI | Item B.G.05

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (4,1)

SPECIFICATION

Report the minimum out-to-out width measured perpendicular to the centerline of the roadway to the nearest tenth of a foot.

COMMENTARY

For multiple (double) deck structures that are inventoried as one structure, measure all levels, and report the sum of the measurements to account for the total width carried on the structure.

For structures under fill, measure the width from out-to-out of the headwalls or barrel ends.

For structures under fill, in which the features that define the out-to-out width are not parallel, report the minimum out-to-out width.

For structures under fill, the reported value can be limited to the width of the roadway section over the structure for unusual situations where the structure continues far beyond the roadway cross-section, and a lesser width would likely be constructed for a replacement project.

For sidehill structures, measure the out-to-out structure width.

For structures that carry multiple types of service, for example highway, pedestrian, and railroad, measure the out-to-out width that encompasses all service types.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 36 through Figure 39* for several examples of the out-to-out measurement (A):

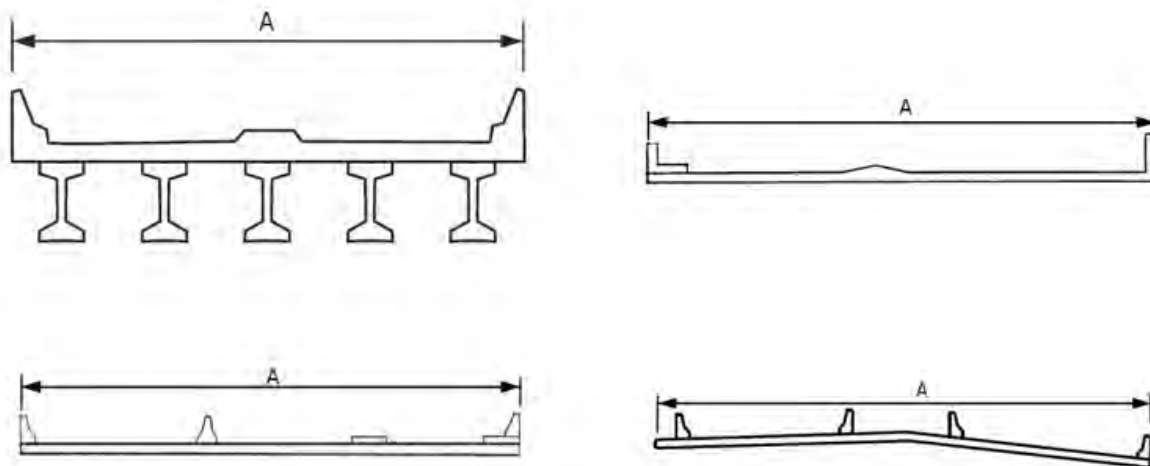


Figure 36. Cross-section views of various bridge decks

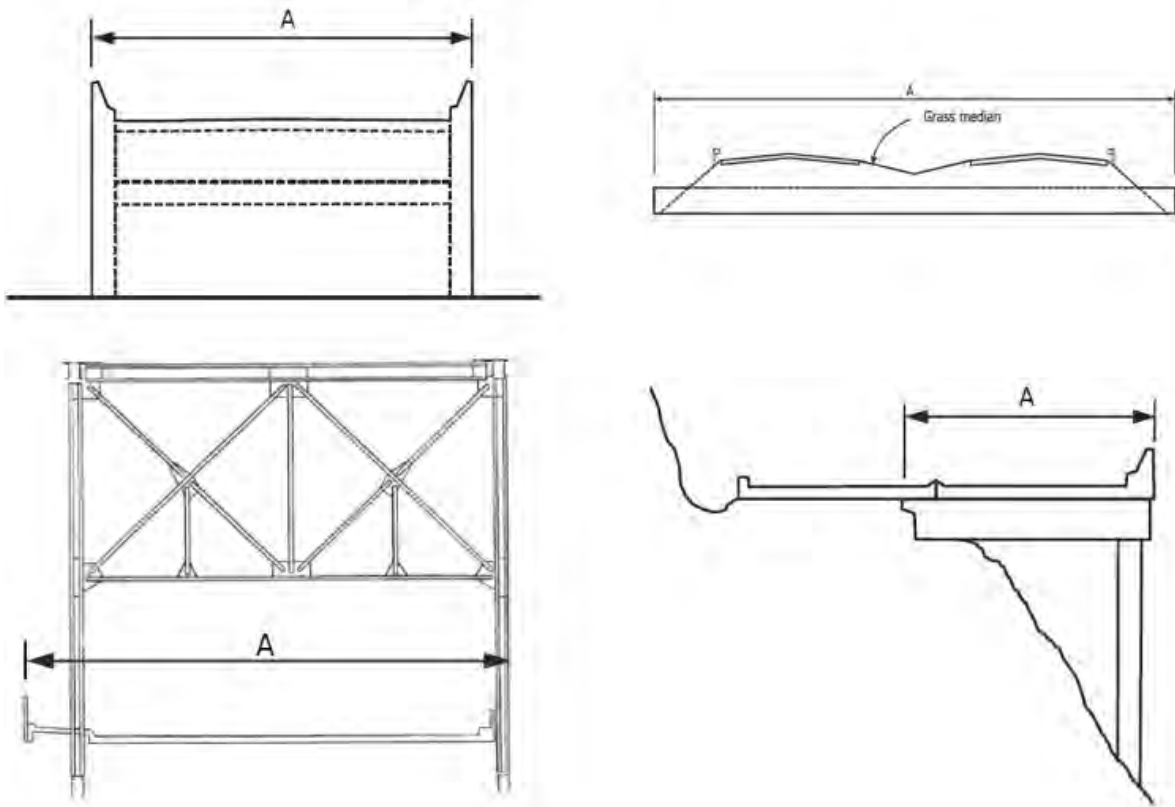


Figure 37. Cross-section views of various structure types

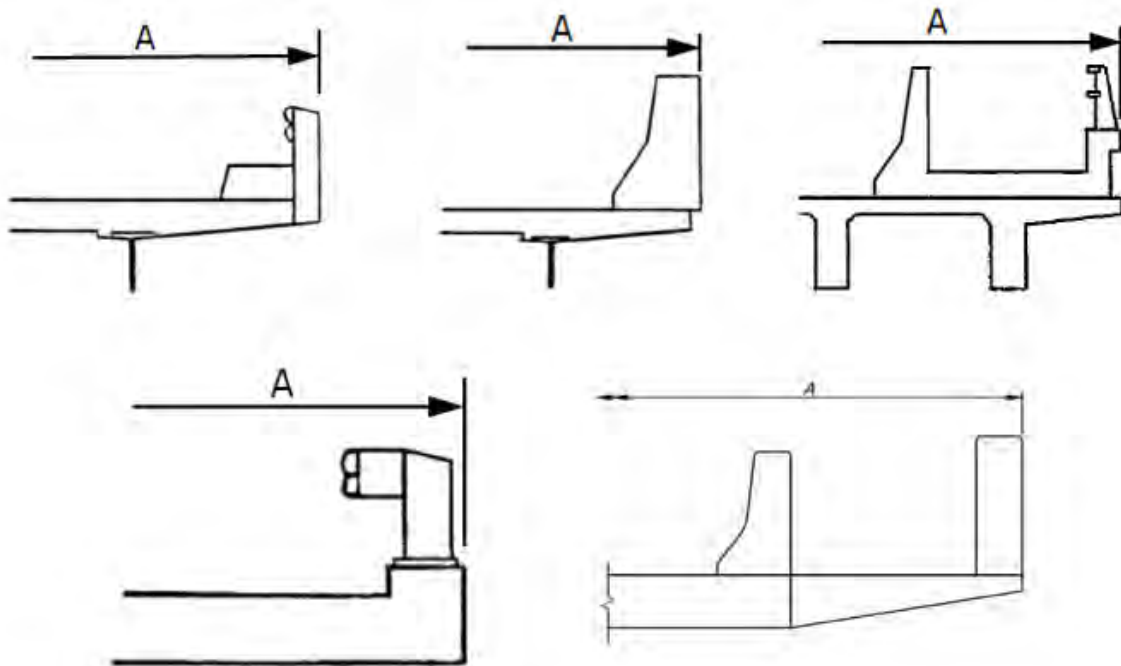


Figure 38. Partial cross-section views of various bridge decks with railings

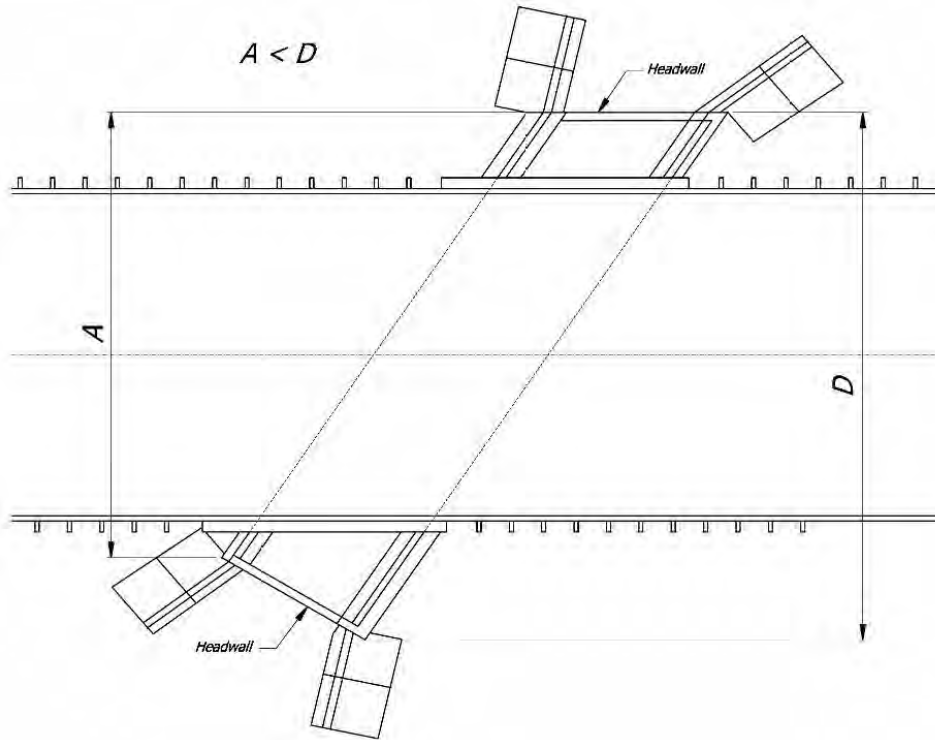


Figure 39. Plan view of a structure with non-parallel fascias

CODING EXAMPLES

Example	G05 Code
F-17-IT: Out-to-out is 41'-6"	41.5
D-03-V-160: Out-to-out is 36'-4"	36.3
PAR CANTBRY-0.2: Out-to-out is 140'-9"	140.8



G06 – Width Curb to Curb SNBI | Item B.G.06

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (4,1)

SPECIFICATION

Report the sum of the most restrictive minimum usable distances, measured perpendicular to the centerline of the roadway between curbs or rails, for all roadways carried by the structure to the nearest tenth of a foot.

COMMENTARY

Exclude from the usable distance measurement: flared areas for ramps or turn lanes, non-mountable and open medians, sidewalk and barrier widths, structurally inadequate shoulders, and other non-mountable areas.

Usable roadway width includes the width of traffic lanes and the widths of shoulders.

Shoulders must be contiguous with the traveled way and must be structurally adequate for all weather and traffic conditions consistent with the facility carried. Unstabilized grass or dirt, with no base course, flush with and beside the traffic lane is not to be considered a shoulder for this item. When it is not readily known if stabilized construction details were used, the presence of rutting, heaving, water retention, or other distress may be used as indicators that the shoulder is not stabilized.

The measurement for this item shall be compatible with the measurements used for *H08 – Lanes on Highway*, *G09 – Approach Roadway Width*, and *H09 – AADT*.

For multiple (double) deck structures that are inventoried as one structure, measure all levels, and report the sum of the most restrictive minimum usable distances carried by the structure.

For sidehill structures measure the actual full curb-to-curb roadway width.

For structures that carry multiple types of service, for example highway, pedestrian, and railroad, report the sum of the most restrictive minimum usable distances that serves the highway service as denoted by curb or barrier separation, or other delineation that separates the service types.

For structures under fill, the usable roadway width crossing the structure is commonly the same value reported for *G09 – Approach Roadway Width*.

A barrier or curb greater than 6 inches high may be considered non-mountable for these specifications.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 40* through *Figure 43* for several examples of the width curb-to-curb measurement (A):

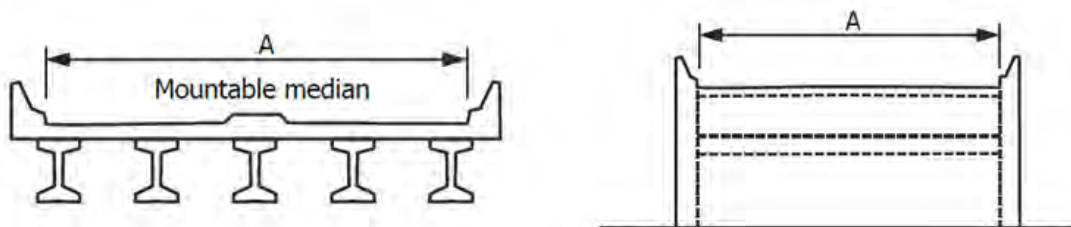


Figure 40. Cross-section views of various structure types

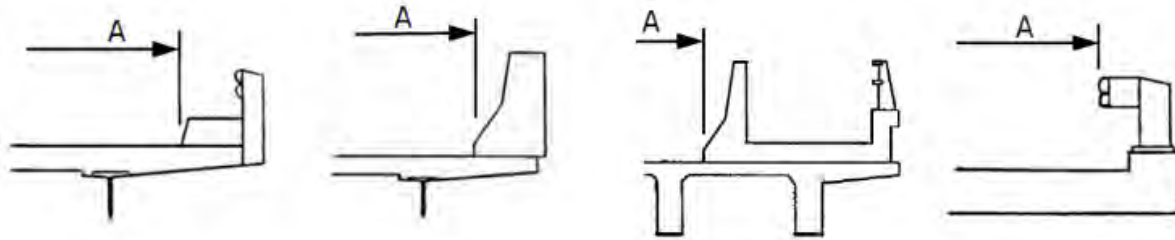


Figure 41. Partial cross-section views of various bridge decks with railings

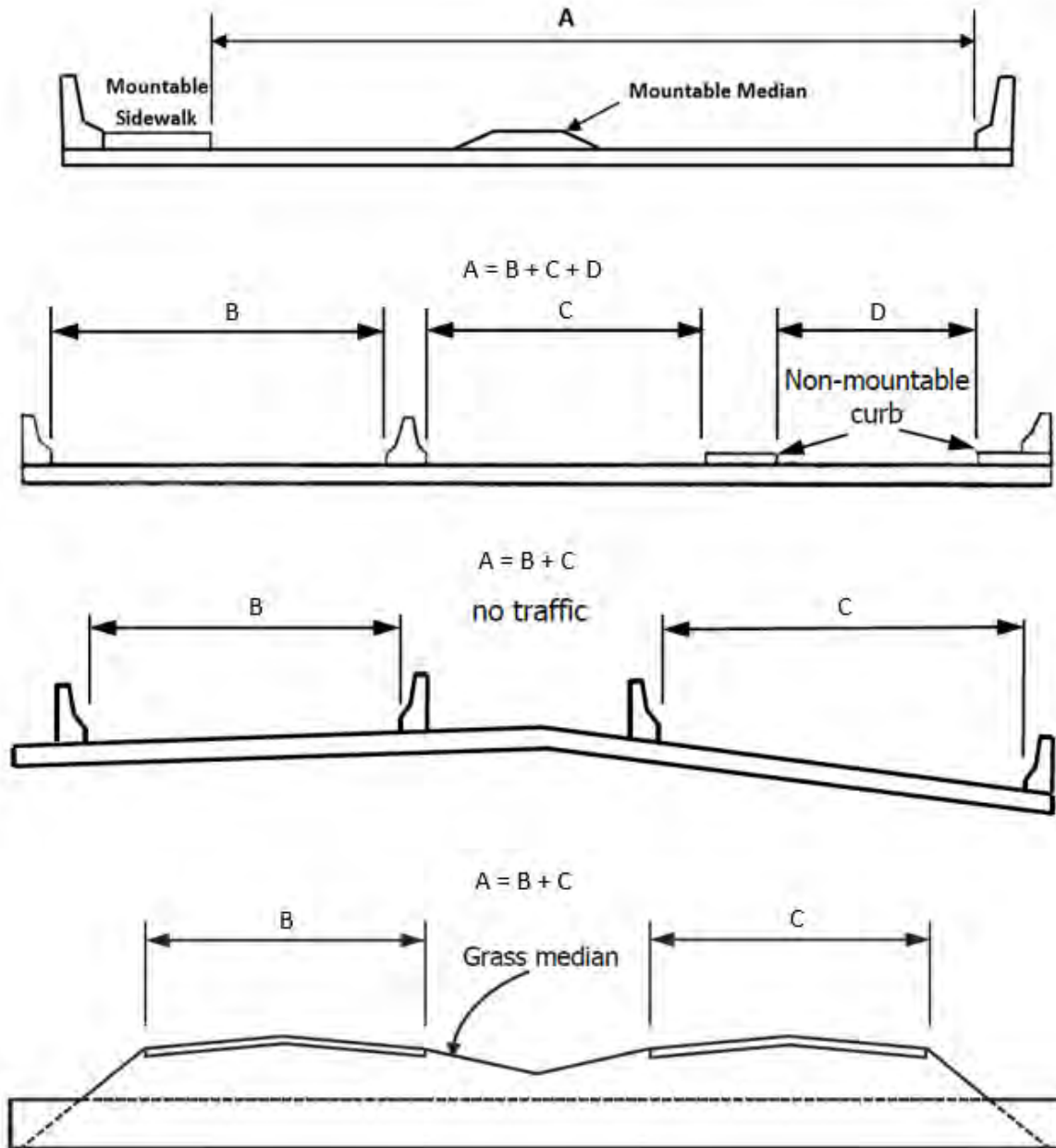


Figure 42. Cross-section views of various structures with medians

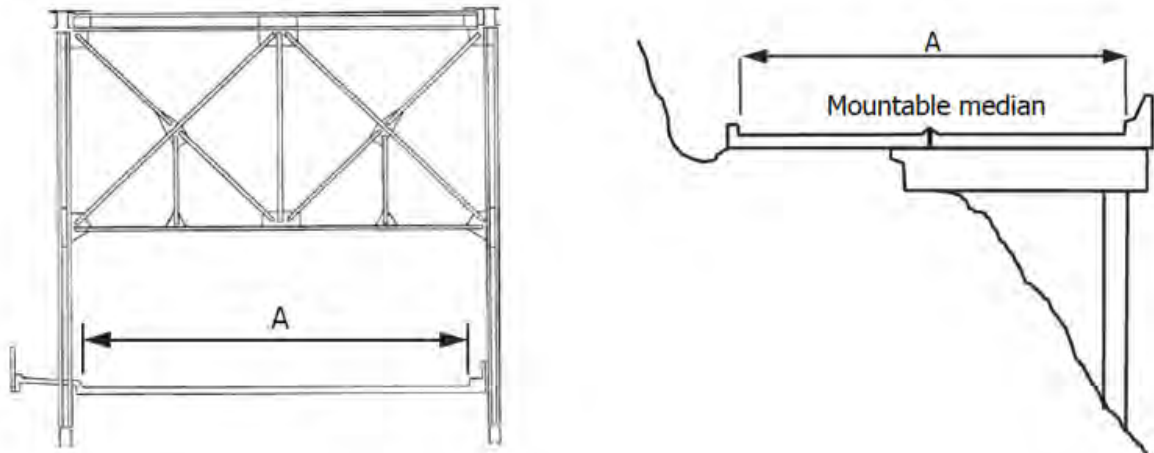


Figure 43. Cross-section views of various bridge types

CODING EXAMPLES

Example	G06 Code
F-17-IT: Curb-to-curb is 38'-0"	38.0
D-03-V-160: Curb-to-curb is 33'-8"	33.7
PAR CANTBRY-0.2: Curb-to-curb is 27'-0" for SB plus 20'-0" for NB	47.0



G07 – Left Curb or Sidewalk SNBI | Item B.G.07

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (3,1)

SPECIFICATION

Report the minimum width, perpendicular to the centerline of the roadway, of the left curb or sidewalk to the nearest tenth of a foot from the face of the rail to the face of the curb.

COMMENTARY

Left and right are determined based on the direction of the inventoried route carried by the structure, commonly west to east or south to north.

When a defined longitudinal joint exists between the curb and the sidewalk, such as a granite curb and concrete sidewalk, measure the width from the face of the rail to the face of the curb.

For sidewalks on structures under fill that are not adjacent to a curb or rail, report the width from the edge to edge of the sidewalk.

Code "0" when the face of the curb does not extend 6 inches or more beyond the face of the rail.

Code "0" when there is no left curb or sidewalk.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 44* and *Figure 45* for several examples of the left curb or sidewalk measurement (C):

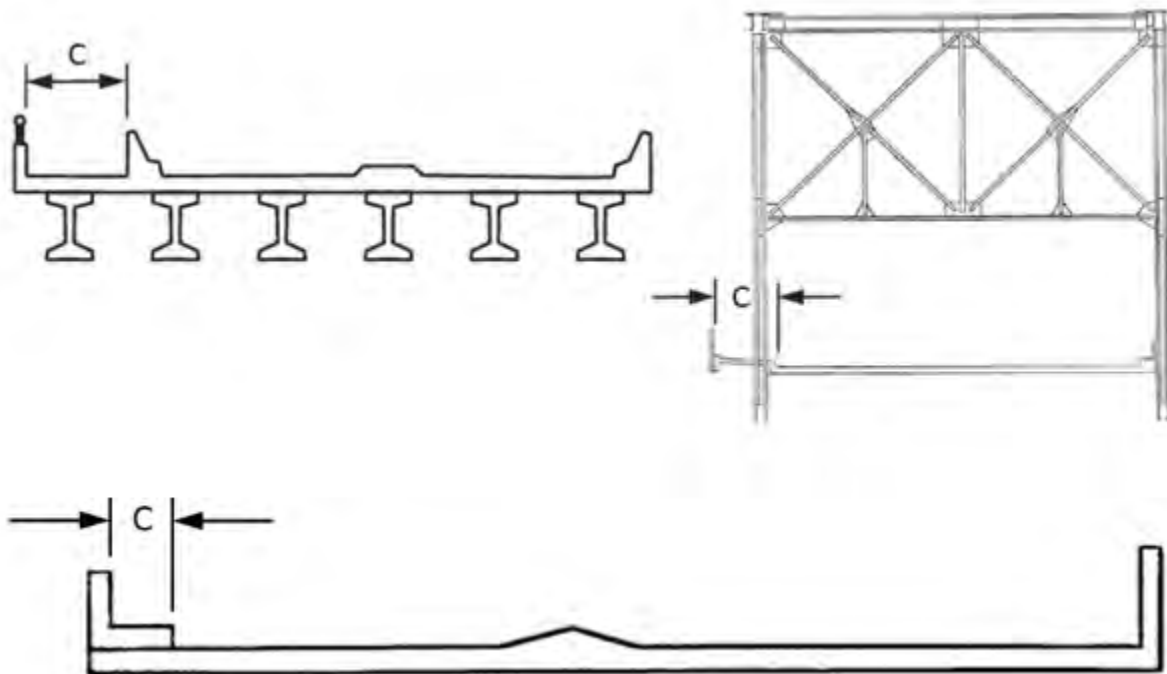


Figure 44. Cross-section views of various bridge types

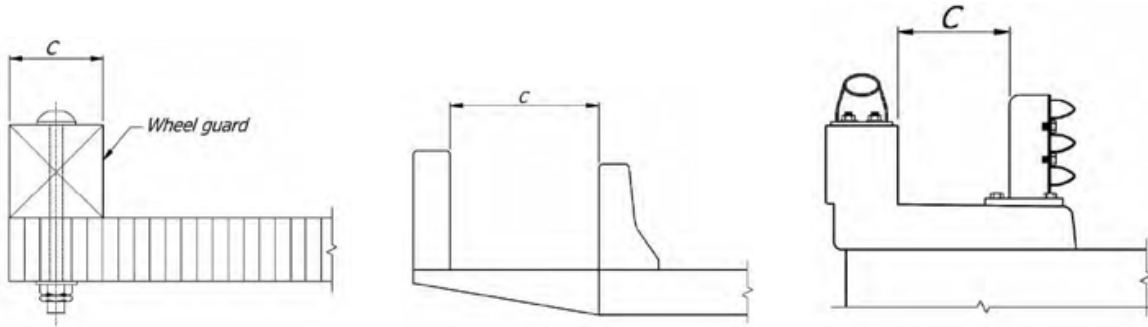


Figure 45. Partial cross-section views of various curbs and sidewalks

CODING EXAMPLES

Example	G07 Code
F-17-IT: No left curb or sidewalk	0.0
D-03-V-160: No left curb or sidewalk	0.0
PAR CANTBRY-0.2: Left sidewalk on fill; width is 10'-0"	10.0
Example 1 in Figure 46	5.0
Example 2 in Figure 47	10.3

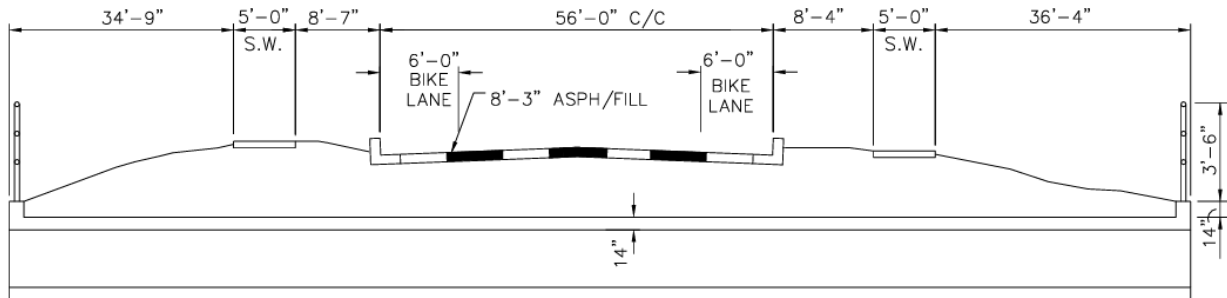


Figure 46. Cross-section view of culvert with sidewalks on both sides (Example 1)

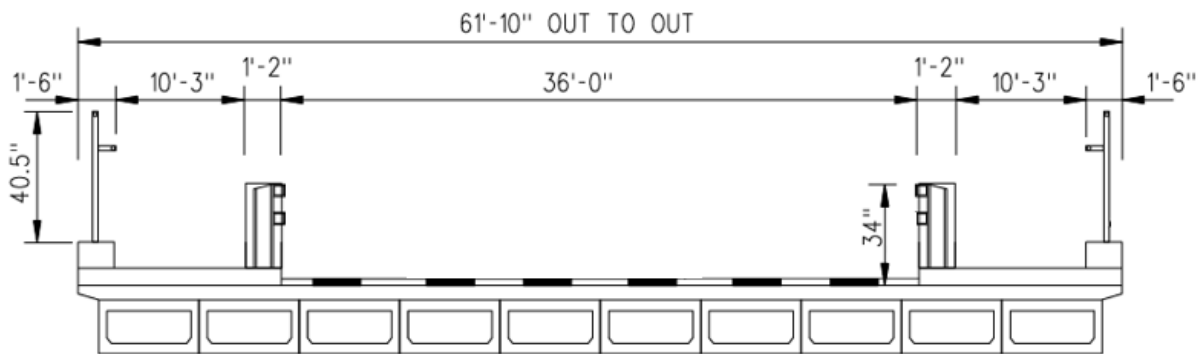


Figure 47. Cross-section view of concrete box girder structure with sidewalks on both sides (Example 2)



G08 – Right Curb or Sidewalk SNBI | Item B.G.08

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (3,1)

SPECIFICATION

Report the minimum width, perpendicular to the centerline of the roadway, of the right curb or sidewalk to the nearest tenth of a foot from the face of the rail to the face of the curb.

COMMENTARY

Left and right are determined based on the direction of the inventoried route carried by the structure, commonly west to east or south to north.

When a defined longitudinal joint exists between the curb and the sidewalk, such as a granite curb and concrete sidewalk, measure the width from the face of the rail to the face of the curb.

For sidewalks on structures under fill that are not adjacent to a curb or rail, report the width from the edge to edge of the sidewalk.

Code "0" when the face of the curb does not extend 6 inches or more beyond the face of the rail.

Code "0" when there is no right curb or sidewalk.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 48* and *Figure 49* for several examples of the left curb or sidewalk measurement (C):

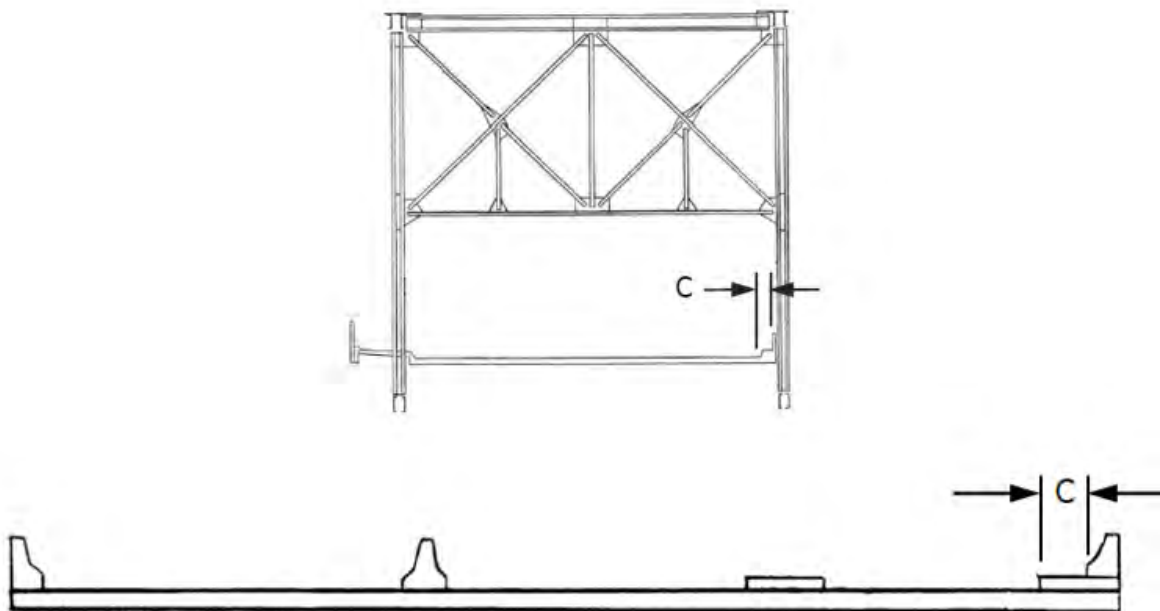


Figure 48. Cross-section view of various bridge types

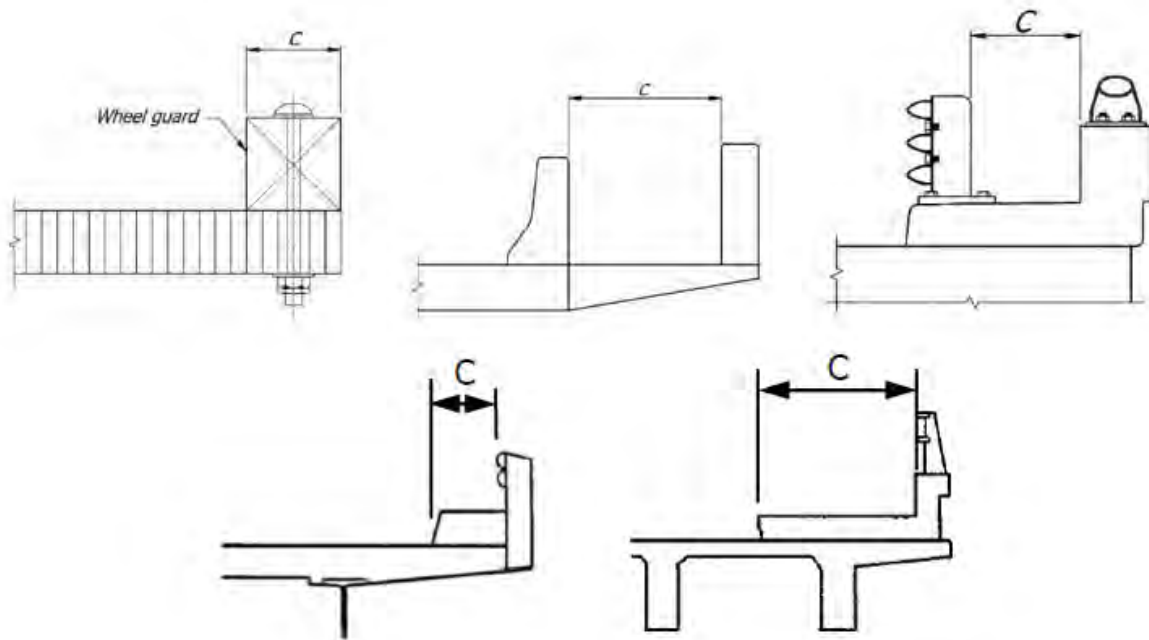


Figure 49. Partial cross-section views of various curbs and sidewalks

CODING EXAMPLES

Example	G08 Code
F-17-IT: No right curb or sidewalk	0.0
D-03-V-160: No right curb or sidewalk	0.0
PAR CANTBRY-0.2: Right sidewalk on fill; width is 5'-0"	5.0
Example 1 in Figure 46	5.0
Example 2 in Figure 47	10.3



G09 – Approach Roadway Width SNBI | Item B.G.09

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (4,1)

SPECIFICATION

Report the minimum usable approach roadway width to the nearest tenth of a foot.

COMMENTARY

Measure the distance perpendicular to the centerline of the roadway between curbs or rails that is representative of the approach roadway within 100 feet of the structure.

Exclude from the usable distance measurement: medians, sidewalks, and other protected areas with non-mountable curbs or barriers.

Usable roadway width includes the width of traffic lanes and the width of shoulders.

Shoulders must be contiguous with the traveled way and must be structurally adequate for all weather and traffic conditions consistent with the facility carried. Unstabilized grass or dirt, with no base course, flush with and beside the traffic lane is not to be considered a shoulder for this item. Refer to agency policy for when and where stabilized shoulders are used. Median widths that do not qualify as shoulders shall not be included. When it is not readily known if stabilized construction details were used, the presence of rutting, heaving, water retention, or other distress may be used as indicators that the shoulder is not stabilized.

Report the lesser of the two approach roadway widths when there is a variation between the approaches at either end of structures that carry two-way traffic.

Report the width at the approach end for structures that carry one-way traffic.

When a ramp is carried on the same structure and is adjacent to the through lanes approaching the structure, it shall be included in the approach roadway width.

A curb greater than 6 inches high may be considered non-mountable for these specifications.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 50* and *Figure 51* for examples of the approach roadway width measurement (A):

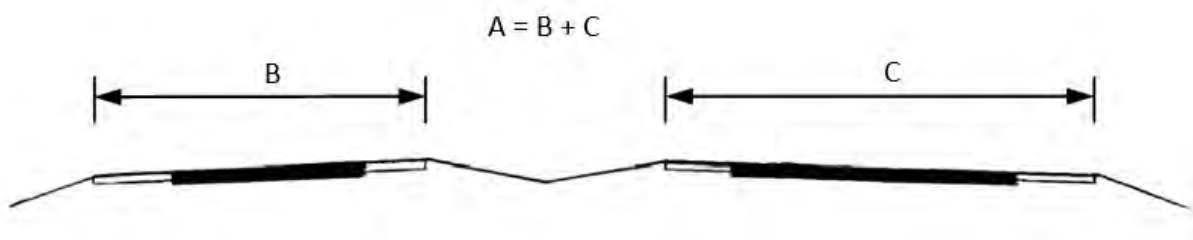


Figure 50. Cross-section view of two approach roadways that are carried across one structure

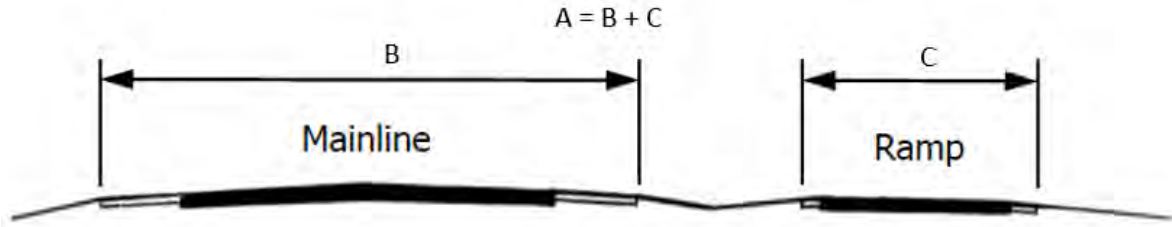


Figure 51. Approach roadway cross-section view for a mainline and a ramp that are carried across one structure

CODING EXAMPLES

Example	G09 Code
F-17-IT: Approach roadway width is 38'-0"	38.0
D-03-V-160: Approach roadway width is 33'-0"	33.0
PAR CANTBRY-0.2: Approach roadway width is 27'-0" for SB plus 20'-0" for NB	47.0
Example 1 in Figure 52	96.0
Example 2 in Figure 53	94.0

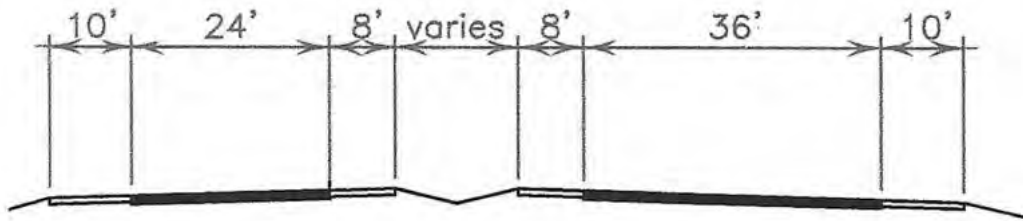


Figure 52. Cross-section view of two approach roadways that are carried across one structure (Example 1)

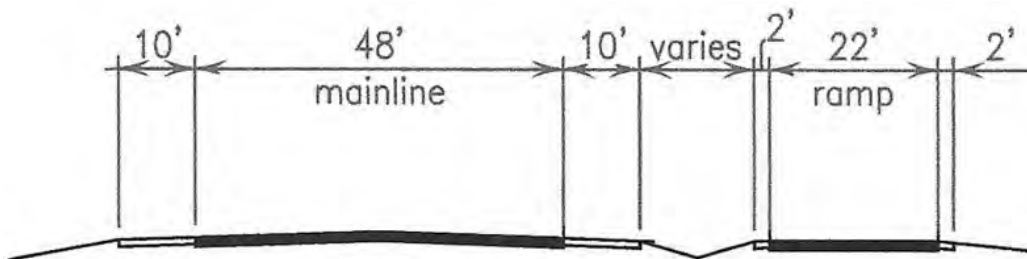


Figure 53. Cross-section view of approach roadway for a mainline and a ramp that are carried across one structure (Example 2)



G10 – Median SNBI | Item B.G.10

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the type of median using one of the following codes.

G10 Codes
0 - No median
1 - Open median
2 - Closed median (no barrier)
3 - Closed median with non-mountable barriers

COMMENTARY

The area between two roadways or directional traffic on the structure is considered the median.

Open median: the area between two roadways on the structure is not covered or connected in such a way as to support traffic.

Closed median: the area between two roadways on the structure is bridged over and capable of supporting traffic. When two structures are widened, but not connected and the approach roadway is built with a closed median, consider the structure to have a closed median.

A barrier or curb greater than 6 inches high may be considered non-mountable for these specifications.

A median should be considered non-mountable if any section across the width of the median is considered non-mountable (e.g., a median with a curb of 6 inches high at the roadway and extending 1 foot in width before then transitioning to a planter box that is 2 feet high should be considered non-mountable).

Code “0” for a structure carrying one-way traffic.

Code “0” for a structure carrying two-way traffic separated only by a painted centerline or lane line.

Code “0” for structures that do not have a median, including structures that carry adjacent traffic lanes separated only by centerline, edge line, or channelization striping, with or without a traversable longitudinal joint.

Code “1” for structures with a longitudinal joint when traffic cannot safely traverse the joint width. If the joint width is safely traversable, use one of the remaining codes. Joint condition does not affect the coding of this item.

Code “2” for structures with medians that are either flush or mountable, with or without a traversable longitudinal joint, including areas that are striped to designate a median, for the full length of the structure.

Code “3” for structures with non-mountable medians that are present for the full structure length or the majority of the structure length.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 54* for examples of different median types:

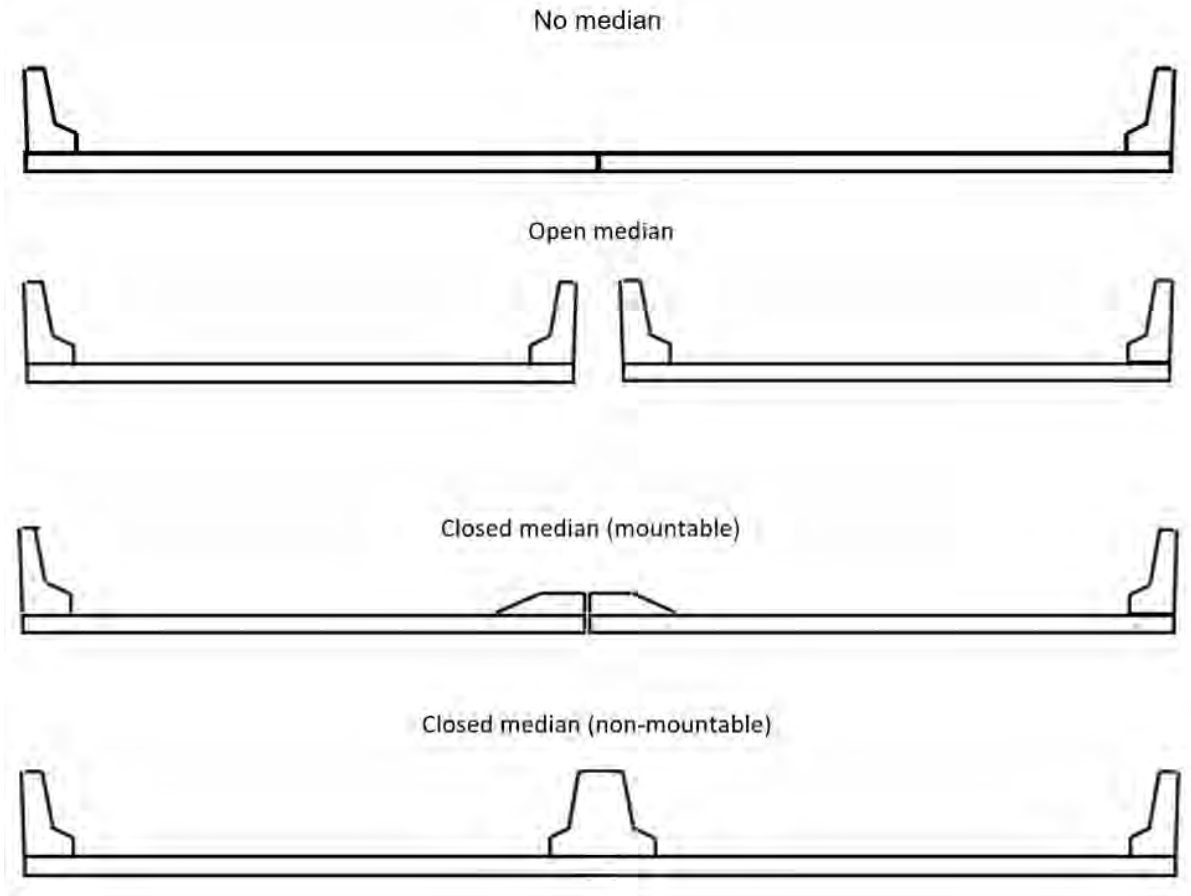


Figure 54. Cross-section views of bridge decks with various median types

CODING EXAMPLES

Example	G10 Code
F-17-IT: Structure carries one way traffic; no median	0 - No median
D-03-V-160: Structure carries one way traffic; no median	0 - No median
PAR CANTBRY-0.2: Structure has a non-mountable median between NB and SB lanes	3 - Closed median with non-mountable barriers



G11 – Skew SNBI | Item B.G.11

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (2,0)

SPECIFICATION

Report the skew angle, measured between the centerline of a substructure unit and a line perpendicular to the roadway centerline, to the nearest degree.

COMMENTARY

Code “0” if there is no skew.

Report the maximum skew when skews vary amongst substructure units.

The skew angle can be taken directly from the plans, if available, or measured in the field.

A satellite image can also provide the detail necessary to determine the skew angle.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 55* for an example of the skew measurement (θ):

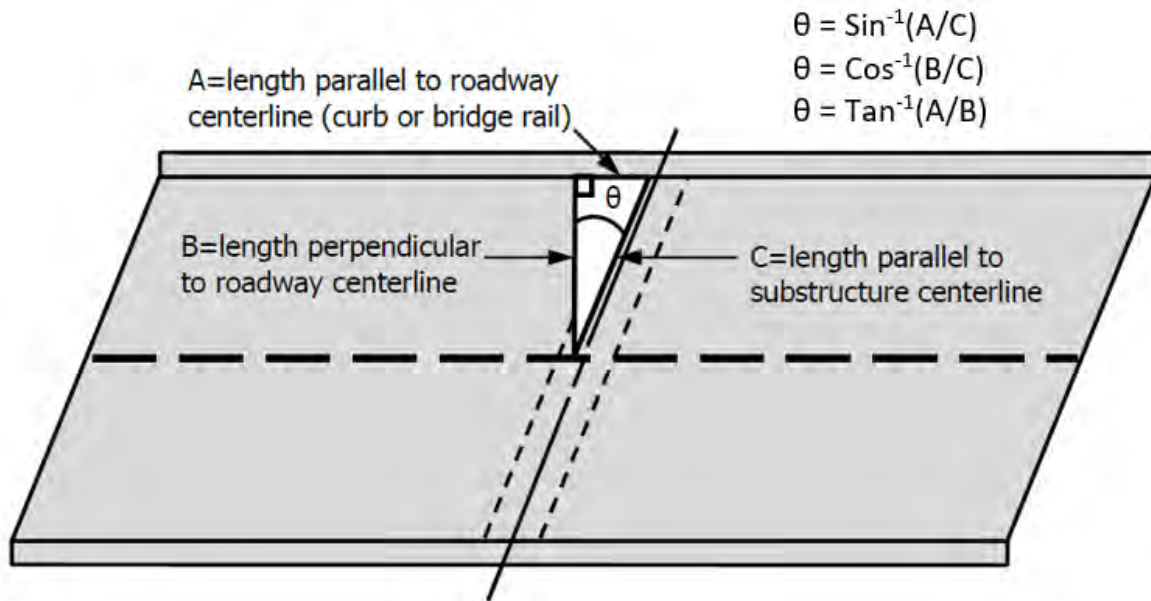


Figure 55. Plan view of a bridge deck indicating skew determination



CODING EXAMPLES

Example	G11 Code
F-17-IT: Both abutments and Pier 2 and Pier 4 are not on skew; Pier 3 is on a 47 degrees skew	47
D-03-V-160: No skew	0
PAR CANTBRY-0.2: Culvert is on a 5 degree skew	5
Structure with a 27° 12' skew	27
Structure with a 7° 43' skew	8
Example 1 in Figure 56	38
Example 2 in Figure 57	39

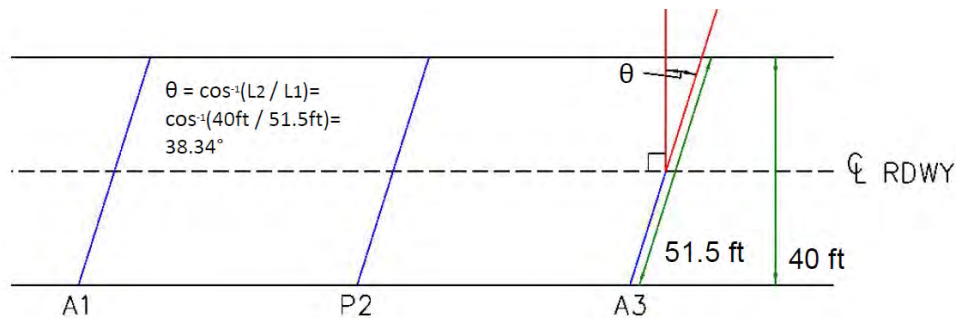


Figure 56. Skew from measuring roadway width (Example 1)

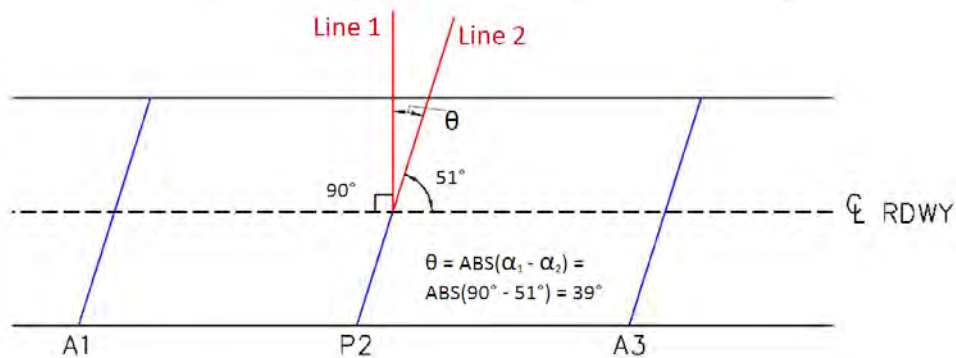


Figure 57. Skew from measuring pier skew from roadway centerline or deck edge (Example 2)



G12 – Curved Bridge SNBI | Item B.G.12

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report whether the structure is horizontally curved using one of the following codes.

G12 Codes
CU - Curved girder(s)
CP - Piecewise straight girders
CK - Kinked girder(s)
N - Not curved

COMMENTARY

A bridge is considered horizontally curved when at least one partial or full length girder line forms a curve using either a curved girder(s), piecewise straight girders forming a segmented/chorded curve, or a kinked girder(s).

For this specification, a piecewise straight girder line is comprised of girders with a longitudinal axis that changes orientation at one or more supports. The girder line may be simply supported or continuous at supports. A kinked girder is a girder with a longitudinal axis that changes orientation at a location(s) along the girder length excluding at the supports.

Code “N” for structures that have curved deck geometry, or may be striped as curved, but the girders do not form a curve.

Code “N” for structures that have straight girders and the girders do not form a curve.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	G12 Code
F-17-IT: Curved structure with curved girders	CU - Curved girder(s)
D-03-V-160: Structure is not curved	N - Not curved
PAR CANTBRY-0.2: Structure is not curved	N - Not curved
Example 1 in <i>Figure 58</i>	CP - Piecewise straight girders
Example 2 in <i>Figure 59</i>	CK - Kinked girder(s)

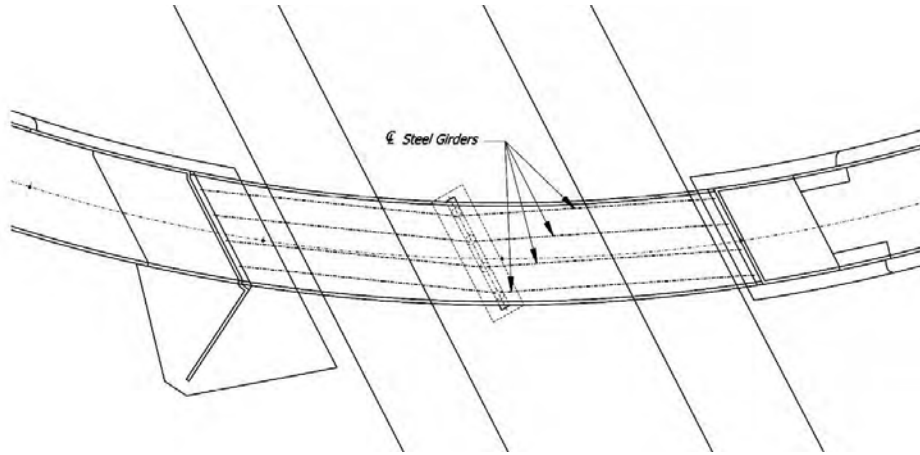


Figure 58. Plan view of a curved bridge with piecewise straight girders (Example 1)

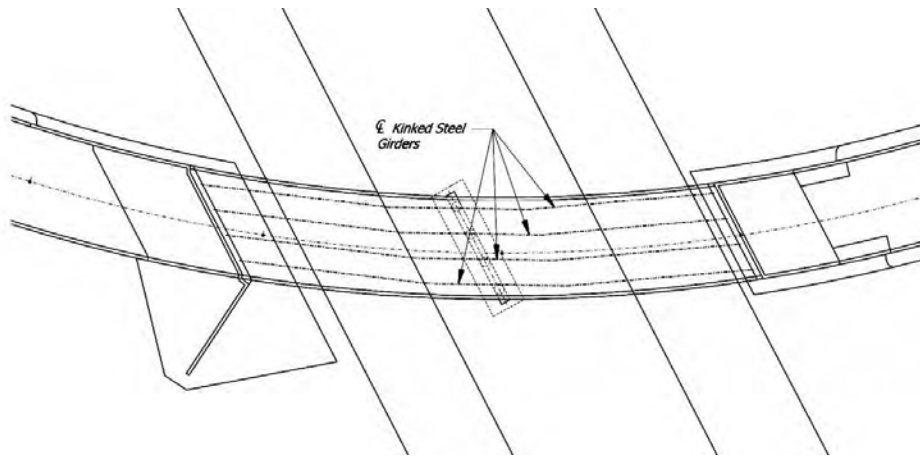


Figure 59. Plan view of a curved bridge with kinked girders (Example 2)



G13 – Maximum Height SNBI | Item B.G.13

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (4,0)

SPECIFICATION

Record the maximum height from top of deck to ground line or water surface elevation, whichever yield the largest value, rounded to the nearest foot.

COMMENTARY

For double-deck bridges inventoried as one bridge, measure from top of deck of the lower deck. For double-deck bridges inventoried as two bridges, measure from the top of deck of the inventoried bridge.

For structures under fill, excluding closed spandrel arches, measure from top of slab, or top of pipe, to water surface elevation. When there is no waterway feature, measure to inside bottom of pipe, inside of floor slab, or ground line when the bottom is unexposed or the bridge is bottomless. For closed spandrel arches measure from top of roadway surface.

Ground line represents dry terrain or pavement.

Use the water surface elevation at the time the value for this item is established.

This item may be estimated by field observation or from plans when it is not practical or is infeasible to measure, or height is more than 30 feet.

This item does not need to be updated due to fluctuations in water surface elevation.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	G13 Code
F-17-IT: Maximum height to top of deck is estimated at 45 feet from plans	45
D-03-V-160: Maximum height to top of deck is 28 feet	28
PAR CANTBRY-0.2: Maximum height to top of top slab is 14 feet	14
Example 1 in Figure 60	27

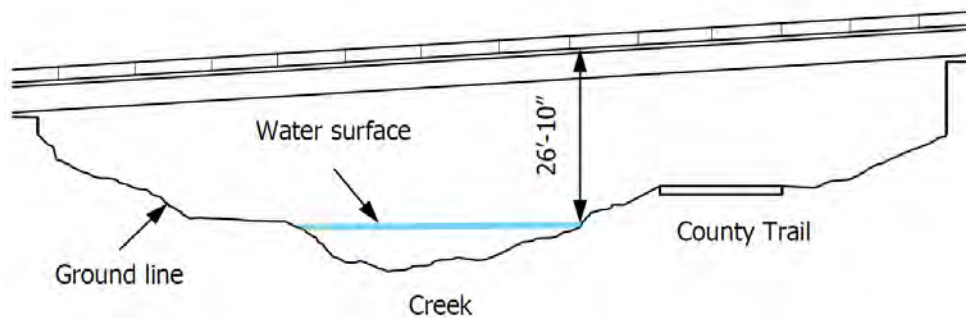


Figure 60. Profile view of a bridge over a creek and trail (Example 1)



G14 – Sidehill Bridge SNBI | Item B.G.14

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report whether any portion of the bridge is a sidehill structure.

G14 Codes
N - Not a sidehill bridge
Y - Is a sidehill bridge

COMMENTARY

A sidehill bridge is a structure built onto the side of terrain or earth material with the roadway centerline running nearly parallel to the face of the terrain or material. The roadway is carried partially on structure and partially on terrain that has been modified by cutting or filling to form the required roadway subgrade elevation.

For sidehill bridges, *G06 – Width Curb to Curb* is typically larger than *G05 – Out to Out*.

For sidehill bridges with irregular geometry, reporting the actual deck area in *G15 – Irregular Deck Area* provides a more accurate value than using the default calculation described for that item.

Code “N” when no portion of the bridge is a sidehill structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	G14 Code
F-17-IT: Structure is not a sidehill bridge	N - Not a sidehill bridge
D-03-V-160: Structure is not a sidehill bridge	N - Not a sidehill bridge
PAR CANTBRY-0.2: Structure is not a sidehill bridge	N - Not a sidehill bridge
Example 1 in <i>Figure 61</i>	Y - Is a sidehill bridge

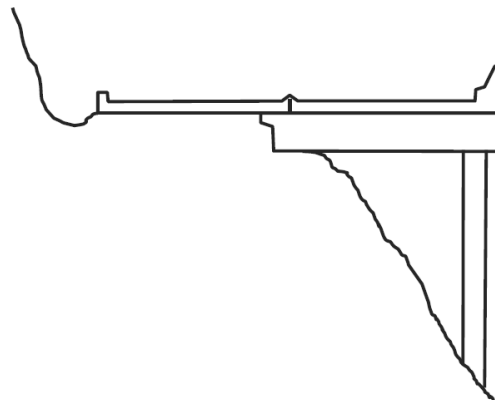


Figure 61. Cross-section view of a sidehill bridge (Example 1)



G15 – Irregular Deck Area SNBI | Item B.G.15

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (10,1)

SPECIFICATION

Report the total deck area rounded to the nearest tenth of a square foot.

COMMENTARY

Only report this item when the actual area is obtained from plans or measurement of structures with irregular geometry.

The limits of measurement shall be in accordance with *G05 – Out to Out* and *G02 – Total Length*.

For structures that carry multiple types of service, for example highway and railroad, report the deck area that encompasses all service types.

Reporting the deck area calculated from plans may more accurately reflect the deck area for structures with unusual geometry (e.g., flared, sidehill, or bifurcated structures), or through structures with cantilevered sidewalks.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	G15 Code
F-17-IT: Structure does not have irregular geometry	
D-03-V-160: Structure does not have irregular geometry	
PAR CANTBRY-0.2: Structure does not have irregular geometry	
Example 1 in Figure 62	10092.6

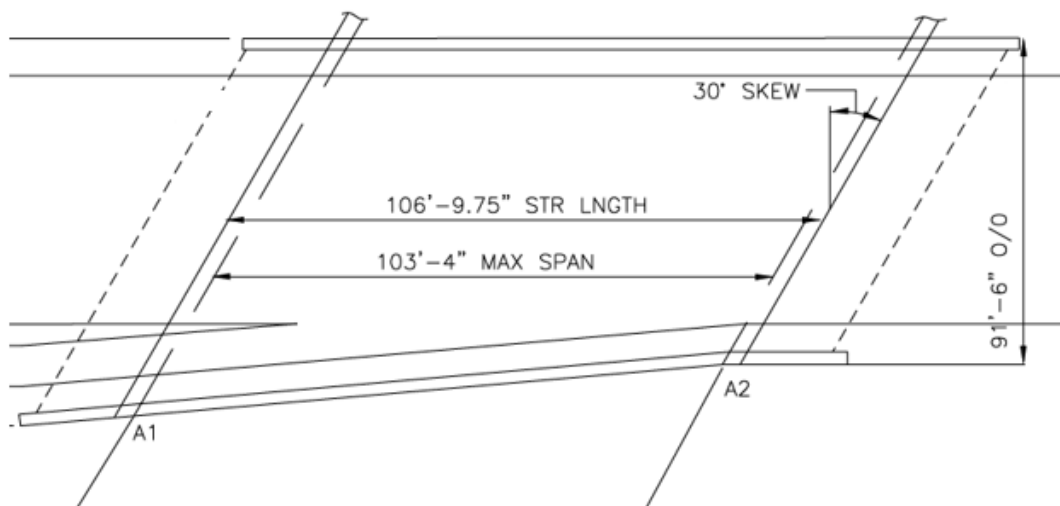


Figure 62. Plan view of structure with irregular deck area (Example 1)



G16 – Federal Deck Area	SNBI Item B.G.16
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Calculated	N (9,0)

SPECIFICATION

The deck area rounded to the nearest square foot.

COMMENTARY

This item is automatically populated in SIMSA. The deck area calculation is the value reported in *G05 – Out to Out* multiplied by the value reported in *G02 – Total Length*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	G16 Code
F-17-IT: Out-to-out of 41.5 times total length of 636.5	26415
D-03-V-160: Out-to-out of 36.3 times total length of 1344.7	48813
PAR CANTBRY-0.2: Out-to-out of 140.8 times total length of 20.9	2943
Example 1 in <i>Figure 62</i>	9772



G17A – Asphalt / Fill Thickness	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (5,2)

SPECIFICATION

Report the asphalt/overlay thickness on the structure deck or the fill height over the culvert at the time of inspection.

COMMENTARY

Measure and record the asphalt/overlay thickness to the nearest quarter inch (e.g., 0.25, 0.50, 0.75).

Measure and record the fill height over a culvert to the nearest inch.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	G17A Code
F-17-IT: 2.5 inches of asphalt on deck	2.50
D-03-V-160: 2.0 inches of asphalt on deck	2.00
PAR CANTBRY-0.2: 103 inches of fill/asphalt over culvert	103
5.5 inches of asphalt on deck	5.50
6 feet 3.4 inches of fill over CBC	75



G18A – Expansion Device Type	CDOT
-------------------------------------	-------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the expansion device type(s) within the bridge limits using one of the following codes.

G18A Codes
1 - Sliding steel plates
2 - Sliding steel plates with fingers
300 - Gland (modular or strip)*
301 - Plug (Rubberized Asphalt)*
302 - Compression joint seal (elastomeric)*
302 - Compression joint seal (foamed)*
303 - Pre-molded rubber device*
305 - Sliding steel plates*
305 - Sliding steel plates with fingers*
352 - Compression joint seal (elastomeric)*
352 - Compression joint seal (foamed)*
353 - Pre-molded rubber device*
355 - Sliding steel plates*
355 - Sliding steel plates with fingers*
A - Pre molded rubber device
B - Compression joint seal (elastomeric) 302/352
C - Compression joint seal (foamed) 302/352
D - Parabolic Gland (strip or modular)
N - Unknown 306/356
O - No expansion device 304/354, 305/355
P - Plug (Rubberized asphalt/pourable) 301/351
U - Unknown*
X - More than one type of device

*Code no longer used and should not be selected.

COMMENTARY

The list above groups the devices in general categories describing either the type of device, the function of the device, or the material used. There are many types of expansion devices from sliding steel plates to compression joint seals. Some pre-molded rubber devices of the same type may be different from one manufacturer to another.

Appendix I provides an example photo of each of the expansion device types.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	G18A Code
F-17-IT: Strip seal expansion joints over abutments	D - Parabolic Gland (strip or modular)
D-03-V-160: Assembly joints with seal over abutments	A - Pre molded rubber device
PAR CANTBRY-0.2: No joints	O - No expansion device 304/354, 305/355
Sliding steel plate device	1 - Sliding steel plates
Pre molded rubber device Type 3	A - Pre molded rubber device



Section 5.10 Identification (ID)

ID01 – Structure Number	282
ID01A – Structure Key	284
ID02 – Structure Name	285
ID03 – Replaces (Old)	286
ID04A – Replaced with (New)	287
ID05A – Owner Transfer Note	288
ID06A – Parallel Structure Key	289
ID07A – Parallel Structure	290



ID01 – Structure Number	SNBI Item B.ID.01
-------------------------	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (15)

SPECIFICATION

Report the unique structure number assigned to the inventoried structure.

COMMENTARY

Do not change the structure number once it has been assigned and recorded, except for a rare or unusual circumstance that requires a one-time change.

When a structure number is changed, report the previous structure number under *ID03 – Replaces (Old)*.

It is preferred that all spans of a superstructure from abutment to abutment be reported as one structure. However, there may be some rare exceptions to this rule when it makes reasonable sense to split into multiple structures.

When a structure has been replaced or is in the process of being replaced, complete the steps listed below:

- For the new structure, assign a new and unique *ID01 – Structure Number*.
- For the new structure, report the *ID01 – Structure Number* of the replaced structure in *ID03 – Replaces (Old)*.
- For the replaced structure, report the *ID01 – Structure Number* of the new structure in *ID04A – Replaced with (New)*.

When a structure is rehabilitated or partially replaced and portions of the deck or superstructure are retained, the existing structure number should be retained. When the entire deck and superstructure of an existing structure is completely replaced but the substructure is retained, a new and unique structure number should be assigned.

When the ownership of a structure is transferred, the assigned structure number must not be changed. *ID01A – Structure Key* and *ID02 – Structure Name* may be used and updated to identify the structure per the owner’s needs.

It is preferable that one structure number be assigned to a structure that supports multiple features.

It is preferable that any bridge or bridges with a closed median, where the area between the two roadways on the bridge is bridged over and can support traffic, be reported as one structure. Closed medians may have either mountable or non-mountable curbs or barriers. It is preferable that separate superstructures with an open median (not meeting the closed median criteria above) sharing a common substructure unit or units be reported as two structures.

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



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

For extremely rare cases when CDOT decides to change *ID01 – Structure Number*, report the previous *ID01 – Structure Number* in *ID03 – Replaces (Old)*.

On-System Structures and Minor Structures owned by CDOT:

Structure numbers are assigned by the CDOT Bridge and Structures Asset Management Unit as follows:

- On-System structure numbers (X-##-XXX) are assigned based on Colorado quadrangle divisions as noted along the Colorado Travel Map borders. The “X-##” portion identifies the quadrangle, and the “XXX” portion is assigned sequentially from A to ZZZ as structures are built within the quadrangle. See *Appendix J* for details.
- Minor structures owned by CDOT are assigned based on highway number, mile point, and information specific to the function of the structure. The first 10 characters are related to the location of the structure including highway, section, and mile point. The final two characters define the extent of the structure under the roadway and the location of the inlet. See *Appendix J* for details.

Off-System Structures:

Structure numbers are assigned by the local agency and should follow the local agency's naming convention if one exists.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	ID01 Code
F-17-IT: On-System structure	F-17-IT
D-03-V-160: Off-System structure in the City and County of Denver	D-03-V-160
PAR CANTBRY-0.2: Off-System structure in the Town of Parker	PAR CANTBRY-0.2
On-System structure located within the A-25 Quadrangle	A-25-AR
On-System structure located on US 287 at mile point 344.85	B-16-H
Minor Structure owned by CDOT located on State Highway 141 (141A) at mile point 84.567 under both lanes with the inlet on the right side looking in the direction of inventory; replaced 141A084570BR	141A084570BR1
Off-System structure in Baca County on County Road 14	BA15-15-43.7-18
Off-System structure in Alamosa County on County Road 15	003001503.9006A



ID01A – Structure Key	CDOT
-----------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (15)

SPECIFICATION

Report the alternate structure number when one exists. If an alternate structure number does not exist, report the same structure number reported in *ID01 – Structure Number*.

COMMENTARY

Although *ID01 – Structure Number* should never be changed, this item can be changed on rare occasions with CDOT's approval.

This item can be used for situations such as when the ownership of a structure changes and the new owner wants to assign a number in accordance with their structure naming convention.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	ID01	ID01A Code
F-17-IT: Structure does not have an alternate structure number	F-17-IT	F-17-IT
D-03-V-160: Structure does not have an alternate structure number	D-03-V-160	D-03-V-160
PAR CANTBRY-0.2: Structure does not have an alternate structure number	PAR CANTBRY-0.2	PAR CANTBRY-0.2
BRI102-124: Structure has an alternate structure number due to ownership transfer	BRI102-124	ADA124-9.035



ID02 – Structure Name	SNBI Item B.ID.02
-----------------------	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report the commonly known name(s) for the structure when one exists.

COMMENTARY

For more than one name, report all names with the most common name first.

Report multiple names separated by pipe (|) delimiters.

Leave this item blank when the structure has no commonly known name.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	ID01	ID02 Code
F-17-IT: Structure does not have any commonly known names	F-17-IT	
D-03-V-160: Structure does not have any commonly known names	D-03-V-160	
PAR CANTBRY-0.2: Structure does not have any commonly known names	PAR CANTBRY-0.2	
F-11-T: Structure is also known as Red Cliff Arch	F-11-T	Red Cliff Arch



ID03 – Replaces (Old)	SNBI Item B.ID.03
-----------------------	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (15)

SPECIFICATION

Report the *ID01 – Structure Number* of the previous structure that has been replaced by the inventoried structure.

COMMENTARY

The intent of this item is to retain a link to data for previous structure numbers associated with this structure.

When a structure has been replaced or is in the process of being replaced, report the *ID01 – Structure Number* of the replaced structure in this item for the new structure.

For extremely rare cases when CDOT decides to change *ID01 – Structure Number*, report the previous *ID01 – Structure Number* in this item.

Leave this item blank if there is no previous structure number.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	ID01	ID03 Code
F-17-IT: No previous structure number	F-17-IT	
D-03-V-160: No previous structure number	D-03-V-160	
PAR CANTBRY-0.2: No previous structure number	PAR CANTBRY-0.2	
083000N01.79040: Previous structure number was 083000N01.80016	083000N01.79040	083000N01.80016



ID04A – Replaced with (New)	CDOT
-----------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (15)

SPECIFICATION

Report the *ID01 – Structure Number* of the structure that replaced, or will replace, an existing structure.

COMMENTARY

The intent of this item is to retain a link to data for structure numbers of replacement structures associated with this structure.

When a structure has been replaced or is in the process of being replaced, report the *ID01 – Structure Number* of the new structure in *ID04A – Replaced with (New)* for the replaced structure.

Leave this item blank if there is no replacement structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	ID01	ID04A Code
F-17-IT: Structure has not or is not planned to be replaced	F-17-IT	
D-03-V-160: Structure has not or is not planned to be replaced	D-03-V-160	
PAR CANTBRY-0.2: Structure has not or is not planned to be replaced	PAR CANTBRY-0.2	
CSG-I.61-06.13W: Structure has been replaced with CSG-I.71-0613WA	CSG-I.61-06.13W	CSG-I.71-0613WA



ID05A – Owner Transfer Note	CDOT
-----------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (300+)

SPECIFICATION

Report notes to document information regarding changes to *CL01 – Owner* or *CL01A – Responsible Party*.

COMMENTARY

The following information should be documented in this item when applicable:

- When *CL01 – Owner* or *CL01A – Responsible Party* changes for a structure, document the previous owner and/or responsible party, new owner and/or responsible party, owner/maintenance agreement, and effective date.

This item is not used to document when a structure is added or removed from the inventory.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	ID05A Code
F-17-IT: Structure has not changed ownership or responsible party	
D-03-V-160: Structure has not changed ownership or responsible party	
PAR CANTBRY-0.2: Structure has not changed ownership or responsible party	
BRI102-124: Structure changed ownership in 2012 from City of Brighton to Adams County.	2012: Structure transferred from City of Brighton to Adams County: formerly BRI102-124.



ID06A – Parallel Structure Key	CDOT
--------------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (15)

SPECIFICATION

Report the *ID01A – Structure Key* for the parallel structure, when a parallel structure exists.

COMMENTARY

When parallel structures are combined, enter the surviving structure key into *ID03 – Replaces (Old)* of the structure whose number is no longer used. Do not delete the structure whose number is no longer used from the database. The surviving structure key is typically the structure carrying traffic in the direction of inventory.

Leave this item blank when no parallel structure exists.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	ID01	ID06A Code
F-17-IT: Structure does not have a parallel structure	F-17-IT	
D-03-V-160: Parallel structure exists; Structure Key is D-03-V-161	D-03-V-160	D-03-V-161
PAR CANTBRY-0.2: Structure does not have a parallel structure	PAR CANTBRY-0.2	



ID07A – Parallel Structure	CDOT
----------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the location of the inventoried structure in relation to the parallel structure in the direction of inventory using one of the following codes.

ID07A Codes
Left structure (traffic in opposite direction)
Right structure (traffic in inventory direction)
No parallel structure exists.

COMMENTARY

For On-System Structures and Minor Structures owned by CDOT the direction of inventory is typically in the direction of increasing mile point for the highway the structure carries.

For Off-System Structures the direction of inventory is typically west to east or south to north.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	ID07A Code
F-17-IT: Structure does not have a parallel structure	No parallel structure exists.
D-03-V-160: Structure is on the left side in the direction of inventory (west to east); carries WB traffic	Left structure (traffic in opposite direction)
PAR CANTBRY-0.2: Structure does not have a parallel structure	No parallel structure exists.
Structure is on the right side in the direction of inventory (south to north); carries NB traffic	Right structure (traffic in inventory direction)



Section 5.11 Inspection Event (IE)

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IE01 – Inspection Type	SNBI Item B.IE.01
------------------------	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the inspection type performed using one of the following codes.

IE01 Codes
Damage Human Induced
Damage Natural Disaster
Electrical Scheduled*
Fire Suppression Scheduled*
In-Depth
Initial
Mechanical Scheduled*
Pin
Routine
Routine+
Special Scheduled
Special Unscheduled
Underwater
Vertical Clearance Scheduled
Posting Status Change Unscheduled

*Code should not be used for Major or Minor Structures. Code applies to other asset types (e.g., tunnels)

COMMENTARY

When *IR01 – NSTM Required* is not coded “Y”, use a “Routine” inspection type instead of “Routine+” in SIMSA.

When *IR01 – NSTM Required* is coded “Y”, use a “Routine+” inspection type instead of “Routine” in SIMSA.

When *IR03 – UW Required* is coded “Yes”, there should be a current “Underwater” inspection type in SIMSA.

When *IR05A – Pin Required* is coded “Yes”, there should be a current “Pin” inspection type in SIMSA.

When *IR06A – Special Required* is coded “Yes”, there should be a current “Special Scheduled” inspection type in SIMSA.

There should never be more than one current inspection for each inspection type.

Refer to the Colorado Bridge Inspection Manual for guidance on inspection types.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.



CODING EXAMPLES

Example	IE01 Code
F-17-IT: Routine+ Inspection performed on August 6, 2025	Routine+
D-03-V-160: Special Unscheduled Inspection started on June 12, 2025 and completed on June 27, 2025 with RTD permit and UP RR ROW access	Special Unscheduled
PAR CANTBRY-0.2: Routine Inspection performed on February 5, 2025	Routine
The first inspection of a structure to add it to the inventory.	Initial
An inspection occurring every twelve months of an entire structure that is in poor condition	Routine
An unscheduled inspection to assess the damage resulting from a vehicular impact	Damage Human Induced
An inspection to perform a hands-on inspection of pins using non-destructive testing methods	Pin
An inspection to use non-destructive testing methods to assess the condition of the cables (complex feature) of a cable-stayed bridge	In-Depth
A scheduled inspection of only the girders (controlling members) of a load restricted bridge	Special Scheduled



IE02 – Inspection Field Start	SNBI Item B.IE.02
-------------------------------	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry/Calculated	mm/dd/yyyy hh:mm:ss AM/PM

SPECIFICATION

Report the start date for the inspection performed.

COMMENTARY

This item is automatically populated in SIMSA with the date and time when the “Start Inspection” button is pressed for the inspection in the SIMSA mobile app.

This item is automatically populated in SIMSA with the date and time when the inspection status is changed to “In Progress” in SIMSA through a web browser.

This item can be manually entered and/or updated with the date and time the inspection started.

For multiple day inspections, report the first day that field inspection begins.

If multiple site visits occur for scour monitoring inspections, for a triggering storm event, report the first site visit date for that storm event.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE02 Code
F-17-IT: Routine+ Inspection performed on August 6, 2025	Routine+	08/06/2025 09:23:32 AM
D-03-V-160: Special Unscheduled Inspection started on June 12, 2025 and completed on June 27, 2025 with RTD permit and UP RR ROW access	Special Unscheduled	06/12/2025 01:29:28 AM
PAR CANTBRY-0.2: Routine Inspection performed on February 5, 2025	Routine	02/05/2025 10:27:25 AM
Routine+ Inspection started on August 1, 2024	Routine+	08/01/2024 08:32:55 AM
An Underwater Inspection started on August 31, 2024	Underwater	08/31/2024 10:38:12 AM
Bridge was struck by an over-height vehicle on November 22, 2024 requiring an inspection on the same day	Damage Human Induced	11/22/2024 04:56:35 PM
Damage from a previous vehicle was repaired and a one-time special inspection of the repair was performed on December 23, 2024	Special Unscheduled	12/23/2024 11:14:43 AM



IE03 – Field End Date	SNBI Item B.IE.03
-----------------------	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry/Calculated	mm/dd/yyyy hh:mm:ss AM/PM

SPECIFICATION

Report the completion date for the inspection performed.

COMMENTARY

This item is automatically populated in SIMSA with the date and time when the “Submit Inspection” button is pressed for the inspection in the SIMSA mobile app.

If this item is blank when the inspection status is changed to “Field Work Complete” in SIMSA through a web browser, this item is automatically populated with the date and time.

This item can be manually entered and/or updated with the date and time the inspection was completed.

For single day inspections, report the same date that field inspection begins.

If multiple site visits occur for scour monitoring inspections, for a triggering storm event, report the last site visit date for that storm event.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03 Code
F-17-IT: Routine+ Inspection performed on August 6, 2025	Routine+	08/06/2025 01:04:37 PM
D-03-V-160: Special Unscheduled Inspection started on June 12, 2025 and completed on June 27, 2025 with RTD permit and UP RR ROW access	Special Unscheduled	06/27/2025 06:32:33 PM
PAR CANTBRY-0.2: Routine Inspection performed on February 5, 2025	Routine	02/05/2025 11:33:45 AM
Routine+ Inspection started on August 1, 2024 and completed on August 4, 2024	Routine+	08/04/2024 10:57:42 AM
An Underwater Inspection started on August 31, 2024 and completed on September 1, 2024	Underwater	09/01/2024 02:16:51 PM



IE03A – Inspection Date	CDOT
-------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	mm/dd/yyyy

SPECIFICATION

The date of the inspection performed.

COMMENTARY

The date reported in this item has two different intents depending on if the field inspection is completed yet. If the field inspection is not completed yet, the date reported in this item is the scheduled inspection date. If the field inspection has been completed, the date reported in this item is the date the inspection was completed.

This item is automatically populated with the scheduled inspection date as a default value. The scheduled inspection date is determined by one of the following two cases:

- For inspection types that have an inspection interval (e.g., Routine, Routine+, Underwater, Pin, Special Scheduled), the scheduled inspection date is the minimum value of the following two calculations from the previous inspection:
 - *IE03A – Inspection Date plus the Next Inspection Interval.*
 - *Target Date plus the Next Inspection Interval.*
- For inspection types that do not have an inspection interval (e.g., Special Unscheduled, Damage Human Induced, Damage Natural Disaster), the scheduled inspection date is the date manually assigned when the inspection is created in SIMSA.

Once item *IE03 – Field End Date* is populated with a date in SIMSA, the date reported in this item is the date reported in *IE03 – Field End Date*.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A Code
F-17-IT: Routine+ Inspection performed on August 6, 2025	Routine+	08/06/2025
D-03-V-160: Special Unscheduled Inspection started on June 12, 2025 and completed on June 27, 2025 with RTD permit and UP RR ROW access	Special Unscheduled	06/27/2025
PAR CANTBRY-0.2: Routine Inspection performed on February 5, 2025	Routine	02/05/2025



IE04 – Team Leader	SNBI Item B.IE.04
--------------------	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the name of the Nationally Certified Bridge Inspector (Team Leader) responsible for the inspection performed using one of the available team leaders in the drop-down menu in SIMSA.

COMMENTARY

The intent of this item is to indicate the Nationally Certified Bridge Inspector (Team Leader) present at the inspection for each inspection type required by the NBIS.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE04 Code
F-17-IT	Routine+	08/06/2025	Robert Campbell
D-03-V-160	Special Unscheduled	06/27/2025	Keith Boone
PAR CANTBRY-0.2	Routine	02/05/2025	Nick Donovan



IE04A – Lead Inspector	CDOT
------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the name of the individual who performed the inspection (or the majority of the inspection) using one of the available team members in the drop-down menu in SIMSA.

COMMENTARY

An individual does not have to be a Nationally Certified Bridge Inspector to be a Lead Inspector.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE04A Code
F-17-IT	Routine+	08/06/2025	Robert Campbell
D-03-V-160	Special Unscheduled	06/27/2025	Alex Smith
PAR CANTBRY-0.2	Routine	02/05/2025	*

*Item not used at the time of inspection



IE04B – Team Member	CDOT
---------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the names of all the team members that were part of the field inspection performed using the available team members in the drop-down menu in SIMSA.

COMMENTARY

If an individual is assigned as a Team Leader or Lead Inspector in SIMSA, they will automatically be added as a Team Member in SIMSA.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE04B Code
F-17-IT	Routine+	08/06/2025	Robert, Campbell, Chris Baker
D-03-V-160	Special Unscheduled	06/27/2025	Keith Boone, Alex Smith, Randy Clark, Jim White
PAR CANTBRY-0.2	Routine	02/05/2025	Nick Donovan, Ryker Black



IE05A – Current Inspection Interval	CDOT
-------------------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	Menu Selection

SPECIFICATION

The planned interval in number of months between the previous inspection and current inspection based on one of the following codes.

IE05 Codes
6
12
24
48
60
72

COMMENTARY

This item is automatically populated in SIMSA with the *Next Inspection Interval* that was reported at the time the previous inspection was finalized.

This item is only populated for scheduled inspection types which have an inspection interval (e.g., Routine, Routine+, Underwater, Pin, Special Scheduled).

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE05A Code
F-17-IT	Routine+	08/06/2025	24
D-03-V-160	Special Unscheduled	06/27/2025	
PAR CANTBRY-0.2	Routine	02/05/2025	24



IE06 – Inspection Due Date	SNBI Item B.IE.06
----------------------------	---------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	mm/dd/yyyy

SPECIFICATION

The date the next scheduled inspection is due.

COMMENTARY

This item is not available in SIMSA. This item is calculated by FHWA and is provided for reference only.

The default calculation that FHWA uses is the value reported in *IE03A – Inspection Date* plus the value reported in *Next Inspection Interval*.

CDOT calculates the inspection due date as the minimum value of the following two calculations from the previous inspection:

- *IE03A – Inspection Date* plus the *Next Inspection Interval*.
- *Target Date* plus the *Next Inspection Interval*.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

None.



IE06A – Current Target Date	CDOT
-----------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	mm/dd/yyyy

SPECIFICATION

A date indicating the target month and year for the current inspection.

This item is blank and not used for inspection types that do not have an inspection interval (e.g., Special Unscheduled, Damage Human Induced, Damage Natural Disaster).

COMMENTARY

The intent of this item is to indicate the target month and year for the current inspection to be in accordance with the *Schedule String*. The exact day of the month that is reported in this item is just a placeholder day and does not have any meaning.

This item is automatically populated in SIMSA when the previous inspection was finalized. The reported date for this item is the *Target Date* plus the *Next Inspection Interval* that were reported at the time the previous inspection was finalized.

Note that there might be cases when *IE06A – Current Target Date* is different than the scheduled inspection date in *IE03A – Inspection Date*.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE06A Code
F-17-IT	Routine+	08/06/2025	8/15/2025
D-03-V-160	Special Unscheduled	06/27/2025	
PAR CANTBRY-0.2	Routine	02/05/2025	02/15/2025



IE06B – Report Due Date	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	mm/dd/yyyy

SPECIFICATION

The date that inspection reports must be completed by in SIMSA for the inspection performed.

COMMENTARY

The intent of this item is to provide a default due date for inspection reports to be complete in SIMSA. CDOT considers an inspection report complete when the inspection organization's quality control reviews are complete, all inspection data has been entered and/or updated in SIMSA, and the inspection status has been changed to "Ready for QA Review".

CDOT may set different report due dates for different inspection programs, assets, and/or contracts that supersede the date reported in this item.

This item is automatically populated in SIMSA based on *IE03 – Field End Date*. The calculated report due date is *IE03 – Field End Date* plus 3 months.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE06B Code
F-17-IT	Routine+	08/06/2025	11/06/2025
D-03-V-160	Special Unscheduled	06/27/2025	09/28/2025
PAR CANTBRY-0.2	Routine	02/05/2025	05/05/2025



IE07 – Risk Based Inspection Interval	SNBI Item B.IE.07
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the risk-based inspection interval method using one of the following codes.

IE07 Codes
N - Not applicable
1 - Method 1
2 - Method 2

COMMENTARY

The intent of this item is to report the risk-based inspection interval method, described in the NBIS, for determining the inspection interval.

This item is coded “1” for all inspections and inspection types in SIMSA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE07 Code
F-17-IT	Routine+	08/06/2025	1 - Method 1
D-03-V-160	Special Unscheduled	06/27/2025	1 - Method 1
PAR CANTBRY-0.2	Routine	02/05/2025	1 - Method 1



IE08 – QC Date	SNBI Item B.IE.08
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	mm/dd/yyyy

SPECIFICATION

The date that the quality control review was completed for the inspection performed.

COMMENTARY

The intent of this item is to document the date that the quality control review of the inspection report was completed. The quality control review may be completed by the same organization that completed the inspection or by an independent organization.

This item is automatically populated in SIMSA with the date the inspection status was changed to “Ready for QA Review” if the inspection was Submitted to CDOT through the QC Review tab in SIMSA.

This item is left blank if the inspection was not Submitted to CDOT through the QC Review tab in SIMSA.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE08 Code
F-17-IT	Routine+	08/06/2025	
D-03-V-160	Special Unscheduled	06/27/2025	08/12/2025
PAR CANTBRY-0.2	Routine	02/05/2025	04/28/2025



IE09 – QA Date	SNBI Item B.IE.09
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	mm/dd/yyyy

SPECIFICATION

The date that the quality assurance review was completed for the inspection performed.

COMMENTARY

The intent of this item is to identify inspections that have had independent quality assurance reviews to measure or verify the overall quality of the inspection program.

This item is automatically populated in SIMSA with the date the inspection report was reviewed if the inspection was selected for quality assurance review in SIMSA.

This item is left blank if the inspection was not selected for a quality assurance review in SIMSA.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE09 Code
F-17-IT	Routine+	08/06/2025	
D-03-V-160	Special Unscheduled	06/27/2025	
PAR CANTBRY-0.2	Routine	02/05/2025	



IE10 – Inspection Data Update Date	SNBI B.IE.10
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	None	Not Applicable

SPECIFICATION

The date that the NBI inspection data was fully entered and complete in SIMSA.

COMMENTARY

The intent of this item is to document the date that the inspection report is complete in SIMSA. This date is used to verify that the NBI inspection data set was entered/updated and complete in SIMSA within the time frames required by the NBIS. CDOT considers an inspection report complete when the inspection organization's quality control reviews are complete, all inspection data has been entered and/or updated in SIMSA, and the inspection the inspection status has been changed to "Ready for QA Review".

This item is not visible in SIMSA.

CDOT calculates this item as the date the inspection status was changed to "Ready for QA Review".

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

None.



IE10A – Inspection Finalized	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Calculated	mm/dd/yyyy

SPECIFICATION

The date that the inspection data was finalized in SIMSA for the inspection.

COMMENTARY

This item is automatically populated in SIMSA with the date the inspection status was changed to “Final” in SIMSA.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE10A Code
F-17-IT	Routine+	08/06/2025	
D-03-V-160	Special Unscheduled	06/27/2025	09/29/2025
PAR CANTBRY-0.2	Routine	02/05/2025	06/26/2025



IE11 – Limited Inspection Note SNBI | Item B.IE.11

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry	AN (300)

SPECIFICATION

Report notes to document the members or features inspected when limited portions of the structure are inspected.

COMMENTARY

This item is intended to document the scope of the inspection when the scope is limited and does not include inspecting the entire structure. Inspection types that typically have a limited scope include Damage Human Induced, Damage Natural Disaster, In-Depth, Pin, Special Scheduled, Special Unscheduled, Underwater, Vertical Clearance Scheduled, and Posting Status Change Unscheduled.

The following inspection should be documented in this item when applicable:

- Description of which structure components, elements, and/or portions of components or elements were included in the scope of the inspection.

Leave this item blank when the scope of the inspection includes inspecting the entire structure. This item should typically be left blank for Initial, Routine, and Routine+ inspection types.

All dates added in this item should be in the format of yyyy/mm/dd.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE11 Code
F-17-IT	Routine+	08/06/2025	
D-03-V-160	Special Unscheduled	06/27/2025	2025/06/11: Special inspection scope only included inspecting underside of structure in Spans 7, 8, and 9 with an RTD right-of-way access permit. 2025/06/27: Special inspection scope only included inspecting underside of structure in Spans 1, 2, and 3 with permission from UP RR to access right-of-way.
PAR CANTBRY-0.2	Routine	02/05/2025	
Structure that requires a Pin Inspection	Pin	08/27/2025	2025/08/27: UT Inspection performed. Only elements related to pin connections were assessed during this inspection.



IE11A – Inspection Note	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry	AN (300+)

SPECIFICATION

Report notes specific to the inspection performed.

COMMENTARY

The following information should be documented in this item when applicable:

- If a Critical Inspection Finding or Essential Repair Finding is identified, document the date the notification was sent to the structure owner or responsible party and the reason for the Critical Inspection Finding or Essential Repair Finding.
- If any significant portion of the structure was in the inspection scope but inaccessible during the inspection, document what was not inspected, why it was inaccessible, and what the plan is to get access and revisit for another inspection if needed.
- If a site visit to the structure was completed after the *IE03 – Field End Date* and data from the site visit is included in the current inspection report, document the date and reason for the site visit.
- If the inspection organization receives any significant information for the structure after the *IE03 – Field End Date* that is incorporated in the current inspection report, document the date information was received, what was the information, and which entity or organization sent the information such as CDOT or the local agency. It is preferred to use names of organizations instead of names of individuals that sent information.
- For all unscheduled inspection types, provide a reason for the unscheduled inspection.
- For Damage Human Induced and Damage Natural Disaster inspections, provide a description of the damage incident that occurred, the approximate date and time the incident occurred and identify which elements and/or components were affected.
- If an organization other than the organization coded in IE19A – Inspection Team is contracted to perform non-destructive testing during an inspection, document the organization name and project contact.
- If a field audit is performed by the CDOT Bridge & Structures Inspection Engineer or designee, document the date of the field review.

All dates added in this item should be in the format of yyyy/mm/dd.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE11A Code
F-17-IT	Routine+	08/06/2025	



Example	IE01	IE03A	IE11A Code
D-03-V-160	Special Unscheduled	06/27/2025	2025/06/11: Special inspection to access and inspect underside of structure in Spans 7, 8, and 9 with an RTD right-of-way access permit. 2025/06/27: Special inspection to access and inspect underside of structure in Spans 1, 2, and 4 with permission from UP RR to access right-of-way.
PAR CANTBRY-0.2	Routine	02/05/2025	
Vertical clearance signs on structure have values higher than vertical clearances measured during Routine Inspection on 3/2/2026	Routine	03/02/2026	2026/03/12: Essential Repair Letter to the owner to update vertical clearance signs.
Inspectors could not access Abutment 1 during Routine Inspection due to high water level	Routine	05/01/2026	2026/05/01: Abutment 1 could not be fully accessed to probe for scour due to deep water. A revisit inspection will be scheduled when water levels are lower.
Damage Human Induced Inspection performed after a vehicle impacted the structure	Damage Human Induced	01/08/2026	2026/01/08: Damage Human Induced inspection to assess the damage from a vehicle impact. Girder 1A was impacted by an over height vehicle at approximately 3:00PM.
Bridge owner installed load posting signs after Routine Inspection field work was complete	Routine	02/01/2026	2026/02/19: The bridge owner emailed photos of new load posting signs installed at the structure.



IE12 – Inspection Equipment SNBI | Item B.IE.12

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Multiple Selection Menu	Menu Selection

SPECIFICATION

Report all access and/or inspection equipment used to perform the inspection using one or more of the following codes.

IE12 Codes - Access
AN - No access equipment used
A01 - Ladder
A02 - Bucket lift vehicle
A03 - Under bridge inspection vehicle
A04 - Rigging
A05 - Waders
A06 - Boat
A07 - Snorkel
A08 - SCUBA
A09 - Surface supplied air
A10 - Remotely Operated Vehicle (ROV)
A11 - Video pole
A12 - Borescope
A13 - Unmanned aerial systems (UAS)
A14 - Service Traveler
AX - Other

IE12 Codes - Inspection
IN - No inspection equipment used
I01 - Ultrasonic
I02 - Ground-penetrating radar
I03 - Infrared thermography
I04 - Radiographic testing
I05 - Impact Echo
I06 - Electromagnetic methods
I07 - Rebound & penetration methods
I08 - Acoustic emissions testing
I09 - Dye penetrant
I10 - Magnetic particle
I11 - Eddy current
I12 - Boring or drilling
I13 - Underwater imaging
I14 - Depth finder/fathometer
I15 - Stress wave timer
IX - Other

COMMENTARY

This item is used to provide information about access and inspection equipment used in addition to standard equipment for each inspection.

Remotely operated vehicles include any remotely controlled device used to provide video access to members of a structure via ground, water surface, or underwater.

Unmanned aerial systems are commonly referred to as drones.

Underwater imaging includes underwater imaging technologies such as side scan sonar.

This item may be left blank when no access and no inspection equipment was used.

Multiple access and/or inspection codes can be selected when multiple types of equipment were used.

When at least one of the listed inspection equipment codes apply and none of the access equipment codes apply for the inspection performed, code “AN” and all applicable inspection equipment codes.

When at least one of the listed access equipment codes apply and none of the inspection equipment codes apply for the inspection performed, code “IN” and all applicable access equipment codes.

NDE and testing inspection equipment listed represent only more common or general types. Use the most closely related code or Code “IX” for types not listed.



This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE12 Code
F-17-IT	Routine+	08/06/2025	IN - No inspection equipment used A01 - Ladder
D-03-V-160	Special Unscheduled	06/27/2025	A02 - Bucket lift vehicle IN - No inspection equipment used
PAR CANTBRY-0.2	Routine	02/05/2025	AN - No access equipment used IN - No inspection equipment used
No access or inspection equipment used during inspection	-	-	



IE13A – Schedule Note	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (300+)

SPECIFICATION

Report notes to document changes to inspection schedules.

COMMENTARY

The following information should be documented in this item when applicable:

- Date the initial inspection was performed when a new structure is added to the inventory.
- When an inspection interval changes, document the date of change, inspection type, previous interval, new interval, and reason for the change.
 - When an inspection target date (*Schedule String*) changes, document the date of change, inspection type, previous target date and schedule string, new target date and schedule string, and reason for the change.
 - When a structure is added or removed from the Underwater Inspection List, i.e. when *IR03 – UW Required* code is changed, document the date of change, if the structure was added or removed, and the reason for the change.
 - When an Underwater Inspection is required, i.e. when *IR03 – UW Required* is coded “Yes”, document the intended scope of the underwater inspection (e.g., which elements to inspect and what portions of each element).
 - When a Special Scheduled inspection has been scheduled or removed, i.e. when *IR06A – Special Required* code is changed, document the date of change, planned interval for the Special Scheduled inspection, reason for the special inspection, and the intended scope for the special inspection (e.g., which elements to inspect and what portions of each element).

All dates added in this item should be in the format of yyyy/mm/dd.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE13A Code
F-17-IT	2019/02: Moved to A-40 schedule per REDACTED request
D-03-V-160	
PAR CANTBRY-0.2	
Structure that had routine inspection interval changed from 24 months to 12 months and an interim special inspection created on a 12 month interval (offset from the routine by 6 months) due to condition of exterior girders; structure inspected every 6 months	2025/05/13: Routine inspection interval changed from 24 months to 12 months and an interim Special Scheduled Inspection has been created on a 12 month interval (offset from the routine by 6 months) due to the severely deteriorated Girders 1J and 2J.
Structure on the Off-System inspection program that had the target month changed for a 24-month Routine inspection from March to February.	2026/01/09: Routine inspection target month changed from March to February to improve field inspection efficiency. Schedule String changed from "EVN MAR C_0" to "EVN FEB C_0".



IE14A – Special Equipment	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report if special equipment or access is needed for inspection using one of the following codes.

IE14A Codes
0 - Not Applicable
8 - See Special Access Notes
9 - Unknown

COMMENTARY

This item is intended to let inspectors know if any special equipment or access is required for inspection.

Code “8” when a structure requires special actions or equipment for inspections, such as traffic control, snooper, bucket trucks, rope access climbing, etc. Specific access details shall be noted in *IE15A – Special Access Note*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE14A Code
F-17-IT: Special access notes	8 - See Special Access Notes
D-03-V-160: Special access notes	8 - See Special Access Notes
PAR CANTBRY-0.2: no special access notes	0 - Not Applicable



IE15A – Special Access Note	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry	AN (300+)

SPECIFICATION

Report notes to document special access information and/or equipment required to complete a full inspection of the structure for all inspection types.

COMMENTARY

The following information should be documented in this item when applicable:

- When special access equipment or methods are required, document the specific type of equipment and/or method such as 40-foot bucket truck, 60-foot boom lift, rope access, and/or underwater inspection equipment.
- When traffic control is required, document which lanes and/or shoulders need to be closed and the organization that a permit must be obtained from.
- When a permit is required such as a railroad right-of-way access permit, document the reason a permit is required and the organization that a permit must be obtained from. When it makes reasonable sense, provide specific contact information for who to contact to obtain a permit.
- When there are locks on site at the structure that inspectors need to access, document where locks are located on site, how to obtain a key, and/or what is the combination for locks.
- Document contact information such as does anyone need to be notified before being on site. Include names, phone numbers, and/or email addresses for relevant contacts.
- Document when special PPE is recommended such as Tyvek suits and/or respirators when there is a significant amount of bird droppings.
- Summary of elements that require access and the best access points. Include detailed information such as which girders have hatches, where are hatches located, are the hatches locked or welded shut, what equipment is needed to access and open each hatch.

Leave this item blank when *IE14A – Special Equipment* is coded “0” or “9”.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE15A Code
F-17-IT	Use drone to check bearings, A-40 not necessary unless a problem is found. Bucket truck can access Pier 3 bearings with lane closure. Box girders are accessible from top of slopes near abutments. No ladder needed. Combination for locks is REDACTED. Hammer may be necessary for tight latches at Abutment 5.



Example	IE15A Code
D-03-V-160	<p>Traffic control required to inspect topside. Topside lane closures must go through CDOT for a permit (contact City and County of Denver as well to let them know). Fenced area with locked gate in front of Abutment 1, use standard City and County of Denver key for the lock.</p> <p>Coordination with UP RR railroad required to inspect inside fenced area in Spans 1, 2, and 3 above UP RR tracks; Contact REDACTED for UP RR yard escort, ROW permit not required. Spans 3 through 6 is the Burnham rail yard which is owned by CDOT. There is a 24/7 security team that patrols the site. You can access the Burnham rail yard by getting permission from CDOT and then contacting the security company REDACTED. Spans 7, 8, and 9 have RTD tracks and a fenced off RTD yard, permit required and typically nighttime access only. Fenced area in Spans 14 and 15 can be accessed with a bucket truck, no ground level access inside fenced area. Parking lot with gate in Span 17, the parking lots are owned by a company named REDACTED. Fenced area with a locked gate area in east half of Span 18 and all of Span 19 owned by City and County of Denver, combination is REDACTED for lock on gate. Locked gate in front of Abutment 20 owned by City and County of Denver, use standard City and County of Denver key for the lock.</p>
PAR CANTBRY-0.2	



IE16A – Weather	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry	AN (250)

SPECIFICATION

Report the weather conditions and ambient temperature at the time the inspection was performed.

COMMENTARY

Weather conditions should include a brief description of the sky’s appearance (e.g., cloudy, clear, mostly sunny). Other weather conditions, including wind and precipitation, only need to be documented when they are present at the time of the inspection.

Ambient temperature shall be recorded in degrees Fahrenheit (F).

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE19A Code
F-17-IT	Routine+	08/06/2025	87F Sunny / Partly cloudy/ windy
D-03-V-160	Special Unscheduled	06/27/2025	70 degrees F, clear
PAR CANTBRY-0.2	Routine	02/05/2025	59 degrees, Clear



IE17A – Bat Present	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Option Button	Option Selection

SPECIFICATION

Report whether bats are present at the structure using one of the following codes.

IE17A Codes	Description
Yes	Bats are present at the structure
No	Bats are not present at the structure

COMMENTARY

Code “Yes” if bats or signs of bat presence are found during the inspection.

Code “No” if there are no bats present and no signs of bat presence are found during the inspection.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE17A Code
F-17-IT	Routine+	08/06/2025	No
D-03-V-160	Special Unscheduled	06/27/2025	No
PAR CANTBRY-0.2	Routine	02/05/2025	No
Bats observed living inside box girder during inspection	-	-	Yes



IE19A – Inspection Team	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the organization that performed the inspection using one of the available organizations in the drop-down menu in SIMSA.

COMMENTARY

Code the primary (or responsible) organization when an inspection is performed by team members from multiple organizations.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.

CODING EXAMPLES

Example	IE01	IE03A	IE19A Code
F-17-IT	Routine+	08/06/2025	Company D
D-03-V-160	Special Unscheduled	06/27/2025	Company E
PAR CANTBRY-0.2	Routine	02/05/2025	Company F



IE20A – Inspection Status	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Drop-down Menu	Menu Selection

SPECIFICATION

Report the status of the inspection using one of the following codes.

IE20A Codes
Open
Assigned to Organization
Assigned to Inspector
Ready to Inspect
In Field
In Progress
Field Work Complete
Ready for QC Review
QC In Progress
QC Revisions Needed
QC Review Complete
Ready for QA Review
QA In Progress
QA Revisions Needed
QA Approved
Final

COMMENTARY

The inspection status must be coded “Ready to Inspect”, “In Field”, or “In Progress” for the inspection to sync to the SIMSA mobile app on a mobile device.

When this item is coded “Ready to Inspect” and an assigned inspector syncs the SIMSA mobile app on their mobile device this item is automatically updated in SIMSA to “In Field”.

When the “Start Inspection” button is pressed for the inspection in the SIMSA mobile app and an assigned inspector syncs the SIMSA mobile app, this item is automatically updated in SIMSA to “In Progress”.

When the “Submit Inspection” button is pressed for the inspection in the SIMSA mobile app and an assigned inspector syncs the SIMSA mobile app, this item is automatically updated in SIMSA to “Field Work Complete”.

When this item is coded “Field Work Complete” and an assigned inspector syncs the SIMSA mobile app on their mobile device the data from the mobile app will sync to the SIMSA web version and the inspection will be removed from the SIMSA mobile app.

This item is specific to each individual inspection. This item is not linked across inspection types and not carried forward from inspection to inspection.



CODING EXAMPLES

Example	IE01	IE03A	IE20A Code
F-17-IT	Routine+	08/06/2025	Ready for QC Review
D-03-V-160	Special Unscheduled	06/27/2025	Final
PAR CANTBRY-0.2	Routine	02/05/2025	Final



Section 5.12 Inspection Requirements (IR)

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IR02 – Fatigue Details.....	325
IR03 – UW Required.....	326
IR03A – UW Category.....	327
IR04 – Complex Feature	328
IR05A – Pin Required.....	329
IR06A – Special Required.....	330
IR07A – Inspection Program	331
IR08A – LiDAR Required	332



IR01 – NSTM Required SNBI | Item B.IR.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report whether the bridge requires an NSTM inspection using one of the following codes.

IR01 Codes
N - NSTM inspection not required
Y - NSTM inspection required
I - NSTM inspection not required - Internal Redundancy
S - NSTM inspection not required - System Redundancy

COMMENTARY

The intent of this item is to identify bridges that require NSTM inspection for any part of the bridge, to ensure they are inspected in accordance with the NBIS.

Code “N” when an NSTM inspection is not required and codes I and S do not apply.

Code “I” when the bridge owner has demonstrated to FHWA, through the use of nationally recognized methods, that a member without load path redundancy is internally redundant, and it is determined that the bridge does not require an NSTM inspection.

Code “S” when the bridge owner has demonstrated to FHWA, through the use of nationally recognized methods, that a bridge without load path redundancy is system redundant, and it is determined that the bridge does not require an NSTM inspection.

When this item is coded “Y”, use a Routine+ inspection type instead of a Routine inspection type in SIMSA.

Structures coded “Y” should be the on the State’s Master List of bridges requiring an NSTM inspection.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IR01 Code
F-17-IT: Superstructure has NSTMs; NSTM inspection required	Y - NSTM inspection required
D-03-V-160: Substructure has NSTMs; NSTM inspection required	Y - NSTM inspection required
PAR CANTBRY-0.2: Structure is concrete, no NSTMs; NSTM inspection not required	N - NSTM inspection not required
Structure with steel components with no NSTMs; E’ fatigue details present	N - NSTM inspection not required



IR02 – Fatigue Details SNBI | Item B.IR.02

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report whether the bridge has AASHTO fatigue category E or E' details using one of the following codes.

IR02 Codes
N - No E/E(prime) details
Y - E/E(prime) details are present

COMMENTARY

This item provides data to identify bridges that have details most prone to fatigue.

Refer to the BIRM or AASHTO LRFD Bridge Design Specifications for fatigue categories.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IR02 Code
F-17-IT: Structure has E and/or E' fatigue details	Y - E/E(prime) details are present
D-03-V-160: Structure has E and/or E' fatigue details	Y - E/E(prime) details are present
PAR CANTBRY-0.2: Structure is concrete; does not have any E or E' fatigue details	N - No E/E(prime) details
Structure with steel components with no NSTMs; E' fatigue details present	Y - E/E(prime) details are present



IR03 – UW Required SNBI | Item B.IR.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether an underwater inspection is required under normal flow conditions using one of the following codes.

IR03 Codes	Description
Yes	Underwater inspection required
No	Underwater inspection not required

COMMENTARY

The intent of this item is to identify structures that require an underwater inspection per the NBIS.

Code “Yes” when during a typical routine inspection, any portion of a bridge substructure and the surrounding channel cannot be inspected to the mudline at low water by wading or probing, generally requiring diving or other appropriate technique.

Code “No” when during a typical routine inspection, all portions of a bridge substructure and the surrounding channel can be inspected to the mudline at low water by wading or probing.

If this item was previously coded “Yes” because an underwater inspection is generally required, it should continue to be coded as “Yes” even for instances of unusually low flow where all portions of the substructure can be inspected by wading and probing, and an underwater inspection is not required. This applies only if the low flow condition is truly unusual and is not likely to reoccur during the next inspection interval.

The reported code for this item may change in the rare circumstance where long-term environmental conditions change for inspection access to underwater portions of the substructure.

When this item is coded “Yes”, there should be a current Underwater inspection type in SIMSA.

Structures coded “Yes” should be the on the State’s Master List of bridges requiring an underwater inspection.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IR03 Code
F-17-IT: Structure does not cross over a waterway; underwater inspection not required	No
D-03-V-160: Structure does not cross over a waterway; underwater inspection not required	No
PAR CANTBRY-0.2: Water level typically only a few inches deep during routine inspection; underwater inspection not required	No
Structure has several inaccessible elements due to a water depth of 8 feet	Yes



IR03A – UW Category	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the underwater inspection category using one of the following codes.

IR03A Codes
85 - SI/Category I UWI (Water depth greater than 10 ft.)
86 - SI/Category II UWI (Water depth 7 ft to 10 ft)
88 - SI/Category III UWI (Water depth 4 ft to 6 ft)

COMMENTARY

The intent of this item is to categorize structures that require underwater inspections based on typical water depth.

This item is used to capture structures that likely require more complex underwater inspections and additional equipment (e.g., Blue Mesa bridges that use dive boats and recompression chambers).

Leave this item blank when *IR03 – UW Required* is coded “No”.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IR03A Code
F-17-IT: Structure does not cross over a waterway; underwater inspection not required	
D-03-V-160: Structure does not cross over a waterway; underwater inspection not required	
PAR CANTBRY-0.2: Water level typically only a few inches deep during routine inspection; underwater inspection not required	
Structure has several inaccessible elements due to a water depth of 8 feet	86 - SI/Category II UWI (Water depth 7 ft to 10 ft)



IR04 – Complex Feature	SNBI Item B.IR.04
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether the bridge has a complex feature using one of the following codes.

IR04 Codes	Description
Yes	Bridge has complex feature
No	Bridge does not have complex feature

COMMENTARY

The intent of this item is to identify bridges with complex features as defined by the NBIS.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IR04 Code
F-17-IT: Structure does not have any complex features	No
D-03-V-160: Structure does not have any complex features	No
PAR CANTBRY-0.2: Structure does not have any complex features	No



IR05A – Pin Required	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether a pin inspection is required using one of the following codes.

IR05A Codes	Description
Yes	Pin inspection required
No	Pin inspection not required

COMMENTARY

The intent of this item is to identify structures that require structure pin non-destructive testing as outlined in the CDOT Quality Assurance Procedure 5957, Ultrasonic Inspection Procedure for Bridge Pins.

When this item is coded “Yes”, there should be a current Pin inspection type in SIMSA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IR05A Code
F-17-IT: Structure does not have any structure pins; does not require a pin inspection	No
D-03-V-160: Structure does not have any structure pins; does not require a pin inspection	No
PAR CANTBRY-0.2: Structure does not have any structure pins; does not require a pin inspection	No
Structure is a steel thru truss with 64 structural pins; pin inspection required	Yes



IR06A – Special Required	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Option Button	Option Selection

SPECIFICATION

Report whether a special scheduled inspection is required using one of the following codes.

IR06A Codes	Description
Yes	Special inspection required
No	Special inspection not required

COMMENTARY

The intent of this item is to identify structures that require a special inspection to be performed on a regular interval.

A Special Scheduled inspection may be used to monitor a particular known or suspected deficiency, or to monitor special details or unusual characteristics of a structure that does not necessarily have defects on a regular interval.

The Scheduled Special inspection is typically scheduled off cycle of the Routine inspection.

When this item is coded “Yes”, there should be a current Special Scheduled inspection type in SIMSA.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IR06A Code
F-17-IT: Structure does not require a special scheduled inspection	No
D-03-V-160: Structure does not require a special scheduled inspection	No
PAR CANTBRY-0.2: Structure does not require a special scheduled inspection	No
Structure requires an interim special inspection created on a 12 month interval (offset from the routine by 6 months) due to condition of exterior girders	Yes



IR07A – Inspection Program	CDOT
----------------------------	------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the structure inspection program using one of the following codes.

IR07A Codes
Ancillary*
Central 70
E470
Inventory Only
Minor
Miscellaneous*
Northwest Parkway
Off System
On System
Tunnel*
Wall*

*Code is not applicable for Major or Minor Structures. Code is used for other asset types (e.g., ancillary, non-vehicular, tunnels, and walls)

COMMENTARY

Refer to the Colorado Bridge Inspection Manual for guidance on CDOT inspection programs.

Code "Inventory Only" for Minor Structures owned by a local agency. Typically, Minor Structures owned by a local agency should not be added to SIMSA, but on rare occasions these structures are in SIMSA for tracking purposes only.

Code "Inventory Only" for Major Structures owned by a Federal agency.

Code "Minor" for Minor Structures owned by CDOT.

Code "Off System" for Major Structures owned by a local agency.

Code "On System" for Major Structures owned by CDOT.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IR07A Code
F-17-IT: Major structure owned by CDOT	On System
D-03-V-160: Major structure owned by City and County of Denver	Off System
PAR CANTBRY-0.2: Major structure owned by Town of Parker	Off System
Minor structure owned by CDOT	Minor



IR08A – LiDAR Required	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Option Button	Option Selection

SPECIFICATION

Report whether LiDAR is required to collect new vertical clearances using one of the following codes.

IR08A Codes	Description
Yes	LiDAR required
No	LiDAR not required

COMMENTARY

The intent of this item is to identify structures that require new vertical clearance measurements to be collected using LiDAR. This item should not be used to identify structures that can only have vertical clearances measured using LiDAR (e.g., high traffic volumes, high speed roadways).

Code “Yes” when it is determined during an inspection that LiDAR is required to collect new vertical clearances.

New vertical clearances may need to be collected using LiDAR for the following reasons:

- There has been change in vertical clearances since the previous inspection (e.g., construction, structure rehabilitation, new overlay, new lane configuration).
- Vertical clearances cannot be safely taken by an inspector during an inspection, and it has been 48 months or longer since the vertical clearances were last measured.

Refer to the Colorado Bridge Inspection Manual for additional guidance on vertical clearances and LiDAR.

When coding of this item is changed, a note, including the date of the change, should be added to the Travel Path Note in the Vertical Clearance section of SIMSA for the corresponding travelway.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	IR08A Code
F-17-IT: Identified during last inspection that LiDAR is required to collect new vertical clearances	Yes
D-03-V-160: LiDAR not required to collect new vertical clearances	No
PAR CANTBRY-0.2: LiDAR not required to collect new vertical clearances	No
Structure passed over Interstate 25 and vertical clearances have not been verified in 50 months	Yes
Structure passes over Interstate 70 and vertical clearances were verified 24 months prior to inspection	No
Structure passes over a high traffic volume roadway and a new asphalt overlay was under the structure since the previous routine inspection	Yes



Section 5.13 Location (L)

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L01 – State	SNBI Item B.L.01
-------------	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Calculated	Menu Selection

SPECIFICATION

The State code where the structure is located.

L01 Codes
08 - Colorado

COMMENTARY

This item is automatically populated to “08” in SIMSA for all structures.

State codes are derived from the FIPS, Standard Codes for States (FIPS PUB 5-2).

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L01 Code
F-17-IT: Structure is in Colorado	08 - Colorado
D-03-V-160: Structure is in Colorado	08 - Colorado
PAR CANTBRY-0.2: Structure is in Colorado	08 - Colorado



L02 – County	SNBI Item B.L.02
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Calculated	Menu Selection

SPECIFICATION

The FIPS code for the county in which the structure is located based on one of the FIPS county codes in *Appendix K*.

COMMENTARY

This item is automatically populated in SIMSA for all structures based on the location of the structure reported in *L05 – Latitude* and *L06 – Longitude*.

If this item is updated by manually selecting a different county code from the drop-down menu, the item will be updated overnight back to the automatically populated code based on the location of the structure.

Use the FIPS codes in the current version of the Census of Population and Housing - Geographic Identification Code Scheme to determine the appropriate code.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L02 Code
F-17-IT: Structure is located within Douglas County	035 - Douglas
D-03-V-160: Structure is located within the City and Count of Denver	031 - Denver
PAR CANTBRY-0.2: Structure is located within Douglas County	035 - Douglas
Structure is located within Las Animas County	071 - Las Animas
Structure is located within Yuma County	125 - Yuma



L03 – City/Town SNBI | Item B.L.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Calculated	Menu Selection

SPECIFICATION

The FIPS place code for the city, town, township, village, and other census-designated place where the structure is located based on one of the FIPS place codes in *Appendix K*.

COMMENTARY

This item is automatically populated in SIMSA for all structures based on the location of the structure reported in *L05 – Latitude* and *L06 – Longitude*.

If this item is updated by manually selecting a different FIPS place code from the drop-down menu, the item will be updated overnight back to the automatically populated code based on the location of the structure.

Code “00000” if there is no FIPS place code where the structure is located.

Use the FIPS codes in the current version of the Census of Population and Housing - Geographic Identification Code Scheme to determine the city, town, township, village, or other census-designated place code, regardless of ownership.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L03 Code
F-17-IT: Structure is located within the City of Lone Tree	45955 - Lone Tree
D-03-V-160: Structure is located within the City and County of Denver	20000 - Denver
PAR CANTBRY-0.2: Structure is located within the Town of Parker	57630 - Parker
Structure is located within the city limits of Pagosa Springs	56860 - Pagosa Springs
Structure is located on a county road or state highway, but not within the limits of a municipality	00000 - Non City



L04 – District	SNBI Item B.L.04
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Calculated	AN (2)

SPECIFICATION

The district or region code where the structure is located based on one of the following codes.

L04 Codes	Engineering Region	Maintenance Section	Location
15	1	5	KOA / Aurora Maintenance
19	1	9	Eisenhower Tunnel
24	2	4	Pueblo Maintenance
32	3	2	Grand Junction Maintenance
36	3	6	Craig Maintenance
37	3	7*	Alamosa Maintenance
41	4	1	Greeley Maintenance
44	4	4*	Pueblo Maintenance
45	4	5*	Aurora Maintenance
52	5	2*	Grand Junction Maintenance
53	5	3	Durango Maintenance
57	5	7	Alamosa Maintenance

* The Maintenance Section’s office is in a different Engineering Region, but the Maintenance Section has some maintenance responsibility within the listed Engineering Region’s boundary

COMMENTARY

This item is automatically populated in SIMSA for all structures based on the location of the structure reported in *L05 – Latitude* and *L06 – Longitude*.

Maintenance Sections are generally within the boundaries of an Engineering Region. An Engineering Region generally follows county boundaries and may have multiple Maintenance Sections within the Engineering Region. There are a few locations that have roadways and structures assigned to a Maintenance Section not attached to the structure’s Engineering Region. This occurs where it is more expedient, or cost effective, to overlap responsibilities because of geography, efficient deployment of equipment, or other extenuating circumstance(s).

The contact information for each engineering region and maintenance section can be found on CDOT’s website.

Appendix L provides a map showing the boundaries of the engineering regions and maintenance sections.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	L04 Code
F-17-IT: Structure is located within Engineering Region 1 and Maintenance Section 5	15
D-03-V-160: Structure is located within Engineering Region 1 and Maintenance Section 5	15
PAR CANTBRY-0.2: Structure is located within Engineering Region 1 and Maintenance Section 5	15
Structure is located within Engineering Region 1 and Maintenance Section 9	19
Structure is located within Engineering Region 5 but assigned to Maintenance Section 2 within Engineering Region 3	32



L04A – Zone	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the inspection zone where the structure is located using one of the following codes.

L04A Codes
Central
North
South

COMMENTARY

The inspection zone is based on the county in which the structure is located (*L02 – County*). For Off-System major structures located on the border of two counties, the inspection zone should be coded based on the agency that has primary responsibility of the structure (*CL01A – Responsible Party*).

The inspection zones for each inspection program are as follows:

On-System Structure and Off-System Structures:

Inspection Zone	Counties
North	Boulder, Broomfield, Garfield, Grand, Jackson, Larimer, Logan, Moffat, Morgan, Phillips, Rio Blanco, Routt, Sedgwick, Washington, Weld, Yuma
Central	Adams, Arapahoe, Clear Creek, Denver, Douglas, Eagle, Elbert, El Paso, Gilpin, Jefferson, Lincoln, Park, Summit, Teller
South	Alamosa, Archuleta, Baca, Bent, Chaffee, Cheyenne, Conejos, Costilla, Crowley, Custer, Delta, Dolores, Fremont, Gunnison, Hinsdale, Huerfano, Kiowa, Kit Carson, Lake, La Plata, Las Animas, Mesa, Mineral, Montezuma, Montrose, Otero, Ouray, Pitkin, Prowers, Pueblo, Rio Grande, Saguache, San Juan, San Miguel

Minor Structures owned by CDOT:

Inspection Zone	Counties
North	Boulder, Cheyenne, Delta, Eagle, Elbert, Garfield, Grand, Gunnison, Hinsdale, Jackson, Kit Carson, Lake, Larimer, Lincoln, Logan, Mesa, Moffat, Montrose (northeast), Morgan, Phillips, Pitkin, Rio Blanco, Routt, Sedgwick, Summit, Washington, Weld, Yuma
Central	Adams, Arapahoe, Broomfield, Clear Creek, Denver, Douglas, Gilpin, Jefferson
South	Alamosa, Archuleta, Baca, Bent, Chaffee, Conejos, Costilla, Crowley, Custer, Dolores, El Paso, Fremont, Huerfano, Kiowa, La Plata, Las Animas, Mineral, Montezuma, Montrose (southwest), Otero, Ouray, Park, Prowers, Pueblo, Rio Grande, Saguache, San Juan, San Miguel, Teller

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	L04A Code
F-17-IT: Structure is an On-System structure and is located within Douglas County	Central
D-03-V-160: Structure is an Off-System structure and is located within City and County of Denver	Central
PAR CANTBRY-0.2: Structure is an Off-System structure and is located within Douglas County	Central
Structure is an Off-System structure and is located within Pitkin County	South
Structure is an On-System structure and is located within Pitkin County	North



L05 – Latitude	SNBI Item B.L.05
----------------	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (9,6)

SPECIFICATION

Report the latitude of the structure in decimal degrees at the back left corner of the structure.

COMMENTARY

The latitude can be computed from existing U.S. Geological Survey maps or determined using Global Positioning System (GPS) data.

The reported value does not need to be at the same location as the LRS mile point reported in *H07 – LRS Mile Point*. LRS mile point locations occurring on a chorded shape file created using only roadway mile points do not always correspond with the true latitude of a structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L05 Code
F-17-IT: Latitude is 39° 33' 17.43" N	39.554843
D-03-V-160: Latitude is 39° 43' 32.67" N	39.725741
PAR CANTBRY-0.2: Latitude is 39° 29' 34.61" N	39.492947



L06 – Longitude SNBI | Item B.L.06

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (10,6)

SPECIFICATION

Report the longitude in decimal degrees at the back left corner of the structure.

COMMENTARY

The format accommodates reporting a negative sign which is counted as a digit. FHWA will adjust the polarity when it is incorrectly reported.

The longitude can be computed from existing U.S. Geological Survey maps or determined using Global Positioning System (GPS) data.

The reported value does not need to be at the same location as the LRS mile point reported in *H07 – LRS Mile Point*. LRS mile point locations occurring on a chorded shape file created using only roadway mile points do not always correspond with the true longitude of a structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L06 Code
F-17-IT: Longitude is 104° 52' 16.74" W	-104.871317
D-03-V-160: Longitude is 105° 00' 20.23" W	-105.005620
PAR CANTBRY-0.2: Longitude is 104° 44' 00.70" W	-104.733527



L07 – Border Structure	SNBI Item B.L.07
------------------------	--------------------

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (15)

SPECIFICATION

Report the neighboring State's exact structure number as reported to FHWA.

COMMENTARY

For the purposes of the NBI, only structures that cross a State or international border are considered border structures.

Leave this item blank when the structure does not cross a border with another State.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L07 Code
F-17-IT: Structure does not cross a border with another State	
D-03-V-160: Structure does not cross a border with another State	
PAR CANTBRY-0.2: Structure does not cross a border with another State	
G-28-V: Structure crosses Kansas border and has shared responsibility between Kansas and Colorado; Kansas is the lead state	999907000910011
SED36.3-27.744A: Structure crosses Nebraska border; Colorado has full responsibility and is the lead state	C002503220



L08 – Border State SNBI | Item B.L.08

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the neighboring State code using one of the following codes.

L08 Codes
06 - California
08 - Colorado
20 - Kansas
31 - Nebraska
35 - New Mexico
40 - Oklahoma
49 - Utah
56 - Wyoming

COMMENTARY

Leave this item blank when the structure does not cross a border with another State.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L08 Code
F-17-IT: Structure does not cross a border with another State	
D-03-V-160: Structure does not cross a border with another State	
PAR CANTBRY-0.2: Structure does not cross a border with another State	
G-28-V: Structure crosses Kansas border and has shared responsibility between Kansas and Colorado; Kansas is the lead state	20 - Kansas
SED36.3-27.744A: Structure crosses Nebraska border; Colorado has full responsibility and is the lead state	31 - Nebraska



L09 – Border Inspection Responsibility SNBI | Item B.L.09

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the border structure inspection responsibility for any entity within the State geographical boundaries, regardless of ownership, using one of the following codes.

L09 Codes
0 - No responsibility
1 - Shared responsibility
2 - Full responsibility

COMMENTARY

The intent of this item is to capture the border structure inspection responsibility for any entity within the State geographical boundaries, for all inspection types, regardless of ownership (Federal, State, city, county, toll authority etc.).

Agency inspection responsibility should be documented in interagency agreements or memorandums of understanding and included as part of the structure file or record.

Leave this item blank when the structure does not cross a border with another State.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L09 Code
F-17-IT: Structure does not cross a border with another State	
D-03-V-160: Structure does not cross a border with another State	
PAR CANTBRY-0.2: Structure does not cross a border with another State	
G-28-V: Structure crosses Kansas border and has shared responsibility between Kansas and Colorado; Kansas is the lead state	1 - Share responsibility
SED36.3-27.744A: Structure crosses Nebraska border; Colorado has full responsibility and is the lead state	2 - Full responsibility



L10 – Border Lead State SNBI | Item B.L.10

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the State code for the State that has been determined to be the Designated Lead State for reporting the border structure full record using one of the following codes.

L10 Codes
06 - California
08 - Colorado
20 - Kansas
31 - Nebraska
35 - New Mexico
40 - Oklahoma
49 - Utah
56 - Wyoming

COMMENTARY

The intent of this item is to capture the State which has been designated by agreement between the two bordering states to report a full structure record for the border structure.

Leave this item blank when the structure does not cross a border with another State.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L10 Code
F-17-IT: Structure does not cross a border with another State	
D-03-V-160: Structure does not cross a border with another State	
PAR CANTBRY-0.2: Structure does not cross a border with another State	
G-28-V: Structure crosses Kansas border and has shared responsibility between Kansas and Colorado; Kansas is the lead state	20 - Kansas
SED36.3-27.744A: Structure crosses Nebraska border; Colorado has full responsibility and is the lead state	08 - Colorado



L11 – Location Description	SNBI Item B.L.11
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report a narrative description of the structure location.

COMMENTARY

It is preferred that the narrative describe the location and distance of the structure from a distinguishable feature along the primary highway route carried on the structure such as a road junction or topographical feature. If the structures does not carry a highway, it is preferred to use the primary highway route below the structure. Include additional information as needed to locate the structure.

On-System Structures: Report the distance of the structure from a distinguishable feature along the primary highway route carried on the structure such as a road junction or topographical feature. For structures that carry both directions of traffic, record the distance from the feature to the structure in the direction of inventory. For structures that carry only one direction of traffic, record the distance from the feature to the structure in the direction of travel.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L11 Code
F-17-IT: Structure at C470 and I-25 interchange	MID-LEVEL ABOVE JCT I-25
D-03-V-160: Structure on WB 6th Avenue east of I-25	0.35 MI EAST OF I25
PAR CANTBRY-0.2: Structure on Canterbury Parkway just north of Hilltop Rd	.2 MI N. OF HILLTOP ROAD
Structure on SH 113 north of SH 138	12.5 MI N OF JCT SH 138
Structure on I-70 WBND west of Deer Trail	5.1 MI W OF DEER TRAIL



L12 – MPO SNBI | Item B.L.12

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Calculated	Menu Selection

SPECIFICATION

The name of the Metropolitan Planning Organization in which the structure is located, regardless of structure owner or maintenance responsibility, based on one of the following codes.

L12 Codes
0 - Not in an MPO
1 - Denver Regional Council of Governments
2 - North Front Range
3 - Pikes Peak Area Council of Governments
4 - Pueblo Area Council of Governments
5 - Grand Valley

COMMENTARY

This item is automatically populated in SIMSA for all structures based on latitude and longitude reported in *L05 – Latitude* and *L06 – Longitude*.

If this item is updated by manually selecting a code from the drop-down menu, the item will be updated overnight back to the automatically populated code based on the location of the structure.

Appendix L provides a map showing the boundaries of the MPOs. For the most updated boundary and informational maps refer to CDOT’s Online Transportation Information System (OTIS).

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L12 Code
F-17-IT: Structure is located within Douglas County	1 - Denver Regional Council of Governments
D-03-V-160: Structure is located within the City and Count of Denver	1 - Denver Regional Council of Governments
PAR CANTBRY-0.2: Structure is located within Douglas County	1 - Denver Regional Council of Governments
Structure is located within Colorado Springs	3 - Pikes Peak Area Council of Governments
Structure is located within Pagosa Springs	0 - Not in an MPO



L13A – TPR	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Calculated	Menu Selection

SPECIFICATION

The Transportation Planning Region (TPR) in which the structure is located based on one of the following codes.

L13A Codes
01 - Pikes Peak Area
02 - Greater Denver Area
03 - North Front Range
04 - Pueblo Area
05 - Grand Valley
06 - Eastern
07 - Southeast
08 - San Luis Valley
09 - Gunnison Valley
10 - Southwest
11 - Intermountain
12 - Northwest
13 - Upper Front Range
14 - Central Front Range
15 - South Central

COMMENTARY

This item is automatically populated in SIMSA for all structures based on latitude and longitude reported in L05 – Latitude and L06 – Longitude.

If this item is updated by manually selecting a code from the drop-down menu, the item will be updated overnight back to the automatically populated code based on the location of the structure.

Appendix L provides a map showing the boundaries of the TPRs. For the most updated boundary and informational maps refer to CDOT’s Online Transportation Information System (OTIS).

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L13A Code
F-17-IT: Structure is located within Douglas County	02 - Greater Denver Area
D-03-V-160: Structure is located within the City and County of Denver	02 - Greater Denver Area
PAR CANTBRY-0.2: Structure is located within Douglas County	02 - Greater Denver Area
Structure is located within Colorado Springs	01 - Pikes Peak Area
Structure is located within Pagosa Springs	10 - Southwest



L14A – Structure Note	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Each Inspection	Manual Entry	AN (300+)

SPECIFICATION

Report notes to document the structure’s element naming conventions, significant changes in condition, project history, and other important information specific to the entire structure.

COMMENTARY

The following information should be documented in this item when applicable:

- Structure's direction of inventory.
- Which side is upstream.
- Superstructure naming convention.
- Substructure naming convention.
- Culvert cell/pipe naming convention.
- When *C12 – Overall Condition* changes, document the date of change, the previous condition, and the new condition.
- When a deck, superstructure, substructure, or culvert condition rating (items C01 through C04) changes into or out of Poor Condition, document the date of change, the previous condition rating number, the new condition rating number, and the reason for the change.
- When structure rehabilitation or major repair work is completed, document the date and a brief project description.
- When a significant damage or natural disaster event occurs, document the date and a brief description.
- If the structure requires load posting signs, document the exact posting requirement for each truck that requires load restrictions. Also document if the structure is not load posted as required.
- If the structure requires low vertical clearance posting signs, document the specific posting sign requirements for each direction of traffic for each highway that requires posting restrictions. Also document if the structure is posted correctly for vertical clearance restrictions.
- Document all low vertical clearance posting signs in place at the structure. Include the clearance listed on the sign and which highway and direction of traffic each sign is for. Document all vertical clearance signs regardless of if they are required or not.
- Document any other posting signs or traffic control devices erected at the structure such as speed limit signs, one lane bridge signs, or closures of shoulders, lanes, or entire roadways.
- Document when a new load rating is in progress but was not completed by the time the inspection report is submitted in SIMSA.
- When special access equipment is required to complete an inspection of the structure, document a history of inspection access. For each inspection, document what special access equipment was used, and which portions of the structure were inspected.



- When a structure has a complex feature and *IR04 – Complex Feature* is coded “Yes”, document the complex feature(s), the inspection procedure for each complex feature, and any additional inspector training and experience required for the complex feature inspection.

All dates added in this item should be in the format of yyyy/mm/dd.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	L14A Code
F-17-IT	Interior of girders inspected in 2011 - most recent inspection. SPECIAL INSPECTION COMPLETED ON 1-29-14 MAINLY of BEARINGS, INCLUDED JOINTS. Bearings at Abutment 1 were replaced prior to 2015 inspection. 2019 used bucket truck to look at bearings. 2021 inspected on foot. 2023 used bucket truck for P3 bearings, rest on foot, inspected interiors of box girders. 2025 Inspected interiors of box girders, rest on foot.
D-03-V-160	Inventory route is west to east. Superstructure is named Girder A through F from north to south. Substructure is numbered 1 through 20 from west to east. Vertical clearance signs reading 15 FT 1 IN on both sides of 6th Avenue for Lipan Street. Posted vertical clearance values are lower than actual vertical clearance. PIN AND HANGER CONNECTIONS ARE NOW CONTINUOUS (NOTED AT 1998 INSPECTION). Substructure rehab work was completed in April 2009. New drain system installed at Pier 9, Pier 10, Pier 12, Pier 14, Pier 16 and Pier 18. 2013, 2016, and 2022: Bucket truck used for inspection of pier cap, bearings, and girder elements. 2018/11/20: 21 foot ladder used for the fracture critical inspection of Pier Caps 11 through 19. 2019/03/19: UP RR access was obtained, a 32 foot ladder was used for the fracture critical inspection of Pier Caps 2 through 10. 2021/01/28: 35 foot towable boom was used for the fracture critical inspection of Pier Caps 2 through 10. 2024/11/28: Bucket truck used for inspection of pier caps, bearings, and girders, except in Spans 1, 2, 3, 7, and 8. Abutment 1 lock was seized and could not be opened during 2024 inspection. Parking lot with gate in Span 17, not locked during 2024 inspection. 2025/06/11: RTD permit obtained and bucket truck used for the NSTM inspection of Spans 7, 8, and 9 2025/06/27: UP RR access obtained and bucket truck used for the NSTM inspection of Span 1 through 3.
PAR CANTBRY-0.2	Inventory route is south to north. East side is upstream. Culvert cells are numbered 1 through 2 from south to north. Culvert walls are numbered 1 through 3 from south to north.



Section 5.14 Roadside Hardware (RH)

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RH01 – Bridge Railings SNBI | B.RH.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the crash-test level for the structure railings using one of the following codes.

RH01 Codes
0 - None, roadside hardware is required but not present
N - NA, roadside hardware is not required
I - Roadside hardware has not been crash tested and does not meet agency standards
A - YY - Roadside hardware has not been crash-tested but meets AASHTO spec (Record last 2 digits of year of spec)
S - YY - Roadside hardware has not been crash-tested but meets agency standards (Record last 2 digits of year of standard)
M-YY-1 - AASHTO MASH crash tested level 1 (Record last 2 digits of year of crash test)
M-YY-2 - AASHTO MASH crash tested level 2 (Record last 2 digits of year of crash test)
M-YY-3 - AASHTO MASH crash tested level 3 (Record last 2 digits of year of crash test)
M-YY-4 - AASHTO MASH crash tested level 4 (Record last 2 digits of year of crash test)
M-YY-5 - AASHTO MASH crash tested level 5 (Record last 2 digits of year of crash test)
M-YY-6 - AASHTO MASH crash tested level 6 (Record last 2 digits of year of crash test)
3501 - NCHRP Report 350 crash tested level 1
3502 - NCHRP Report 350 crash tested level 2
3503 - NCHRP Report 350 crash tested level 3
3504 - NCHRP Report 350 crash tested level 4
3505 - NCHRP Report 350 crash tested level 5
3506 - NCHRP Report 350 crash tested level 6
2301 - NCHRP Report 230 crash tested level 1
2302 - NCHRP Report 230 crash tested level 2
2303 - NCHRP Report 230 crash tested level 3
2391 - NCHRP Report 239 crash tested level 1
2392 - NCHRP Report 239 crash tested level 2
2393 - NCHRP Report 239 crash tested level 3
891 - AASHTO 1989 spec crash tested level 1
892 - AASHTO 1989 spec crash tested level 2
893 - AASHTO 1989 spec crash tested level 3

COMMENTARY

This item is not currently being used.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

This roadside hardware includes all types and shapes of structure railings (parapets, median barriers, or structure mounted) located on the structure or that cross over buried structures.

A list of crash-tested bridge railings may be obtained from the FHWA Office of Highway Safety website.



Prior to 1993, bridge railings were tested according to the AASHTO Guide Specifications for Bridge Railings, NCHRP Report 230, or NCHRP Report 239.

Since 1993, bridge railings were crash-tested and classified according to the guidelines shown in NCHRP Report 350.

In 2009 the AASHTO Manual for Assessing Safety Hardware (MASH) replaced NCHRP 350.

Refer to State, Federal agency, or Tribal government policies for bridge railing standards.

Code “I” when no information is known about the crash test level or an agency approved standard.

Code “I” when an overlay is applied to the deck/slab and the height no longer meets the original geometry requirements of the crash-tested rail.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



RH01A – Bridge Rail Year of Spec	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (2,0)

SPECIFICATION

Report the last two digits of the year for the crash testing publication, AASHTO Specifications, or agency approved standards for the bridge rail reported in *RH01 – Bridge Railings*.

COMMENTARY

This item is not currently being used.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

Leave this item blank when *RH01 – Bridge Railings* is coded “0”, “N”, “I”, “3501” through “3506”, “2301” through “2303”, “2391” through “2393”, and “891” through “893”.

Code this item when *RH01 – Bridge Railings* is coded “A – YY”, “S – YY”, and “M-YY-1” through “M-YY-6”.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



RH02 – Transitions SNBI | Item B.RH.02

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the crash-test level for transition railings using one of the following codes.

RH02 Codes
0 - None, roadside hardware is required but not present
N - NA, roadside hardware is not required
I - Roadside hardware has not been crash tested and does not meet agency standards
A - YY - Roadside hardware has not been crash-tested but meets AASHTO spec (Record last 2 digits of year of spec)
S - YY - Roadside hardware has not been crash-tested but meets agency standards (Record last 2 digits of year of standard)
M-YY-1 - AASHTO MASH crash tested level 1 (Record last 2 digits of year of crash test)
M-YY-2 - AASHTO MASH crash tested level 2 (Record last 2 digits of year of crash test)
M-YY-3 - AASHTO MASH crash tested level 3 (Record last 2 digits of year of crash test)
M-YY-4 - AASHTO MASH crash tested level 4 (Record last 2 digits of year of crash test)
M-YY-5 - AASHTO MASH crash tested level 5 (Record last 2 digits of year of crash test)
M-YY-6 - AASHTO MASH crash tested level 6 (Record last 2 digits of year of crash test)
3501 - NCHRP Report 350 crash tested level 1
3502 - NCHRP Report 350 crash tested level 2
3503 - NCHRP Report 350 crash tested level 3
3504 - NCHRP Report 350 crash tested level 4
3505 - NCHRP Report 350 crash tested level 5
3506 - NCHRP Report 350 crash tested level 6
2301 - NCHRP Report 230 crash tested level 1
2302 - NCHRP Report 230 crash tested level 2
2303 - NCHRP Report 230 crash tested level 3
2391 - NCHRP Report 239 crash tested level 1
2392 - NCHRP Report 239 crash tested level 2
2393 - NCHRP Report 239 crash tested level 3
891 - AASHTO 1989 spec crash tested level 1
892 - AASHTO 1989 spec crash tested level 2
893 - AASHTO 1989 spec crash tested level 3

COMMENTARY

This item is not currently being used.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

This roadside hardware serves as the transition from the roadside approach railing to the bridge railing and is firmly attached and anchored to the bridge railing to provide sufficient tension in the transition rail upon impact.

A list of crash-tested transitions may be obtained from the FHWA Office of Highway Safety website.



Since 1993, transitions to bridge railings have been crash tested and classified according to the guidelines shown in NCHRP Report 350.

In 2009 the AASHTO Manual for Assessing Safety Hardware (MASH) replaced NCHRP 350.

Refer to State, Federal agency, or Tribal government policies for transition railing standards.

Code "1" when no information is known about the crash test level or an agency approved standard.

Code "1" when an overlay is applied to the deck/slab and the height no longer meets the original geometry requirements of the crash-tested transition.

For structures with one-way traffic, and which a transition on the departure end of the structure is not warranted (i.e. only a connection to develop the departure rail strength is warranted), the crash-test level of the departure end does not need to be reported when it is lower crash test level than the approach end.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



RH02A – Rail Transition Year of Spec	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (2,0)

SPECIFICATION

Report the last two digits of the year for the crash testing publication, AASHTO Specifications, or agency approved standards for the bridge rail reported in *RH02 – Transitions*.

COMMENTARY

This item is not currently being used.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

Leave this item blank when *RH02 – Transitions* is coded “0”, “N”, “I”, “3501” through “3506”, “2301” through “2303”, “2391” through “2393”, and “891” through “893”.

Code this item when *RH02 – Transitions* is coded “A – YY”, “S – YY”, and “M-YY-1” through “M-YY-6”.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



RH03A – Structure Rail Type	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the rail code for the predominant rail type on the structure using one of the following codes.

RH03A Codes	RH03A Codes
No rail*	Rail Type K
Rail Type A	Rail Type L
Rail Type AA	Rail Type M
Rail Type AB	Rail Type N
Rail Type AC	Rail Type N/A
Rail Type AD	Rail Type O
Rail Type AE	Rail Type P
Rail Type AF	Rail Type Q
Rail Type B	Rail Type R
Rail Type C	Rail Type S
Rail Type D	Rail Type T
Rail Type E	Rail Type U
Rail Type F	Rail Type V
Rail Type FB	Rail Type W
Rail Type G	Rail Type X
Rail Type H	Rail Type XX
Rail Type I	Rail Type Y
Rail Type J	Rail Type Z

*Code no longer used and should not be selected.

COMMENTARY

Only structural traffic rail should be included in the structure rail type.

Appendix M provides sketches of the different rail types.

Code “Rail Type N/A” when structural traffic rail is not applicable (e.g., rail on a pedestrian or railroad structure).

Code “Rail Type X” when no structural traffic rail is present.

Code “Rail Type XX” when no other rail type code applies.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	RH03A Code
F-17-IT: Concrete barrier	Rail Type R
D-03-V-160: Type 4 concrete bridge rail	Rail Type R
PAR CANTBRY-0.2: W-beam rail on timber posts in fill	Rail Type FB
Type 10M rail	Rail Type Y



RH04A – Structure Rail Modified	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report if the rail identified in *RH03A – Structure Rail Type* is standard or has been modified using one of the following codes.

RH04A Codes
0 - Not modified
1 - Modified up to standards
2 - Modified not up to standards
3 - If median rail and outside rail differ
4 - More than one type of rail

COMMENTARY

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	RH04A Code
F-17-IT: Standard rail	0 - Not modified
D-03-V-160: Standard rail	0 - Not modified
PAR CANTBRY-0.2: Standard rail	0 - Not modified



RH05A – Height of Rail CDOT

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (3,1)

SPECIFICATION

Report the structural traffic rail height to the nearest tenth of an inch.

COMMENTARY

Guardrail is roadside hardware protecting vehicular traffic from leaving the roadway. Only structural traffic railing should be included in the measurement. Do not include pedestrian fence or railing.

When rail height varies across a structure or between different rails, report the lowest height.

For structures that are not considered buried, measure the height from the top of the deck, slab, or top flange of girder to the top of the structural rail. Do not measure height from the top of the asphalt since this can vary.

For structures that are considered buried, whether the rails are mechanically or integrally connected to the structure or the rails are mounted in fill, measure the height from the roadway surface to the top of the structural rail.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 63* through *Figure 67* for several examples of the height of rail measurement (A):

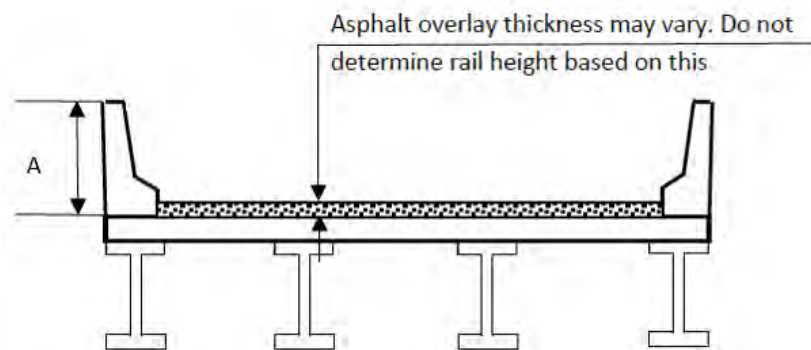


Figure 63. Cross-section view of typical asphalt wearing surface over concrete deck

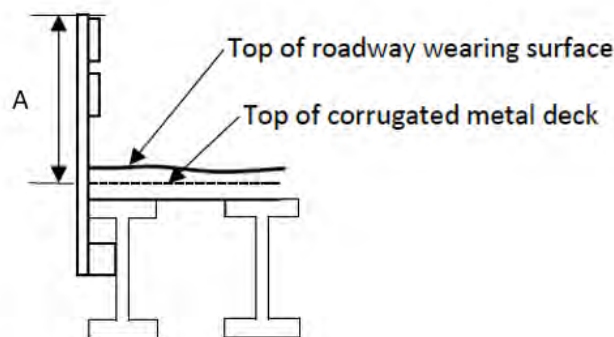


Figure 64. Partial cross-section view of corrugated metal deck on girder

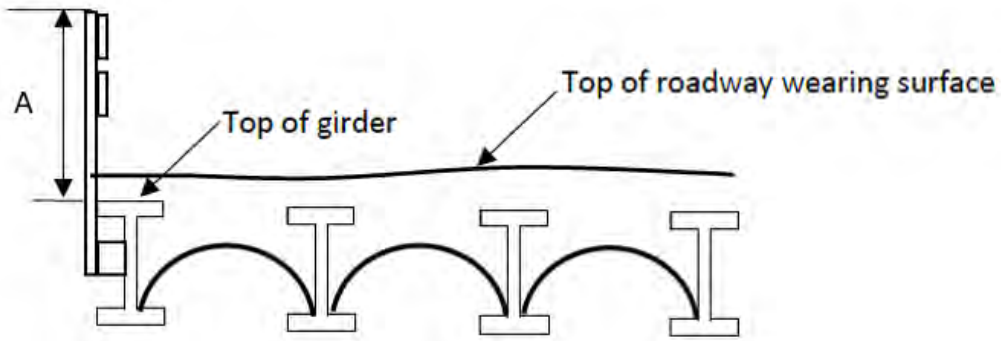


Figure 65. Partial cross-section view of earth filled over culvert halves

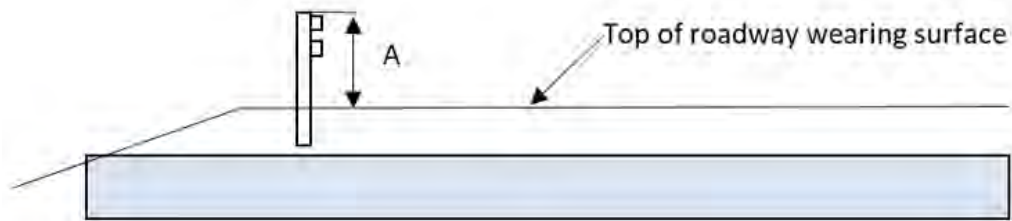


Figure 66. Partial cross-section view of buried structure with rail mounted in fill

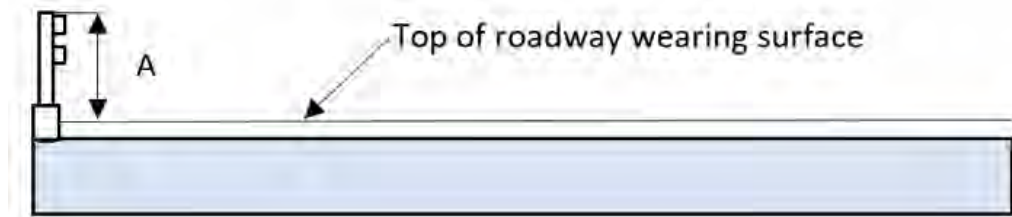


Figure 67. Partial cross-section view of buried structure with rail mechanically/integrally connected

CODING EXAMPLES

Example	RH05A Code
F-17-IT: Rail height to top of deck is 34 inches	34.0
D-03-V-160: Rail height to top of deck is 36 inches	36.0
PAR CANTBRY-0.2: Rail height to top of wearing surface is 36 inches	36.0
Rail height to top of deck, obtained from the plans, is 36 inches	36.0
Rail height measured to top of deck is 36 inches	36.0
Rail height measured to the top of the asphalt for a buried structure is 29 inches	29.0



RH06A – Structure Rail CDOT

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report whether the structure rail for the highway feature on the structure meets current acceptable standards based on original design, regardless of condition, using one of the following codes.

RH06A Codes
N - Not applicable or a safety feature is not required.
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.

COMMENTARY

All traffic safety features are currently evaluated for highway speeds unless the owner provides documentation that the traffic safety features meet site specific standards.

The FHWA requires all structure railing used on the National Highway System (NHS) to meet full-scale crash criteria as documented in the AASHTO Manual for Assessing Safety Hardware (MASH).

The important factor in determining adequacy is that the structure rail must meet currently acceptable standards. *Appendix M* provides sketches of different rail types encountered in the field.

Some factors that affect the proper function of structure railings are height, material, strength, and geometric features. Railings must be capable of smoothly redirecting an impacting vehicle. Structure railings should be evaluated using AASHTO Standard Specifications for Highway Bridges as a guide for establishing a currently acceptable standard. However, a structure rail design must be tested and approved by the FHWA.

Refer to the CDOT M & S standards for detailed descriptions and drawings.

Culverts and pipes with horizontal distance from the outside of the travel lanes to the headwall of a culvert or to the end of a pipe is 30 feet or greater and the fill slopes at 3 horizontal to 1 vertical (3:1), or flatter, are considered to not require traffic safety features. When the distance to the headwall or pipe end is less than 30 feet, safety rail is required regardless of slope.

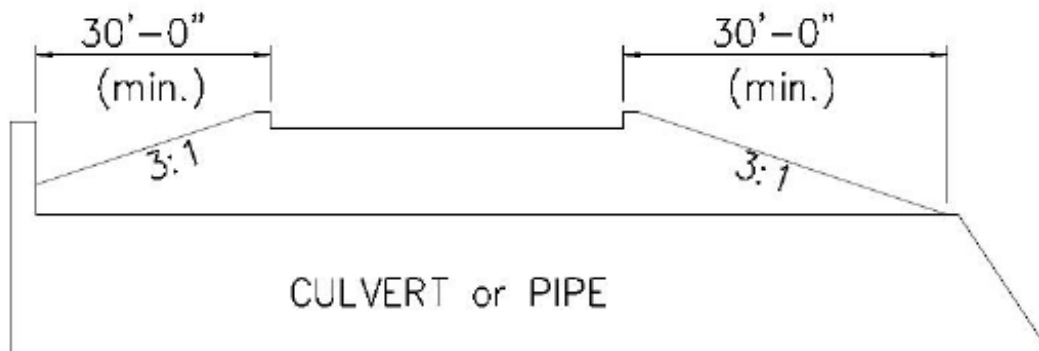


Figure 68. Minimum slope and horizontal clearance for traffic safety features to not be required



Reference(s)

- AASHTO’s Task Force 13 website, TF13 Guide to Bridge Railing Systems, provides specifications for structure railing hardware/systems, including test level designation for various structure rails and FHWA status letters of eligibility for each rail design tested. However, do not assume that a design that is submitted and listed has been tested and approved. Refer to the FHWA Letters of Eligibility to determine when a rail type has been approved, rejected or not yet tested.
- AASHTO Manual for Assessing Safety Hardware (MASH), 2009 or most current revisions/updates.
- CDOT’s Standard Plans/ M&S Standards, 2013 or most current revisions/updates thereto.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	RH06A Code
F-17-IT	1 - Inspected feature meets currently acceptable standards.
D-03-V-160	1 - Inspected feature meets currently acceptable standards.
PAR CANTBRY-0.2	1 - Inspected feature meets currently acceptable standards.
Structure rail, approach rail, and end treatment meet currently acceptable standards but the approach rail transition does not meet currently acceptable standards	1 - Inspected feature meets currently acceptable standards.
Culvert with 2:1 slope and no safety features	0 - Inspected feature does not meet currently acceptable standards or a safety feature is required and none is provided.
Culvert with 4:1 slope 25 feet long to headwall and no safety features	0 - Inspected feature does not meet currently acceptable standards or a safety feature is required and none is provided.
Culvert with 3:1 slope 35 feet long and no safety features	N - Not applicable or a safety feature is not required.



RH07A – Transition CDOT

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report whether the approach rail transition for the highway feature on the structure meets current acceptable standards based on original design, regardless of condition, using one of the following codes.

RH07A Codes
N - Not applicable or a safety feature is not required.
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.

COMMENTARY

All traffic safety features are currently evaluated for highway speeds unless the owner provides documentation that the traffic safety features meet site specific standards.

The FHWA requires all structure railing used on the National Highway System (NHS) to meet full-scale crash criteria as documented in the AASHTO Manual for Assessing Safety Hardware (MASH).

The important factor in determining adequacy is that the approach rail transition must meet currently acceptable standards.

The transition requires the approach rail be gradually stiffened as it comes closer to the structure rail and firmly attached to the structure rail. The ends of curbs and safety walks need to be gradually tapered out or shielded when they do not continue along the route beyond the structure.

Refer to the CDOT M & S standards for detailed descriptions and drawings.

Culverts and pipes with horizontal distance from the outside of the travel lanes to the headwall of a culvert or to the end of a pipe is 30 feet or greater and the fill slopes at 3 horizontal to 1 vertical (3:1), or flatter, are considered to not require traffic safety features. When the distance to the headwall or pipe end is less than 30 feet, safety rail is required regardless of slope.

Reference(s):

- AASHTO’s Task Force 13 website, TF13 Guide to Bridge Railing Systems, provides specifications for structure railing hardware/systems, including test level designation for various structure rails and FHWA status letters of eligibility for each rail design tested. However, do not assume that a design that is submitted and listed has been tested and approved. Refer to the FHWA Letters of Eligibility to determine when a rail type has been approved, rejected or not yet tested.
- AASHTO Manual for Assessing Safety Hardware (MASH), 2009 or most current revisions/updates.
- CDOT’s Standard Plans/ M&S Standards, 2013 or most current revisions/updates thereto.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	RH07A Code
F-17-IT	1 - Inspected feature meets currently acceptable standards.
D-03-V-160	1 - Inspected feature meets currently acceptable standards.
PAR CANTBRY-0.2	1 - Inspected feature meets currently acceptable standards.
Structure rail, approach rail, and end treatment meet currently acceptable standards but the approach rail transition does not meet currently acceptable standards	0 - Inspected feature does not meet currently acceptable standards or a safety feature is required and none is provided.
Culvert with 2:1 slope and no safety features	0 - Inspected feature does not meet currently acceptable standards or a safety feature is required and none is provided.
Culvert with 4:1 slope 25 feet long to headwall and no safety features	0 - Inspected feature does not meet currently acceptable standards or a safety feature is required and none is provided.
Culvert with 3:1 slope 35 feet long and no safety features	N - Not applicable or a safety feature is not required.



RH08A – Approach Rail Rating CDOT

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report whether the approach guardrails for the highway feature on the structure meets current acceptable standards based on original design, regardless of condition, using one of the following codes.

RH08A Codes
N - Not applicable or a safety feature is not required.
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.

COMMENTARY

All traffic safety features are currently evaluated for highway speeds unless the owner provides documentation that the traffic safety features meet site specific standards.

The FHWA requires all structure railing used on the National Highway System (NHS) to meet full-scale crash criteria as documented in the AASHTO Manual for Assessing Safety Hardware (MASH).

The important factor in determining adequacy is that the approach guardrails must meet currently acceptable standards.

The structural adequacy and compatibility of approach guardrail with transition designs should be determined. Rarely does the need for a barrier stop at the end of a structure; thus, an approach guardrail with adequate length and structural qualities to shield motorists from the hazards at a structure site needs to be installed. In addition to being capable of safely redirecting an impacting vehicle, the approach rail must also facilitate a transition to the structure railing that will not cause snagging or pocketing of an impacting vehicle. Acceptable guardrail design suggestions are contained in the AASHTO Guide for Selecting, Locating and Designing Traffic Barriers.

Refer to the CDOT M & S standards for detailed descriptions and drawings.

Culverts and pipes with horizontal distance from the outside of the travel lanes to the headwall of a culvert or to the end of a pipe is 30 feet or greater and the fill slopes at 3 horizontal to 1 vertical (3:1), or flatter, are considered to not require traffic safety features. When the distance to the headwall or pipe end is less than 30 feet, safety rail is required regardless of slope.

Reference(s):

- AASHTO’s Task Force 13 website, TF13 Guide to Bridge Railing Systems, provides specifications for structure railing hardware/systems, including test level designation for various structure rails and FHWA status letters of eligibility for each rail design tested. However, do not assume that a design that is submitted and listed has been tested and approved. Refer to the FHWA Letters of Eligibility to determine when a rail type has been approved, rejected or not yet tested.
- AASHTO Manual for Assessing Safety Hardware (MASH), 2009 or most current revisions/updates.
- CDOT’s Standard Plans/ M&S Standards, 2013 or most current revisions/updates thereto.



This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	RH08A Code
F-17-IT	1 - Inspected feature meets currently acceptable standards.
D-03-V-160	1 - Inspected feature meets currently acceptable standards.
PAR CANTBRY-0.2	1 - Inspected feature meets currently acceptable standards.
Structure rail, approach rail, and end treatment meet currently acceptable standards but the approach rail transition does not meet currently acceptable standards	1 - Inspected feature meets currently acceptable standards.
Culvert with 2:1 slope and no safety features	0 - Inspected feature does not meet currently acceptable standards or a safety feature is required and none is provided.
Culvert with 4:1 slope 25 feet long to headwall and no safety features	0 - Inspected feature does not meet currently acceptable standards or a safety feature is required and none is provided.
Culvert with 3:1 slope 35 feet long and no safety features	N - Not applicable or a safety feature is not required.



RH09A – End Treatment Rating	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report whether the approach guardrail ends for the highway feature on the structure meets current acceptable standards based on original design, regardless of condition, using one of the following codes.

RH09A Codes
N - Not applicable or a safety feature is not required.
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.

COMMENTARY

All traffic safety features are currently evaluated for highway speeds unless the owner provides documentation that the traffic safety features meet site specific standards.

The FHWA requires all structure railing used on the National Highway System (NHS) to meet full-scale crash criteria as documented in the AASHTO Manual for Assessing Safety Hardware (MASH).

The important factor in determining adequacy is that the approach guardrail ends must meet currently acceptable standards.

As with guardrail ends in general, the ends of the approach rails should be flared, made breakaway, or shielded. Acceptable design treatment of guardrail ends is given in the AASHTO Guide for Selecting, Locating and Designing Traffic Barriers.

Refer to the most current CDOT M & S standards for detailed descriptions and drawings.

Culverts and pipes with horizontal distance from the outside of the travel lanes to the headwall of a culvert or to the end of a pipe is 30 feet or greater and the fill slopes at 3 horizontal to 1 vertical (3:1), or flatter, are considered to not require traffic safety features. When the distance to the headwall or pipe end is less than 30 feet, safety rail is required regardless of slope.

Reference(s):

- AASHTO’s Task Force 13 website, TF13 Guide to Bridge Railing Systems, provides specifications for structure railing hardware/systems, including test level designation for various structure rails and FHWA status letters of eligibility for each rail design tested. However, do not assume that a design that is submitted and listed has been tested and approved. Refer to the FHWA Letters of Eligibility to determine when a rail type has been approved, rejected or not yet tested.
- AASHTO Manual for Assessing Safety Hardware (MASH), 2009 or most current revisions/updates.
- CDOT’s Standard Plans/ M&S Standards, 2013 or most current revisions/updates thereto.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	RH09A Code
F-17-IT	1 - Inspected feature meets currently acceptable standards.
D-03-V-160	1 - Inspected feature meets currently acceptable standards.
PAR CANTBRY-0.2	1 - Inspected feature meets currently acceptable standards.
Structure rail, approach rail, and end treatment meet currently acceptable standards but the approach rail transition does not meet currently acceptable standards	1 - Inspected feature meets currently acceptable standards.
Culvert with 2:1 slope and no safety features	0 - Inspected feature does not meet currently acceptable standards or a safety feature is required and none is provided.
Culvert with 4:1 slope 25 feet long to headwall and no safety features	0 - Inspected feature does not meet currently acceptable standards or a safety feature is required and none is provided.
Culvert with 3:1 slope 35 feet long and no safety features	N - Not applicable or a safety feature is not required.



Section 5.15 Substructure (SB)

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SB01A – Substructure Configuration SNBI | Item B.SB.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the substructure configuration for each unique substructure configuration using one of the following codes.

SB01A Codes
A - Abutment
P - Pier or Bent
W - Widening

COMMENTARY

The substructure is the portion of a structure below the bearings or below the springline of an arch, which transfers loads to the foundation. This includes the walls of three-sided and four-sided rigid frames.

A unique substructure configuration characterizes all substructure units of similar construction: material (*SB03 – Substructure Material*), type (*SB04 – Substructure Type*), and foundation type (*SB06 – Foundation Type*). Substructures of similar configuration do not need to be adjacent to be reported in the same substructure configuration.

An abutment is a substructure unit located at the end of a bridge that transfers loads from the superstructure to the foundation while providing lateral support for the approach roadway embankment. Typically, a bridge has two abutments, but there may be cases (such as bifurcated structures assigned two bridge numbers) where one end of the bridge does not mate up with the approach roadway.

A multiple span bridge with cantilevered end spans that are unsupported at the extreme ends does not have abutments.

Piers and bents are substructure units that support the spans of a multi-span superstructure at intermediate location(s) between abutments.

Do not code a substructure configuration when *SP06 – Span Type* is coded “P01” or “P02”.

Code “W” for widened portions of abutments or piers/bents with dissimilar substructure construction.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SB01A Code
F-17-IT: Four-span structure with CIP concrete stub abutments on steel H-piles and 3 piers consisting of CIP concrete caps on single CIP concrete columns on CIP concrete footings not on rock	A - Abutment
	P - Pier or Bent
D-03-V-160: 19 span structure with steel or CIP concrete pier caps on single CIP concrete columns on CIP concrete footings bearing on concrete filled pipe piles and micro H-piles; CIP concrete abutment wall on CIP concrete footing not on rock at east end; CIP concrete stub abutment on concrete filled pipe piles at west end	A - Abutment
	A - Abutment
	P - Pier or Bent



Example	SB01A Code
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert	A - Abutment
	P - Pier or Bent
Three-sided concrete frame with a spread footing keyed into bedrock, modified by adding a four-sided box culvert placed on crushed stone bedding to the end of the frame to widen the structure	A - Abutment
	W - Widening



SB01B – Substructure Designation SNBI | Item B.SB.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the substructure set designation for each substructure configuration listed in *SB01A – Substructure Configuration* using one of the following codes.

SB01B Codes
1
2
3
4
5
6
7
8
9
10
11
12
13
14

COMMENTARY

Each substructure configuration is numbered sequentially, starting with one (e.g., A – “1”, A – “2”, P – “1”, P – “2”) and identifies each unique substructure configuration present on the structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SB01A	SB01B Code
F-17-IT: Four-span structure with CIP concrete stub abutments on steel H-piles and 3 piers consisting of CIP concrete caps on single CIP concrete columns on CIP concrete footings not on rock	A - Abutment	1
	P - Pier or Bent	1
D-03-V-160: 19 span structure with steel or CIP concrete pier caps on single CIP concrete columns on CIP concrete footings bearing on concrete filled pipe piles and micro H-piles; CIP concrete abutment wall on CIP concrete footing not on rock at east end; CIP concrete stub abutment on concrete filled pipe piles at west end	A - Abutment	1
	A - Abutment	2
	P - Pier or Bent	1
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert	A - Abutment	1
	P - Pier or Bent	1
Three-sided concrete frame with a spread footing keyed into bedrock, modified by adding a four-sided box culvert placed on crushed stone bedding to the end of the frame to widen the structure	A - Abutment	1
	W - Widening	1



SB02 – Number of Substructure Units	SNBI Item B.SB.02
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (3,0)

SPECIFICATION

Report the number of substructure units for each substructure configuration designation reported in *SB01A – Substructure Configuration* and *SB01B – Substructure Designation*.

COMMENTARY

This item captures the number of substructure units of similar material, design, and foundation type that are being reported.

Leave this item blank when *SP06 – Span Type* is coded “P01” or “P02”.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SB01A	SB01B	SB02 Code
F-17-IT: Four-span structure with CIP concrete stub abutments on steel H-piles and 3 piers consisting of CIP concrete caps on single CIP concrete columns on CIP concrete footings not on rock	A - Abutment	1	2
	P - Pier or Bent	1	3
D-03-V-160: 19 span structure with steel or CIP concrete pier caps on single CIP concrete columns on CIP concrete footings bearing on concrete filled pipe piles and micro H-piles; CIP concrete abutment wall on CIP concrete footing not on rock at east end; CIP concrete stub abutment on concrete filled pipe piles at west end	A - Abutment	1	1
	A - Abutment	2	1
	P - Pier or Bent	1	18
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert	A - Abutment	1	2
	P - Pier or Bent	1	1



SB03 – Substructure Material SNBI | Item B.SB.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the principal substructure material type for each substructure configuration designation reported in *SB01A – Substructure Configuration* and *SB01B – Substructure Designation* using one of the following codes.

SB03 Codes
A01 - Aluminum
C01 - Reinforced concrete, cast-in-place
C02 - Reinforced concrete, precast
C03 - Prestressed concrete, pre-tensioned
C04 - Prestressed concrete, cast-in-place post-tensioned
C05 - Prestressed concrete, precast post-tensioned
CX - Concrete, other
E01 - Earth, reinforced soil
F01 - FRP composite, aramid fiber
F02 - FRP composite, carbon fiber
F03 - FRP composite, glass fiber
FX - FRP composite, other
I01 - Iron, wrought
I02 - Iron, cast
M01 - Masonry, block
M02 - Masonry, stone
P01 - Plastic, Polyethylene
PX - Plastic, other
S01 - Steel, rolled shapes
S02 - Steel, welded shapes
S03 - Steel, bolted shapes
S04 - Steel, riveted shapes
S05 - Steel, bolted and riveted shapes
S06 - Steel, pipe
SX - Steel, other
T01 - Timber, glue laminated
T02 - Timber, nail laminated
T03 - Timber, solid sawn
T04 - Timber, stress laminated
TX - Timber, other
X - Other
0 - None



COMMENTARY

This item reflects the material which provides the support for the transfer of the superstructure load to the foundation. In cases where the substructure unit(s) may have a combination of materials, use the code for the predominant material that transfers load to the foundation.

Leave this item blank when *SP06 – Span Type* is coded “P01” or “P02”.

Code “0” when the superstructure rests directly on the foundation (i.e. on unreinforced soil or bedding material, reinforced soil or bedding material, or rock).

Code “C04” or “C05”, as applicable, for prestressed concrete substructure unit(s) that utilize both pre-tensioning and post-tensioning.

Code “E01” when the superstructure rests directly on the reinforced soil mass. Code E01 is not intended to be used for MSE walls when the superstructure does not rest directly on the reinforced soil mass.

Code “M01” for masonry made from bricks or concrete blocks.

Code “M02” for natural stone.

Code “S06” for filled or unfilled steel pipe piles.

Code “C01” for cased and uncased cast-in-place concrete piles, and for driven corrugated, fluted, or spiral-welded shell-cased concrete piles.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SB01A	SB01B	SB03 Code
F-17-IT: Four-span structure with CIP concrete stub abutments on steel H-piles and 3 piers consisting of CIP concrete caps on single CIP concrete columns on CIP concrete footings not on rock	A - Abutment	1	C01 - Reinforced concrete, cast-in-place
	P - Pier or Bent	1	C01 - Reinforced concrete, cast-in-place
D-03-V-160: 19 span structure with steel or CIP concrete pier caps on single CIP concrete columns on CIP concrete footings bearing on concrete filled pipe piles and micro H-piles; CIP concrete abutment wall on CIP concrete footing not on rock at east end; CIP concrete stub abutment on concrete filled pipe piles at west end	A - Abutment	1	C01 - Reinforced concrete, cast-in-place
	A - Abutment	2	C01 - Reinforced concrete, cast-in-place
	P - Pier or Bent	1	C01 - Reinforced concrete, cast-in-place
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert	A - Abutment	1	C01 - Reinforced concrete, cast-in-place
	P - Pier or Bent	1	C01 - Reinforced concrete, cast-in-place
Closed spandrel arch founded on CIP concrete spread footings on rock	A - Abutment	1	C01 - Reinforced concrete, cast-in-place
Pile bent abutment with timber piles, timber lagging, and concrete cap	A - Abutment	1	C01 - Reinforced concrete, cast-in-place
Pile bent abutment with steel H-piles, timber lagging, and rolled steel cap	A - Abutment	1	S01 - Steel, rolled shapes



Example	SB01A	SB01B	SB03 Code
GRS abutment with precast, prestressed concrete box beams placed directly on the reinforced soil mass	A - Abutment	1	E01 - Earth, reinforced soil



SB04 – Substructure Type SNBI | Item B.SB.04

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the abutment, pier, or bent design type for each substructure configuration designation reported in *SB01A – Substructure Configuration* and *SB01B – Substructure Designation* using one of the following codes.

SB04 Codes
A01 - Abutment, cantilever/wall
A02 - Abutment, stub
A03 - Abutment, open/spill through
A04 - Abutment, integral
A05 - Abutment, semi-integral
A06 - Abutment, gravity
A07 - Abutment, counterfort
A08 - Abutment, pile bent with lagging
A09 - Abutment, crib
A10 - Abutment, cellular/vaulted
A11 - Abutment, reinforced soil
A12 - Abutment, footing only
AX - Abutment, other
B01 - Bent, column or open
B02 - Bent, column with web wall
B03 - Bent, pile
B04 - Bent, straddle or c-shaped
BX - Bent, other
P01 - Pier, wall
P02 - Pier, single column
P03 - Pier, multiple column
P04 - Pier, multiple column with web wall
P05 - Pier, straddle or c-shaped
P06 - Pier, movable bridge
P07 - Pier, tower
P08 - Pier, footing only
PX - Pier, other
U - Unknown
X - Other
0 - None

COMMENTARY

In cases where the substructure may have a combination of designs due to retrofitting actions, use the code for the predominant design.



Both piers and bents provide the same function; however, a pier has only one footing at each substructure unit (the footing may serve as a pile cap) while a bent has several footings or no footing, as is the case with a pile bent.

Leave this item blank when *SP06 – Span Type* is coded “P01” or “P02”.

Code “0” when the superstructure rests directly on the foundation (i.e. on unreinforced soil or bedding material, reinforced soil or bedding material, or rock).

Code “A01” for exterior walls of three-sided or four-sided frames.

Code “A01” to “A10”, as appropriate, if the superstructure load is supported by a substructure unit, which is in turn supported by piles or the reinforced soil mass. Use code A11 when the superstructure rests directly on the reinforced soil mass.

Code “A02” for partial height abutments that do not extend to near the bottom of the embankment fill. Code “A02” for abutments that are larger height than a pile cap or have features such as a backwall that exceed the purpose of a pile cap.

Code “A10” when the space between wingwalls, abutment stem, approach slab, and footings is hollow.

Code “A12” or “P08” when the superstructure rests only on a footing, grade beam, thrust block, or pile or shaft cap with embedded piles or shafts that are not part of a bent.

Code “B04” when a highway or railroad passes directly beneath or through the bent.

Code “P06” for piers that support movable bridges and the equipment needed to open and close the bridge.

Code “P07” for towers of complex bridges such as cable-stayed and suspension bridges.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SB01A	SB01B	SB04 Code
F-17-IT: Four-span structure with CIP concrete stub abutments on steel H-piles and 3 piers consisting of CIP concrete caps on single CIP concrete columns on CIP concrete footings not on rock	A - Abutment	1	A02 - Abutment, stub
	P - Pier or Bent	1	P02 - Pier, single column
D-03-V-160: 19 span structure with steel or CIP concrete pier caps on single CIP concrete columns on CIP concrete footings bearing on concrete filled pipe piles and micro H-piles; CIP concrete abutment wall on CIP concrete footing not on rock at east end; CIP concrete stub abutment on concrete filled pipe piles at west end	A - Abutment	1	A01 - Abutment, cantilever/wall
	A - Abutment	2	A02 - Abutment, stub
	P - Pier or Bent	1	P02 - Pier, single column
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert	A - Abutment	1	A01 - Abutment, cantilever/wall
	P - Pier or Bent	1	P01 - Pier, wall
Pile bent type abutment with painted steel piles, timber lagging, and steel cap	A - Abutment	1	A08 - Abutment, pile bent with lagging
Single-span closed spandrel arch that bears directly on a thrust block founded on rock	A - Abutment	1	A12 - Abutment, footing only



Example	SB01A	SB01B	SB04 Code
Single-span timber beams resting on concrete grade beam	A - Abutment	1	A12 - Abutment, footing only
Single-span railroad flat car with ends resting on unreinforced soil	A - Abutment	1	0 - None
Intermediate bent supported on concrete-filled steel pipe piles connected with a concrete cap beam	P - Pier or Bent	1	B03 - Bent, pile



SB05 – Substructure Protective System SNBI | Item B.SB.05

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the substructure protective system for each substructure configuration designation reported in *SB01A – Substructure Configuration* and *SB01B – Substructure Designation* using one of the following codes.

SB05 Codes
A01 - Admixture, internally sealed
A02 - Admixture, low permeability
A03 - Admixture, polymer impregnated
A04 - Admixture, corrosion inhibitor
A05 - Admixture, ASR inhibitor
AX - Admixture, other
C01 - Coating, paint
C02 - Coating, sealer
C03 - Coating, hot dip galvanizing
CX - Coating, other
E01 - Encasement, concrete
EX - Encasement, other
P01 - Patina, uncoated weathering steel
S01 - Sacrificial, cathodic, passive
S02 - Sacrificial, cathodic, active
SX - Sacrificial, other
T01 - Treated, timber preservative
X - Other
0 - None

COMMENTARY

Code this item consistent with the predominant material reported in *SB03 – Substructure Material*.

In cases where the substructure may have a combination of protective systems, use the code for the predominant protective system based on protected area. In cases where multiple systems protect the same area, use the code for the outermost protective layer.

When only portions of the substructure have a protective system, code this item consistent with the predominant condition of the substructure.

Leave this item blank when *SP06 – Span Type* is coded “P01” or “P02”.

Code “0” when the substructure is unprotected.

Code “0” when unprotected steels either never were coated or currently have no signs of coating systems and have no protective systems, such as, cathodic protection or weathering chemistry.

Anti-graffiti coatings are not considered when coding this item.

Code “C01” for weathering steel that has been painted.



Code “C02” for sealers such as silanes, siloxanes, linseed oils, etc.

Code “E01” for steel piles of pile bents that are encased in concrete.

Code “P01” only for weathering grades of steel.

For timber, code “T01” for oil-based or water-borne timber preservatives. Code “C01” for paints and stains.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SB01A	SB01B	SB05 Code
F-17-IT: Four-span structure with CIP concrete stub abutments on steel H-piles and 3 piers consisting of CIP concrete caps on single CIP concrete columns on CIP concrete footings not on rock	A - Abutment	1	C01 - Coating, paint
	P - Pier or Bent	1	C01 - Coating, paint
D-03-V-160: 19 span structure with steel or CIP concrete pier caps on single CIP concrete columns on CIP concrete footings bearing on concrete filled pipe piles and micro H-piles; CIP concrete abutment wall on CIP concrete footing not on rock at east end; CIP concrete stub abutment on concrete filled pipe piles at west end	A - Abutment	1	0 - None
	A - Abutment	2	0 - None
	P - Pier or Bent	1	0 - None
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert	A - Abutment	1	0 - None
	P - Pier or Bent	1	0 - None
Pile bent with preservative treated timber piles and concrete cap sealed with siloxane	P - Pier or Bent	1	C02 - Coating, sealer
Pile bent type abutment with painted steel H-pile foundation, timber lagging, and reinforced concrete cap with active cathodic protection	A - Abutment	1	S02 - Sacrificial, cathodic, active



SB06 – Foundation Type SNBI | Item B.SB.06

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the foundation type for each substructure configuration designation reported in *SB01A – Substructure Configuration* and *SB01B – Substructure Designation* using one of the following codes.

SB06 Codes
E01 - Earth, reinforced soil
F01 - Footing, not on rock
F02 - Footing, on rock
F03 - Footing, on reinforced soil
P01 - Pile, steel H-shape
P02 - Pile, steel pipe
P03 - Pile, concrete, cast-in-place
P04 - Pile, prestressed concrete
P05 - Pile, timber
P06 - Pile, auger cast
P07 - Pile, micropile
P08 - Pile, composite
P09 - Pile, FRP composite
PX - Pile, other
S01 - Drilled shaft, single
S02 - Drilled shafts, multiple
S03 - Caisson
U - Unknown
X - Other

COMMENTARY

In cases where the substructure has a combination of foundations due to retrofitting actions, use the code for the predominant foundation.

Do not consider localized repairs to original foundation types when reporting this item.

Leave this item blank when *SP06 – Span Type* is coded “P01” or “P02”.

Code “E01” when the superstructure bears directly on the reinforced soil mass.

Use “F” codes (“F01” through “F03”) for footings or when the substructure bears directly on ground at grade or below grade (e.g., grade beams, floor slabs, gravity walls, crib walls).

Code “F02” only if the design plans, or subsequent subsurface investigation, indicate that the entire foundation is supported by rock.

Code “F03” if the superstructure load is supported by a substructure unit, which is in turn supported by the reinforced soil mass.

Code “P02” for filled or unfilled steel pipe piles.



Code “P03” for cased and uncased cast-in-place concrete piles, and for driven corrugated, fluted, or spiral-welded shell-cased concrete piles.

Code “P04” for solid or hollow-core square, octagonal, or cylindrical piles.

Code “P06” for piles that have concrete or grout placed by pumping through the stem of the auger pipe as the auger is withdrawn.

Code “P07” for small diameter piles, typically less than 12 inches, that are drilled, then grouted.

Code “P08” for piles in which the length is composed of two or more pile types or materials, excluding pile tips.

Code “P09” when FRP composite piles are used for construction but not as repairs to existing piles of a different type.

Code “S01” or “S02”, as applicable, for cased or uncased drilled shafts.

Code “S03” for footings sunk into position by excavation through or beneath the caisson structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SB01A	SB01B	SB06 Code
F-17-IT: Four-span structure with CIP concrete stub abutments on steel H-piles and 3 piers consisting of CIP concrete caps on single CIP concrete columns on CIP concrete footings not on rock	A - Abutment	1	P01 - Pile, steel H-shape
	P - Pier or Bent	1	F01 - Footing, not on rock
D-03-V-160: 19 span structure with steel or CIP concrete pier caps on single CIP concrete columns on CIP concrete footings bearing on concrete filled pipe piles and micro H-piles; CIP concrete abutment wall on CIP concrete footing not on rock at east end; CIP concrete stub abutment on concrete filled pipe piles at west end	A - Abutment	1	F01 - Footing, not on rock
	A - Abutment	2	P02 - Pile, steel pipe
	P - Pier or Bent	1	P02 - Pile, steel pipe
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert	A - Abutment	1	F01 - Footing, not on rock
	P - Pier or Bent	1	F01 - Footing, not on rock
Three-sided concrete frame with a spread footing keyed into bedrock, modified by adding a four-sided box culvert placed on crushed stone bedding to the end of the barrel to widen the culvert	A - Abutment	1	F02 - Footing, on rock
	W - Widening	1	F01 - Footing, not on rock
Pile bent abutment with timber piles, timber lagging, and concrete cap	A - Abutment	1	P05 - Pile, timber
GRS abutment with precast, prestressed concrete box beams placed directly on the reinforced soil mass	A - Abutment	1	E01 - Earth, reinforced soil
Four corrugated steel circular pipes placed on crushed stone bedding	-	-	



SB07 – Foundation Protective System SNBI | Item B.SB.07

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the foundation protective system for each substructure configuration designation reported in *SB01A – Substructure Configuration* and *SB01B – Substructure Designation* using one of the following codes.

SB07 Codes
A01 - Admixture, internally sealed
A02 - Admixture, low permeability
A03 - Admixture, polymer impregnated
A04 - Admixture, corrosion inhibitor
A05 - Admixture, ASR inhibitor
AX - Admixture, other
C01 - Coating, paint
C02 - Coating, sealer
C03 - Coating, hot dip galvanizing
CX - Coating, other
E01 - Encasement, concrete
EX - Encasement, other
P01 - Patina, uncoated weathering steel
S01 - Sacrificial, cathodic, passive
S02 - Sacrificial, cathodic, active
SX - Sacrificial, other
T01 - Treated, timber preservative
U - Unknown
X - Other
0 - None

COMMENTARY

Code this item consistent with the predominant material reported in *SB06 – Foundation Type*.

In cases where the foundation may have a combination of protective systems, use the code for the predominant protective system based on protected area. In cases where multiple systems protect the same area, use the code for the outermost protective layer.

Leave this item blank when *SP06 – Span Type* is coded “P01” or “P02”.

Code “0” when the foundation is unprotected.

Code “0” when unprotected steels either never were coated or currently have no signs of coating systems and have no protective systems, such as cathodic protection or weathering chemistry.

Anti-graffiti coatings are not considered when coding this item.

Code “C02” for sealers such as silanes, siloxanes, linseed oils, etc.

Code “E01” for steel piles of pile bents that are encased in concrete.



Code “P01” only for weathering grades of steel.

For timber, code “T01” for oil-based or water-borne timber preservatives and code “C01” for paints and stains.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SB01A	SB01B	SB07 Code
F-17-IT: Four-span structure with CIP concrete stub abutments on steel H-piles and 3 piers consisting of CIP concrete caps on single CIP concrete columns on CIP concrete footings not on rock	A - Abutment	1	0 - None
	P - Pier or Bent	1	0 - None
D-03-V-160: 19 span structure with steel or CIP concrete pier caps on single CIP concrete columns on CIP concrete footings bearing on concrete filled pipe piles and micro H-piles; CIP concrete abutment wall on CIP concrete footing not on rock at east end; CIP concrete stub abutment on concrete filled pipe piles at west end	A - Abutment	1	0 - None
	A - Abutment	2	0 - None
	P - Pier or Bent	1	0 - None
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert	A - Abutment	1	0 - None
	P - Pier or Bent	1	0 - None
Pile bent abutment with timber piles treated with creosote, timber lagging, and concrete cap	A - Abutment	1	T01 - Treated, timber preservative
Pile bent with painted steel H-piles and rolled steel cap	P - Pier or Bent	1	C01 - Coating, paint
GRS abutment with precast, prestressed concrete box beams placed directly on the reinforced soil mass	A - Abutment	1	0 - None
Three-sided concrete frame with a spread footing keyed into bedrock, modified by adding a four-sided box culvert placed on crushed stone bedding to the end of the barrel to widen the structure. The four-sided box was constructed with high performance concrete that provides for low permeability	A - Abutment	1	0 - None
	W - Widening	1	A02 - Admixture, low permeability



Section 5.16 Span (SP)

SP01A – Span Configuration 389

SP01B – Span Designation 391

SP02 – Number of Spans 393

SP03 – Number of Beam Lines..... 394

SP04 – Span Material 395

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SP01A – Span Configuration SNBI | Item B.SP.01

FREQUENCY	SIMS INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the span configuration for each unique span configuration using one of the following codes.

SP01A Codes
M - Main Span
C - Culvert Span
A - Approach Span
W - Widening
V - Culvert extension

COMMENTARY

This item captures how spans of the reported structure configuration are classified.

Except for culverts, each structure has at least one main span. Main spans include all spans of most structures or the major span(s) of a sizable structure.

A unique span configuration characterizes all spans of similar construction: material (*SP04 – Span Material*), continuity (*SP05 – Span Continuity*), and type (*SP06 – Span Type*). Spans of similar configuration do not need to be contiguous to be reported in the same configuration.

A structure may or may not have approach spans. Approach spans are typically those of a different material, type, or design than the main span and are typically at one or both ends of the main span.

Consider the span(s) of vaulted abutments as an approach span.

The code for this item must match the code in item *CL08A – Structure Class*. When *CL08A – Structure Class* is coded “Culvert”, this item shall only be coded “C” and/or “V”. When *CL08A – Structure Class* is coded “Bridge”, this item shall not be coded “C” or “V”.

Code “C” for all pipes, four-sided frames, three-sided frames that have an integral invert, slabs that have an integral invert, and arches that have an integral invert; this is regardless of the amount of fill above the structure.

Code “V” when a culvert is extended using dissimilar construction.

Code “W” for widened portions of main or approach spans with dissimilar construction. Widening data sets do not contribute to the calculation of the total number of spans for the structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span



Example	SP01A Code
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite cast-in-place concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill	C - Culvert Span
Four-span structure with vaulted abutment at east approach	M - Main Span
	A - Approach Span
Four-cell corrugated steel pipe culvert, modified by adding four additional HDPE round pipes along the roadway centerline to increase hydraulic capacity	C - Culvert Span
	C - Culvert Span
Steel truss main span bridge with three prestressed concrete multi-beam approach spans at the north end, and two steel multi-beam approach spans at the south end	M - Main Span
	A - Approach Span
	A - Approach Span
Single span reinforced concrete tee-beam bridge widened with prestressed concrete box beams	M - Main Span
	W - Widening
Three-sided frame with an integral invert, lengthened by adding a four-sided box culvert to the end of the frame	C - Culvert Span
	V - Culvert Extension



SP01B – Span Designation SNBI | Item B.SP.01

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the assigned span designation for each span configuration listed in *SP01A – Span Configuration* using one of the following codes.

SP01B Codes
1
2
3
4
5
6
7
8
9
10
11
12
13
14

COMMENTARY

Each span configuration is numbered sequentially, starting with one (e.g., M – “1”, M – “2”, A – “1”, A – “2”) and identifies each unique span configuration present on the structure.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill	C - Culvert Span	1
Four-span structure with vaulted abutment at east approach	M - Main Span	1
	A - Approach Span	1
Four-cell corrugated steel pipe culvert, modified by adding four additional HDPE round pipes along the roadway centerline to increase hydraulic capacity	C - Culvert Span	1
	C - Culvert Span	2



Example	SP01A	SP01B Code
Steel truss main span bridge with three prestressed concrete multi-beam approach spans at the north end, and two steel multi-beam approach spans at the south end	M - Main Span	1
	A - Approach Span	1
	A - Approach Span	2
Single span reinforced concrete tee-beam bridge widened with prestressed concrete box beams	M - Main Span	1
	W - Widening	1
Three-sided frame with an integral invert, lengthened by adding a four-sided box culvert to the end of the frame	C - Culvert Span	1
	V - Culvert Extension	1



SP02 – Number of Spans	SNBI Item B.SP.02
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (4,0)

SPECIFICATION

Report the number of spans for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation*.

COMMENTARY

If the number of barrels or spans varies, report the maximum number.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B	SP02 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	4
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	19
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill	C - Culvert Span	1	2



SP03 – Number of Beam Lines SNBI | Item B.SP.03

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (3,0)

SPECIFICATION

Report the number of principal beam lines for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation*.

COMMENTARY

Principal beam lines include the main longitudinal load-carrying members of the superstructure such as beams, girders, trusses, and arches or arch ribs, but do not include stringers of a floor beam system or spandrel walls of an arch.

Use the average number of beam lines for structures with variable number of beam lines within a span configuration, rounded down.

Code “0” for structures where *SP06 – Span Type* is coded “P01” or “P02”.

Code “1” for structures where *SP06 – Span Type* is coded “F01”, “F02”, “S01”, or “S02”.

Code “1” for structures comprised of adjacent precast concrete arch segments.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B	SP03 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	2
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	6
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill	C - Culvert Span	1	1
Steel through truss bridge with two trusses and ten stringers	M - Main Span	1	2
Flared three-span tee-beam bridge with 12 beams at the south end and 17 beams at the north end	M - Main Span	1	14
Steel arch bridge with three arch ribs	M - Main Span	1	3
Concrete arch bridge with masonry spandrel walls	M - Main Span	1	1
Four-cell corrugated steel pipe culvert, modified by adding four additional HDPE round pipes along the roadway centerline to increase hydraulic capacity	C - Culvert Span	1	0
	C - Culvert Span	2	0



SP04 – Span Material SNBI | Item B.SP.04

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the principal span material type for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation* using one of the following codes.

SP04 Codes
A01 - Aluminum
C01 - Reinforced concrete, cast-in-place
C02 - Reinforced concrete, precast
C03 - Prestressed concrete, pre-tensioned
C04 - Prestressed concrete, cast-in-place post-tensioned
C05 - Prestressed concrete, precast post-tensioned
CX - Concrete, other
F01 - FRP composite, aramid fiber
F02 - FRP composite, carbon fiber
F03 - FRP composite, glass fiber
FX - FRP composite, other
I01 - Iron, cast
I02 - Iron, wrought
M01 - Masonry, block
M02 - Masonry, stone
P01 - Plastic, Polyethylene
PX - Plastic, other
S01 - Steel, rolled shapes
S02 - Steel, welded shapes
S03 - Steel, bolted shapes
S04 - Steel, riveted shapes
S05 - Steel, bolted and riveted shapes
SX - Steel, other
T01 - Timber, glue laminated
T02 - Timber, nail laminated
T03 - Timber, solid sawn
T04 - Timber, stress laminated
TX - Timber, other
X - Other
AL-T - TEMP, aluminum or iron. A01, I01, I02*
CP-T - TEMP, prestressed concrete. C03, C04, C05*
CR-T - TEMP, reinforced concrete. C01, C02, CX*
M-T - TEMP, masonry. M01, M02*
S-T - TEMP, steel. S01, S02, S03, S04, S05, SX*
T-T - TEMP, timber. T01, T02, T03, T04, T05*
X-T - TEMP, other*

*Temporary code cannot be selected and will be phased out.



COMMENTARY

A principal span member includes the main longitudinal load-carrying members of the span such as beams, girders, trusses, arches, or pipes, but does not include the floor system.

Code “C04” or “C05”, as applicable, for prestressed concrete superstructures that utilize both pre-tensioning and post-tensioning.

Code “M01” for masonry made from bricks or concrete blocks.

Code “M02” for natural stone.

Code “P01” for plastics that include HDPE and PE materials typically used for pipes.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B	SP04 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	S02 - Steel, welded shapes
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	S01 - Steel, rolled shapes
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill	C - Culvert Span	1	C01 - Reinforced concrete, cast-in-place
Spliced concrete girder: post-tensioned, precast, pre-tensioned bulb-T	M - Main Span	1	C05 - Prestressed concrete, precast post-tensioned
Stress laminated timber slab	M - Main Span	1	T04 - Timber, stress laminated
Concrete encased steel rolled beam	M - Main Span	1	S01 - Steel, rolled shapes
Bolted steel truss with timber stringers	M - Main Span	1	S03 - Steel, bolted shapes
CIP reinforced concrete tee-beams strengthened with carbon fiber FRP	M - Main Span	1	C01 - Reinforced concrete, cast-in-place
Corrugated steel pipes with welded seams, modified by adding additional HDPE round pipes to lengthen the culvert along the roadway centerline.	C - Culvert Span	1	S02 - Steel, welded shapes
	C - Culvert Span	2	P01 - Plastic, Polyethylene
Terra cotta pipes	C - Culvert Span	1	X - Other



SP05 – Span Continuity SNBI | Item B.SP.05

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the span continuity for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation* using one of the following codes.

SP05 Codes
1 - Simple or single span
2 - Continuous
3 - Continuous for live loads only
4 - Cantilever
5 - Cantilever with pin and hanger
6 - Frame
7 - Buried
7-T - TEMP, buried*
C-T - TEMP, continuous. 2 or 3*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

Code “2” for structures designed continuous for permanent (dead) loads and live loads. Also, code “2” for cable stayed and suspension bridges, and for multi-span arches.

Code “3” for structures designed as simple spans for permanent (dead) loads and continuous for live loads. When it is unknown if the superstructure was designed as continuous for live loads, code this item consistent with the assumption used in the load rating calculations.

Code “6” for three-sided frames that do not have an integral invert and are not considered buried.

Code “7” for all culverts (e.g., pipes, four-sided frames, three-sided frames that have an integral invert, slabs that have an integral invert, and arches that have an integral invert) regardless of the amount of fill on top of the culvert, even if the top slab or crown of arch is exposed.

Code “7” for three-sided frames, slabs, and arches that do not have an integral invert and have 2 feet or more of fill on top of the bridges.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.



CODING EXAMPLES

Example	SP01A	SP01B	SP05 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	2 - Continuous
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	2 - Continuous
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill	C - Culvert Span	1	7 - Buried
Two prestressed concrete girder simple spans	M - Main Span	1	1 - Simple or single span
Three-span bridge with cantilevered end spans that are unsupported at the extreme ends	M - Main Span	1	2 - Continuous
	M - Main Span	2	4 - Cantilever
Three-sided frame with an integral invert and not under fill	C - Culvert Span	1	7 - Buried
Two prestressed concrete girder simple spans with continuous deck designed to provide continuity for live load over the pier	M - Main Span	1	3 - Continuous for live loads only
Three-span steel girder bridge with cantilever and suspended pin and hanger center span	M - Main Span	1	5 - Cantilever with pin and hanger
	M - Main Span	2	2 - Continuous
Four-barrel corrugated steel pipe culvert	C - Culvert Span	1	7 - Buried



SP06 – Span Type SNBI | Item B.SP.06

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the span type for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation* using one of the following codes.

SP06 Codes
A01 - Arch, under fill without spandrel
A02 - Arch, open spandrel
A03 - Arch, closed spandrel
A04 - Arch, through
A05 - Arch, tied
B01 - Box girder/beam, single
B02 - Box girder/beam, multiple adjacent
B03 - Box girder/beam, multiple spread
B04 - Box girder/beam, segmental
F01 - Frame, three-sided
F02 - Frame, four-sided
F03 - Frame, K-shaped
F04 - Frame, delta-shaped
G01 - Girder/beam, I-shaped adjacent
G02 - Girder/beam, I-shaped spread
G03 - Girder/beam, tee-beam
G04 - Girder/beam, inverted tee-beam
G05 - Girder/beam, double-tee adjacent
G06 - Girder/beam, double-tee spread
G07 - Girder/beam, channel adjacent
G08 - Girder/beam, channel spread
G09 - Girder/beam, girder & floor beam
G10 - Girder/beam, through girder
GX - Girder/beam, other
L01 - Cable, suspension
L02 - Cable, cable-stayed
L03 - Cable, extradosed
LX - Cable, other
M01 - Movable, vertical lift

SP06 Codes
M02 - Movable, bascule
M03 - Movable, swing
MX - Movable, other
P01 - Pipe, Rigid
P02 - Pipe, Flexible
S01 - Slab, solid
S02 - Slab, voided
T01 - Truss, deck
T02 - Truss, through
T03 - Truss, pony
X01 - Other, railroad flat car
X02 - Other, ferry transfer
X03 - Other, floating
X - Other
AD-T - TEMP, deck arch. A01, A02, A03*
AT-T - TEMP, through or tied arch. A04, A05*
BM-T - TEMP, box girder/beam, multiple. B02, B03*
BS-T - TEMP, box girder/beam, single or spread. B01, B03*
C-T - TEMP CULVERT, arch, frame or pipe*
F-T - TEMP, frame. F01, F02, F03, F04*
GB-T - TEMP, girder/beam. G01, G02, G10, GX*
GC-T - TEMP, channel beam. G07, G08*
GT-T - TEMP, tee beam. G03, G04, G05, G06*
L-T - TEMP, cable-stayed or extradosed. L02, L03*
S-T - TEMP, slab. S01, S02*
T-T - TEMP, truss, through or pony. T02, T03*
X-T - TEMP, other*
Z-T - TEMP, mixed types*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

Adjacent girders/beams are those sections that are placed directly next to each other and are touching or nearly touching.



Spread girders/beams are those sections that are spaced so that the deck spans the space between the sections.

Box girder/beams include boxes, tubs, and cellular structures where interior surfaces may or may not be accessible.

Code "B02" for precast, prestressed concrete slab girders that do not have shear keys between the precast slab girders or if shear keys are not visible and plans are not available. When this item is coded "B02" for the main span, *CL09A – Structure Type* should be coded "CBGP" or "CBGCP", as applicable.

Code "F01" for three-sided rigid frames.

Code "F02" for rigid four-sided concrete box structures.

Code "G01" or "G02", as applicable, for bulb-tee and deck bulb-tee girders/beams.

Code "G09" for superstructures with girder and floor beam systems regardless of the girder shape.

Code "G10" for through girder type superstructures regardless of the girder shape.

Code "P02" for pipes that rely on the stability of surrounding soils to maintain their structural shape.

Code "S01" or "S02", as applicable, for precast, prestressed concrete slab girders that have shear keys between the precast slab girders, either visible or confirmed with plans. When this item is coded "S01" or "S02" for the main span, *CL09A – Structure Type* should be coded "CSP" or "CSCP", as applicable.

For structures with transverse post-tensioned rods connecting members together, code "S01" or "S02", as applicable.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

See *Figure 69* through *Figure 71* for examples of different box girder span types:

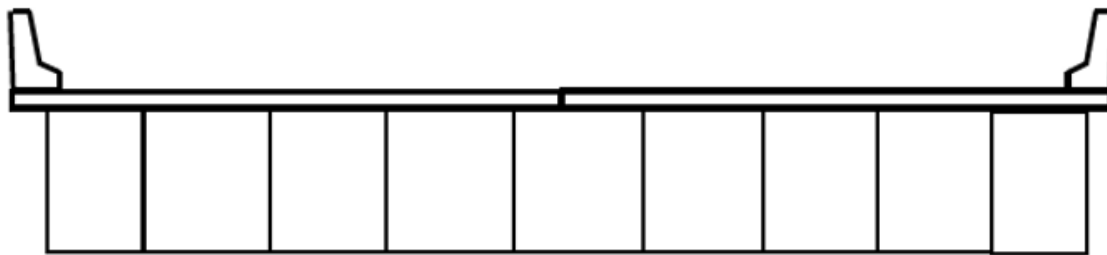


Figure 69. Cross-section view of multiple adjacent box girders

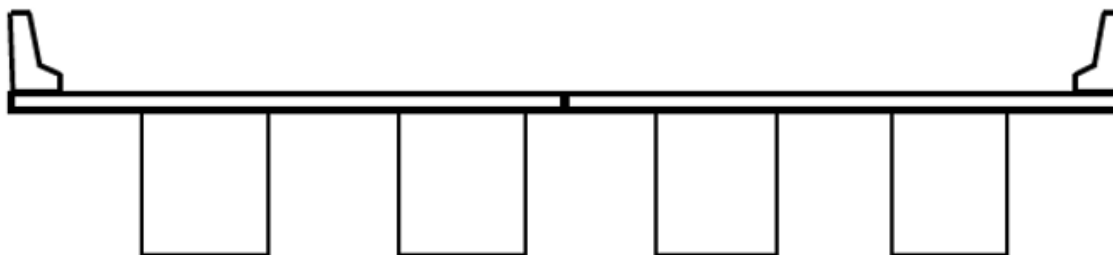


Figure 70. Cross-section view of multiple spread box girders

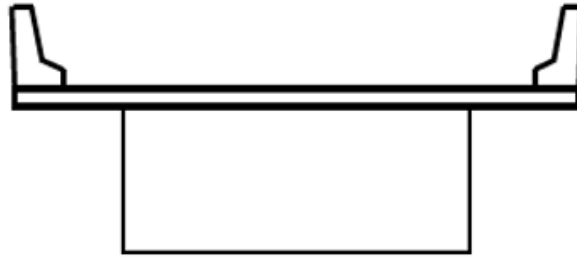


Figure 71. Cross-section view of single box girder

CODING EXAMPLES

Example	SP01A	SP01B	SP06 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	B03 - Box girder/beam, multiple spread
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	G02 - Girder/beam, I-shaped spread
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill	C - Culvert Span	1	F02 - Frame, four sided
Three span structure with eight adjacent precast, prestressed concrete solid slab girders with no shear keys between girders	M - Main Span	1	B02 - Box girder/beam, multiple adjacent
Single span structure with 10 adjacent precast, prestressed concrete solid slab girders with shear keys between girders	M - Main Span	1	S01 - Slab, solid



SP07 – Span Protective System SNBI | Item B.SP.07

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the span protective system for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation* using one of the following codes.

SP07 Codes
A01 - Admixture, internally sealed
A02 - Admixture, low permeability
A03 - Admixture, polymer impregnated
A04 - Admixture, corrosion inhibitor
A05 - Admixture, ASR inhibitor
AX - Admixture, other
C01 - Coating, paint
C02 - Coating, sealer
C03 - Coating, hot dip galvanizing
C04 - Coating, metalizing/thermal spray
CX - Coating, other
E01 - Encasement, concrete
EX - Encasement, other
P01 - Patina, uncoated weathering steel
S01 - Sacrificial, cathodic, passive
S02 - Sacrificial, cathodic, active
SX - Sacrificial, other
T01 - Treated, timber preservative
U - Unknown
X - Other
0 - None

COMMENTARY

Code this item consistent with the material reported for *SP04 – Span Material*.

In cases where the span configuration may have a combination of protective systems, code the predominant protective system based on protected area. In cases where multiple systems protect the same area, code the outermost protective layer.

When only portions of the superstructure have a protective system, code this item consistent with the predominant condition of the superstructure.

Code “0” when the span is unprotected.

Code “0” when unprotected steels either never were coated or currently have no signs of coating systems, and have no protective systems such as cathodic protection or weathering chemistry.

Non-protective anti-graffiti and aesthetic coatings are not considered when coding this item.

Code “C01” for weathering steel that has been painted.



Code “C02” for sealers such as silanes, siloxanes, linseed oils, etc.

Code “P01” only for weathering grades of steel.

For timber, code “T01” for oil-based or water-borne timber preservatives. Code “C01” for paints and stains.

Use the appropriate code for span members under fill that have a protective system.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B	SP07 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	C01 - Coating, paint
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	C01 - Coating, paint
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill	C - Culvert Span	1	0 - None
Weathering steel multi-beam structure that has beam ends painted to protect from leakage through the joints	M - Main Span	1	P01 - Patina, uncoated weathering steel



SP08 – Deck Interaction SNBI | Item B.SP.08

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the type of interaction between the superstructure and deck for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation* using one of the following codes.

SP08 Codes
CS - Composite, shored construction
CU - Composite, unshored construction
IM - Integral or monolithic
NC - Non-composite
C-T - TEMP, Composite. CS, CU*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

This item captures the type of structural interaction that occurs between the deck and superstructure, which may indicate the importance of the deck to the overall stability and capacity of the structure.

Leave this item blank when *SP09 – Deck Material and Type* is coded “0”.

Code “CS” to indicate that the deck acts composite with the superstructure, but without the deck the superstructure requires shoring to carry its own self weight, the weight of the deck concrete prior to curing, or both.

Code “CU” to indicate that the deck acts composite with the superstructure, and that the superstructure can carry its own self-weight, plus that of the deck concrete prior to curing.

Code “IM” to indicate that the deck was cast or fabricated of the same material and at the same time as the superstructure and the two can be expected to act as a unit. Code “IM” for slabs and orthotropic steel decks.

Code “NC” to indicate that the deck and the superstructure act independently.

When the type of interaction is unknown, code this item consistent with the assumption used in the load rating calculations.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B	SP08 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	CU - Composite, unshored construction
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	CU - Composite, unshored construction



Example	SP01A	SP01B	SP08 Code
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill. SP09 coded "0"	C - Culvert Span	1	
Steel rolled shape beams with CIP deck; no shear connectors	M - Main Span	1	NC - Non-composite
Steel plate girder with CIP deck. Shear connectors extend into the deck. Girders were shored during deck construction to maintain stability	M - Main Span	1	CS - Composite, shored construction
CIP tee-beam bridge	M - Main Span	1	IM - Integral or monolithic
Steel box girder with orthotropic deck. Deck plate acts as top flange of the box section	M - Main Span	1	IM - Integral or monolithic



SP09 – Deck Material and Type SNBI | Item B.SP.09

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the deck material and type for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation* using one of the following codes.

SP09 Codes
A01 - Aluminum
C01 - Reinforced concrete, cast-in-place
C02 - Reinforced concrete, precast
C03 - Prestressed concrete, pre-tensioned
C04 - Prestressed concrete, cast-in-place post-tensioned
C05 - Prestressed concrete, precast post-tensioned
CX - Concrete, other
F01 - FRP composite, aramid fiber
F02 - FRP composite, carbon fiber
F03 - FRP composite, glass fiber
FX - FRP composite, other
S01 - Steel, open grid
S02 - Steel, filled or partially filled grid
S03 - Steel, plate
S04 - Steel, orthotropic
S05 - Steel, corrugated
SX - Steel, other
T01 - Timber, glue laminated
T02 - Timber, nail laminated
T03 - Timber, solid sawn
T04 - Timber, stress laminated
TX - Timber, other
X - Other
0 - None
CP-T - TEMP, Concrete precast. C02, C03, C05, CX*
CR-T - TEMP, Concrete cast in place. C01, C04, CX*
S-T - TEMP, Steel, plate or orthotropic. S03, S04*
T-T - TEMP, Timber. T01, T02, T03, T04, TX*
X-T - TEMP, other*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

In cases where the superstructure configuration may have a combination of deck materials and/or types, code the predominant deck material and type based on the deck area.

Use the applicable code for superstructure types with integral top flanges that serve as the deck, such as concrete tee-beams and box beams/girders.



For slabs, and for the slab portion of three-sided rigid frames that do not have an integral invert and are not coded “7” in *SP05 – Span Continuity* use the same applicable material code as used in *SP04 – Span Material*.

Code “0” for slabs, and for the slab portion of three-sided rigid frames that do not have an integral invert and are coded “7” in *SP05 – Span Continuity*.

Code “0” for all culverts (e.g., pipes, four-sided frames, three-sided frames that have an integral invert, slabs that have an integral invert, and arches that have an integral invert) regardless of the amount of fill on top of the culvert.

Code “0” for arches under fill without spandrels or closed spandrel arches that do not have an integral invert.

Code “C01” or “C04”, as applicable, for cast-in-place concrete on partial depth structural panels that are not just considered stay-in-place forms.

Code “C02”, “C03”, or “C05”, as applicable, for full depth precast panels only.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B	SP09 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	C01 - Reinforced concrete, cast-in-place
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	C01 - Reinforced concrete, cast-in-place
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill	C - Culvert Span	1	0 - None
Three-sided frame with an integral invert and not under fill	C - Culvert Span	1	0 - None



SP10 – Wearing Surface SNBI | Item B.SP.10

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the predominant wearing surface material type protecting the deck or slab for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation* using one of the following codes.

SP10 Codes
B01 - Bituminous (asphalt)
C01 - Concrete, Monolithic
C02 - Concrete, Unmodified
C03 - Concrete, Latex modified
C04 - Concrete, low slump
C05 - Concrete, fiber reinforced
C06 - Concrete, microsilica
C07 - Concrete, polyester
CX - Concrete, other
CU - Concrete, unknown
E01 - Earth, gravel or soil
P01 - Polymer, epoxy
P02 - Polymer, polyester
PX - Polymer, other
S01 - Steel
T01 - Timber, running planks
X - Other
0 - None
C-T - TEMP, concrete additive. C03, C05, C06, C07, CX*
P-T - TEMP, polymer. P01, P02, PX*
X-T - TEMP, other*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

When a span configuration has a combination of wearing surface types, code the predominant wearing surface type based on the deck or slab area.

Do not consider patching materials when coding this item.

Leave this item blank when *SP09 – Deck Material and Type* is coded “0”.

Code “0” when no additional sacrificial concrete thickness or wearing surface is included on the deck or slab.

Use “C” codes (“C01” through “CU”) for overlays that contain portland cement.

Code “C01” when there is an additional sacrificial thickness cast concurrently with the structural deck or slab.



Code “C02” when an additional placement of concrete of the same concrete material as the deck or slab is placed after the deck or slab has cured.

Code “CU” when a concrete wearing surface exists, but the specific material composition is unknown.

Code “P01” for epoxy chip seal overlays that are not considered protective. The surface resembles light-colored asphalt with a rough, broadcast aggregate texture and no distinct vertical edge at joints.

Code “P02” for rigid concrete overlays that use polyester or epoxy as the binder instead of portland cement and are considered to seal the deck. The surface is often presented as a ½ inch to 1 inch + light grey or amber-tinted monolithic layer. Unlike thin polymer overlays (chip seals), polyester polymer concrete will not show "shelling" of individual aggregates and will have a distinct vertical profile at expansion joints. Typically, CDOT Pay Item 519 Place / Furnish Thin Bonded Overlay (Polyester Concrete).

Code “PX” for unknown rigid overlays, where the distinction between P01 and P02 cannot be made or where the protective properties of the overlay are unknown. CDOT Bridge and Structures Asset Management Unit will review and determine correct coding with the help of design subject matter experts.

Code “S01” when a steel grid deck is fabricated with an additional sacrificial thickness. Code “S01” is not intended for temporary steel plates.

Code “T01” where running planks are added on timber decks or slabs.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B	SP10 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	B01 - Bituminous (asphalt)
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	B01 - Bituminous (asphalt)
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill. SP09 coded “0”	C - Culvert Span	1	
Bridge with latex modified concrete overlay topped with an epoxy polymer overlay	M - Main Span	1	P01 - Polymer, epoxy



SP11 – Deck Protective System SNBI | Item B.SP.11

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the deck protective system for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation* using one of the following codes.

SP11 Codes
M01 - Membrane, built up
M02 - Membrane, sheet
M03 - Membrane, liquid applied
MU - Membrane, unknown
MX - Membrane, other
C01 - Coating, paint
C02 - Coating, silane/siloxane
C03 - Coating, methacrylate
CX - Coating, other
P01 - Patina, weathering steel
A01 - Admixture, internally sealed
A02 - Admixture, low permeability
A03 - Admixture, polymer impregnated
A04 - Admixture, corrosion inhibitor
A05 - Admixture, ASR inhibitor
AX - Admixture, other
X - Other
0 - None
MX-T - TEMP, other*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

Code this item consistent with the predominant material reported in *SP09 – Deck Material and Type*.

In cases where the deck may have a combination of protective systems, code the predominant protective system based on protected area. In cases where multiple systems protect the same area, code the outermost protective layer.

Leave this item blank when *SP09 – Deck Material and Type* is coded “0”.

Code “0” when there is no known internal or external protective system in place.

Code “A01” for internally sealed concrete systems that use wax beads in the concrete. After the concrete cures, it is heated to melt the wax and seal the concrete.

Code “A02” when low permeability concrete is used with admixtures such as flyash, microsilica, or slag.

Code “A05” when admixtures are used to inhibit alkali-silica reactivity (ASR).

Do not code “C02” or “C03” when the material is applied for localized crack repair.



Code “M01” when the membrane is built up using combined layers of liquid and preformed/sheet membranes.

Code “MU” when a membrane exists, but the type is unknown.

Code “MX” when a membrane type is known, but does not match the types specified for codes “M01”, “M02”, or “M03”.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B	SP11 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	M02 - Membrane, sheet
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	M01 - Membrane, built up
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill. SP09 coded “0”	C - Culvert Span	1	
Bridge deck constructed with polymer impregnated concrete and sealed with a flood coat of methacrylate	M - Main Span	1	C03 - Coating, methacrylate



SP12 – Deck Reinforcing Protective System SNBI | Item B.SP.12

FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the type of deck reinforcing protective system for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation* using one of the following codes for concrete decks and slabs.

SP12 Codes
C01 - Coating, epoxy coated
C02 - Coating, galvanized
C03 - Coating, metalized
CX - Coating, other
R01 - Reinforcing, stainless, clad
R02 - Reinforcing, stainless, solid
R03 - Reinforcing, high chromium
R04 - Reinforcing, FRP, aramid fiber
R05 - Reinforcing, FRP, carbon fiber
R06 - Reinforcing, FRP, glass fiber
R07 - Reinforcing, FRP, other
RX - Reinforcing, other
S01 - Sacrificial, cathodic, passive
S02 - Sacrificial, cathodic, active
SX - Sacrificial, other
X - Other
0 - None
C-T - TEMP, coating. C03, CX*
S-T - TEMP, sacrificial. S01, S02, SX*
X-T - TEMP, other or unknown*

*Temporary code cannot be selected and will be phased out.

COMMENTARY

Code this item only if *SP09 – Deck Material and Type* is concrete (i.e. codes “C01” to “CX”).

In cases where the span(s) may have a combination of protective systems, code the predominant protective system based on protected area. In cases where multiple systems protect the same area, code the outermost protective layer. If the top and bottom mat have different protective systems, report the protective system for the top mat.

Do not consider bar chairs or other reinforcing steel supports when coding this item.

Code “0” when steel reinforcement is unprotected, such as with black steel.

Use “C” codes (“C01” through “CX”) and “R” codes (“R01” through “RX”) when any (e.g., top mat only) or all the reinforcing steel in the deck is protected by the selected steel type.

Code “S02” when impressed currents are used as the cathodic protection system.



This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B	SP12 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	C01 - Coating, epoxy coated
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	0 - None
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill. SP09 coded "0"	C - Culvert Span	1	
Bridge deck constructed with black reinforcing bars, later widened with a top mat of epoxy coated bars and bottom mat of black bars	M - Main Span	1	0 - None
	W - Widening	1	C01 - Coating, epoxy coated



SP13 – Deck-Stay-in-Place Forms SNBI | Item B.SP.13

FREQUENCY	SIMS A INPUT TYPE	FORMAT
Initial	Drop-down Menu	Menu Selection

SPECIFICATION

Report the type of deck stay-in-place form for each span configuration designation reported in *SP01A – Span Configuration* and *SP01B – Span Designation* using one of the following codes.

SP13 Codes
C01 - Concrete, reinforced
C02 - Concrete, prestressed
F01 - FRP composite
M01 - Metal
T01 - Timber
X - Other
0 - None

COMMENTARY

Use this item to identify forms used in construction that remain in place by design or owner preference.

When a span configuration has a combination of stay-in-place form types, code the predominant type based on the deck area.

Leave this item blank when *SP09 – Deck Material and Type* is coded “0”.

Code “C01” when a precast reinforced concrete panel (partial depth) is used with a cast-in-place reinforced concrete placement on top.

Code “C02” when a precast prestressed concrete panel (partial depth) is used with a cast-in-place reinforced concrete placement on top.

This item is not intended to be used for materials installed only for debris shielding, or when *SP09 – Deck Material and Type* is coded “S05”.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	SP01A	SP01B	SP13 Code
F-17-IT: Four-span structure with two continuous steel box girders with composite CIP concrete deck on metal stay-in-place forms with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	M01 - Metal
D-03-V-160: 19 span structure with six continuous steel wide flange girders with composite CIP concrete deck with waterproof membrane and asphalt wearing surface; girders are painted	M - Main Span	1	0 - None
PAR CANTBRY-0.2: Two cell, four-sided CIP concrete box culvert under fill. SP09 coded “0”	C - Culvert Span	1	
Bridge constructed using 3” thick prestressed concrete form panels; completed deck is 8” thick	M - Main Span	1	C02 - Concrete, prestressed



Section 5.17 Work (W)

W01 – Year Built	416
W01A – Year Work Performed	417
W03A – Work Performed	418
W04A – Work Done By	419



W01 – Year Built	SNBI Item B.W.01
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (4,0)

SPECIFICATION

Report the year in which original construction was completed and the structure was able to carry traffic.

COMMENTARY

This date reflects the date when construction was completed and the structure was able to carry traffic, regardless of when the structure was opened to traffic.

For phased construction, report the year in which the first phase was completed and the structure was able to carry traffic.

When widening, rehabilitation, or other re-construction work is performed on the structure, the year built does not change.

Provide a best estimate when the year built is unknown.

When year built is estimated, add a note in *L14A – Structure Note*.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

Example	W01 Code
F-17-IT: Built in 1985	1985
D-03-V-160: Built in 1958	1958
PAR CANTBRY-0.2: Built in 2003	2003
Structure found in Bridge Survey, 1954	1954
Structure estimated to be built circa 1941	1941
Date of original construction unknown, year built estimated to be around 1996 from Google Earth historical imagery	1996



W01A – Year Work Performed	SNBI Item B.W.02
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	N (4,0)

SPECIFICATION

Report the year that work was completed on a structure.

COMMENTARY

This item is not currently being used.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



W03A – Work Performed	SNBI Item B.W.03
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (120)

SPECIFICATION

Report all work completed on the structure in each year.

COMMENTARY

This item is not currently being used.

CDOT is developing additional guidance for this item. An update to the manual will be issued upon finalization of the guidance.

This item is specific to the entire structure. This item is linked live across inspection types and carried forward from inspection to inspection.

CODING EXAMPLES

None.



W04A – Work Done By	CDOT
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FREQUENCY	SIMSA INPUT TYPE	FORMAT
Initial	Manual Entry	AN (250)

SPECIFICATION

Report whether the work performed is to be done by contract or by owner forces.

COMMENTARY

This item is no longer used.

CODING EXAMPLES

None.



Appendix A Structure Examples

Appendix A contains sample SIMSA inspection reports, Load Rating Summary Sheets, sketches and/or portions of plans for the three structure examples used throughout the manual. Some data presented in these sample reports has been modified and may not match the actual inputs for these structures in SIMSA. The names of the individuals and organizations who performed the inspections and load ratings have been changed in the examples for privacy.



F-17-IT – ON-SYSTEM STRUCTURE



COLORADO
Department of Transportation

F-17-IT

Bridge, SBGC - Steel Box Girder,
Continuous

Routine+

Draft Report

INSPECTION DATE
08/06/2025

Team Leader (IE04): Robert Campbell

Lead Inspector (IE04A): Robert Campbell

Team Member(s) (IE04B): Chris Baker

INSPECTION ORGANIZATION
Company D

Signed on: **Not Available**

Signed by: **Not Available**

Structure: F-17-IT : 2025-08-06 - Routine+

Page 1 of 26



Structure Inspection and Inventory Report

Structure Information Summary

Inspection Date: 08/06/2025

Structure Key: F-17-IT

Structure Class: Bridge

Identification

C470 EB RAMP TO I 25 NB over I 25, SH 470 ML, RTD
Structure Key F-17-IT
Structure Name
Structure Type SBGC - Steel Box Girder, Continuous
Year Built 1985



Ownership and Location

Inspection Program On System
Owner S01 - State Transportation Department
Responsible Party CDOT
County 035 - Douglas
City 45955 - Lone Tree
Inspection Area 1 - Denver Metro
Location Description MID-LEVEL ABOVE JCT I-25
Highway & Milepoint 025A / 26.138 mi

Geometry

Total Length 636.5
Width, Out to Out 41.5
Deck Area 26415
Total # of Spans 4
Asphalt Thickness 2.5

Highway Traffic

Nat. Highway System Yes
Lanes Carried 2
Highway Type Carried 1 - Interstate
ADT Carried 40000
Lanes Under 12
Highway Type Under 1 - Interstate
ADT Under 576000

Risk Factors

NSTM Y - NSTM inspection required
Scour Critical
Approach Alignment G - Good
Inspection Frequency 24 Mo.
Underwater Required No
Pin Required No
Special Required False
Membrane M02 - Membrane, sheet
Expansion Device A - Pre molded rubber device
Open Essential Repair No

Inspection History

Date	Type	Rating	Deck	Super	Sub	Culv
2025-08-06	Routine+	Good	7	7	7	N
2023-08-16	Routine+	Fair	6	6	6	N
2021-08-19	Routine+	Fair	6	6	6	N
2019-08-13	Routine+	Fair	6	6	6	N
2017-08-22	Routine+	Good	7	7	7	N
2015-08-20	Routine+	Good	7	7	7	N
2014-01-29	Routine+	Good	7	7	7	N
2013-08-13	Routine+	Good	7	7	7	N
2011-08-30	Routine+	Good	7	7	7	N
2009-08-27	Routine+	Good	7	8	7	N

Load Rating

Posting Status P - Permanent O - Open - No Restriction
Posting 5 - Equal to or above legal loads
Load Rating Date 03/01/2023
Design Load / Method HS-20 / LFD
Oper. Rating Method 8 - LRFR RF wHL 93
Oper. Rating Value 0.76
Overload Color Code 0 - White

Vertical Clearance

VCLR Date 08/25/2024
Min / Max Clr. Above 17.76 / 18.52
Min / Clr. Under 17.3097 / 99.9

Safety Features

Rail Type Rail Type R
Bridge Rail 1 - Inspected feature meets currently acceptable stan
Rail Transition 1 - Inspected feature meets currently acceptable stan
Approach Rail 1 - Inspected feature meets currently acceptable stan
End Treatment 1 - Inspected feature meets currently acceptable stan



Structure Inspection and Inventory Report
SI&A Bridge

Inspection Date: 08/06/2025
Structure Key: F-17-IT

Appraisal (AP)

- AP01 - Approach Alignment Rating: G - Good
- AP02 - Overtopping Likelihood:
- AP03 - Scour Vulnerability:
- AP04 - Scour Plan of Action:
- AP04A - Scour Documentation: No
- AP04B - Monitoring Comment:
- AP04C - Monitoring Trigger:
- AP04D - Closure Trigger:
- AP04E - Mobilize Trigger:
- AP04F - Scour Watch 113M: No
- AP05 - Seismic Vulnerability: N - Bridge does not require seismic evaluation due to low anticipated ground motion or agency prioritization
- AP12A - SNBI Deskside Review Complete: Yes
- AP12B - SNBI Field Verification Complete: Yes

Condition (C)

- C01 - Deck Rating: 7 - Good
- C02 - Superstructure Rating: 7 - Good
- C03 - Substructure Rating: 7 - Good
- C04 - Culvert Rating: N - Not applicable
- C05 - Railing Condition Rating: 6 - Satisfactory
- C06 - Railing Transition Condition Rating: 6 - Satisfactory
- C07 - Bearing Condition Rating: 6 - Satisfactory
- C08 - Joint Condition Rating: 6 - Satisfactory
- C09 - Channel Condition Rating: N - Not applicable
- C10 - Channel Protection Rating: N - Not applicable
- C11 - Scour Condition Rating: N - Structure does not cross over water
- C12 - Overall Condition: Good
- C13 - Lowest Condition Rating: 7
- C14 - NSTM Inspection Rating: 7 - Good
- C15 - Underwater Condition Rating:

Classification (CL)

- CL01 - Owner: S01 - State Transportation Department
- CL01A - Responsible Party: CDOT
- CL02 - Maintenance Responsibility: S01 - State Transportation Department
- CL03 - Federal or Tribal Land Access: N - Not applicable
- CL04 - Historical Significance: N - Bridge is not eligible for the National Register, and is not in a historic district eligible for the National Register
- CL05 - Toll: N - Bridge does not carry a toll road and is not a toll bridge
- CL06 - Emergency Evacuation Designation:
- CL07A - Structure Status: 3 - Active
- CL08A - Structure Class: Bridge
- CL09A - Structure Type: SBGC - Steel Box Girder, Continuous
- CL10A - Construction Type 120B: 10 - Curved
- CL11A - Features Intersected: I 25, SH 470 ML, RTD
- CL11B - Feature Carried: C470 EB RAMP TO I 25 NB
- CL12A - Service Type On: 7 - Third level interchange
- CL13A - Service Type Under: 4 - Highway and railroad
- CL14A - BTE Eligibility: Not applicable
- CL15A - Federal Submission: MAJOR VEHICULAR

Feature (F): P01 - C470 Trail along C470 WB

- F01A - Feature Type: P - Pathway
- F01B - Feature Designation: 1
- F02 - Feature Location: B - Below structure
- F03 - Feature Name: C470 Trail along C470 WB

Feature (F): H01 - C470 EB RAMP TO I 25 NB

- F01A - Feature Type: H - Highway
- F01B - Feature Designation: 1
- RT01A - Route Designation: 2
- RT02 - Route Number: 470A
- RT03 - Route Direction: EB - Eastbound
- H01 - Functional Classification: 1 - Interstate
- H02 - Urban Code: 23527 - Denver-Aurora
- H03 - NHS: Y - On NHS
- H04 - National Highway Freight Network: N - Not on the NHFN
- H05 - STRAHNET Designation: N - Not a STRAHNET route
- H06 - LRS Route: 025A_G_2271
- H07 - LRS Mile Point: 0.142
- H08 - Lanes on Highway: 2
- H09 - AADT: 20000
- H10 - Average Annual Daily Truck Traffic: 1200
- H10A - AADTT Percent: 6
- H11 - Year of AADT: 2023
- F02 - Feature Location: C - Carried on structure
- F03 - Feature Name: C470 EB RAMP TO I 25 NB
- RT03C - Primary Routelog: 1
- RT04 - Route Type: 3 - State
- RT05 - Level of Service: 7 - Ramp
- H12 - Maximum Vertical Clearance: 18.52
- H13 - Minimum Vertical Clearance: 17.76
- H14 - Minimum Horizontal Clearance Left:
- H15 - Minimum Horizontal Clearance Right:
- H16 - Maximum Usable Surface Width: 38
- H17 - Detour Length: 1
- H18 - Crossing Structure Number:
- H20A - Legacy Milepoint: 26.138
- H21A - Base Highway Network 12: 1 - On the Base Network
- H22A - Future AADT 114: 110400
- H22B - Year of Future AADT 115: 2043



Feature (F): H02 - C470 ML WB

- | | |
|---|---|
| ■ F01A - Feature Type: H - Highway | ■ F02 - Feature Location: B - Below structure |
| ■ F01B - Feature Designation: 2 | ■ F03 - Feature Name: C470 ML WB |
| ■ RT01A - Route Designation: 1 | ■ RT03C - Primary Routelog: |
| ■ RT02 - Route Number: 470A | ■ RT04 - Route Type: 3 - State |
| ■ RT03 - Route Direction: WB - Westbound | ■ RT05 - Level of Service: 1 - Mainline |
| ■ H01 - Functional Classification: 2 - Principal Arterial - Other Freeways or Expressways | ■ H12 - Maximum Vertical Clearance: 99.9 |
| ■ H02 - Urban Code: 23527 - Denver--Aurora | ■ H13 - Minimum Vertical Clearance: 99.9 |
| ■ H03 - NHS: Y - On NHS | ■ H14 - Minimum Horizontal Clearance Left: 99.9 |
| ■ H04 - National Highway Freight Network: N - Not on the NHFN | ■ H15 - Minimum Horizontal Clearance Right: 99.9 |
| ■ H05 - STRAHNET Designation: N - Not a STRAHNET route | ■ H16 - Maximum Usable Surface Width: 55 |
| ■ H06 - LRS Route: 470A | ■ H17 - Detour Length: 1 |
| ■ H07 - LRS Mile Point: 26.217 | ■ H18 - Crossing Structure Number: |
| ■ H08 - Lanes on Highway: 2 | ■ H20A - Legacy Milepoint: 26.138 |
| ■ H09 - AADT: 112000 | ■ H21A - Base Highway Network 12: 1 - On the Base Network |
| ■ H10 - Average Annual Daily Truck Traffic: 3360 | ■ H22A - Future AADT 114: 137760 |
| ■ H10A - AADTT Percent: 3 | ■ H22B - Year of Future AADT 115: 2043 |
| ■ H11 - Year of AADT: 2023 | |

Feature (F): H03 - C470 ML EB

- | | |
|---|---|
| ■ F01A - Feature Type: H - Highway | ■ F02 - Feature Location: B - Below structure |
| ■ F01B - Feature Designation: 3 | ■ F03 - Feature Name: C470 ML EB |
| ■ RT01A - Route Designation: 1 | ■ RT03C - Primary Routelog: |
| ■ RT02 - Route Number: 470A | ■ RT04 - Route Type: 3 - State |
| ■ RT03 - Route Direction: EB - Eastbound | ■ RT05 - Level of Service: 1 - Mainline |
| ■ H01 - Functional Classification: 2 - Principal Arterial - Other Freeways or Expressways | ■ H12 - Maximum Vertical Clearance: 99.9 |
| ■ H02 - Urban Code: 23527 - Denver--Aurora | ■ H13 - Minimum Vertical Clearance: 99.9 |
| ■ H03 - NHS: Y - On NHS | ■ H14 - Minimum Horizontal Clearance Left: 99.9 |
| ■ H04 - National Highway Freight Network: N - Not on the NHFN | ■ H15 - Minimum Horizontal Clearance Right: 99.9 |
| ■ H05 - STRAHNET Designation: N - Not a STRAHNET route | ■ H16 - Maximum Usable Surface Width: 55 |
| ■ H06 - LRS Route: 470A | ■ H17 - Detour Length: 1 |
| ■ H07 - LRS Mile Point: 26.217 | ■ H18 - Crossing Structure Number: |
| ■ H08 - Lanes on Highway: 2 | ■ H20A - Legacy Milepoint: 26.138 |
| ■ H09 - AADT: 112000 | ■ H21A - Base Highway Network 12: 1 - On the Base Network |
| ■ H10 - Average Annual Daily Truck Traffic: 3360 | ■ H22A - Future AADT 114: 137760 |
| ■ H10A - AADTT Percent: 3 | ■ H22B - Year of Future AADT 115: 2043 |
| ■ H11 - Year of AADT: 2023 | |

Feature (F): H04 - I 25 ML NB

- | | |
|--|---|
| ■ F01A - Feature Type: H - Highway | ■ F02 - Feature Location: B - Below structure |
| ■ F01B - Feature Designation: 4 | ■ F03 - Feature Name: I 25 ML NB |
| ■ RT01A - Route Designation: 1 | ■ RT03C - Primary Routelog: |
| ■ RT02 - Route Number: 025A | ■ RT04 - Route Type: 1 - Interstate |
| ■ RT03 - Route Direction: NB - Northbound | ■ RT05 - Level of Service: 1 - Mainline |
| ■ H01 - Functional Classification: 1 - Interstate | ■ H12 - Maximum Vertical Clearance: 20.6693 |
| ■ H02 - Urban Code: 23527 - Denver--Aurora | ■ H13 - Minimum Vertical Clearance: 18.5072 |
| ■ H03 - NHS: Y - On NHS | ■ H14 - Minimum Horizontal Clearance Left: 4 |
| ■ H04 - National Highway Freight Network: 1 - Primary Highway Freight System | ■ H15 - Minimum Horizontal Clearance Right: 12 |
| ■ H05 - STRAHNET Designation: 1 - STRAHNET route | ■ H16 - Maximum Usable Surface Width: 67.8 |
| ■ H06 - LRS Route: 025A | ■ H17 - Detour Length: 2 |
| ■ H07 - LRS Mile Point: 194.14 | ■ H18 - Crossing Structure Number: F-17-JV |
| ■ H08 - Lanes on Highway: 4 | ■ H20A - Legacy Milepoint: 194.283 |
| ■ H09 - AADT: 176000 | ■ H21A - Base Highway Network 12: 1 - On the Base Network |
| ■ H10 - Average Annual Daily Truck Traffic: 10560 | ■ H22A - Future AADT 114: 223520 |
| ■ H10A - AADTT Percent: 6 | ■ H22B - Year of Future AADT 115: 2043 |

Structure: F-17-IT : 2025-08-06 - Routine+



■ H11 - Year of AADT: 2023

Feature (F): H05 - I 25 ML SB

■ F01A - Feature Type: H - Highway	■ F02 - Feature Location: B - Below structure
■ F01B - Feature Designation: 5	■ F03 - Feature Name: I 25 ML SB
■ RT01A - Route Designation: 1	■ RT03C - Primary Routelog:
■ RT02 - Route Number: 025A	■ RT04 - Route Type: 1 - Interstate
■ RT03 - Route Direction: SB - Southbound	■ RT05 - Level of Service: 1 - Mainline
■ H01 - Functional Classification: 1 - Interstate	■ H12 - Maximum Vertical Clearance: 17.8281
■ H02 - Urban Code: 23527 - Denver--Aurora	■ H13 - Minimum Vertical Clearance: 17.3097
■ H03 - NHS: Y - On NHS	■ H14 - Minimum Horizontal Clearance Left: 4
■ H04 - National Highway Freight Network: 1 - Primary Highway Freight System	■ H15 - Minimum Horizontal Clearance Right: 12
■ H05 - STRAHNET Designation: 1 - STRAHNET route	■ H16 - Maximum Usable Surface Width: 67.7
■ H06 - LRS Route: 025A	■ H17 - Detour Length: 2
■ H07 - LRS Mile Point: 194.14	■ H18 - Crossing Structure Number: F-17-JU
■ H08 - Lanes on Highway: 4	■ H20A - Legacy Milepoint: 194.283
■ H09 - AADT: 176000	■ H21A - Base Highway Network 12: 1 - On the Base Network
■ H10 - Average Annual Daily Truck Traffic: 10560	■ H22A - Future AADT 114: 223520
■ H10A - AADTT Percent: 6	■ H22B - Year of Future AADT 115: 2043
■ H11 - Year of AADT: 2023	

Feature (F): H06 - I25 NB Ramp to C470 WB

■ F01A - Feature Type: H - Highway	■ F02 - Feature Location: A - Above structure
■ F01B - Feature Designation: 6	■ F03 - Feature Name: I25 NB Ramp to C470 WB
■ RT01A - Route Designation: 1	■ RT03C - Primary Routelog:
■ RT02 - Route Number: 025A	■ RT04 - Route Type: 1 - Interstate
■ RT03 - Route Direction: NB - Northbound	■ RT05 - Level of Service: 7 - Ramp
■ H01 - Functional Classification: 1 - Interstate	■ H12 - Maximum Vertical Clearance:
■ H02 - Urban Code: 23527 - Denver--Aurora	■ H13 - Minimum Vertical Clearance:
■ H03 - NHS: Y - On NHS	■ H14 - Minimum Horizontal Clearance Left:
■ H04 - National Highway Freight Network: N - Not on the NHFN	■ H15 - Minimum Horizontal Clearance Right:
■ H05 - STRAHNET Designation: N - Not a STRAHNET route	■ H16 - Maximum Usable Surface Width: 0
■ H06 - LRS Route: 025A_H_2285	■ H17 - Detour Length:
■ H07 - LRS Mile Point: 0.257	■ H18 - Crossing Structure Number: F-17-IQ
■ H08 - Lanes on Highway: 1	■ H20A - Legacy Milepoint: 194.283
■ H09 - AADT: 0	■ H21A - Base Highway Network 12:
■ H10 - Average Annual Daily Truck Traffic: 0	■ H22A - Future AADT 114: 0
■ H10A - AADTT Percent: 0	■ H22B - Year of Future AADT 115: 0
■ H11 - Year of AADT: 2023	

Feature (F): H07 - I25 SB ramp to E470 EB

■ F01A - Feature Type: H - Highway	■ F02 - Feature Location: A - Above structure
■ F01B - Feature Designation: 7	■ F03 - Feature Name: I25 SB ramp to E470 EB
■ RT01A - Route Designation: 1	■ RT03C - Primary Routelog:
■ RT02 - Route Number: 025A	■ RT04 - Route Type: 1 - Interstate
■ RT03 - Route Direction: SB - Southbound	■ RT05 - Level of Service: 7 - Ramp
■ H01 - Functional Classification: 1 - Interstate	■ H12 - Maximum Vertical Clearance:
■ H02 - Urban Code: 23527 - Denver--Aurora	■ H13 - Minimum Vertical Clearance:
■ H03 - NHS: Y - On NHS	■ H14 - Minimum Horizontal Clearance Left:
■ H04 - National Highway Freight Network: N - Not on the NHFN	■ H15 - Minimum Horizontal Clearance Right:
■ H05 - STRAHNET Designation: N - Not a STRAHNET route	■ H16 - Maximum Usable Surface Width: 0
■ H06 - LRS Route: 025A_F_102	■ H17 - Detour Length:
■ H07 - LRS Mile Point: 0.239	■ H18 - Crossing Structure Number: F-17-JX
■ H08 - Lanes on Highway: 2	■ H20A - Legacy Milepoint: 194.283
■ H09 - AADT: 0	■ H21A - Base Highway Network 12:
■ H10 - Average Annual Daily Truck Traffic: 0	■ H22A - Future AADT 114: 0
■ H10A - AADTT Percent: 0	■ H22B - Year of Future AADT 115: 0

Structure: F-17-IT : 2025-08-06 - Routine+



■ H11 - Year of AADT: 2023

Feature (F): R01 - RTD Light Rail

- | | |
|---|---|
| ■ F01A - Feature Type: R - Railroad | ■ F02 - Feature Location: B - Below structure |
| ■ F01B - Feature Designation: 1 | ■ F03 - Feature Name: RTD Light Rail |
| ■ RR01 - Railroad Service Type: PE - Passenger, electrified | ■ RR03 - Railroad Minimum Horizontal Offset: 24.5 |
| ■ RR02 - Railroad Minimum Vertical Clearance: 16.5 | |

Geometry (G)

- | | |
|------------------------------------|--|
| ■ G01 - NBIS Length: 625.5 | ■ G10 - Median: 0 - No median |
| ■ G02 - Total Length: 636.5 | ■ G11 - Skew: 47 |
| ■ G03 - Maximum Span: 185.1 | ■ G12 - Curved Bridge: CU - Curved girder(s) |
| ■ G04 - Minimum Span: 130 | ■ G13 - Maximum Height: 45 |
| ■ G05 - Out To Out: 41.5 | ■ G14 - Sidehill Bridge: N - Not a sidehill bridge |
| ■ G06 - Width Curb to Curb: 38 | ■ G15 - Irregular Deck Area: |
| ■ G07 - Left Curb Or Sidewalk: 0 | ■ G16 - Federal Deck Area: 26415 |
| ■ G08 - Right Curb Or Sidewalk: 0 | ■ G17A - Asphalt / Fill Thickness: 2.5 |
| ■ G09 - Approach Roadway Width: 38 | ■ G18A - Expansion Device Type 124: D - Parabolic Gland (strip or modular) |

Identification (ID)

- | | |
|------------------------------------|---|
| ■ ID01 - Structure Number: F-17-IT | ■ ID03 - Replaces (Old): |
| ■ ID01A - Structure Key: F-17-IT | ■ ID06A - Parallel Structure Key 8P: |
| ■ ID02 - Structure Name: | ■ ID07A - Parallel Structure 101: No parallel structure exists. |

Inspection Event (IE)

- | | |
|---|---|
| ■ IE02 - Inspection Field Start: 2025-08-06 | ■ IE08 - QC Date: |
| ■ IE03 - Field End Date: 2025-08-06 | ■ IE09 - QA Date: |
| ■ IE03A - Inspection Date: 2025-08-06 | ■ IE10A - Inspection Finalized: |
| ■ IE05A - Current Inspection Interval: 24 | ■ IE14A - Special Equipment: 8 - See Special Access Notes |
| ■ IE06A - Current Target Date: 2025-08-15 | ■ IE16A - Weather: 87F Sunny / Partly cloudy/ windy |
| ■ IE06B - Report Due Date: 2025-11-06 | ■ IE17A - Bat Present: No |
| ■ IE07 - Risk Based Inspection Interval: 1 - Method 1 | |

Inspection Requirements (IR)

- | | |
|--|---|
| ■ IR01 - NSTM Required: Y - NSTM inspection required | ■ IR05A - Pin Required: No |
| ■ IR02 - Fatigue Details: Y - E/E(prime) details are present | ■ IR06A - Special Required: No |
| ■ IR03 - UW Required: No | ■ IR07A - Inspection Program: On System |
| ■ IR03A - UW Category: | ■ IR08A - LIDAR Required: Yes |
| ■ IR04 - Complex Feature: No | |

Location (L)

- | | |
|--------------------------------------|---|
| ■ L01 - State: 08 - Colorado | ■ L08 - Border State: |
| ■ L02 - County: 035 - Douglas | ■ L09 - Border Inspection Responsibility: |
| ■ L03 - City/Town: 45955 - Lone Tree | ■ L10 - Border Lead State: |
| ■ L04 - District: 15 | ■ L11 - Location Description: MID-LEVEL ABOVE JCT I-25 |
| ■ L04A - Zone: Central | ■ L12 - MPO: 1 - Denver Regional Council of Governments |
| ■ L05 - Latitude: 39.554843 | ■ L13A - TPR: 02 - Greater Denver Area |
| ■ L06 - Longitude: -104.871317 | |
| ■ L07 - Border Structure: | |

Roadside Hardware (RH)

- | | |
|--|---|
| ■ RH01 - Bridge Railings: | ■ RH05A - Height of Rail: 34 |
| ■ RH01A - Bridge Rail Year of Spec: | ■ RH06A - Structure Rail 36A: 1 - Inspected feature meets currently acceptable standards. |
| ■ RH02 - Transitions: | ■ RH07A - Transition 36B: 1 - Inspected feature meets currently acceptable standards. |
| ■ RH02A - Rail Transition Year of Spec: | ■ RH08A - Approach Rail Rating: 1 - Inspected feature meets currently acceptable standards. |
| ■ RH03A - Structure Rail Type 125A: Rail Type R | ■ RH09A - End Treatment Rating: 1 - Inspected feature meets currently acceptable standards. |
| ■ RH04A - Structure Rail Modified 125B: 0 - Not modified | |

Substructure (SB): A01 - A02 - Abutment, stub

Structure: F-17-IT : 2025-08-06 - Routine+



- **SB01A - Substructure Configuration:** A - Abutment
- **SB01B - Substructure Designation:** 1
- **SB02 - Number of Substructure Units:** 2
- **SB03 - Substructure Material:** C01 - Reinforced concrete, cast-in-place
- **SB04 - Substructure Type:** A02 - Abutment, stub
- **SB05 - Substructure Protective System:** C01 - Coating, paint
- **SB06 - Foundation Type:** P01 - Pile, steel H-shape
- **SB07 - Foundation Protective System:** 0 - None

Substructure (SB): P01 - P02 - Pier, single column

- **SB01A - Substructure Configuration:** P - Pier or Bent
- **SB01B - Substructure Designation:** 1
- **SB02 - Number of Substructure Units:** 3
- **SB03 - Substructure Material:** C01 - Reinforced concrete, cast-in-place
- **SB04 - Substructure Type:** P02 - Pier, single column
- **SB05 - Substructure Protective System:** C01 - Coating, paint
- **SB06 - Foundation Type:** F01 - Footing, not on rock
- **SB07 - Foundation Protective System:** 0 - None

Span (SP): M01 - B03 - Box girder/beam, multiple spread

- **SP01A - Span Configuration:** M - Main Span
- **SP01B - Span Designation:** 1
- **SP02 - Number of Spans:** 4
- **SP03 - Number of Beam Lines:** 2
- **SP04 - Span Material:** S02 - Steel, welded shapes
- **SP05 - Span Continuity:** 2 - Continuous
- **SP06 - Span Type:** B03 - Box girder/beam, multiple spread
- **SP07 - Span Protective System:** C01 - Coating, paint
- **SP08 - Deck Interaction:** CU - Composite, unshored construction
- **SP09 - Deck Material and Type:** C01 - Reinforced concrete, cast-in-place
- **SP10 - Wearing Surface:** B01 - Bituminous (asphalt)
- **SP11 - Deck Protective System:** M02 - Membrane, sheet
- **SP12 - Deck Reinforcing Protective System:** C01 - Coating, epoxy coated
- **SP13 - Deck Stay-In-Place Forms:** M01 - Metal

Work (W)

- **W01 - Year Built:** 1985
- **W01A - Year Work Performed:** 0
- **W03A - Work Performed:**
- **W04A - Work Done By:**

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report
SI&A Notes and Schedule

Inspection Date: 08/06/2025
Structure Key: F-17-IT
Structure Class: Bridge

Notes

- **ID05A - Owner Transfer Note :**
- **IE 11 - Limited Inspection Note :**
- **IE 11A - Inspection Note :**
- **IE12 - Inspection Equipment :** IN - No inspection equipment used|A01 - Ladder
- **IE13A - Schedule Note :** 2019/02: Moved to A-40 schedule per [REDACTED] request.
- **IE 15A - Special Access Note :** Use drone to check bearings; A-40 not necessary unless a problem is found. Bucket truck can access Pier 3 bearings with lane closure.

Box girders are accessible from top of slopes near abutments. No ladder needed.
Combination for locks is [REDACTED].

- **L 14A - Structure Note :** Interior of girders inspected in 2011 - most recent inspection. SPECIAL INSPECTION COMPLETED ON 1-29-14 MAINLY of BEARINGS, INCLUDED JOINTS.
Bearings at Abutment 1 were replaced prior to 2015 inspection.
2019 used bucket truck to look at bearings.
2021 inspected on foot.
2023 used bucket truck for P3 bearings, rest on foot, inspected interiors of box girders.
2025 Inspected interiors of box girders, rest on foot.

Schedule

	Routine+
Previous Inspection	2023-08-16 Final
Current / Next Inspection	2025-08-06 Ready for QC Review
Target Date	8/15/2025
Interval	24
Schedule String	EVN AUG G19

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report
Load Ratings

Inspection Date: 08/06/2025
Structure Key: F-17-IT
Structure Class: Bridge

Load Rating Date: 02/28/2023

The load rating information presented on this report is for informational purposes and is separate from the inspection findings. Any changes to the load rating made after the inspection date are not a result of this inspection unless explicitly stated in the rating comments. See the latest Load Rating Summary Sheet for specific rating information.

Evaluation and Postings (EP)

EP01 Load Configuration	EP02 Load Rating	EP03 Posting Type	EP04 Posting Value
HL-93 Inventory (RF)	0.58		
HL-93 Operating (RF)	0.76		
Type 3	95.3		
Type 3S2	79.1		
Type 3-2	78.8		
Type SU4	95.3		
Type SU5	76.4		
Type SU6	76.4		
Type SU7	76.6		
NRL (40T)	76.5		
EV 2 (28.75T)	95.5		
EV 3 (43T)	76.4		
Permit Truck (96T)	124.3		
Modified Tandem (50T)	59.1		

- EP05A - Posting 70: 5 - Equal to or above legal loads
- EP06A - Load Rating Organization 66C: Company A
- EP07A - Load Rater Name 66N: Kathy Potter
- EP08A - Load Rater Initials: KP
- EP09A - Checker Name 66P: Matthew Miller
- EP10A - Checker Initials 66J: MM
- EP11A - Rating Package Review Date 66R: 2023-03-15
- EP12A - Rating Package Reviewer 66RN: AVT
- EP13A - Rating Calculations Complete 66CC: Yes
- EP14A - Rating Package Complete 66RPC: Yes
- EP15A - Entire Structure Rated 66ESR: Yes
- EP16A - Rating Input Files Archived 66IFA: Yes
- EP17A - Rating Output Files Archived 66OFA: Yes
- EP18A - Rating Assigned To 66AT:
- EP19A - Rating Software Used 66RS: 4 - BrR (NSG)
- EP20A - BrR Rating Runs 66RR: Yes
- EP21A - BrR Rating Analysis 66RA: Yes
- EP22A - BrR Rating System Based 66S: Yes
- EP23A - Rating Asphalt Thickness 66RT: 3
- EP24A - Girder Operating Rating, Tons 66A: 27.3
- EP25A - Overload Color Code 139: 0 - White
- EP26A - Overload Color Code Live Load 139OLL: 2 - Permit Vehicle
- EP27A - Operating Controlling Member 66OC: E - Exterior girder
- EP27B - Inventory Controlling Member 66IC: E - Exterior Girder

■ EP28A - Rating Comment: (2) continuous steel box girders with 8.25 in composite deck. Modeled box girder webs as steel plate girders, manually entered compression flange capacity in negative moment regions. Exterior girder controls in compression flange flexure stress. Splices not included in rating.
Ext. Box Average Rating = 0.5*(63.07 tons + 113.93 tons) = 88.5 tons
Ext. Box 1 NSG Avg. Rating = 0.5*(96.40 + 152.36 tons) = 124.38 tons
Girders rated using LRFR method. Deck rated using LFR method.
No Posting Required. Color Code: White.
Rated by: Company A
Girders rated using AASHTOWare BrR version 7.2.0.3001.

Load Ratings (LR)

- LR01 - Design Load 31: HS-20
- LR02 - Design Method 31D: LFD
- LR03 - Load Rating Date: 2023-03-01
- LR03A - Load Rating Check Date 130C: Feb 28 2023 12:00AM
- LR04 - Operating Rating Method: 8 - LRFR RF w HL 93
- LR04A - Inventory Rating Method 65: 8 - LRFR RF w HL 93
- LR09A - Within 1 Mile 64LT 10: Yes
- LR10A - BrR Structure Number 66STR: F-17-IT
- LR11A - Plans Available 500: Yes
- LR12A - Overload Critical Structure 139OC: No

Structure: F-17-IT : 2025-08-06 - Routine+

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Posting Status (PS)

- PS01A - Load Posting Structure Status: P - Permanent
- PS01B - Load Posting Status Code: O - Open - No Restriction
- PS03A - Posting - CO Legal Trucks: A - No restriction
- PS03B - Posting - SHV Trucks: A - No restriction
- PS03C - Posting - EV Trucks: A - No restriction
- PS03D - Temporary Structure 103: No



Structure Inspection and Inventory Report

Inspection Date: 08/06/2025

Structure Key: F-17-IT

Elements

Element/Defect	Unit	Total Qty	CS1	CS2	CS3	CS4
12 - Reinforced Concrete Deck	sq feet	26347	25943 98%	400 2%	4 0%	0
1080 - Delamination/Spall/Patched Area	each	9	0	0	9 100%	0
1120 - Efflorescence/Rust Staining	each	400	0	400 100%	0	0

Covered with asphalt.

Steel Stay-In-Place forms between the girders.

Timber forms remain on the bottom face of the deck inside both girders.

Deck haunch at Abutment 1 has a horizontal cracked delaminated of about 5 feet long x 1 foot wide. (5 CS3 1080)

Insignificant to medium width transverse cracks with efflorescence in overhangs about (16) per span per side, each crack is up to 3 feet long. (400 CS2 1120)

Left overhang is spalled near the Abutment 5 Joint. (4 CS3 1080)

510 - Wearing Surfaces	sq feet	24183	12091 50%	4837 20%	7255 30%	0
3210 - Delamination/Spall/Patched Area/Pothole (Wearing Surfaces)	each	2	0	0	2 100%	0
3220 - Crack (Wearing Surface)	each	12092	0	4837 40%	7255 60%	0

2 - 3 inches asphalt. Deck overlaid in 2013.

About 30% of wearing surface is in CS3.

Pothole about 2 square feet in center lane next to rear joint end dam. (2 CS3 3210)

Wide longitudinal and transverse cracks in asphalt in all spans, heavier in Spans 2, 4 and 5, some previously sealed, failed in spots. (4837 CS2, 7255 CS3 3220)

102 - Steel Closed Web/Box Girder	feet	1260	1200 95%	60 5%	0	0
1000 - Corrosion	each	58	0	58 100%	0	0
1020 - Connection	each	2	0	2 100%	0	0

Interior:

5 foot height to bottom of diagonal bracing.

Structure: F-17-IT : 2025-08-06 - Routine+

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Timber forms in both girders at the deck bottom.

Good fatigue details and mostly quality welds throughout.

Fiberglass plates have been attached to Girders 1A and 1B, above light rail tracks, for electrical shielding.

Loose bolt in Girder 1A near Pier 2 in the bottom flange (not seen 2023), same in Girder 2A near Pier 3. (2 CS2 1020)

Girder 2A Cross-Frame 4 has rust on the top corner and dents on the diagonal bracing at both sides. (1 CS2 1000)

Exterior:

There are (2) gouges/scrapes on the bottom flange of Girder A in Span 2; no visible distress on the interior.

A few areas of R1 corrosion, especially at splice plates in Spans 2 and 3. (50 CS2 1000)

Also R1 corrosion in Spans 2 and 3, at bolts. (7 CS2 1000)

515 - Steel Protective Coating	sq feet	1260	1202 95%	0	0	58 5%
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Failed at areas of corrosion.

109 - Prestressed Concrete Open Girder/Beam	feet	75	75 100%	0	0	0
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This is the carrier beam support, spanning from Pier 2 to Abutment 1, on mainline I-25 structures; (F-17-JU, and F-17-JV).

It supports Pier 3 of this structure.

Some insignificant width cracks in the I-25 median.

A few areas of light scaling in the I-25 median.

Blackened around Pier 3.

210 - Reinforced Concrete Pier Wall	feet	30	15 50%	15 50%	0	0
1130 - Cracking (RC and Other)	each	15	0	15 100%	0	0

A few minor spalls and scrapes on Pier 2.

Piers 3 and 4 have 0.016 inch wide vertical and horizontal cracks. (15 CS2 1130)

521 - Concrete Protective Coating	sq feet	30	30 100%	0	0	0
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On Pier walls.

Some blotted out graffiti on the Pier 2 wall.

Structure: F-17-IT : 2025-08-06 - Routine+



215 - Reinforced Concrete Abutment	feet	72	60 83%	10 14%	2 3%	0
1120 - Efflorescence/Rust Staining	each	12	0	10 83%	2 17%	0

0.016 inch - medium width vertical cracks with efflorescence at both abutment breastwalls. (8 CS2 1120)

Some waterstains due to joint leakage at Abutment 1.

Abutment 1 has cracking with efflorescence and some rust stains at back wall, left side near Girder 1A.

Abutment 5 has minor delamination with efflorescence around vertical cracks on the left side and at midway of breast wall. (2 CS2 1120)

Abutment 5 backwall has a 0.016 inch wide diagonal crack with efflorescence and shrinkage cracks with rust stains below the Left overhang.

521 - Concrete Protective Coating	sq feet	72	72 100%	0	0	0
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Few spots where coating is peeling off due to water damage.

234 - Reinforced Concrete Pier Cap	feet	86	78 91%	8 9%	0	0
1130 - Cracking (RC and Other)	each	8	0	8 100%	0	0

The Pier 4 Cap has a medium width diagonal shear crack on the Rear face under Girder A; (measured 0.02 inch during the 1991 inspection). (1 CS2 1130)

The left end of the Pier 4 Cap has shallow delamination cracks. (7 CS2 1130)

521 - Concrete Protective Coating	sq feet	86	86 100%	0	0	0
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On Pier Caps.

260 - Slope Prof/Berms	each	2	2 100%	0	0	0
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A dirt slope at Abutment 1.

A retaining wall for the light rail has been constructed on the Abutment 1 slope.

Slope pavement on the Abutment 5 slope.

Weeds are growing in cracks.

No visible problems.

Structure: F-17-IT : 2025-08-06 - Routine+

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300 - Strip Seal Expansion Joint	feet	76	24 32%	52 68%	0	0
2330 - Seal Damage	each	24	0	0	24 100%	0
2350 - Debris Impaction	each	28	0	28 100%	0	0

Above abutments.

Rear joint above Abutment 1 is 38 feet long, it is open 1 inch and filled with sand in the shoulders. (14 CS2 2350)

Forward joint above Abutment 2 is 38 feet long, it is open 1.25 inches and filled with sand in the shoulders. (14 CS2 2350)

Gland failed in mainline areas, worst in Lane 1. (24 CS3 2330)

314 - Pot Bearing	each	10	7 70%	2 20%	1 10%	0
1020 - Connection	each	3	0	2 67%	1 33%	0

Some masonry plate bolts are not tight, due to lack of clearance. (2 CS2 1120)

Teflon shavings present at most..

New pot bearings were installed at Abutment 1 prior to 2015 inspection.

Sole plate and masonry plate anchors are in contact at Bearing 5A, the bearing is in the maximum expansion position. (1 CS3 1120)

Bearing 5A is currently surrounded by debris.

321 - Reinforced Concrete Approach Slab	sq feet	1640	1640 100%	0	0	0
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Both are asphalt covered.

510 - Wearing Surfaces	sq feet	1520	1432 94%	85 6%	0	3 0%
3210 - Delamination/Spall/Patched Area/Pothole (Wearing Surfaces)	each	3	0	0	3 100%	0
3220 - Crack (Wearing Surface)	each	86	0	0	86 100%	0

Structure: F-17-IT : 2025-08-06 - Routine+

Page 13 of 26



D-cracking along the strip seal of rear joint above Abutment 1. (38 CS3 3220)

Some longitudinal cracking and a 2 square foot pothole along the forward strip seal joint in Lane 2, and a pothole at the sleeper slab. (3 CS4 3210) (48 CS3 3220)

323 - Approach Railing	each	4	4 100%	0	0	0
------------------------	------	---	-----------	---	---	---

Rear are newer.

Forward left approach rail has a 2.5 foot x 3 foot spall with exposed rebar.

Forward right approach rail has a spall; 6 feet x 1.5 feet with exposed, corroded rebar.

Rear right end rail is dented from impact, jersey barrier has been placed in front.

Forward right bridge railing is spalled with exposed rebar above Abutment 5.

326 - Wingwalls	each	4	4 100%	0	0	0
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U-type abutment wingwalls.

0.012 inch wide vertical cracking in all.

0.016 inch wide - moderate random cracking with efflorescence and rust stains in Abutment 1 Left, and Abutment 5 Left with active leakage.

521 - Concrete Protective Coating	sq feet	4	4 100%	0	0	0
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Coating on Wingwalls.

Rear left wingwall has peeling coating.

330 - Metal Bridge Railing	feet	75	75 100%	0	0	0
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A 5 foot high chain link fence placed on top of the Jersey barrier, above the light rail tracks.

No significant defects noted.

331 - Reinforced Concrete Bridge Railing	feet	1199	716 60%	480 40%	3 0%	0
--	------	------	------------	------------	---------	---



1080 - Delamination/Spall/Patched Area	each	3	0	0	3 100%	0
1130 - Cracking (RC and Other)	each	480	0	480 100%	0	0

Many insignificant - 1/16 inch wide vertical cracks spaced 1 to 4 feet apart. (480 CS2 1130)

Light scale along the bottom of the interior side.

Minor chips on faces.

A few shallow spalls with exposed rebar on the left bridge rail. (3 CS3 1080)

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report

Photos

Inspection Date: 08/06/2025

Structure Key: F-17-IT

Structure Class: Bridge

12 - Reinforced Concrete Deck



Deck haunch at Abutment 1 has a horizontal cracked delaminated.

Deck haunch at Abutment 1 has a horizontal cracked delaminated of about 5 feet long x 1 foot wide.

8/6/2025 12:00:00 AM

1080 - Delamination/Spall/Patched Area



2011 photo of spalling concrete on the Left overhang at the A5 Joint

2011 photo of spalling concrete on the Left overhang at the A5 Joint

8/6/2025 12:00:00 AM

510 - Wearing Surfaces



Pothole about 2 sq feet in center lane next to rear joint end dam.

Pothole about 2 sq feet in center lane next to rear joint end dam

8/6/2025 12:00:00 AM



Span 4 has up to wide longitudinal and transverse cracks on asphalt some previously been sealed, but failed in spots.

Span 4 has up to wide longitudinal and transverse cracks on asphalt some previously been sealed, but failed in spots.

8/6/2025 12:00:00 AM



Span 4 has Wide longitudinal and transverse cracks in asphalt previously been sealed, but failed in spots

Span 4 has Wide longitudinal and transverse cracks in asphalt previously been sealed, but failed in spots

8/6/2025 12:00:00 AM



Span 4 has Wide longitudinal and transverse cracks in asphalt previously been sealed, but failed in spots

Span4 has wide longitudinal and transverse cracks in asphalt previously been sealed, but failed in spots

8/6/2025 12:00:00 AM

102 - Steel Closed Web/Box Girder



Timber forms in Girder A at the deck bottom.

Timber forms in both girders at the deck bottom

8/6/2025 12:00:00 AM

215 - Reinforced Concrete Abutment



Abutment 1 has cracking with efflorescence and some rust stains at back wall, left side near Girder 1A .

Abutment 1 has cracking with efflorescence and some rust stains at back wall, left side near Girder 1A .

8/6/2025 12:00:00 AM



Abutment 1 up to medium width cracking

Abutment 1 up to medium width cracking

8/6/2025 12:00:00 AM



Abutment 5 backwall has a 0.016 inch wide diagonal crack with efflorescence and shrinkage cracks with rust stains below the Left overhang.

Abutment 5 backwall has a 0.016 inch wide diagonal crack with efflorescence and shrinkage cracks with rust stains below the Left overhang.

8/6/2025 12:00:00 AM



Abutment 5 backwall has a 0.016 inch wide diagonal crack with efflorescence and shrinkage cracks with rust stains below the Left overhang.

Abutment 5 backwall has a 0.016 inch wide diagonal crack with efflorescence and shrinkage cracks with rust stains below the Left overhang.

8/6/2025 12:00:00 AM



Abutment 5 has minor delamination around vertical cracks on the left side.

Abutment 5 has minor delamination around vertical cracks on the left side.

8/6/2025 12:00:00 AM



Abutment 5 has vertical crack with delamination and efflorescence at midway of breast wall.

Abutment 5 has vertical crack with delamination and efflorescence at midway of breast wall.

8/6/2025 12:00:00 AM



Some waterstains due to joint leakage at Abutment 1.

Some waterstains due to joint leakage at Abutment 1.

8/6/2025 12:00:00 AM



Some waterstains due to joint leakage at Abutment 1.

Some waterstains due to joint leakage at Abutment 1.

8/6/2025 12:00:00 AM

300 - Strip Seal Expansion Joint



Abutment 1 joint is 38 feet long, it is open 1 inch and filled with sand in the shoulders.

Abutment 1 joint is 38 feet long, it is open 1 inch and filled with sand in the shoulders.

8/6/2025 12:00:00 AM



Forward joint glan is failed in mainlines.

Forward joint glan is failed in mainlines.

8/6/2025 12:00:00 AM

314 - Pot Bearing



Sole plate and masonry plate anchors are in contact at Bearing 5A, the bearing is in the maximum expansion position, Bearing 5A is currently surrounded by debris,

Sole plate and masonry plate anchors are in contact at Bearing 5A, the bearing is in the maximum expansion position, Bearing 5A is currently surrounded by debris,

8/6/2025 12:00:00 AM



Sole plate and masonry plate anchors are in contact at Bearing 5A, the bearing is in the maximum expansion position, Bearing 5A is currently surrounded by debris,

Sole plate and masonry plate anchors are in contact at Bearing 5A, the bearing is in the maximum expansion position, Bearing 5A is currently surrounded by debris,

8/6/2025 12:00:00 AM

321 - Reinforced Concrete Approach Slab

510 - Wearing Surfaces



Abutment 5 has some longitudinal cracking and a 2 square foot pothole along the strip seal joint in Lane 2, and a pothole at the sleeper slab.

Abutment 5 has some longitudinal cracking and a 2 square foot pothole along the strip seal joint in Lane 2, and a pothole at the sleeper slab.

8/6/2025 12:00:00 AM

323 - Approach Railing



Forward Left Approach Rail has a spall with exposed rebar.

Forward Left Approach Rail has a 2.5 foot x 3 foot spall with exposed rebar.

8/6/2025 12:00:00 AM



Forward Right Approach Rail has a spall with exposed corroded rebar,

Forward Right Approach Rail has a spall about 6 feet x 1.5 feet with exposed corroded rebar.

8/6/2025 12:00:00 AM

326 - Wingwalls



Random cracking with efflorescence and rust stains at Left of Abutment 1.

Up to medium width random cracking with efflorescence and rust stains at Left of Abutment 1.

8/6/2025 12:00:00 AM

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report

Photos Inventory

Inspection Date: 08/06/2025

Structure Key: F-17-IT

Structure Class: Bridge

Elevation



Elevation

Looking South

8/6/2025 12:00:00 AM

General/Superstructure



Superstructure

Looking West from Abutment 5

8/6/2025 12:00:00 AM

Roadway



Roadway

Roadway Looking West

8/6/2025 12:00:00 AM

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report
Maintenance Items

Inspection Date: 08/06/2025
Structure Key: F-17-IT
Structure Class: Bridge

High

152.00 - Flexible Pavement Patching/Minor repair

Status	Date Entered	Target Date	Deterioration Category
Open	03/04/2026	08/06/2027	

Problem Description

Repair potholes and impending potholes throughout deck.

High

364.00 - Repair/replace expansion joints and seals

Status	Date Entered	Target Date	Deterioration Category
Open	08/06/2025	08/06/2027	

Problem Description

Repair failed gland at forward joint in mainlane above Abutment 5.

High

353.99 - Miscellaneous bridge deck work

Status	Date Entered	Target Date	Deterioration Category
Open	08/30/2011	08/06/2027	

Problem Description

Seal wide longitudinal and transverse cracks in asphalt throughout deck pavement.

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report
Vertical Clearance
C470 EB RAMP TO I 25 NB Over I 25, SH 470
ML, RTD

Inspection Date: 08/06/2025
Structure Key: F-17-IT
Structure Class: Bridge

H01 Carried - C470 EB RAMP TO I 25 NB. 2 Lanes

Direction	Left EoA	Stripe1	Stripe2	Stripe3	Stripe4	Stripe5	Stripe6	Stripe7	Stripe8	Stripe9	Right EoA
North	0.0000	19.4100	18.5200	17.7600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

	Date Recorded	Max Clearance	Min Clearance	Method	Note
North	07/01/2016	18.5200	17.7600	Clearance Master	NA

H02 Below - C470 ML WB. 2 Lanes

Direction	Left EoA	Stripe1	Stripe2	Stripe3	Stripe4	Stripe5	Stripe6	Stripe7	Stripe8	Stripe9	Right EoA
West	0.0000	99.9000	99.9000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
X		0.0000	0.0000								

	Date Recorded	Max Clearance	Min Clearance	Method	Note
West	01/01/0001	99.9000	99.9000	Clearance Master	Ramp clearances to ramp does not control for this route. See clearance
X	01/01/0001				

H03 Below - C470 ML EB. 2 Lanes

Direction	Left EoA	Stripe1	Stripe2	Stripe3	Stripe4	Stripe5	Stripe6	Stripe7	Stripe8	Stripe9	Right EoA
East	0.0000	99.9000	99.9000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
X		0.0000	0.0000								

	Date Recorded	Max Clearance	Min Clearance	Method	Note
East	01/01/0001	99.9000	99.9000	Clearance Master	Ramp clearances to ramp does not control for this route. See clearance
X	01/01/0001				

H04 Below - I 25 ML NB. 4 Lanes

Direction	Left EoA	Stripe1	Stripe2	Stripe3	Stripe4	Stripe5	Stripe6	Stripe7	Stripe8	Stripe9	Right EoA
North	18.5072	18.6942	19.2881	19.8031	20.1936	20.6693	21.3386	0.0000	0.0000	0.0000	22.0735
X											

	Date Recorded	Max Clearance	Min Clearance	Method	Note
North	08/25/2024	20.6693	18.5072	LIDAR	FY 25 Submittal 12-02
X	01/01/0001				



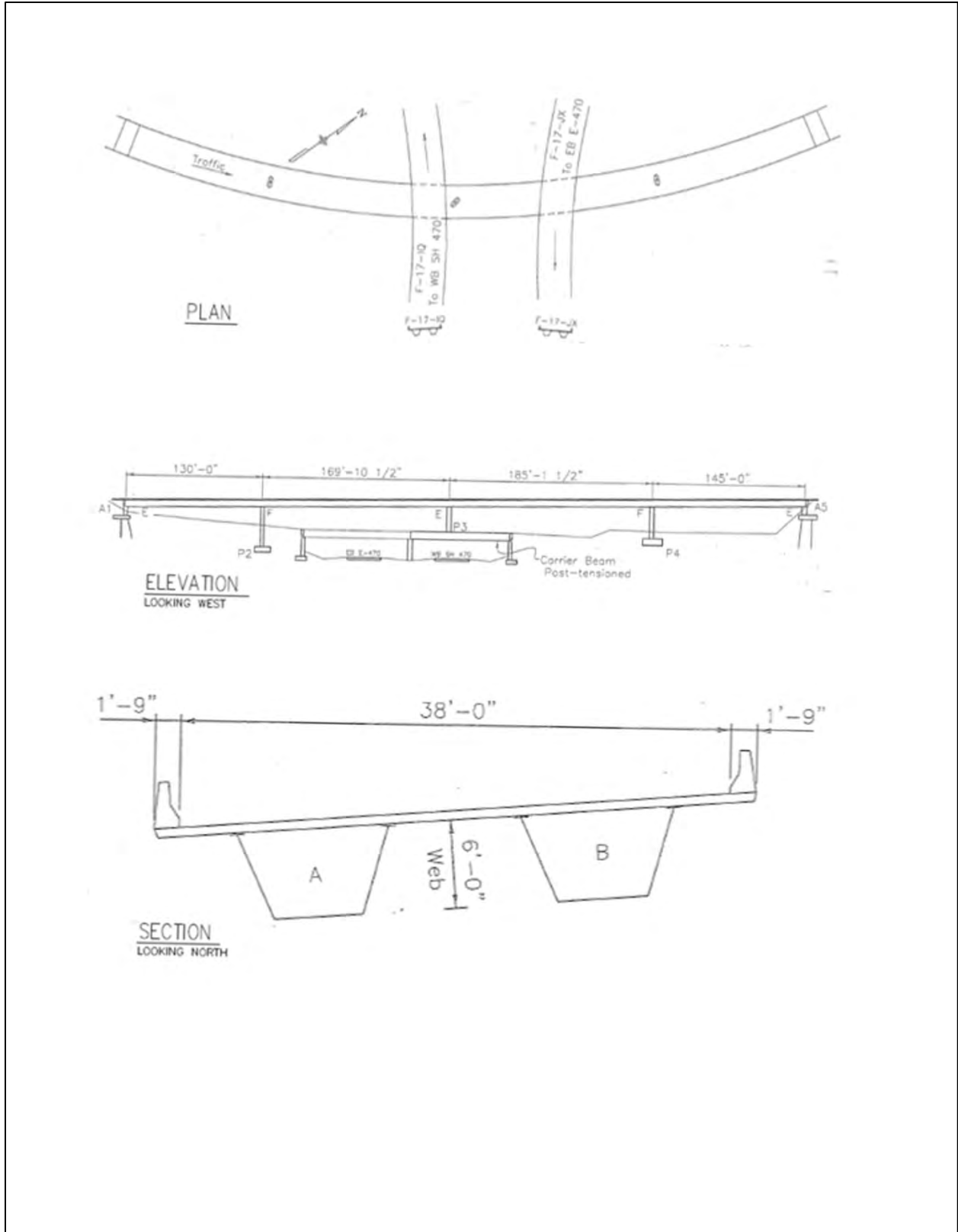
H05 Below - I 25 ML SB. 4 Lanes

Direction	Left EoA	Stripe1	Stripe2	Stripe3	Stripe4	Stripe5	Stripe6	Stripe7	Stripe8	Stripe9	Right EoA
South	18.0479	17.9954	17.8281	17.7493	17.6312	17.4836	0.0000	0.0000	0.0000	0.0000	17.3097

X

	Date Recorded	Max Clearance	Min Clearance	Method	Note
South	08/25/2024	17.8281	17.3097	Clearance Master	FY 25 Submittal 12-02
X	01/01/0001				

FOR EXAMPLE ONLY



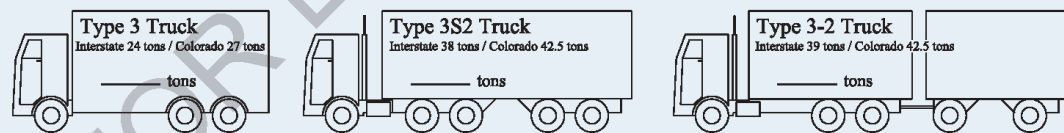


COLORADO DEPARTMENT OF TRANSPORTATION LOAD & RESISTANCE FACTOR RATING SUMMARY		Structure #	F-17-IT
Rated using: Asphalt thickness: <u>3</u> in. <input type="checkbox"/> Colorado legal loads <input checked="" type="checkbox"/> Interstate legal loads		State Highway #	025A
<input type="checkbox"/> Multi-lane for Legal & Permit Vehicles <input checked="" type="checkbox"/> Single lane for Legal & Permit Vehicles		Batch I.D.	5105
		Structure Type	SBGC
		Parallel Structure #	None

Structural Member	Ext. Web G-A	Int. Web G-B	Box 1 Avg.	NSG Avg.	
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Rating Factor					
Inventory	0.58	0.74			
Operating	0.76	0.96			

Tons					
Type 3 truck	97.3	95.3			
Type 3S2 truck	79.1	99.7			
Type 3-2 truck	78.8	99.3			
Type SU4 truck (27T)	97.2	95.3			
Type SU5 truck (31T)	76.4	95.6			
Type SU6 truck (35T)	76.4	95.7			
Type SU7 truck (39T)	76.6	95.9			
NRL (40T)	76.5	95.7			
Lane-Type Legal					
EV2 (28.75T)	97.4	95.5			
EV3 (43T)	76.4	95.6			
Permit Truck (96T)	63.0	113.9	88.5	124.3	
Modified Tandem (50T)	59.1	104.4			



Comments: (2) continuous steel box girders with 8.25 in composite deck. Modeled box girder webs as steel plate girders, manually entered compression flange capacity in negative moment regions. Exterior girder controls in compression flange flexure stress. Splices not included in rating. Ext. Box Average Rating = $0.5 \times (63.07 \text{ tons} + 113.93 \text{ tons}) = 88.5 \text{ tons}$ Ext. Box 1 NSG Avg. Rating = $0.5 \times (96.40 + 152.36 \text{ tons}) = 124.38 \text{ tons}$ No Posting Required. Color Code: White. Rated by: Company A Girders rated using AASHTOWare BrR version 7.2.0.3001.			PE Seal Colorado PE stamp signed by David Anderson on 3/1/2023
Rated by: (Print name and sign) <i>Kathy Potter</i>	Date: 2/22/23	Checked by: (Print name and sign) <i>Matthew Miller</i>	
		Date: 2/28/23	

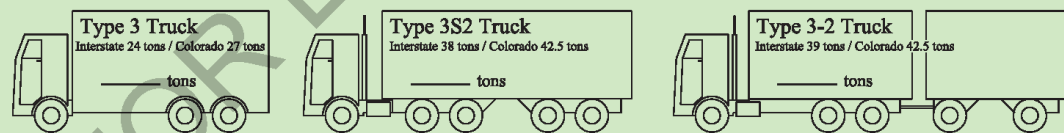


COLORADO DEPARTMENT OF TRANSPORTATION LOAD FACTOR RATING SUMMARY		Structure #	F-17-IT
Rated using: Asphalt thickness: <u>3</u> in.		State Highway #	025A
<input type="checkbox"/> Colorado legal loads	<input type="checkbox"/> Multi-lane for Legal & Permit Vehicles	Batch I.D.	5105
<input checked="" type="checkbox"/> Interstate legal loads	<input checked="" type="checkbox"/> Single lane for Legal & Permit Vehicles	Structure Type	SBGC
		Parallel Structure #	None

Structural Member	R/C Deck				
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Tons					
Inventory	39.8				
Operating	66.3				

Type 3 truck					
Type 3S2 truck					
Type 3-2 truck					
Type SU4 truck (27T)					
Type SU5 truck (31T)					
Type SU6 truck (35T)					
Type SU7 truck (39T)					
NRL (40T)					
EV2 (28.75T)					
EV3 (43T)					
Permit Truck (96T)					
Modified Tandem (50T)					



<p>Comments: (2) continuous steel box girders with 8.25 in composite deck. Modeled box girder webs as steel plate girders, manually entered compression flange capacity in negative moment regions.</p> <p>Girders rated using LRFR method. Deck rated using LFR method.</p> <p>No Posting Required. Color Code: White. Rated by: Company A Girders rated using AASHTOWare BrR version 7.2.0.3001.</p>		<p>PE Seal</p> <p>Colorado PE stamp signed by David Anderson on 1/18/2023</p>	
Rated by: (Print name and sign) <i>Kathy Potter</i>	Date: 1/9/23	Checked by: (Print name and sign) <i>Matthew Miller</i>	Date: 1/18/23



D-03-V-160 – OFF-SYSTEM STRUCTURE

<p>INSPECTION ORGANIZATION Company E</p>	
	<p>D-03-V-160 Bridge, CLICK - Concrete on I-Beam, Continuous and Composite</p>
<h2 style="margin: 0;">Special Unscheduled Final Report</h2> <hr style="border: 1px solid black;"/>	
<p>INSPECTION DATE 06/27/2025</p>	
<p>Team Leader (IE04): Keith Boone</p> <hr style="border: 1px solid black;"/>	
<p>Lead Inspector (IE04A): Alex Smith</p> <hr style="border: 1px solid black;"/>	
<p>Team Member(s) (IE04B): Randy Clark, Jim White</p>	
<p>Signed on: 08/12/2025 Signed by: Keith Boone</p>	
<p>Structure: D-03-V-160 ; 2025-06-27 - Special Unscheduled</p> <p>Page 1 of 22</p>	



Structure Inspection and Inventory Report

Structure Information Summary

Inspection Date: 06/27/2025
Structure Key: D-03-V-160
Structure Class: Bridge

Identification

WB 6TH AVE over MARIPOSA ST | LIPAN ST | UP RR | RTD
Structure Key D-03-V-160
Structure Name
Structure Type CICK - Concrete on I-Beam, Continuous and Composite
Year Built 1958



Ownership and Location

Inspection Program Off System
Owner L03 - City or municipal highway agency
Responsible Party City & County of Denver
County 031 - Denver
City 20000 - Denver
Inspection Area Central
Location Description 0.35 MI EAST OF I25
Highway & Milepoint 0 / 0 mi

Geometry

Total Length 1344.7
Width, Out to Out 36.3
Deck Area 48813
Total # of Spans 19
Asphalt Thickness 2

Highway Traffic

Nat. Highway System Yes
Lanes Carried 3
Highway Type Carried 5 - City
ADT Carried 31795
Lanes Under 4
Highway Type Under 5 - City
ADT Under 5379

Risk Factors

NSTM Y - NSTM inspection required
Scour Critical
Approach Alignment G - Good
Inspection Frequency 24 Mo.
Underwater Required No
Pin Required No
Special Required False
Membrane M01 - Membrane, built up
Expansion Device A - Pre molded rubber device
Open Essential Repair No

Inspection History

Date	Type	Rating	Deck	Super	Sub	Culv
2026-11-15	Routine-					
2025-06-27	Special U	Fair	6	7	5	N
2025-01-23	Special U	Fair	6	7	5	N
2024-11-27	Routine+	Fair	6	7	5	N
2022-11-15	Routine+	Fair	6	7	5	N
2020-11-25	Routine+	Fair	6	7	5	N
2018-11-20	Routine+	Fair	6	7	5	N
2017-01-18	Routine+	Fair	6	7	5	N
2015-01-06	Routine+	Fair	6	7	5	N
2013-01-21	Routine	Fair	6	7	5	N

Load Rating

Posting Status P - Permanent O - Open - No Restriction
Posting 5 - Equal to or above legal loads
Load Rating Date 08/19/2024
Design Load / Method H-20 / ASD
Oper. Rating Method 1 - LF
Oper. Rating Value 32.5
Overload Color Code N Not applicable

Vertical Clearance

VCLR Date 11/27/2024
Min / Max Clr. Above 99.9 / 99.9
Min / Clr. Under 16.66 / 21.66

Safety Features

Rail Type Rail Type R
Bridge Rail 1 - Inspected feature meets currently acceptable stan
Rail Transition 1 - Inspected feature meets currently acceptable stan
Approach Rail 1 - Inspected feature meets currently acceptable stan
End Treatment 1 - Inspected feature meets currently acceptable stan



Structure Inspection and Inventory Report
SI&A Bridge

Inspection Date: 06/27/2025
Structure Key: D-03-V-160

Appraisal (AP)

- AP01 - Approach Alignment Rating: G - Good
- AP02 - Overtopping Likelihood:
- AP03 - Scour Vulnerability:
- AP04 - Scour Plan of Action:
- AP04A - Scour Documentation: Yes
- AP04B - Monitoring Comment:
- AP04C - Monitoring Trigger:
- AP04D - Closure Trigger:
- AP04E - Mobilize Trigger:
- AP04F - Scour Watch 113M: No
- AP05 - Seismic Vulnerability: N - Bridge does not require seismic evaluation due to low anticipated ground motion or agency prioritization
- AP12A - SNBI Deskside Review Complete: Yes
- AP12B - SNBI Field Verification Complete: No

Condition (C)

- C01 - Deck Rating: 6 - Satisfactory
- C02 - Superstructure Rating: 7 - Good
- C03 - Substructure Rating: 5 - Fair
- C04 - Culvert Rating: N - Not applicable
- C05 - Railing Condition Rating: 6 - Satisfactory
- C06 - Railing Transition Condition Rating: 7 - Good
- C07 - Bearing Condition Rating: 8 - Very good
- C08 - Joint Condition Rating: 6 - Satisfactory
- C09 - Channel Condition Rating: N - Not applicable
- C10 - Channel Protection Rating: N - Not applicable
- C11 - Scour Condition Rating: N - Structure does not cross over water
- C12 - Overall Condition: Fair
- C13 - Lowest Condition Rating: 5
- C14 - NSTM Inspection Rating: 7 - Good
- C15 - Underwater Condition Rating:

Classification (CL)

- CL01 - Owner: L03 - City or municipal highway agency
- CL01A - Responsible Party: City & County of Denver
- CL02 - Maintenance Responsibility: L03 - City or municipal highway agency
- CL03 - Federal or Tribal Land Access: N - Not applicable
- CL04 - Historical Significance: N - Bridge is not eligible for the National Register, and is not in a historic district eligible for the National Register
- CL05 - Toll: N - Bridge does not carry a toll road and is not a toll bridge
- CL06 - Emergency Evacuation Designation:
- CL07A - Structure Status: 3 - Active
- CL08A - Structure Class: Bridge
- CL09A - Structure Type: CICK - Concrete on I-Beam, Continuous and Composite
- CL10A - Construction Type 120B:
- CL11A - Features Intersected: MARIPOSA ST | LIPAN ST | UP RR | RTD
- CL11B - Feature Carried: WB 6TH AVE
- CL12A - Service Type On: 1 - Highway
- CL13A - Service Type Under: 4 - Highway and railroad
- CL14A - BTE Eligibility: Not applicable
- CL15A - Federal Submission: MAJOR VEHICULAR

Feature (F): H01 - WB 6TH AVE

- F01A - Feature Type: H - Highway
- F01B - Feature Designation: 1
- RT01A - Route Designation: 1
- RT02 - Route Number: 0
- RT03 - Route Direction: WB - Westbound
- H01 - Functional Classification: 3 - Principal Arterial - Other
- H02 - Urban Code: 23527 - Denver--Aurora
- H03 - NHS: Y - On NHS
- H04 - National Highway Freight Network: N - Not on the NHFN
- H05 - STRAHNET Designation: N - Not a STRAHNET route
- H06 - LRS Route: 031-0-2013-4204
- H07 - LRS Mile Point: 0.31
- H08 - Lanes on Highway: 3
- H09 - AADT: 31795
- H10 - Average Annual Daily Truck Traffic: 1590
- H10A - AADTT Percent: 5
- H11 - Year of AADT: 2021
- F02 - Feature Location: C - Carried on structure
- F03 - Feature Name: WB 6TH AVE
- RT03C - Primary Routelog: 1
- RT04 - Route Type: 5 - City
- RT05 - Level of Service: 1 - Mainline
- H12 - Maximum Vertical Clearance: 99.9
- H13 - Minimum Vertical Clearance: 99.9
- H14 - Minimum Horizontal Clearance Left:
- H15 - Minimum Horizontal Clearance Right:
- H16 - Maximum Usable Surface Width: 33.7
- H17 - Detour Length: 1
- H18 - Crossing Structure Number:
- H20A - Legacy Milepoint: 0
- H21A - Base Highway Network 12: 0 - Not on the Base Network
- H22A - Future AADT 114: 61020
- H22B - Year of Future AADT 115: 2045

Feature (F): H02 - Lipan St

- F01A - Feature Type: H - Highway
- F01B - Feature Designation: 2
- F02 - Feature Location: B - Below structure
- F03 - Feature Name: Lipan St



- RT01A - Route Designation: 1
- RT02 - Route Number: 0
- RT03 - Route Direction: NS - Northbound and Southbound
- H01 - Functional Classification: 7 - Local
- H02 - Urban Code: 23527 - Denver--Aurora
- H03 - NHS: N - Not on NHS
- H04 - National Highway Freight Network: N - Not on the NHFN
- H05 - STRAHNET Designation: N - Not a STRAHNET route
- H06 - LRS Route: 031-0-2013-1955
- H07 - LRS Mile Point: 0.207
- H08 - Lanes on Highway: 2
- H09 - AADT: 4907
- H10 - Average Annual Daily Truck Traffic: 98
- H10A - AADTT Percent: 2
- H11 - Year of AADT: 2009
- RT03C - Primary Routelog:
- RT04 - Route Type: 5 - City
- RT05 - Level of Service: 1 - Mainline
- H12 - Maximum Vertical Clearance: 16.75
- H13 - Minimum Vertical Clearance: 16.66
- H14 - Minimum Horizontal Clearance Left: 0
- H15 - Minimum Horizontal Clearance Right: 5
- H16 - Maximum Usable Surface Width: 28
- H17 - Detour Length: 1
- H18 - Crossing Structure Number:
- H20A - Legacy Milepoint: 0
- H21A - Base Highway Network 12: 0 - Not on the Base Network
- H22A - Future AADT 114: 5658
- H22B - Year of Future AADT 115: 2045

Feature (F): H03 - Mariposa St

- F01A - Feature Type: H - Highway
- F01B - Feature Designation: 3
- RT01A - Route Designation: 1
- RT02 - Route Number: 0
- RT03 - Route Direction: NS - Northbound and Southbound
- H01 - Functional Classification: 7 - Local
- H02 - Urban Code: 23527 - Denver--Aurora
- H03 - NHS: N - Not on NHS
- H04 - National Highway Freight Network: N - Not on the NHFN
- H05 - STRAHNET Designation: N - Not a STRAHNET route
- H06 - LRS Route: 031-0-2013-2051
- H07 - LRS Mile Point: 0
- H08 - Lanes on Highway: 2
- H09 - AADT: 472
- H10 - Average Annual Daily Truck Traffic: 0
- H10A - AADTT Percent: 0
- H11 - Year of AADT: 2025
- F02 - Feature Location: B - Below structure
- F03 - Feature Name: Mariposa St
- RT03C - Primary Routelog:
- RT04 - Route Type: 5 - City
- RT05 - Level of Service: 1 - Mainline
- H12 - Maximum Vertical Clearance: 21.66
- H13 - Minimum Vertical Clearance: 21.58
- H14 - Minimum Horizontal Clearance Left: 0
- H15 - Minimum Horizontal Clearance Right: 14.5
- H16 - Maximum Usable Surface Width: 39.5
- H17 - Detour Length: 1
- H18 - Crossing Structure Number:
- H20A - Legacy Milepoint: 0
- H21A - Base Highway Network 12: 0 - Not on the Base Network
- H22A - Future AADT 114: 544
- H22B - Year of Future AADT 115: 2045

Feature (F): R01 - UP RR in Span 1

- F01A - Feature Type: R - Railroad
- F01B - Feature Designation: 1
- RR01 - Railroad Service Type: F - Freight
- RR02 - Railroad Minimum Vertical Clearance: 21.1
- F02 - Feature Location: B - Below structure
- F03 - Feature Name: UP RR in Span 1
- RR03 - Railroad Minimum Horizontal Offset: 16.4

Feature (F): R02 - UP RR in Span 2

- F01A - Feature Type: R - Railroad
- F01B - Feature Designation: 2
- RR01 - Railroad Service Type: F - Freight
- RR02 - Railroad Minimum Vertical Clearance: 22.9
- F02 - Feature Location: B - Below structure
- F03 - Feature Name: UP RR in Span 2
- RR03 - Railroad Minimum Horizontal Offset: 14.1

Feature (F): R03 - RTD LRT in Span 7

- F01A - Feature Type: R - Railroad
- F01B - Feature Designation: 3
- RR01 - Railroad Service Type: PE - Passenger, electrified
- RR02 - Railroad Minimum Vertical Clearance: 24.5
- F02 - Feature Location: B - Below structure
- F03 - Feature Name: RTD LRT in Span 7
- RR03 - Railroad Minimum Horizontal Offset: 13.5

Feature (F): R04 - UP RR in Span 7

- F01A - Feature Type: R - Railroad
- F01B - Feature Designation: 4
- RR01 - Railroad Service Type: F - Freight
- RR02 - Railroad Minimum Vertical Clearance: 24.5
- F02 - Feature Location: B - Below structure
- F03 - Feature Name: UP RR in Span 7
- RR03 - Railroad Minimum Horizontal Offset: 31.7



Feature (F): B01 - Parking Lot/Alley in Spans 11-15

- **F01A - Feature Type:** B - Urban feature
- **F01B - Feature Designation:** 1
- **F02 - Feature Location:** B - Below structure
- **F03 - Feature Name:** Parking Lot/Alley in Spans 11-15

Geometry (G)

- **G01 - NBIS Length:** 1338.3
- **G02 - Total Length:** 1344.7
- **G03 - Maximum Span:** 99
- **G04 - Minimum Span:** 57.1
- **G05 - Out To Out:** 36.3
- **G06 - Width Curb to Curb:** 33.7
- **G07 - Left Curb Or Sidewalk:** 0
- **G08 - Right Curb Or Sidewalk:** 0
- **G09 - Approach Roadway Width:** 33
- **G10 - Median:** 0 - No median
- **G11 - Skew:** 0
- **G12 - Curved Bridge:** N - Not curved
- **G13 - Maximum Height:** 28
- **G14 - Sidehill Bridge:** N - Not a sidehill bridge
- **G15 - Irregular Deck Area:**
- **G16 - Federal Deck Area:** 48813
- **G17A - Asphalt / Fill Thickness:** 2
- **G18A - Expansion Device Type 124:** A - Pre molded rubber device

Identification (ID)

- **ID01 - Structure Number:** D-03-V-160
- **ID01A - Structure Key:** D-03-V-160
- **ID02 - Structure Name:**
- **ID03 - Replaces (Old):**
- **ID06A - Parallel Structure Key 8P:** D-03-V-161
- **ID07A - Parallel Structure 101:** Left structure (traffic in opposite direction)

Inspection Event (IE)

- **IE02 - Inspection Field Start:** 2025-06-12
- **IE03 - Field End Date:** 2025-06-27
- **IE03A - Inspection Date:** 2025-06-27
- **IE05A - Current Inspection Interval:**
- **IE06A - Current Target Date:**
- **IE06B - Report Due Date:** 2025-09-28
- **IE07 - Risk Based Inspection Interval:** 1 - Method 1
- **IE08 - QC Date:** 2025-08-12
- **IE09 - QA Date:**
- **IE10A - Inspection Finalized:** 2025-09-29
- **IE14A - Special Equipment:** 8 - See Special Access Notes
- **IE16A - Weather:** 70 degrees F, clear
- **IE17A - Bat Present:** No

Inspection Requirements (IR)

- **IR01 - NSTM Required:** Y - NSTM inspection required
- **IR02 - Fatigue Details:** Y - E/E(prime) details are present
- **IR03 - UW Required:** No
- **IR03A - UW Category:**
- **IR04 - Complex Feature:** No
- **IR05A - Pin Required:** No
- **IR06A - Special Required:** No
- **IR07A - Inspection Program:** Off System
- **IR08A - LIDAR Required:** No

Location (L)

- **L01 - State:** 08 - Colorado
- **L02 - County:** 031 - Denver
- **L03 - City/Town:** 20000 - Denver
- **L04 - District:** 15
- **L04A - Zone:** Central
- **L05 - Latitude:** 39.725741
- **L06 - Longitude:** -105.005620
- **L07 - Border Structure:**
- **L08 - Border State:**
- **L09 - Border Inspection Responsibility:**
- **L10 - Border Lead State:**
- **L11 - Location Description:** 0.35 MI EAST OF I25
- **L12 - MPO:** 1 - Denver Regional Council of Governments
- **L13A - TPR:** 02 - Greater Denver Area

Roadside Hardware (RH)

- **RH01 - Bridge Railings:**
- **RH01A - Bridge Rail Year of Spec:**
- **RH02 - Transitions:**
- **RH02A - Rail Transition Year of Spec:**
- **RH03A - Structure Rail Type 125A:** Rail Type R
- **RH04A - Structure Rail Modified 125B:** 0 - Not modified
- **RH05A - Height of Rail:** 36
- **RH06A - Structure Rail 36A:** 1 - Inspected feature meets currently acceptable standards.
- **RH07A - Transition 36B:** 1 - Inspected feature meets currently acceptable standards.
- **RH08A - Approach Rail Rating:** 1 - Inspected feature meets currently acceptable standards.
- **RH09A - End Treatment Rating:** 1 - Inspected feature meets currently acceptable standards.

Substructure (SB): A01 - A02 - Abutment, stub

- **SB01A - Substructure Configuration:** A - Abutment
- **SB01B - Substructure Designation:** 1
- **SB02 - Number of Substructure Units:** 1
- **SB04 - Substructure Type:** A02 - Abutment, stub
- **SB05 - Substructure Protective System:** 0 - None
- **SB06 - Foundation Type:** P02 - Pile, steel pipe

Structure: D-03-V-160 : 2025-06-27 - Special Unscheduled



- **SB03 - Substructure Material:** C01 - Reinforced concrete, cast-in-place
- **SB07 - Foundation Protective System:** 0 - None

Substructure (SB): A02 - A01 - Abutment, cantilever/wall

- **SB01A - Substructure Configuration:** A - Abutment
- **SB04 - Substructure Type:** A01 - Abutment, cantilever/wall
- **SB01B - Substructure Designation:** 2
- **SB05 - Substructure Protective System:** 0 - None
- **SB02 - Number of Substructure Units:** 1
- **SB06 - Foundation Type:** F01 - Footing, not on rock
- **SB03 - Substructure Material:** C01 - Reinforced concrete, cast-in-place
- **SB07 - Foundation Protective System:** 0 - None

Substructure (SB): P01 - P02 - Pier, single column

- **SB01A - Substructure Configuration:** P - Pier or Bent
- **SB04 - Substructure Type:** P02 - Pier, single column
- **SB01B - Substructure Designation:** 1
- **SB05 - Substructure Protective System:** 0 - None
- **SB02 - Number of Substructure Units:** 18
- **SB06 - Foundation Type:** P02 - Pile, steel pipe
- **SB03 - Substructure Material:** C01 - Reinforced concrete, cast-in-place
- **SB07 - Foundation Protective System:** 0 - None

Span (SP): M01 - G02 - Girder/beam, I-shaped spread

- **SP01A - Span Configuration:** M - Main Span
- **SP07 - Span Protective System:** C01 - Coating, paint
- **SP01B - Span Designation:** 1
- **SP08 - Deck Interaction:** CU - Composite, unshored construction
- **SP02 - Number of Spans:** 19
- **SP09 - Deck Material and Type:** C01 - Reinforced concrete, cast-in-place
- **SP03 - Number of Beam Lines:** 6
- **SP10 - Wearing Surface:** B01 - Bituminous (asphalt)
- **SP04 - Span Material:** S01 - Steel, rolled shapes
- **SP11 - Deck Protective System:** M01 - Membrane, built up
- **SP05 - Span Continuity:** 2 - Continuous
- **SP12 - Deck Reinforcing Protective System:** 0 - None
- **SP06 - Span Type:** G02 - Girder/beam, I-shaped spread
- **SP13 - Deck Stay-In-Place Forms:** 0 - None

Work (W)

- **W01 - Year Built:** 1958
- **W03A - Work Performed:**
- **W01A - Year Work Performed:** 2008
- **W04A - Work Done By:**

FOR EXAMPLE



Structure Inspection and Inventory Report
SI&A Notes and Schedule

Inspection Date: 06/27/2025
Structure Key: D-03-V-160
Structure Class: Bridge

Notes

■ **ID05A - Owner Transfer Note :**

■ **IE11 - Limited Inspection Note :** 2025/06/11: Special inspection scope only included inspecting underside of structure in Spans 7, 8, and 9 with an RTD right-of-way access permit. 2025/06/27: Special inspection scope only included inspecting underside of structure in Spans 1, 2, and 3 with permission from UP RR to access right-of-way.

■ **IE11A - Inspection Note :** 2025/06/11: Special inspection to access and inspect underside of structure in Spans 7, 8, and 9 with an RTD right-of-way access permit. 2025/06/27: Special inspection to access and inspect underside of structure in Spans 1, 2, and 4 with permission from UP RR to access right-of-way.

■ **IE12 - Inspection Equipment :** A02 - Bucket lift vehicle|IN - No inspection equipment used

■ **IE13A - Schedule Note :**

■ **IE15A - Special Access Note :** Traffic control required to inspect topside. Topside lane closures must go through CDOT for a permit (contact City and County of Denver as well to let them know). Fenced area with locked gate in front of Abutment 1, use standard City and County of Denver key for the lock. Coordination with UP RR railroad required to inspect inside fenced area in Spans 1, 2, and 3 above UP RR tracks; Contact [redacted] for UP RR yard escort, ROW permit not required. Spans 3 through 6 is the Burnham rail yard which is owned by CDOT. There is a 24/7 security team that patrols the site. You can access the Burnham rail yard by getting permission from CDOT and then contacting the security company [redacted]. Spans 7, 8, and 9 have RTD tracks and a fenced off RTD yard, permit required and typically nighttime access only. Fenced area in Spans 14 and 15 can be accessed with a bucket truck, no ground level access inside fenced area. Parking lot with gate in Span 17, the parking lots are owned by a company named [redacted]. Fenced area with a locked gate area in east half of Span 18 and all of Span 19 owned by City and County of Denver, combination is [redacted] for lock on gate. Locked gate in front of Abutment 20 owned by City and County of Denver, use standard City and County of Denver key for the lock.

■ **L14A - Structure Note :** Inventory route is west to east.
Superstructure is named Girder A through F from north to south.
Substructure is numbered 1 through 20 from west to east.

Vertical clearance signs reading 15 FT 1 IN on both sides of 6th Avenue for Lipan Street. Posted vertical clearance values are lower than actual vertical clearance.

PIN AND HANGER CONNECTIONS ARE NOW CONTINUOUS (NOTED AT 1998 INSPECTION).

Substructure rehab work was completed in April 2009.

New drain system installed at Pier 9, Pier 10, Pier 12, Pier 14, Pier 16 and Pier 18.

2013, 2016, and 2022: Bucket truck used for inspection of pier cap, bearings, and girder elements.
2018/11/20: 21 foot ladder used for the fracture critical inspection of Pier Caps 11 through 19.
2019/03/19: UP RR access was obtained, a 32 foot ladder was used for the fracture critical inspection of Pier Caps 2 through 10.
2021/01/28: 35 foot towable boom was used for the fracture critical inspection of Pier Caps 2 through 10.
2024/11/28: Bucket truck used for inspection of pier caps, bearings, and girders, except in Spans 1, 2, 3, 7, and 8. Abutment 1 lock was seized and could not be opened during 2024 inspection. Parking lot with gate in Span 17, not locked during 2024 inspection.
2025/06/11: RTD permit obtained and bucket truck used for the NSTM inspection of Spans 7, 8, and 9
2025/06/27: UP RR access obtained and bucket truck used for the NSTM inspection of Span 1 through 3.

Schedule

	Routine+
Previous Inspection	2024-11-27 Final
Current / Next Inspection	2026-11-15 Open
Target Date	11/15/2026
Interval	24
Schedule String	ODD NOV C_0



Structure Inspection and Inventory Report
Load Ratings

Inspection Date: 06/27/2025
Structure Key: D-03-V-160
Structure Class: Bridge

Load Rating Date: 08/18/2024

The load rating information presented on this report is for informational purposes and is separate from the inspection findings. Any changes to the load rating made after the inspection date are not a result of this inspection unless explicitly stated in the rating comments. See the latest Load Rating Summary Sheet for specific rating information.

Evaluation and Postings (EP)

EP01 Load Configuration	EP02 Load Rating	EP03 Posting Type	EP04 Posting Value
HS20 Inventory (Tons)	19.4		
HS20 Operating (Tons)	32.5		
Type 3	44.1		
Type 3S2	52		
Type 3-2	52.5		
Type SU4	43.9		
Type SU5	44.8		
Type SU6	45.2		
Type SU7	45.9		
NRL (40T)	45.3		
EV 2 (28.75T)	29.9		
EV 3 (43T)	44.7		

- EP05A - Posting 70: 5 - Equal to or above legal loads
- EP06A - Load Rating Organization 66C: Company B
- EP07A - Load Rater Name 66N: Larry Diaz
- EP08A - Load Rater Initials: LD
- EP09A - Checker Name 66P: Jacob Alvarez
- EP10A - Checker Initials 66J: JA
- EP11A - Rating Package Review Date 66R:
- EP12A - Rating Package Reviewer 66RN:
- EP13A - Rating Calculations Complete 66CC:
- EP14A - Rating Package Complete 66RPC: Yes
- EP15A - Entire Structure Rated 66ESR: Yes
- EP16A - Rating Input Files Archived 66IFA:
- EP17A - Rating Output Files Archived 66OFA:
- EP18A - Rating Assigned To 66AT:
- EP19A - Rating Software Used 66RS: 1 - BrR (non-NSG)
- EP20A - BrR Rating Runs 66RR:
- EP21A - BrR Rating Analysis 66RA:
- EP22A - BrR Rating System Based 66S: Yes
- EP23A - Rating Asphalt Thickness 66RT: 3
- EP24A - Girder Operating Rating, Tons 66A: 32.5
- EP25A - Overload Color Code 139: N - Not applicable
- EP26A - Overload Color Code Live Load 139OLL: N - Not applicable
- EP27A - Operating Controlling Member 66OC: E - Exterior girder
- EP27B - Inventory Controlling Member 66IC: E - Exterior girder
- EP28A - Rating Comment: 3" asphalt over 7" thick composite concrete deck. 19 Spans: 1 @ 61'-6", 10 @ 60'-0", 1 @ 71'-0", 1 @ 87'-0", 1 @ 96'-6", 1 @ 99'-0", 1 @ 80'-0", 1 @ 85'-0", 1 @ 80'-0", 1 @ 81'-6", (6-W30x108 in Spans 1 to 11), (6-W36x150 in Spans 12 and 16 to 19), (6-W36x194 in Spans 13 to 15). Deck Fc = 5,000 psi, fy = 40,000 psi. Structural Steel fy = 36,000 psi. Rating based on 8/21/1957 original plans, 1/26/2008 rehabilitation plans and 11/15/2022 inspection report and inspection sketch. Rated in BrR v 7.2.0.3001 by Company B. Controlling member: Exterior Girder. Load posting is not required.

Load Ratings (LR)

- LR01 - Design Load 31: H-20
- LR02 - Design Method 31D: ASD
- LR03 - Load Rating Date: 2024-08-19
- LR03A - Load Rating Check Date 130C:
- LR04 - Operating Rating Method: 1 - LF
- LR04A - Inventory Rating Method 65: 1 - LF
- LR09A - Within 1 Mile 64LT 10: Yes
- LR10A - BrR Structure Number 66STR:
- LR11A - Plans Available 500: Yes
- LR12A - Overload Critical Structure 139OC: No

Posting Status (PS)

- PS01A - Load Posting Structure Status: P - Permanent
- PS01B - Load Posting Status Code: O - Open - No Restriction
- PS03A - Posting - CO Legal Trucks: A - No restriction
- PS03B - Posting - SHV Trucks: A - No restriction
- PS03C - Posting - EV Trucks: A - No restriction
- PS03D - Temporary Structure 103: No



Structure Inspection and Inventory Report
Elements

Inspection Date: 06/27/2025
Structure Key: D-03-V-160

Element/Defect	Unit	Total Qty	CS1	CS2	CS3	CS4
12 - Reinforced Concrete Deck	sq feet	48813	42689 87%	4847 10%	1277 3%	0
1080 - Delamination/Spall/Patched Area	each	3690	0	2345 64%	1345 36%	0
1090 - Exposed Rebar	each	100	0	0	100 100%	0
1120 - Efflorescence/Rust Staining	each	3250	0	2500 77%	750 23%	0

Concrete deck with asphalt wearing surface. Top of deck not visible for inspection. Deck drains present along both curbs at the following locations: Span 2 at Pier 2; Span 6 at Pier 6; Span 7 at Pier 8; Span 9 at Pier 10; Span 11 at Pier 12; Span 13 and Pier 14; Span 15 at Pier 16, and Span 17 at Pier 18.

Drains - broken pipe at southwest corner above Abutment 1.

During 1/23/2025 deck topside inspection the deck drains were covered with snow and not visible for inspection.

Deck exterior edges, in most spans, has freeze/thaw deterioration and several spalls measuring up to 1.5 inches deep with isolated exposed and corroded (R1 to R2) reinforcing worse in north edge. Some areas have been patched. (673 CS2, 673 CS3 1080)

North overhang has transverse cracks with efflorescence and some with rust stains. (336 CS2, 168 CS3 1120)

South overhang has S1 to S2 scale with efflorescence and areas of rust stains. (336 CS2 1190) (336 CS3 1120)

Deck soffit, primarily in exterior bays, at various locations, has insignificant width transverse cracks with efflorescence. (1500 CS2 1120)

Deck soffit has random areas of insignificant width minor map cracks with efflorescence, randomly throughout. (1000 CS2 1120)

Various locations in all spans exhibit full depth deck patches, patches appear sound. (1000 CS2 1080)

Deck soffit in Bay 16E, (2) areas of exposed and corroded (R1) rebar around edge of patch. (2 CS2 1090)

510 - Wearing Surfaces	sq feet	45330	45330 100%	0	0	0
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Asphalt.

New asphalt wearing surface installed prior to 2024 inspection.

No significant defects.

107 - Steel Open Girder/Beam	feet	8068	7068 88%	1000 12%	0	0
1000 - Corrosion	each	1000	0	1000 100%	0	0

(6) steel girders.

Pin and hanger details retrofitted with welded steel plates on webs and flanges.

Cover plates with tapered ends welded to bottom flanges with many cover plate ends weld wrapped; poor quality



welds at some locations.

Steel diaphragms, in exterior bays, have R1 to R2 rust with R2 to R3 rust at pin and hanger details.

East half of Span 11 girders have been exposed to fire and are soot stained.

Girders at random locations and at locations of deck efflorescence, throughout, have spotty R1 corrosion; affects less than 5 percent of total length. (1000 CS2 1000)

515 - Steel Protective Coating	sq feet	8068	7068 88%	0	0	1000 12%
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Painted. Girders are spot painted throughout. Girders over light rail in Span 7 were not repainted.

Girder 1F bottom flange weld at west end has cracks in paint.

East half of Span 11 girders have been exposed to fire and are soot stained.

Failed at areas of corrosion. (1000 CS4)

205 - Reinforced Concrete Column	each	11	0	11 100%	0	0
1130 - Cracking (RC and Other)	each	11	0	11 100%	0	0

At Piers 9 to 19, replaced between 2006 and 2009 inspections.

Columns bear on concrete footing on steel H-piles.

Tops of all columns have horizontal, full circumference, cracks open up to 0.03 inch wide, and vertical insignificant cracks. (11 CS2 1130)

210 - Reinforced Concrete Pier Wall	feet	49	49 100%	0	0	0
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At Piers 2 to 8, replaced between 2006 and 2009 inspections. Walls bear on concrete footing on steel H-piles.

Minor graffiti on walls.

Pier 2, southwest and southeast corners exhibit a minor spall at each location up to 7 inches high x 4 inches wide x 1 inch deep. (1 CS2)

215 - Reinforced Concrete Abutment	feet	73	59 81%	11 15%	3 4%	0
1090 - Exposed Rebar	each	1	0	0	1 100%	0
1120 - Efflorescence/Rust Staining	each	12	0	10 83%	2 17%	0



1130 - Cracking (RC and Other)	each	1	0	1 100%	0	0
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South face of Abutment 1 has insignificant width heavy map cracking with areas of rust staining and (3) spalls up to 6 inch wide x 18 inch high x 1 inch deep with exposed and corroded rebar an (1) spall 12 inch wide x 30 inch high x 2 inch deep with exposed and corroded rebar with up to 90 percent section remaining. (1 CS3 1080)

Abutment 1 under Girder 1B and 1F, horizontal/diagonal crack up to 0.016 inch wide, cracks under Girder 1F have areas of rust staining. (2 CS3 1120) (1 CS2 1130)

Both abutments have areas of efflorescence and leakage stains. Active leakage at Abutment 20 on 11/27/2024. (10 CS2 1120)

Abutment 20 north cheek wall, has a vertical crack measuring full height x up to 1/4 inch wide with associated delamination.

231 - Steel Pier Cap	feet	574	414 72%	160 28%	0	0
1000 - Corrosion	each	160	0	160 100%	0	0

NSTM. Problem areas were tested using NDT and weld repairs were made in 2009.

Most pier caps have spotty R1 rust randomly throughout. (160 CS2 1000)

515 - Steel Protective Coating	sq feet	574	414 72%	0	0	160 28%
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Painted.

Failed at rust locations. (160 CS4)

234 - Reinforced Concrete Pier Cap	feet	263	153 58%	110 42%	0	0
1130 - Cracking (RC and Other)	each	110	0	110 100%	0	0

Supports steel pier caps at Pier 2, Piers 4 to 6, Pier 8 and Piers 10 to 19. Replaced between 2006 and 2009 inspections.

Cantilevered sections of Piers 4 through 6 and Piers 10 through 19 have flexure cracks to insignificant width spaced approximately 12 inches on center (first noted in 2013). (110 CS2 1130)

Pier 2 has vertical cracks to insignificant width spaced approximately 12 inches on center. (CS2)

260 - Slope Prot/Berms	each	1	0	1 100%	0	0
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Abutment 1 slope paving shotcreted between 2006 and 2009 inspections.

Slope paving has cracks and spalls measuring up to 1 inch wide and 3 inches deep, respectively, throughout. Under Girder A near top of paving, 10 inch wide x 10 inch high area of exposed wire mesh. (1 CS2)

Retaining wall at south side of slope protection has insignificant to medium width diagonal cracks.

303 - Assembly Joint With Seal	feet	73	0	73 100%	0	0
2330 - Seal Damage	each	5	0	5 100%	0	0
2350 - Debris Impaction	each	37	0	37 100%	0	0
2360 - Adjacent Deck or Header	each	31	0	31 100%	0	0

303 - Assembly Joint with Seal - Modular consists of a Waboflex (Waboflex SR) at abutments, installed between 2006 and 2009 inspections.

Both joints, wheel lines have moderate wear with the tining worn down completely.

Both joints, approximately one third of the rubber bolt caps are missing.

Both joints have rubber torn in multiple places. (5 CS2 2330)

Both joints, headers have transverse cracks up to 0.03 inch wide, but 75 percent have been routed and injected with sealer. (29 CS2 2360)

Abutment 1 joint header has a patched spall 1.5 foot long x 1.5 foot wide. (2 CS2 2360)

Abutment 20 joint is partially filled with debris. (37 CS2 2350)

313 - Fixed Bearing	each	1	1 100%	0	0	0
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(1) fixed bearing at Pier 9 between concrete column and steel pier cap.

No significant defects.

315 - Disk Bearing	each	76	76 100%	0	0	0
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Expansion disk bearings supporting steel pier caps; (6) at each abutment, (4) at Piers 2, 4-6, 8, and 10-19, (2) at Pier 3 and 5. Bearings replaced between 2006 and 2009 inspections.

Bearing grout pads have cracking of insignificant width.

Bearing 2B exhibits build up from leaking lubricant.



321 - Reinforced Concrete Approach Slab	sq feet	1320	1320 100%	0	0	0
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Approach slab only at east end; west approach is a different bridge.
Not visible due to asphalt overlay.
No evidence of settlement.

510 - Wearing Surfaces	sq feet	1320	0	526 40%	794 60%	0
3210 - Delamination/Spall/Patched Area/Pothole (Wearing Surfaces)	each	268	0	0	268 100%	0
3220 - Crack (Wearing Surface)	each	1052	0	526 50%	526 50%	0

Entire wearing surface over the east approach slab has medium to heavy map cracking throughout. (526 CS2, 526 CS3 3220)
East approach slab asphalt has potholes measuring up to 1 foot in diameter x 2 inches deep. (268 CS3 3210)
Asphalt at joint headers exhibits rutting.

322 - Approach Roadway	each	1	1 100%	0	0	0
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Asphalt. Curve at east approach. Minor speed reduction required.

326 - Wingwalls	each	2	2 100%	0	0	0
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At northwest and northeast only.
Coating on northeast wingwall peeling in areas throughout.
Coating on northwest wingwall peeling in areas near Abutment 1.
Northeast wingwall has diagonal cracks open up to 3/16 inch with areas of delamination measuring up to 12 inch wide x 6 inch high along crack.
Northeast wingwall, top corner adjacent to Abutment 20, has a spall measuring 24 inch high x 16 inch wide x 2 inch deep with exposed and corroded rebar with approximately 90 percent section remaining.



330 - Metal Bridge Railing	feet	205	195 95%	10 5%	0	0
1000 - Corrosion	each	10	0	10 100%	0	0

Metal fence above Light Rail and Spans 13, 14, and 15 on north side. Mounted on top of concrete bridge rail
Several posts have R1 rust at bottom. (10 CS2 1000)

515 - Steel Protective Coating	sq feet	205	195 95%	0	0	10 5%
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Galvanized. Painted on roadway side.
Failed at rust locations. (10 CS4)

331 - Reinforced Concrete Bridge Railing	feet	2689	1340 50%	1344 50%	5 0%	0
1080 - Delamination/Spall/Patched Area	each	5	0	0	5 100%	0
1130 - Cracking (RC and Other)	each	1344	0	1344 100%	0	0

Concrete barrier rail.
Both rails, full length, exhibit vertical cracks to insignificant width spaced 1 to 3 feet apart. (1344 CS2 1130)
North rail, over Span 1, has an area of spalls to 4.5 feet long x 14 inch high with exposed rebar. (5 CS3 1080)
North bridge rail has minor scraping for 20 total feet due to vehicle impact.

343 - Pole Attachment	each	11	0	0	10 91%	1 9%
-----------------------	------	----	---	---	-----------	---------

Along north edge. Attached to steel pedestals welded to girder webs.
All light poles replaced between 2009 and 2011 inspections.
Pedestals have R1 to R2 rust.
Light poles, lower 6 to 10 feet of poles in splash zone, exhibit R2 to R3 rust. (10 CS3)
2nd pole from east, lower 6 to 10 feet in splash zone, exhibits R4 perforation holes. (1 CS4)
2nd, 5th, 6th, 7th, 8th, 9th, and 10th poles from east exhibits a detached electrical cover plate at wired connection to bridge rail.
11th pole from east exhibits a loose cover plate.



600 - General Notes	none	1	1 100%	0	0	0
---------------------	------	---	-----------	---	---	---

Deck drain pipe below the south overhang at Abutment 1 is disconnected.
 Deck drain pipe on south side in Span 5 and north side near Pier 6 are disconnected.

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report

Photos

Inspection Date: 06/27/2025
Structure Key: D-03-V-160
Structure Class: Bridge

12 - Reinforced Concrete Deck



Efflorescence in deck soffit of Bay 3E

6/27/2025 12:00:00 AM

107 - Steel Open Girder/Beam



Overview of Girder 2B pin and hanger assembly and splice at Pier 2

6/27/2025 12:00:00 AM

315 - Disk Bearing



3 inches to edge of bearing plate on east side of Bearing 3B
6/27/2025 12:00:00 AM



4.5 inches to edge of bearing plate on west side of Bearing 3B
6/27/2025 12:00:00 AM



Limits of expansion and contraction for Bearing 3B
6/27/2025 12:00:00 AM



Overview of Bearing 2A
6/27/2025 12:00:00 AM



Overview of Bearing 2B
6/27/2025 12:00:00 AM



Overview of Bearing 2C
6/27/2025 12:00:00 AM



Overview of Bearing 2D
6/27/2025 12:00:00 AM



Overview of Bearing 3A
6/27/2025 12:00:00 AM



Overview of Bearing 3B
6/27/2025 12:00:00 AM

600 - General Notes



Hands on inspection with a bucket truck of NSTM pier caps
6/27/2025 12:00:00 AM



Structure Inspection and Inventory Report

Photos Inventory

Inspection Date: 06/27/2025
Structure Key: D-03-V-160
Structure Class: Bridge

General/Superstructure



Superstructure looking east - Span 8

6/12/2025 12:00:00 AM

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report
Maintenance Items

Inspection Date: 06/27/2025
Structure Key: D-03-V-160
Structure Class: Bridge

High

398.00 - Miscellaneous Bridge Work

Status	Date Entered	Target Date	Deterioration Category
Open	01/23/2025	01/23/2026	

Problem Description
Replace 2nd light pole from east end of structure.

High

352.00 - Cleaning or Washing

Status	Date Entered	Target Date	Deterioration Category
Open	11/20/2018	01/23/2026	

Problem Description
Clean deck drains at various locations and repair deck drains at Piers 2, 6, and 12. Reattach drain sections on north side in Span 5 and at south side of Abutment 1.

High

156.00 - Flexible Pavement Crack/Joint Sealing

Status	Date Entered	Target Date	Deterioration Category
Open	11/20/2018	01/23/2027	

Problem Description
Seal cracks and patch potholes in asphalt on east approach slab.

Moderate

200.31 - Concrete repair, including removal of spalled, delaminated, deteriorated concrete, may include rebar cleaning/replacement

Status	Date Entered	Target Date	Deterioration Category
Open	01/23/2025	01/23/2027	

Problem Description
Patch spalls in north bridge rail.

Moderate

353.04 - Seal concrete deck surfaces

Status	Date Entered	Target Date	Deterioration Category
Open	11/20/2018	11/27/2026	

Problem Description
Patch spalls in deck soffit.



Moderate

355.00 - Clean and Paint Bridge

Status	Date Entered	Target Date	Deterioration Category
Open	11/20/2018	11/27/2029	

Problem Description

Clean and paint locations of rust in girders and pier caps.

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report
Vertical Clearance
WB 6TH AVE Over MARIPOSA ST | LIPAN ST
| UP RR | RTD

Inspection Date: 06/27/2025
Structure Key: D-03-V-160
Structure Class: Bridge

H02 Below - Lipan St. 2 Lanes

Direction	Left EoA	Stripe1	Stripe2	Stripe3	Stripe4	Stripe5	Stripe6	Stripe7	Stripe8	Stripe9	Right EoA
North	0.0000	16.7500	16.6600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	16.7500
South	0.0000	16.7500	17.0800	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	17.3300

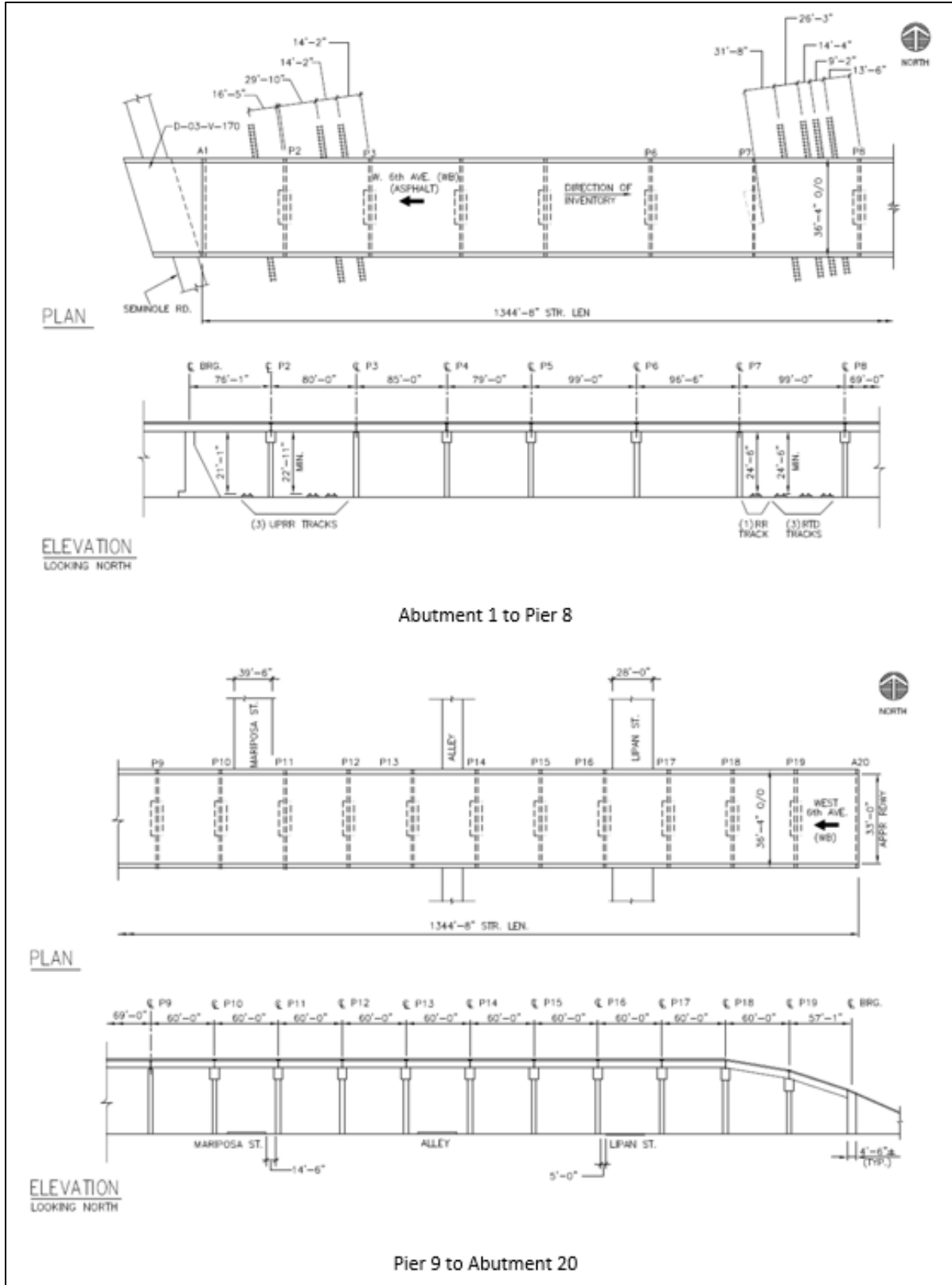
	Date Recorded	Max Clearance	Min Clearance	Method	Note
North	11/27/2024	16.6600	16.6600	Inspector hand held device	
South	11/27/2024	16.7500	16.7500	Inspector hand held device	

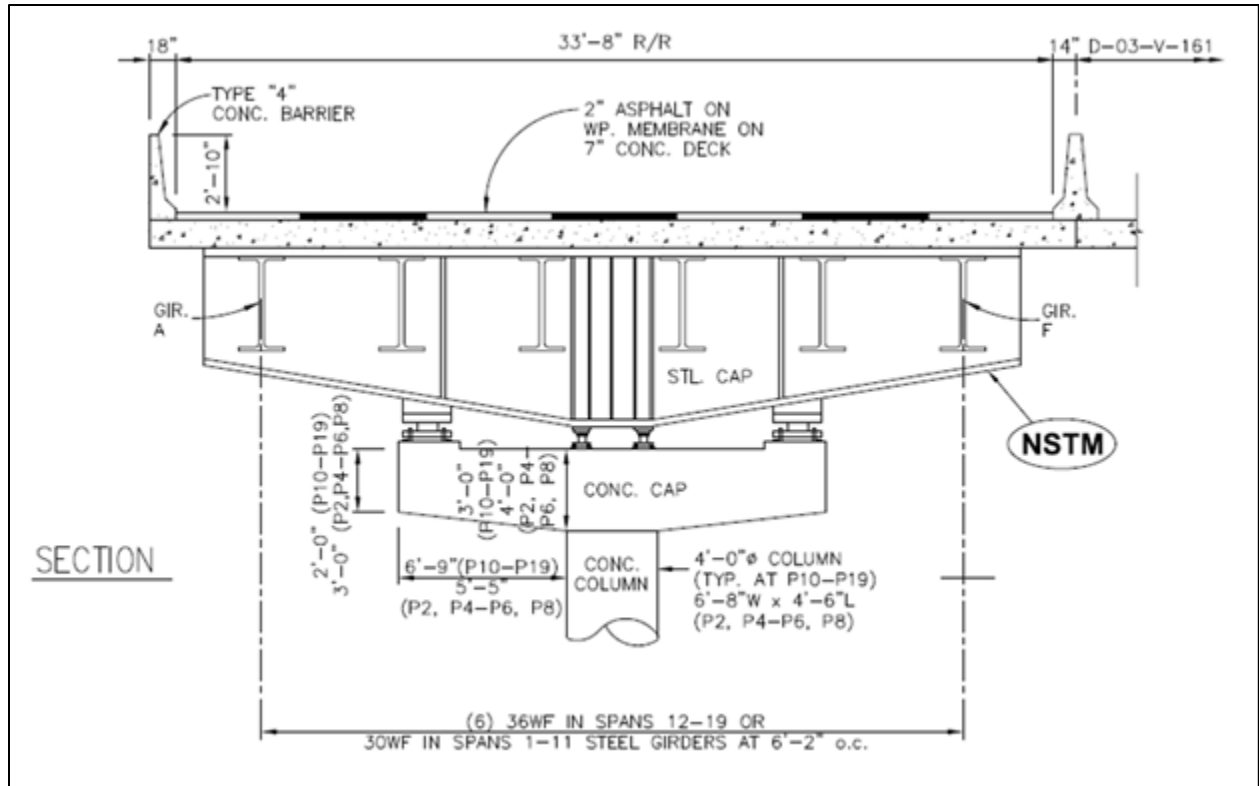
H03 Below - Mariposa St. 2 Lanes

Direction	Left EoA	Stripe1	Stripe2	Stripe3	Stripe4	Stripe5	Stripe6	Stripe7	Stripe8	Stripe9	Right EoA
North	0.0000	21.6600	21.6600	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	21.5800
South	0.0000	21.6600	21.7500	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	21.8300

	Date Recorded	Max Clearance	Min Clearance	Method	Note
North	11/27/2024	21.6600	21.5800	Inspector hand held device	
South	11/27/2024	21.6600	21.6600	Inspector hand held device	

FOR EXAMPLE ONLY








COLORADO DEPARTMENT OF TRANSPORTATION LOAD FACTOR RATING SUMMARY								Structure #:	D-03-V-160
Rating using: • Asphalt thickness: _____ in. or Fill thickness: _____ in. • <input checked="" type="checkbox"/> Colorado Legal Loads (CO) or <input type="checkbox"/> Interstate Legal Loads (Interstate) • <input checked="" type="checkbox"/> Multi-lane for Legal & Permit Vehicles or <input type="checkbox"/> Single lane for Legal & Permit Vehicles								Highway #: West 10th Avenue Batch I.D.: Structure Type: CICK Parallel Structure #: D-03-V-161	
Structural Member	Exterior Girder	Interior Girder	Deck						
Tons									
Inventory	19.4	30.9	23.5						
Operating	32.5	51.6	39.2						
Tons									
Type 3 truck <small>(Interstate 241/CO 271)</small>	44.1	66.2	47.1						
Type 3S2 truck <small>(Interstate 381/CO 42.1)</small>	52.0	77.9	74.2						
Type 3-2 truck <small>(Interstate 391/CO 42.1)</small>	52.5	80.0	74.2						
 <div style="display: flex; justify-content: space-around; width: 100%;"> Type 3 Type 3S2 Type 3-2 </div>									
Tons									
Type SU4 truck <small>(271)</small>	43.9	65.9	55.4						
Type SU5 truck <small>(311)</small>	44.8	67.2	63.7						
Type SU6 truck <small>(Interstate 34.751/CO 331)</small>	45.2	67.7	67.8						
Type SU7 truck <small>(Interstate 38.751/CO 331)</small>	45.9	68.8	71.9						
NRL <small>(401)</small>	45.3	68.0	82.1						
 <div style="display: flex; justify-content: space-around; width: 100%;"> SU4 SU5 SU6 SU7 </div>									
Tons									
EV2 <small>(28.751)</small>	44.6	85.2	29.9						
EV3 <small>(431)</small>	44.7	85.3	48.4						
 <div style="display: flex; justify-content: space-around; width: 100%;"> EV2 EV3 </div>									
Tons									
Permit Truck <small>(911)</small>									
Modified Tandem <small>(901)</small>									
Comments: 3" asphalt over 7" thick composite concrete deck. 19 Spans: 1 @ 61'-6", 10 @ 60'-0", 1 @ 71'-0", 1 @ 87'-0", 1 @ 96'-6", 1 @ 99'-0", 1 @ 80'-0", 1 @ 85'-0", 1 @ 80'-0", 1 @ 81'-6", (6-W30x108 in Spans 1 to 11), (6-W36x150 in Spans 12 and 16 to 19), (6-W36x194 in Spans 13 to 15). Deck f'c = 5,000 psi, fy = 40,000 psi. Structural Steel fy = 36,000 psi. Rating based on 8/21/1957 original plans, 1/26/2008 rehabilitation plans and 11/15/2022 inspection report and inspection sketch. Rated in BrR v 7.2.0.3001 by Company B. Controlling member: Exterior Girder. Load posting is not required.								PE Seal Colorado PE stamp signed by Jacob Alvarez on 8/19/2024	
Rated by: (Print name and sign) Larry Diaz <small>Digitally signed by Larry Diaz Date: 2024.07.31 16:17:12-0600</small>				Date: 7/31/2024		Checked by: (Print name and sign) Jacob Alvarez <small>Digitally signed by Jacob Alvarez Date: 2024.08.19 10:12:21 -0600</small>		Date: 8/19/2024	
CDOT Staff Only - LPR 10/6/2021									



PAR CANTBRY-0.2 – OFF-SYSTEM STRUCTURE

INSPECTION ORGANIZATION
Company F



PAR CANTBRY-0.2 Culvert, CBC - Concrete Box Culvert

Routine Final Report

INSPECTION DATE
02/05/2025

Team Leader (IE04): Nick Donovan

Lead Inspector (IE04A): Not Assigned

Team Member(s) (IE04B): Ryker Black

Signed on: **04/28/2025**
Signed by: **Nick Donovan**

Structure: PAR CANTBRY-0.2 : 2025-02-05 - Routine

Page 1 of 17



Structure Inspection and Inventory Report

Structure Information Summary

Inspection Date: 02/05/2025

Structure Key: PAR CANTBRY-0.2

Structure Class: Culvert

Identification

CANTERBERRY PARKWAY over TALLMAN GULCH

Structure Key PAR CANTBRY-0.2

Structure Name

Structure Type CBC - Concrete Box Culvert

Year Built 2003

Ownership and Location

Inspection Program Off System

Owner L02 - Town or township highway agency

Responsible Party Town of Parker

County 035 - Douglas

City 57630 - Parker

Inspection Area Central

Location Description .2 MI N. OF HILLTOP ROAD

Highway & Milepoint

Geometry

Total Length 20.9

Width, Out to Out 140.8

Deck Area 2943

Total # of Spans 2

Asphalt Thickness 103

Highway Traffic

Nat. Highway System No

Lanes Carried 3

Highway Type Carried 5 - City

ADT Carried 12242

Lanes Under 0

Highway Type Under

ADT Under 0

Risk Factors

NSTM N - NSTM inspection not required

Scour Critical AB-T - TEMP, Stable for scour, possibly dependent on countermeasures, A, B

Approach Alignment G - Good

Inspection Frequency 24 Mo.

Underwater Required No

Pin Required No

Special Required False

Membrane

Expansion Device O - No expansion device 304/354, 305/355

Open Essential Repair No



Inspection History

Date	Type	Rating	Deck	Super	Sub	Culv
2027-02-05	Routine					
2025-02-05	Routine	Fair	N	N	N	5
2023-02-06	Routine	Fair	N	N	N	6
2021-02-11	Routine	Fair	N	N	N	6
2019-02-05	Routine	Fair	N	N	N	6
2017-02-15	Routine	Fair	N	N	N	6
2015-02-01	Routine	Fair	N	N	N	6
2013-02-12	Routine	Fair	N	N	N	6
2011-02-06	Routine	Fair	N	N	N	6
2009-03-02	Routine	Fair	N	N	N	6

Load Rating

Posting Status P - Permanent O - Open - No Restriction

Posting 5 - Equal to or above legal loads

Load Rating Date 04/30/2007

Design Load / Method HS-20 / LFD

Oper. Rating Method 1 - LF

Oper. Rating Value 67.2

Overload Color Code N Not applicable

Vertical Clearance

VCLR Date 01/01/1901

Min / Max Clr. Above 99.9 / 99.9

Min / Clr. Under

Safety Features

Rail Type Rail Type FB

Bridge Rail 1 - Inspected feature meets currently acceptable stan

Rail Transition 1 - Inspected feature meets currently acceptable stan

Approach Rail 1 - Inspected feature meets currently acceptable stan

End Treatment 1 - Inspected feature meets currently acceptable stan



Structure Inspection and Inventory Report
SI&A Culvert

Inspection Date: 02/05/2025
Structure Key: PAR CANTBRY-0.2

Appraisal (AP)

- **AP01 - Approach Alignment Rating:** G - Good
- **AP02 - Overtopping Likelihood:** 1 - Remote, once every 100 years or less frequently
- **AP03 - Scour Vulnerability:** AB-T - TEMP, Stable for scour, possibly dependent on countermeasures A, B
- **AP04 - Scour Plan of Action:** 0 - A scour POA is not required
- **AP04A - Scour Documentation:** Yes
- **AP04B - Monitoring Comment:**
- **AP04C - Monitoring Trigger:**
- **AP04D - Closure Trigger:**
- **AP04E - Mobilize Trigger:**
- **AP04F - Scour Watch 113M:** No
- **AP05 - Seismic Vulnerability:** N - Bridge does not require seismic evaluation due to low anticipated ground motion or agency prioritization
- **AP12A - SNBI Deskside Review Complete:** Yes
- **AP12B - SNBI Field Verification Complete:** No

Condition (C)

- **C01 - Deck Rating:** N - Not applicable
- **C02 - Superstructure Rating:** N - Not applicable
- **C03 - Substructure Rating:** N - Not applicable
- **C04 - Culvert Rating:** 5 - Fair
- **C05 - Railing Condition Rating:** 8 - Very good
- **C06 - Railing Transition Condition Rating:** 8 - Very good
- **C07 - Bearing Condition Rating:** N - Not applicable
- **C08 - Joint Condition Rating:** N - Not applicable
- **C09 - Channel Condition Rating:** 8 - Very good
- **C10 - Channel Protection Rating:** 8 - Very good
- **C11 - Scour Condition Rating:** 8 - Insignificant scour
- **C12 - Overall Condition:** Fair
- **C13 - Lowest Condition Rating:** 5
- **C14 - NSTM Inspection Rating:**
- **C15 - Underwater Condition Rating:**

Classification (CL)

- **CL01 - Owner:** L02 - Town or township highway agency
- **CL01A - Responsible Party:** Town of Parker
- **CL02 - Maintenance Responsibility:** L02 - Town or township highway agency
- **CL03 - Federal or Tribal Land Access:** N - Not applicable
- **CL04 - Historical Significance:** N - Bridge is not eligible for the National Register, and is not in a historic district eligible for the National Register
- **CL05 - Toll:** N - Bridge does not carry a toll road and is not a toll bridge
- **CL06 - Emergency Evacuation Designation:**
- **CL07A - Structure Status:** 3 - Active
- **CL08A - Structure Class:** Culvert
- **CL09A - Structure Type:** CBC - Concrete Box Culvert
- **CL10A - Construction Type 120B:** 02 - Poured in Place
- **CL11A - Features Intersected:** TALLMAN GULCH
- **CL11B - Feature Carried:** CANTERBERRY PARKWAY
- **CL12A - Service Type On:** 5 - Highway and pedestrian
- **CL13A - Service Type Under:** 5 - Waterway
- **CL14A - BTE Eligibility:** Not applicable
- **CL15A - Federal Submission:** MAJOR VEHICULAR

Feature (F): P01 - Sidewalks on east and west sides

- **F01A - Feature Type:** P - Pathway
- **F01B - Feature Designation:** 1
- **F02 - Feature Location:** C - Carried on structure
- **F03 - Feature Name:** Sidewalks on east and west sides

Feature (F): P02 - Tallman Gulch Trail

- **F01A - Feature Type:** P - Pathway
- **F01B - Feature Designation:** 2
- **F02 - Feature Location:** B - Below structure
- **F03 - Feature Name:** Tallman Gulch Trail

Feature (F): H01 - CANTERBERRY PKWY SB

- **F01A - Feature Type:** H - Highway
- **F01B - Feature Designation:** 1
- **RT01A - Route Designation:** 1
- **RT02 - Route Number:** 0
- **RT03 - Route Direction:** SB - Southbound
- **H01 - Functional Classification:** 7 - Local
- **H02 - Urban Code:** 23527 - Denver--Aurora
- **H03 - NHS:** N - Not on NHS
- **H04 - National Highway Freight Network:** N - Not on the NHFN
- **H05 - STRAHNET Designation:** N - Not a STRAHNET route
- **H06 - LRS Route:** 035-0-2013-4262
- **H07 - LRS Mile Point:** 2.571
- **H08 - Lanes on Highway:** 2
- **F02 - Feature Location:** C - Carried on structure
- **F03 - Feature Name:** CANTERBERRY PKWY SB
- **RT03C - Primary Routelog:** 1
- **RT04 - Route Type:** 5 - City
- **RT05 - Level of Service:** 1 - Mainline
- **H12 - Maximum Vertical Clearance:** 99.9
- **H13 - Minimum Vertical Clearance:** 99.9
- **H14 - Minimum Horizontal Clearance Left:**
- **H15 - Minimum Horizontal Clearance Right:**
- **H16 - Maximum Usable Surface Width:** 27
- **H17 - Detour Length:** 2
- **H18 - Crossing Structure Number:**
- **H20A - Legacy Milepoint:** 0



- H09 - AADT: 6121
- H10 - Average Annual Daily Truck Traffic: 122
- H10A - AADTT Percent: 2
- H11 - Year of AADT: 2021
- H21A - Base Highway Network 12: 0 - Not on the Base Network
- H22A - Future AADT 114: 7645
- H22B - Year of Future AADT 115: 2044

Feature (F): H02 - CANTERBERRY PKWY NB

- | | |
|--|--|
| <ul style="list-style-type: none"> ■ F01A - Feature Type: H - Highway ■ F01B - Feature Designation: 2 ■ RT01A - Route Designation: 1 ■ RT02 - Route Number: 0 ■ RT03 - Route Direction: NB - Northbound ■ H01 - Functional Classification: 7 - Local ■ H02 - Urban Code: 23527 - Denver--Aurora ■ H03 - NHS: N - Not on NHS ■ H04 - National Highway Freight Network: N - Not on the NHFN ■ H05 - STRAHNET Designation: N - Not a STRAHNET route ■ H06 - LRS Route: 035-0-2013-4262 ■ H07 - LRS Mile Point: 2.571 ■ H08 - Lanes on Highway: 1 ■ H09 - AADT: 6121 ■ H10 - Average Annual Daily Truck Traffic: 122 ■ H10A - AADTT Percent: 2 ■ H11 - Year of AADT: 2021 | <ul style="list-style-type: none"> ■ F02 - Feature Location: C - Carried on structure ■ F03 - Feature Name: CANTERBERRY PKWY NB ■ RT03C - Primary Routelog: ■ RT04 - Route Type: 5 - City ■ RT05 - Level of Service: 1 - Mainline ■ H12 - Maximum Vertical Clearance: 99.9 ■ H13 - Minimum Vertical Clearance: 99.9 ■ H14 - Minimum Horizontal Clearance Left: ■ H15 - Minimum Horizontal Clearance Right: ■ H16 - Maximum Usable Surface Width: 20 ■ H17 - Detour Length: 2 ■ H18 - Crossing Structure Number: ■ H20A - Legacy Milepoint: 0 ■ H21A - Base Highway Network 12: 0 - Not on the Base Network ■ H22A - Future AADT 114: 7645 ■ H22B - Year of Future AADT 115: 2044 |
|--|--|

Feature (F): W01 - Tallman Gulch

- | | |
|--|--|
| <ul style="list-style-type: none"> ■ F01A - Feature Type: W - Waterway ■ F01B - Feature Designation: 1 | <ul style="list-style-type: none"> ■ F02 - Feature Location: B - Below structure ■ F03 - Feature Name: Tallman Gulch |
|--|--|

Geometry (G)

- | | |
|--|--|
| <ul style="list-style-type: none"> ■ G01 - NBIS Length: 20.9 ■ G02 - Total Length: 20.9 ■ G03 - Maximum Span: 10 ■ G04 - Minimum Span: 10 ■ G05 - Out To Out: 140.8 ■ G06 - Width Curb to Curb: 47 ■ G07 - Left Curb Or Sidewalk: 10 ■ G08 - Right Curb Or Sidewalk: 5 ■ G09 - Approach Roadway Width: 47 | <ul style="list-style-type: none"> ■ G10 - Median: 3 - Closed median with non-mountable barriers ■ G11 - Skew: 5 ■ G12 - Curved Bridge: N - Not curved ■ G13 - Maximum Height: 14 ■ G14 - Sidehill Bridge: N - Not a sidehill bridge ■ G15 - Irregular Deck Area: ■ G16 - Federal Deck Area: 2943 ■ G17A - Asphalt / Fill Thickness: 103 ■ G18A - Expansion Device Type 124: O - No expansion device 304/354, 305/355 |
|--|--|

Identification (ID)

- | | |
|--|---|
| <ul style="list-style-type: none"> ■ ID01 - Structure Number: PAR CANTBRY-0.2 ■ ID01A - Structure Key: PAR CANTBRY-0.2 ■ ID02 - Structure Name: | <ul style="list-style-type: none"> ■ ID03 - Replaces (Old): ■ ID06A - Parallel Structure Key 8P: ■ ID07A - Parallel Structure 101: No parallel structure exists. |
|--|---|

Inspection Event (IE)

- | | |
|---|---|
| <ul style="list-style-type: none"> ■ IE02 - Inspection Field Start: 2025-02-05 ■ IE03 - Field End Date: 2025-02-05 ■ IE03A - Inspection Date: 2025-02-05 ■ IE05A - Current Inspection Interval: 24 ■ IE06A - Current Target Date: 2025-02-15 ■ IE06B - Report Due Date: 2025-05-05 ■ IE07 - Risk Based Inspection Interval: 1 - Method 1 | <ul style="list-style-type: none"> ■ IE08 - QC Date: 2025-04-28 ■ IE09 - QA Date: ■ IE10A - Inspection Finalized: 2025-06-26 ■ IE14A - Special Equipment: 0 - Not Applicable ■ IE16A - Weather: 59 degrees, Clear ■ IE17A - Bat Present: No |
|---|---|

Inspection Requirements (IR)

- | | |
|---|--|
| <ul style="list-style-type: none"> ■ IR01 - NSTM Required: N - NSTM inspection not required ■ IR02 - Fatigue Details: N - No E/E(prime) details ■ IR03 - UW Required: No ■ IR03A - UW Category: ■ IR04 - Complex Feature: No | <ul style="list-style-type: none"> ■ IR05A - Pin Required: No ■ IR06A - Special Required: No ■ IR07A - Inspection Program: Off System ■ IR08A - LIDAR Required: No |
|---|--|

Structure: PAR CANTBRY-0.2 : 2025-02-05 - Routine



Location (L)

- L01 - State: 08 - Colorado
- L02 - County: 035 - Douglas
- L03 - City/Town: 57630 - Parker
- L04 - District: 15
- L04A - Zone: Central
- L05 - Latitude: 39.492947
- L06 - Longitude: -104.733527
- L07 - Border Structure:
- L08 - Border State:
- L09 - Border Inspection Responsibility:
- L10 - Border Lead State:
- L11 - Location Description: .2 MI N. OF HILLTOP ROAD
- L12 - MPO: 1 - Denver Regional Council of Governments
- L13A - TPR: 02 - Greater Denver Area

Roadside Hardware (RH)

- RH01 - Bridge Railings:
- RH01A - Bridge Rail Year of Spec:
- RH02 - Transitions:
- RH02A - Rail Transition Year of Spec:
- RH03A - Structure Rail Type 125A: Rail Type FB
- RH04A - Structure Rail Modified 125B: 0 - Not modified
- RH05A - Height of Rail: 36
- RH06A - Structure Rail 36A: 1 - Inspected feature meets currently acceptable standards.
- RH07A - Transition 36B: 1 - Inspected feature meets currently acceptable standards.
- RH08A - Approach Rail Rating: 1 - Inspected feature meets currently acceptable standards.
- RH09A - End Treatment Rating: 1 - Inspected feature meets currently acceptable standards.

Substructure (SB): A01 - A01 - Abutment, cantilever/wall

- SB01A - Substructure Configuration: A - Abutment
- SB01B - Substructure Designation: 1
- SB02 - Number of Substructure Units: 2
- SB03 - Substructure Material: C01 - Reinforced concrete, cast-in-place
- SB04 - Substructure Type: A01 - Abutment, cantilever/wall
- SB05 - Substructure Protective System: 0 - None
- SB06 - Foundation Type: F01 - Footing, not on rock
- SB07 - Foundation Protective System: 0 - None

Substructure (SB): P01 - P01 - Pier, wall

- SB01A - Substructure Configuration: P - Pier or Bent
- SB01B - Substructure Designation: 1
- SB02 - Number of Substructure Units: 1
- SB03 - Substructure Material: C01 - Reinforced concrete, cast-in-place
- SB04 - Substructure Type: P01 - Pier, wall
- SB05 - Substructure Protective System: 0 - None
- SB06 - Foundation Type: F01 - Footing, not on rock
- SB07 - Foundation Protective System: 0 - None

Span (SP): C01 - F02 - Frame, four-sided

- SP01A - Span Configuration: C - Culvert Span
- SP01B - Span Designation: 1
- SP02 - Number of Spans: 2
- SP03 - Number of Beam Lines: 1
- SP04 - Span Material: C01 - Reinforced concrete, cast-in-place
- SP05 - Span Continuity: 7 - Buried
- SP06 - Span Type: F02 - Frame, four-sided
- SP07 - Span Protective System: 0 - None
- SP08 - Deck Interaction:
- SP09 - Deck Material and Type: 0 - None
- SP10 - Wearing Surface:
- SP11 - Deck Protective System:
- SP12 - Deck Reinforcing Protective System:
- SP13 - Deck Stay-In-Place Forms:

Work (W)

- W01 - Year Built: 2003
- W01A - Year Work Performed: 0
- W03A - Work Performed:
- W04A - Work Done By:



Structure Inspection and Inventory Report
SI&A Notes and Schedule

Inspection Date: 02/05/2025
Structure Key: PAR CANTBRY-0.2
Structure Class: Culvert

Notes

- **ID05A - Owner Transfer Note :**
- **IE 11 - Limited Inspection Note :**
- **IE 11A - Inspection Note :**
- **IE 12 - Inspection Equipment :** AN - No access equipment used|IN - No inspection equipment used
- **IE 13A - Schedule Note :**
- **IE 15A - Special Access Note :**
- **L14A - Structure Note :** Inventory route is south to north.
East side is upstream.
Culvert cells are numbered 1 through 2 from south to north.
Culvert walls are numbered 1 through 3 from south to north.

Schedule

	Routine
Previous Inspection	2025-02-05 Final
Current / Next Inspection	2027-02-05 Open
Target Date	2/15/2027
Interval	24
Schedule String	ODD FEB C_0

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report
Load Ratings

Inspection Date: 02/05/2025
Structure Key: PAR CANTBRY-0.2
Structure Class: Culvert

Load Rating Date: 04/29/2007

The load rating information presented on this report is for informational purposes and is separate from the inspection findings. Any changes to the load rating made after the inspection date are not a result of this inspection unless explicitly stated in the rating comments. See the latest Load Rating Summary Sheet for specific rating information.

Evaluation and Postings (EP)

EP01 Load Configuration	EP02 Load Rating	EP03 Posting Type	EP04 Posting Value
-------------------------	------------------	-------------------	--------------------

HS20 Inventory (Tons)	40.2		
HS20 Operating (Tons)	67.2		

- EP05A - Posting 70: 5 - Equal to or above legal loads
- EP06A - Load Rating Organization 66C: Company C
- EP07A - Load Rater Name 66N: Martin Murry
- EP08A - Load Rater Initials:
- EP09A - Checker Name 66P:
- EP10A - Checker Initials 66J:
- EP11A - Rating Package Review Date 66R:
- EP12A - Rating Package Reviewer 66RN:
- EP13A - Rating Calculations Complete 66CC: No
- EP14A - Rating Package Complete 66RPC: No
- EP15A - Entire Structure Rated 66ESR: Yes
- EP16A - Rating Input Files Archived 66IFA: No
- EP17A - Rating Output Files Archived 66OFA: No
- EP18A - Rating Assigned To 66AT:
- EP19A - Rating Software Used 66RS: 3 - Other
- EP20A - BrR Rating Runs 66RR: No
- EP21A - BrR Rating Analysis 66RA: No
- EP22A - BrR Rating System Based 66S: No
- EP23A - Rating Asphalt Thickness 66RT: 105
- EP24A - Girder Operating Rating, Tons 66A: 0
- EP25A - Overload Color Code 139: N - Not applicable
- EP26A - Overload Color Code Live Load 139OLL: N - Not applicable
- EP27A - Operating Controlling Member 66OC: X - Culvert or non-slab
- EP27B - Inventory Controlling Member 66IC: X - Culvert or non-slab

■ EP28A - Rating Comment: This culvert was rated using project specific plan details.

A fill height of 8.74 ft. on top of a 12" concrete slab was determined from the plans. Checked by signature illegible on rating summary sheet.

Load Ratings (LR)

- LR01 - Design Load 31: HS-20
- LR02 - Design Method 31D: LFD
- LR03 - Load Rating Date: 2007-04-30
- LR03A - Load Rating Check Date 130C:
- LR04 - Operating Rating Method: 1 - LF
- LR04A - Inventory Rating Method 65: 1 - LF
- LR09A - Within 1 Mile 64LT 10: No
- LR10A - BrR Structure Number 66STR:
- LR11A - Plans Available 500: Yes
- LR12A - Overload Critical Structure 139OC: No

Posting Status (PS)

- PS01A - Load Posting Structure Status: P - Permanent
- PS01B - Load Posting Status Code: O - Open - No Restriction
- PS03A - Posting - CO Legal Trucks: A - No restriction
- PS03B - Posting - SHV Trucks:
- PS03C - Posting - EV Trucks:
- PS03D - Temporary Structure 103: No



Structure Inspection and Inventory Report
Elements

Inspection Date: 02/05/2025
Structure Key: PAR CANTBRY-0.2

Element/Defect	Unit	Total Qty	CS1	CS2	CS3	CS4
241 - Reinforced Concrete Culvert	feet	282	161 57%	57 20%	64 23%	0
1080 - Delamination/Spall/Patched Area	each	1	0	0	1 100%	0
1120 - Efflorescence/Rust Staining	each	97	0	34 35%	63 65%	0
1130 - Cracking (RC and Other)	each	23	0	23 100%	0	0

(2) cell reinforced concrete box culvert with 10 foot wide x 13 foot tall cells. Cell 2 with fill and concrete slab making the cell opening height 10 feet.

Cell 1:

Scattered areas of light honeycomb at base of walls.

There are 42 weep holes in bottom of top slab of Cell 1 (1 inch diameter). All holes have efflorescence around perimeter and approximately half have rust stains. (21 CS2, 21 CS3 1120)

Throughout walls, top slab, and bottom slab, (11) medium width vertical/parallel to roadway cracks. (11 CS2 1130)

Bottom of top slab, (24) medium width transverse cracks, most have been epoxy sealed, all with efflorescence and (17) with rust stains. Some cracks extend into walls. (7 CS2, 17 CS3 1120)

Wall 2 at inlet, 6 inch high x 5 inch long x 2 inch deep spall. (1 CS3 1080)

Cell 2:

Throughout walls and bottom of top slab, (12) medium width vertical/parallel to roadway cracks. (12 CS2 1130)

Bottom of top slab and walls, (28) total medium width (and mostly epoxy sealed) transverse/parallel to roadway cracks, (6) have efflorescence, and (22) have efflorescence buildup, rust staining, and some stalactites. (6 CS2, 22 CS3 1120)

Wall 2 has (3) vertical cracks up to medium width with rust stains. (3 CS3 1120)

Bottom of Wall 2, 40 feet from inlet, S1 scaling for 12 feet.

322 - Approach Roadway	each	1	1 100%	0	0	0
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Roadway is on vertical and horizontal curve. No speed reduction required.

323 - Approach Railing	each	4	4 100%	0	0	0
------------------------	------	---	-----------	---	---	---

Flex beam rails, weathering steel W-beam on timber posts with timber blockouts, in fill over culvert, with FLEAT end treatments.



<p>320 - Wingwalls</p> <p>each 4</p>	<p>2 50%</p>	<p>2 50%</p>	<p>0</p>	<p>0</p>
<p>Reinforced concrete wall on spread footings, flared.</p> <p>Various locations have diagonal insignificant width cracks.</p> <p>Southwest wingwall along joint with headwall, spalls with exposed reinforcement for 3 feet high. Diagonal crack up to 0.125 inch wide x full height. (1 CS2)</p> <p>Southeast wingwall has (2) vertical cracks and (3) diagonal cracks near culvert up to medium width. Minor erosion around end.</p> <p>Northwest wingwall at juncture with Wall 3, (1) diagonal crack up to 0.06 inch x full height and (1) vertical crack up to 0.03 inch with minor efflorescence and (2) minor spalls with exposed rebar near Wall 3. Along joint with Wall 3 at top edge, delaminated area for 4 foot tall x 6 inch wide. At first construction joint from end, 1 foot long x 18 inch high x 2 inch deep spall/delamination. (1 CS2)</p>				
<p>330 - Metal Bridge Railing</p> <p>feet 42</p>	<p>42 100%</p>	<p>0</p>	<p>0</p>	<p>0</p>
<p>Steel pipe pedestrian rails mounted on headwalls.</p> <p>No significant defects.</p>				
<p>515 - Steel Protective Coating</p> <p>sq feet 42</p>	<p>42 100%</p>	<p>0</p>	<p>0</p>	<p>0</p>
<p>Painted brown.</p> <p>No significant defects.</p>				
<p>335 - Headwall</p> <p>each 2</p>	<p>2 100%</p>	<p>0</p>	<p>0</p>	<p>0</p>
<p>Concrete headwall.</p> <p>Over Wall 2, (3) vertical insignificant width cracks with light efflorescence.</p>				
<p>501 - Channel/Bank</p> <p>each 1</p>	<p>1 100%</p>	<p>0</p>	<p>0</p>	<p>0</p>
<p>Flow is through Cell 1, pedestrian path in Cell 2.</p> <p>Channel appears to have been rock lined, covered with cattails and vegetation.</p> <p>Moderately sloped banks with moderate vegetation.</p>				
<p>Structure: PAR CANTBRY-0.2 : 2025-02-05 - Routine</p>				<p>Page 9 of 17</p>



Grouted rock riprap on downstream bank on south edge of bank.

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report

Photos

Inspection Date: 02/05/2025

Structure Key: PAR CANTBRY-0.2

Structure Class: Culvert

241 - Reinforced Concrete Culvert



Heavy efflorescence buildup and rust staining in Wall 2 of Cell 2

2/5/2025 12:00:00 AM



Honeycomb in bottom of Wall 2 Cell 1 near midpoint

2/5/2025 12:00:00 AM



Rust staining and stalactites in bottom of top slab in Cell 2 near midpoint

2/5/2025 12:00:00 AM



Spall in Wall 2 at inlet

2/5/2025 12:00:00 AM



Vertical crack in Wall 1 near inlet

2/5/2025 12:00:00 AM



326 - Wingwalls



Diagonal crack in southwest wingwall

2/5/2025 12:00:00 AM



Spall in northwest wingwall

2/5/2025 12:00:00 AM

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report

Photos Inventory

Inspection Date: 02/05/2025

Structure Key: PAR CANTBRY-0.2

Structure Class: Culvert

Channel Downstream



Channel looking west downstream

2/5/2025 12:00:00 AM

Channel Upstream



Channel looking east upstream

2/5/2025 12:00:00 AM

Culvert Inlet



Culvert inlet looking west

2/5/2025 12:00:00 AM

Culvert Outlet



Culvert outlet looking east

2/5/2025 12:00:00 AM

General/Superstructure



Culvert general looking east

2/5/2025 12:00:00 AM

Roadway

Structure: PAR CANTBRY-0.2 : 2025-02-05 - Routine

Page 14 of 17



Roadway looking north

2/5/2025 12:00:00 AM

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report
Maintenance Items

Inspection Date: 02/05/2025
Structure Key: PAR CANTBRY-0.2
Structure Class: Culvert

Moderate

200.38 - Crack sealing in concrete, may require epoxy injection

Status	Date Entered	Target Date	Deterioration Category
Open	02/05/2019	02/05/2027	

Problem Description

Epoxy seal cracks in top slab, walls, and wingwalls.

Low

200.31 - Concrete repair, including removal of spalled, delaminated, deteriorated concrete, may include rebar cleaning/replacement

Status	Date Entered	Target Date	Deterioration Category
Open	02/06/2023	02/05/2027	

Problem Description

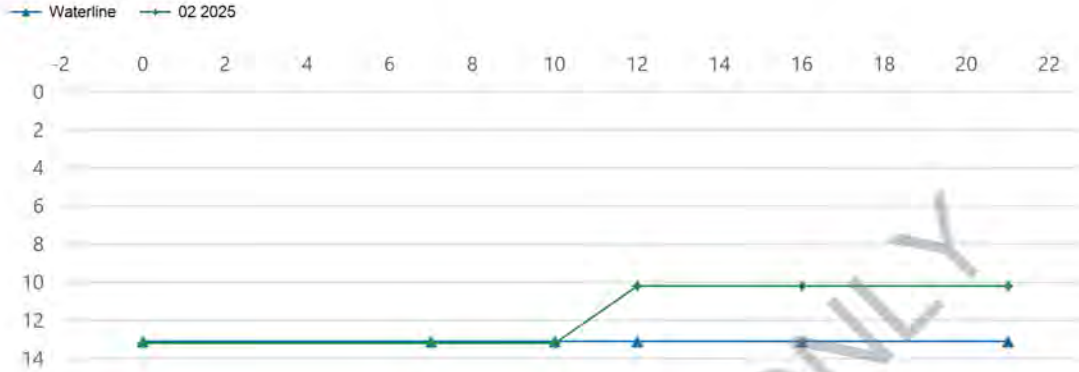
Patch honeycombing and scaling in walls. Patch spalls in wingwalls and in Wall 2 at inlet.

FOR EXAMPLE ONLY



Structure Inspection and Inventory Report
Streambed Profile

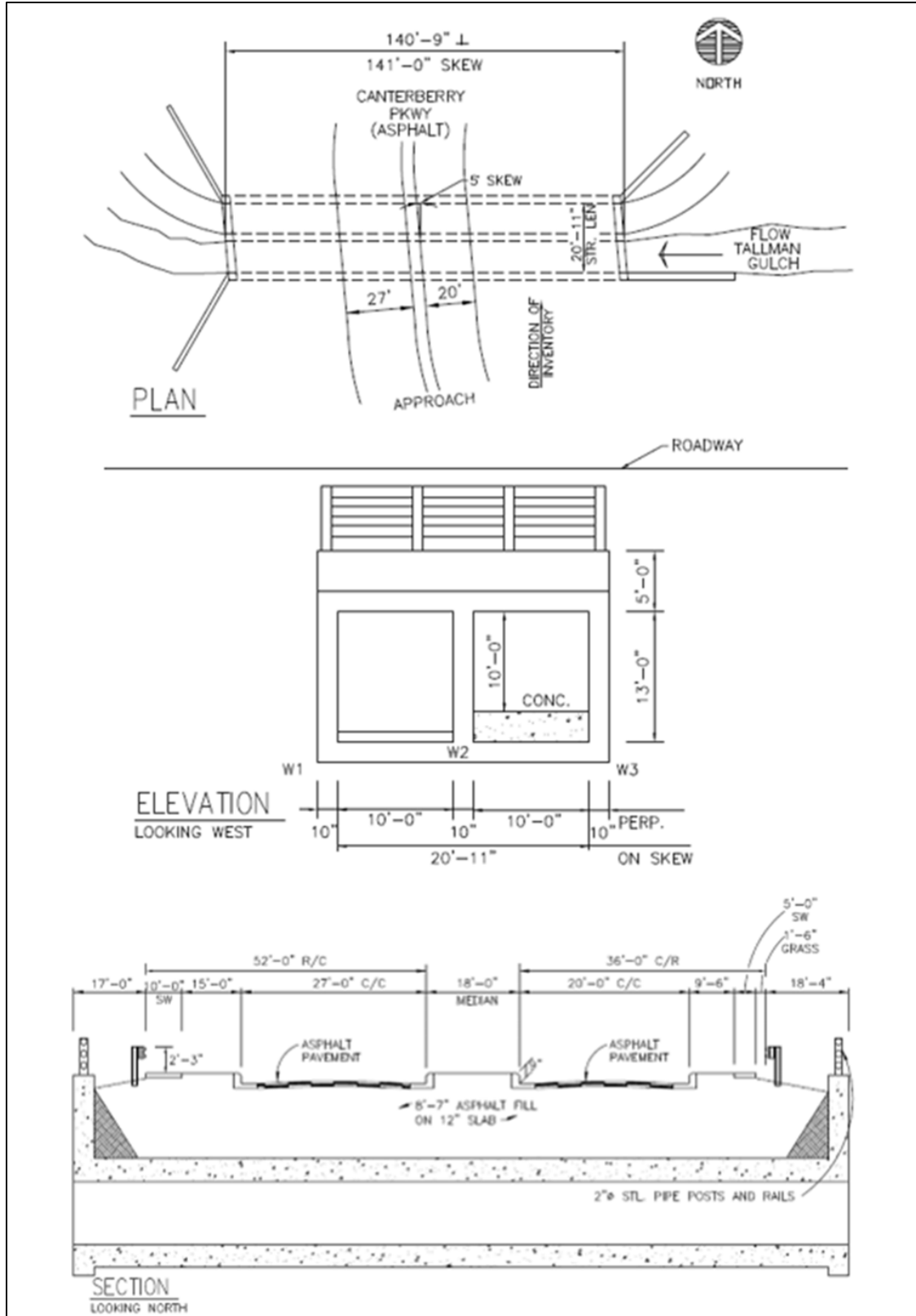
Inspection Date: 02/05/2025
Structure Key: PAR CANTBRY-0.2
Structure Class: Culvert



	W1	W2	W2	W3
02 2025	0 13.2	7 13.2	10 10.2	12 10.2

	Measurement Type	Reference Line	Waterline
02 2025	Upstream	Bottom of top slab	13.1
02/05/25 Comments: N/A			7 feet from W1

FOR EXAMPLE ONLY

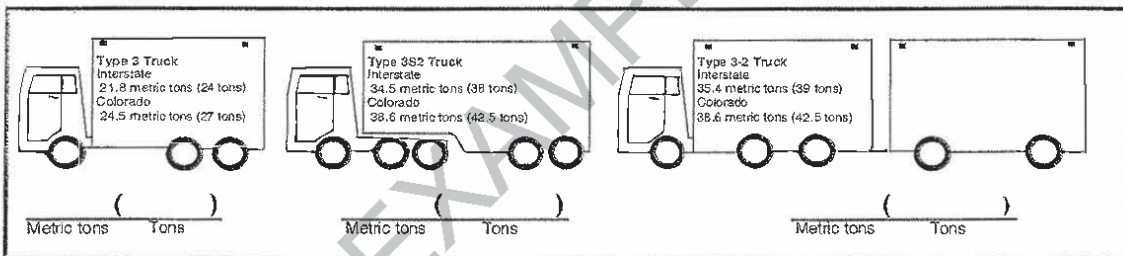




COLORADO DEPARTMENT OF TRANSPORTATION LOAD FACTOR RATING SUMMARY		Structure No.	PAR CANTBRY-0.2
Rated using : Asphalt thickness: <u>0</u> mm (<u>0</u> in.) <input checked="" type="checkbox"/> Colorado legal loads <input type="checkbox"/> Interstate legal loads		Over	TALLMAN GULCH
		Road No.	CANTERBERRY PKWY
		Structure Type	CBC
		Parallel Structure No.	N/A
		Batch I.D.	

Structural member	Bottom of Ext. Wall (Negative Moment)		
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	Metric tons (Tons)	Metric tons (Tons)	Metric tons (Tons)	Metric tons (Tons)
Inventory	36.4 (40.2)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Operating	60.9 (67.2)	0.0 (0.0)	0.0 (0.0)	0.0 (0.0)
Type 3 truck	()	()	()	()
Type 3S2 truck	()	()	()	()
Type 3-2 truck	()	()	()	()
Permit truck	()	()	()	()



Comments **POSTING NOT REQUIRED**

This culvert was rated using project specific plan details.

A fill height of 8.74 ft. on top of a 12" concrete slab was determined from the plans.

INSPECTED BUT NOT RATED

STANTEC CONSULTING 2013	INSPECTED BUT NOT RATED
INSPECTED BUT NOT RATED	SEH, INC.
STANTEC CONSULTING 2015	DATE: _____ BY: _____

Rated by	<i>Martin Murry</i>	Date	3/16/2007	Checked by	<i>Magdalena Serrano</i>	Date	4/20/07
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Appendix B Abbreviations

Appendix B contains abbreviations used throughout this manual and common abbreviations used for coding data items in SIMSA.

ABBREVIATIONS USED THROUGHOUT MANUAL

Abbreviation	Term
AADT	Annual average daily traffic
AADTT	Annual average daily truck traffic
AASHTO	American Association of State Highway and Transportation Officials
AM	Ante Meridiem
AN	Alpha numeric
APR	April
AS	Allowable Stress
ASD	Allowable Stress Design
ASR	Alkali-Silica Reactivity
AUG	August
BIRM	Bridge Inspector's Reference Manual
BRM	Bridge Rating Manual
BrR	AASHTOWare Bridge Rating Software
BTE	Bridge and Tunnel Enterprise
CDOT	Colorado Department of Transportation
CFR	Code of Federal Regulations
CIF	Critical Inspection Finding
CIP	Cast-in-place
CL	Centerline
CMP	Corrugated Metal Pipe
CS	Condition State
dd	Day
DEC	December
DOD	Department of Defense
DOT	Department of Transportation
ERF	Essential Repair Finding
ERL	Essential Repair Letter
EV	Emergency Vehicle
EVN	Even
F	Fahrenheit
f'c	Concrete Compressive Strength
FEB	February
FHWA	Federal Highway Administration
FIPS	Federal Information Processing Series
FRP	Fiber reinforced polymer
FT	Foot or Feet
fy	Structural Steel Yield Strength
GIS	Geographic Information System
Glulam	Glued laminated timber



Abbreviation	Term
GPS	Global Positioning System
GRS	Geosynthetic Reinforced Soil
HDPE	High density polyethylene
HEC	Hydraulic Engineering Circular
hh	Hour
HOV	High-Occupancy Vehicle
HPMS	Highway Performance Monitoring System
I	Interstate
ID	Identification
IN	Inch or inches
JAN	January
JUL	July
JUN	June
LF	Load Factor
LFR	Load Factor Rating
LiDAR	Light Detection and Ranging
LP	Leap Year
LR	Load Rating
LRFD	Load and Resistance Factor Design
LRFR	Load and Resistance Factor Rating
LRS	Linear Referencing System
LRSS	Load Rating Summary Sheet
LRT	Light Rail Transit
MAR	March
MASH	Manual for Assessing Safety Hardware (AASHTO)
mm	Month
mm	Minutes
MPO	Metropolitan Planning Organization
MSE	Mechanically stabilized earth
MUTCD	Manual on Uniform Traffic Control Devices
N	Numeric
N/A	Not applicable
NBI	National Bridge Inventory
NBIS	National Bridge Inspection Standards
NCHRP	National Cooperative Highway Research Program
NDE	Non-destructive evaluation
NHFN	National Highway Freight Network
NHS	National Highway System
No.	Number
NOV	November
NRHP	National Register of Historic Places
NRL	Notional Rating Load
NSG	Non-standard Gage
NSTM	Nonredundant steel tension member



Abbreviation	Term
OCT	October
PE	Polyethylene
PE	Professional Engineer
PM	Post Meridiem
POA	Plan of action
PPE	Personal Protection Equipment
PUB	Publication
QA	Quality Assurance
QC	Quality Control
RF	Rating Factor
ROW	Right of Way
RTD	Regional Transportation District
SCUBA	Self-contained underwater breathing apparatus
SDDC	Military Surface Deployment and Distribution Command
SEP	September
SHV	Special Haul Vehicle
SI&A	Structure Inventory and Appraisal
SIMSA	System for Inspection and Management of Structural Assets
SNBI	Specifications for the National Bridge Inventory
ss	Seconds
STRAHNET	Strategic highway network
SU	Single Unit
T	Tons
TL	Test Level
U.S.	United States
U.S.C.	United States Code
UBIT	Under Bridge Inspection Truck
yyyy	Year



COMMON ABBREVIATIONS USED FOR CODING DATA ITEMS

Abbreviation	Term
1 st	First
2 nd	Second
AR	Access Road
AT&SF	Atchison, Topeka and Santa Fe
AVE	Avenue
BLVD	Boulevard
BNSF	Burlington Northern and Santa Fe
BUS	Business
C&S	Colorado and Southern
CO	Colorado
CO	County
CR	County Road
CR&P	Chicago, Rock Island and Pacific
CRK	Creek
D&RGW	Denver and Rio Grande Western
DIV	Diversion
DTCH	Ditch
E	East
EB	Eastbound
EBND	Eastbound
FK	Fork
FR	Frontage
GUL	Gulch
GW	Great Western
I	Interstate
LRT	Light Rail Transit
LWR	Lower
MAINT	Maintenance
MI	Mile
ML	Mainline
MP	Missouri Pacific
MT	Mount
N	North
NB	Northbound
NBND	Northbound
OVFLW	Overflow
PED	Pedestrian
PKWY	Parkway
R	Ramp
RD	Road
RDWY	Roadway
RES	Reservoir
RR	Railroad



Abbreviation	Term
RT	Route
RTD	Regional Transportation District
RTE	Route
RVR	River
S	South
SB	Southbound
SBND	Southbound
SH	State Highway
SR	Service Road
ST	Saint
ST	Street
UP	Union Pacific
US	United States
W	West
WB	Westbound
WBND	Westbound



Appendix C Definitions

Appendix C contains definitions for terms used throughout this manual.

Term	Definition
Abutment	A structure that supports the end of a bridge, provides lateral support for fill material on which the roadway rests immediately adjacent to the bridge, and transfers the loads from the superstructure into the ground.
Annual Average Daily Traffic (AADT)	The total annual volume of traffic passing a point or segment of a highway in both directions divided by the number of days in a year.
Annual Average Daily Truck Traffic (AADTT)	The total annual volume of truck traffic passing a point or segment of a highway in both directions divided by the number of days in a year.
Bridge	A structure including supports erected over a depression or an obstruction, such as water, highway, or railway, and having a track or passageway for carrying traffic or other moving loads.
Closed Median	A median in which the area between the two roadways on the structure is bridged over and is capable of supporting traffic.
Complex Feature	Structure component(s) or member(s) with advanced or unique structural members or operational characteristics, construction methods, and/or requiring specific inspection procedures. This includes mechanical and electrical elements of movable spans and cable-related members of suspension and cable-stayed superstructures.
Culvert	A structure, conduit, or drain comprised of one or more barrels with integral inverts buried in an embankment underneath a road, railroad, or other obstruction. These structures are designed to convey water, pedestrians, vehicles, railroads, terrestrial organisms, and/or other objects through embankments.
Current Inspection	An inspection that exists in SIMSA and has an inspection status of anything other than "Final". A structure may have more than one "Current Inspection" in SIMSA, but there should not be more than one "Current Inspection" for any inspection type.
Damage Human Induced Inspection	An unscheduled inspection to assess structural damage resulting from human actions.
Damage Natural Disaster Inspection	An unscheduled inspection to assess structural damage resulting from environmental factors.
Divided Highway	A highway with separated roadways for traffic traveling in opposite directions.
Double Deck Bridge	A bridge consisting of two decks, tiers, or levels. These bridges may incorporate highway lanes on both levels or highway lanes on one level and other transportation modes on the other level.
Element Level Structure Inspection Data	Quantitative condition assessment data, collected during structure inspections, that indicates the severity and extent of defects in structure elements.
Federal Information Processing Series (FIPS)	A system of numeric and/or alphabetic coding issued by the National Institute of Standards and Technology (NIST), an agency of the US Department of Commerce. FIPS codes are assigned for a variety of geographic entities including American Indian and Alaska Native Areas, Hawaiian home lands, congressional districts, counties, county subdivisions, metropolitan areas, places, and states. FIPS codes were discontinued by NIST in 2005, but the Census Bureau continues to maintain and issue codes for the geographic entities covered.



Term	Definition
Federal Lands	Lands under the jurisdiction of Federal agencies. FHWA's Federal Land Management Agency partners currently include: National Park Service (NPS); USDA Forest Service (Forest Service); U.S. Fish and Wildlife Service (USFWS); Bureau of Indian Affairs (BIA) and Tribal Governments; Bureau of Land Management (BLM); Department of Defense (DOD); U.S. Army Corps of Engineers (USACE); and Bureau of Reclamation (BOR).
Fiber Reinforced Polymer Composite	Fiber reinforced polymer composite (FRP) is also known as fiberglass reinforced plastic and is a composite made from glass fiber or carbon fiber reinforcement in a plastic (polymer) matrix. With reinforcement of the plastic matrix, a wide variety of physical strengths and properties can be designed into the material. Additionally, the type and configuration of the reinforcement can be selected, along with the type of polymer and additives within the matrix.
Fiscal Year	CDOT's fiscal year is from July 1 to June 30 and is named based on the calendar year at the end of the fiscal year.
Hands-on Inspection	Inspection within arm's length of the member. Inspection uses visual techniques that may be supplemented by nondestructive testing.
Highway	The term "highway" includes: A) a road, street, and parkway; B) a right-of-way, bridge, railroad-highway crossing, tunnel, drainage structure, sign, guardrail, and protective structure, in connection with a highway; and C) a portion of any interstate or international bridge or tunnel and the approaches thereto, the cost of which is assumed by a State transportation department, including such facilities as may be required by the United States Customs and Immigration Services in connection with the operation of an international bridge or tunnel.
Highway Performance Monitoring System	A national level highway information system that includes data on the extent, condition, performance, use, and operating characteristics of the nation's highways.
Hydraulic review	A review by a person qualified to evaluate the field-observed hydraulic conditions and make a determination of the impacts of the conditions on the performance of the channel, channel protection, or when working with structural staff, determine the scour vulnerability of a structure member or entire structure. Hydraulic reviews may include a review of the field inspection notes and photographs, review of as-built plans, scour appraisals, and scour POAs, or performance of a hydraulic analysis as deemed appropriate.
In-Depth Inspection	A close-up, detailed inspection of one or more structure members located above or below water, using visual or nondestructive evaluation techniques as required to identify any deficiencies not readily detectable using routine inspection procedures.
Initial Inspection	The first inspection of a structure as it is added to the inventory. This inspection serves to record required bridge inventory data, establish baseline conditions, and establish the intervals for other inspection types.
Inspection Report	The document which summarizes the structure inspection findings, recommendations, and identifies the team leader responsible for the inspection and report.
Internal Redundancy	A redundancy that exists within a primary member cross-section without load path redundancy, such that fracture of one component will not propagate through the entire member, is discoverable by the applicable inspection procedures, and will not cause a portion of or the entire bridge to collapse.
Inventory Data	All data reported to the National Bridge Inventory in accordance with FHWA's Specifications for the National Bridge Inventory.
Legally Enforceable Load Posting	Posting of a load restriction sign (or signs) at a structure in accordance with State law that is legally enforceable by law enforcement personnel.



Term	Definition
Linear Referencing System	Provides a geospatial representation of a road network through a set of procedures for determining and retaining a record of specific points along a highway. Typical methods used are mile point, milepost, reference point, or link node. LRS data are required for the annual Highway Performance Monitoring System (HPMS) data submittal from the States to FHWA.
Load Configuration	A specific set of live loads used in a structure load rating consisting of uniform loads, concentrated loads, and/or specific vehicle axle loads. Load configurations can be grouped into design, legal, and permit load configuration categories based on which load rating level the configuration was analyzed for in the load rating.
Load Path Redundancy	A redundancy that exists based on the number of primary load-carrying members between points of support, such that fracture of the cross section at one location of a member will not cause a portion of or the entire bridge to collapse.
Load Posting	Regulatory signs installed in accordance with the “Manual on Uniform Traffic Control Devices for Streets and Highways” and State or local law which represent the maximum vehicular live load which the structure may safely carry.
Load Rating	The analysis to determine the safe vehicular live load carrying capacity of a structure using structure plans and supplemented by measurements and other information gathered from an inspection.
Load Rating Level	Colorado requires structures to be load rated at three different levels which are design, legal, and permit load rating levels.
Load Rating Value	The maximum permissible live load for a given structure member and load configuration, reported as either U.S. tons or as a rating factor.
Local Agency	A county, town, municipal, metropolitan district, park and recreation district, or other local government with public authority over structures.
Major Structure	A bridge or culvert carrying a public road or a private bridge or culvert connected to a public road on both ends of the structure, and having an opening measured along the center of the roadway of more than 20 feet between under copings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it includes multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.
Median	The portion of a highway separating opposing directions of the traveled way.
Minor Structure	A bridge or culvert carrying a public road or a private bridge or culvert connected to a public road on both ends of the structure, and having an opening measured along the center of the roadway of greater than or equal to 4 feet and less than or equal to 20 feet between under copings of abutments or spring lines of arches, or extreme ends of openings for multiple boxes; it includes multiple pipes, where the clear distance between openings is less than half of the smaller contiguous opening.
Multi-level Interchange	A multilevel highway intersection or junction of intersecting roads and bridges arranged so that vehicles may move from one road to another without crossing the streams of traffic.
National Bridge Inspection Standards	Federal regulations establishing national policy regarding bridge inspection organization, bridge inspection frequency, inspector qualifications, inventory requirements, report formats, and inspection and rating procedures, as described in 23 CFR 650 Subpart C.



Term	Definition
National Bridge Inventory	An aggregation of State transportation department, Federal agency and Tribal government bridge and associated highway data maintained by the Federal Highway Administration (FHWA). The NBIS requires each State transportation department, Federal agency, and Tribal government to prepare and maintain a bridge inventory, which must be submitted to FHWA in accordance with these specifications on an annual basis or whenever requested.
National Highway Freight Network	A national highway freight network established by FHWA to assist States in strategically directing resources toward improved movement of freight on highways. The National Highway Freight Network consists of a Primary Highway Freight System, the portions of the Interstate System not designated as part of the Primary Highway Freight System, and Critical Rural Freight Corridors and Critical Urban Freight Corridors designated by states.
Nationally Certified Bridge Inspector	An individual meeting the team leader requirements of 23 CFR 650.309(b).
Navigable Waterway	Navigable waterways are determined by the Commandant of the United States Coast Guard. Title 33 of the Code of Federal Regulations, Section 2.36, defines navigable waterways as consisting of: 1. Territorial seas of the United States; 2. Internal waters of the United States that are subject to tidal influence; and 3. Internal waters of the United States not subject to tidal influence that: a. Are or have been used, or are or have been susceptible for use, by themselves or in connection with other waters, as highways for substantial interstate or foreign commerce, notwithstanding natural or man-made obstructions that require portage, or b. A governmental or non-governmental body, having expertise in waterway improvement, determines to be capable of improvement at a reasonable cost (a favorable balance between cost and need) to provide, by themselves or in connection with other waters, highways for substantial interstate or foreign commerce.
Next Inspection	The next inspection that will be created in SIMSA once the current inspection is finalized in SIMSA for inspection types which have intervals.
Nonredundant Steel Tension Member (NSTM)	A primary steel member fully or partially in tension, and without load path redundancy, system redundancy, or internal redundancy, whose failure may cause a portion of or the entire bridge to collapse.
Non-standard Gage	Distribution Factor-Line Girder setting in AASHTOWare Bridge Rating Software that can be used for non-standard gage vehicles or improving the LFR load ratings for legal or permit vehicles.
Off-System Structure	A Major Structure owned by a local agency.
On-System Structure	A Major Structure owned by CDOT.
Operating Rating	The maximum permissible live load to which the structure may be subjected for the load configuration used in the load rating. Allowing unlimited numbers of vehicles to use the structure at operating level may shorten the life of the bridge. Operating rating is a term used in either Allowable Stress or Load Factor Rating method.
Orthotropic Deck	An orthotropic deck consists of a flat, thin steel plate stiffened by a series of closely spaced longitudinal ribs at right angles to the floor beams. The deck acts integrally with the steel superstructure.
Pier	The part of a bridge structure that provides intermediate support to a superstructure.
Pin Inspection	A nondestructive ultrasonic test of structural pins whose failure could cause all or a portion of the entire structure to collapse.



Term	Definition
Posting Status Change Unscheduled Inspection	An inspection type used to document changes to SIA items PS01A – Load Posting Structure Status and PS01B – Load Posting Status Code when these items need to be changed outside of any other active inspections.
Private Bridge	A bridge open to public travel and not owned by a public authority as defined in 23 U.S.C. 101.
Probability	Extent to which an event is likely to occur during a given interval. This may be based on the frequency of events, such as in the quantitative probability of failure, or on degree of belief or expectation. Degrees of belief about probability can be chosen using qualitative scales, ranks, or categories such as, remote, low, moderate, or high.
Public Authority	A Federal, State, county, town, or township, Indian tribe, municipal or other local government or instrumentality with authority to finance, build, operate, or maintain toll or toll-free facilities.
Public Road	Any road or street under the jurisdiction of and maintained by a public authority and open to public travel.
Quality Assurance (QA)	The use of sampling and other measures to assure the adequacy of quality control procedures in order to verify or measure the quality level of the entire structure inspection and load rating program.
Quality Control (QC)	Procedures that are intended to maintain the quality of a structure inspection or load rating at or above a specified level.
Risk	The exposure to the possibility of structural safety or serviceability loss during the interval between inspections. It is the combination of the probability of an event and its consequence.
Roadway	The portion of a highway, including shoulders, for vehicular use. A divided highway has two or more roadways.
Route	A specific road, highway, or travel way open to public travel.
Routine Inspection	Regularly scheduled comprehensive inspection consisting of observations and measurements needed to determine the physical and functional condition of the structure and identify changes from previously recorded conditions.
Routine Permit Load	A live load, which has a gross weight, axle weight, or distance between axles not conforming with State statutes for legally configured vehicles, authorized for unlimited trips over an extended period of time to move alongside other heavy vehicles on a regular basis.
Routine+ Inspection	A Routine Inspection and a hands-on inspection of nonredundant steel tension member(s).
Safe Load Capacity	A live load that can safely utilize a bridge repeatedly over the duration of a specified inspection interval.
Scour	Erosion of streambed or bank material due to flowing water; often considered as being localized around piers and abutments of bridges.
Scour Appraisal	A risk-based and data-driven determination of a structure’s vulnerability to scour, resulting from the least stable result of scour that is either observed, or estimated through a scour evaluation or a scour assessment.
Scour Assessment	The determination of an existing structure’s vulnerability to scour which considers stream stability and scour potential as described in HEC 20 and other scour-related data sources.
Scour Critical Bridge	A bridge with a foundation member that is unstable, or may become unstable, as determined by the scour appraisal.
Scour Evaluation	The application of hydraulic analysis as described in HEC 18 and HEC 20 to estimate scour depths and determine bridge and substructure stability considering potential scour.



Term	Definition
Scour Monitoring Inspection	An inspection performed during or after a triggering storm event as required by a Scour Plan of Action (POA), by personnel with qualifications required by the agency.
Scour Plan of Action (POA)	Procedures for structure inspectors and engineers in managing each structure determined to be scour critical or that has unknown foundations.
Special Scheduled Inspection	A scheduled inspection, used to monitor a particular known or suspected deficiency, or to monitor special details or unusual characteristics of a bridge that does not necessarily have defects.
Special Unscheduled Inspection	An unscheduled inspection used to inspect a particular known or suspected deficiency, inspect special details or unusual characteristics of a structure that does not necessarily have defects, inspect a recently replaced or rehabilitated portion of the structure, or document an inspection not covered by any other inspection type.
Strategic Highway Network (STRAHNET)	A network of highways which are important to the United States' strategic defense policy and which provide defense access, continuity, and emergency capabilities for defense purposes.
Strategic Highway Network (STRAHNET) Connectors	Highways which provide access between major military installations and highways which are part of the Strategic Highway Network.
Structural Review	A review by a person qualified to evaluate the field-observed conditions and make a determination of the impacts of the conditions on the performance of the structure member or entire structure. Structural reviews may include a review of the field inspection notes and photographs, review of as-built plans, or analysis as deemed appropriate.
Structure Element	Individual parts of a structure that are subsets of structure components, inventoried separately as functional groups.
Supported Bridge	A structure with temporary shoring, supports, repairs, or supplemental members that are installed to keep the structure open despite deficiencies in the permanent structure, pending future repairs or replacement.
System Redundancy	A redundancy that exists in a bridge system without load path redundancy, such that fracture of the cross section at one location of a primary member will not cause a portion of or the entire bridge to collapse.
Team Leader	The on-site, nationally certified bridge inspector in charge of an inspection team and responsible for planning, preparing, performing, and reporting on structure field inspections.
Temporary Bridge	A structure which is constructed to carry highway traffic until the permanent facility is built, repaired, rehabilitated, or replaced.
Traveled Way	The portion of roadway for the movement of vehicles, exclusive of shoulders, berms, sidewalks, and parking lanes.
Underwater Inspection	A scheduled inspection of the underwater portion of a structure and the surrounding channel, which cannot be inspected visually at low water by wading or probing, generally requiring diving or other appropriate techniques.
Vertical Clearance Scheduled Inspection	A scheduled inspection to measure and assess a structure's vertical clearance over a public road and typically does not include an inspection of the structure itself.



Appendix D Component Condition Rating Charts

Appendix D contains component condition rating charts to aid in the coding of the condition items in *Section 5.2*.



Component Condition Rating Chart (SIA Items C01, C02, C03, C04, C07, C09, C10, C11, C14, and C15)

Component Condition Rating			Criterion 1: Defect Severity and Extent				Criterion 2: Strength/Performance
Overall Condition	Code	Condition	CS 1 - Good	CS 2 - Fair	CS 3 - Poor	CS 4 - Severe	Strength and/or Performance Affected
			Inherent/Insignificant Defects	Minor Defects	Moderate Defects	Major Defects	
	N	Not Applicable	Component does not exist				
Good	9	Excellent	Isolated (1 - 10%)				Not Affected
	8	Very Good	Some (10 - 50%)	Isolated (1 - 10%)			Not Affected
	7	Good	Widespread (>50%)	Some (10 - 50%)			Not Affected
Fair	6	Satisfactory		Widespread (>50%)	Isolated (1 - 10%)		Not Affected
	5	Fair			Some to Widespread (10 - 100%)	Isolated to Some ³ (1 - 50%)	Not Affected
Poor	4	Poor			Widespread (>50%)	Isolated to Widespread	Affected
	3	Serious				Isolated to Widespread	Seriously Affected. Condition typically necessitates more frequent monitoring, load restrictions, and/or corrective actions.
	2	Critical				Isolated to Widespread	Severely Compromised. Condition typically necessitates frequent monitoring, significant load restrictions, and/or corrective actions in order to keep the structure open.
	1	Imminent Failure	Structure is closed to traffic due to component condition. Repair or rehabilitation may return the structure to service.				
	0	Failed	Structure is closed due to component condition, and is beyond corrective action. Replacement is required to restore service.				

- When the total quantity of defects for a Condition State is less than 1% of the component, typically the Condition Rating is not affected.
- The range of percentages defined in the chart for Isolated, Some, and Widespread defect quantities are guidelines and do not have to exactly match the component's actual quantities.
- For Criterion 1, the correlation between defect quantities and component Condition Ratings defined in this chart is a guideline and does not have to exactly match the component's actual Condition Rating. The component's actual Condition Rating should typically be within +/- one Condition Rating of this chart.
- Criterion 2 must be satisfied for the Condition Rating Code to apply.
- Defects may be coded in Condition State 4 when the defects have no effect on the strength or performance of the component but it is determined that a new structural review should be completed after every future inspection.
- For SIA Item C09 - Channel Condition Rating, Criterion 2 should be based on whether the structure or approach roadway is threatened.
- For SIA Item C11 - Scour Condition Rating, Criterion 2 should be based on whether the strength or stability of the structure is affected.



Component Condition Rating Chart (SIA Items C05 - Railing and C06 - Railing Transition)

Component Condition Rating			Criterion 1: Defect Severity and Extent				Criterion 2: Strength/Performance
Overall Condition	Code	Condition	CS 1 - Good	CS 2 - Fair	CS 3 - Poor	CS 4 - Severe	Strength and/or Performance Affected
			Inherent/Insignificant Defects	Minor Defects	Moderate Defects	Major Defects	
	N	Not Applicable	Component does not exist				
Good	9	Excellent	Isolated (1 - 10%)				Not Affected
	8	Very Good	Some (10 - 50%)	Isolated (1 - 10%)			Not Affected
	7	Good	Widespread (>50%)	Some (10 - 50%)			Not Affected
Fair	6	Satisfactory		Widespread (>50%)	Isolated (1 - 10%)		Not Affected
	5	Fair			Some to Widespread (10 - 100%)	Isolated to Some ³ (1 - 50%)	Not Affected
Poor	4	Poor			Widespread (>50%)	Isolated to Widespread	Affected
	3	Serious				Isolated to Widespread	Seriously Affected. Condition typically necessitates more frequent monitoring and/or corrective actions.
	2	Critical				Isolated to Widespread	Railing(s) are severely compromised or have failed. Condition typically necessitates temporary railings and/or other corrective actions in order to keep the structure open.
	1	Imminent Failure	Structure is closed due to failed railing(s) which presents a safety hazard. Replacement of railing(s) is required to restore service.				
	0	Failed	Structure is closed due to failed railing(s) which presents a safety hazard. Replacement of railing(s) is required to restore service. Replacement of railing(s) requires rehabilitation or replacement of deck, superstructure, or portions of a culvert.				

1. When the total quantity of defects for a Condition State is less than 1% of the component, typically the Condition Rating is not affected.
2. The range of percentages defined in the chart for Isolated, Some, and Widespread defect quantities are guidelines and do not have to exactly match the component's actual quantities.
3. For Criterion 1, the correlation between defect quantities and component Condition Ratings defined in this chart is a guideline and does not have to exactly match the component's actual Condition Rating. The component's actual Condition Rating should typically be within +/- one Condition Rating of this chart.
4. Criterion 2 must be satisfied for the Condition Rating Code to apply.
5. Defects may be coded in Condition State 4 when the defects have no effect on the strength or performance of the component but it is determined that a new structural review should be completed after every future inspection.



Component Condition Rating Chart (SIA Item C08 - Joint)						
Component Condition Rating			Defect Severity and Extent			
Overall Condition	Code	Condition	CS 1 - Good	CS 2 - Fair	CS 3 - Poor	CS 4 - Severe
			Inherent/Insignificant Defects	Minor Defects	Moderate Defects	Major Defects
	N	Not Applicable	Structure does not have deck joints.			
Good	9	Excellent	Isolated (1 - 10%)			
	8	Very Good	Some (10 - 50%)	Isolated (1 - 10%)		
	7	Good	Widespread (>50%)	Some (10 - 50%)		
Fair	6	Satisfactory		Widespread (>50%)	Isolated (1 - 10%)	
	5	Fair			Some (10 - 50%)	
Poor	4	Poor			Widespread (>50%)	Isolated (1 - 10%)
	3	Serious				Some (10 - 50%)
	2	Critical				Widespread (>50%)
	1	Imminent Failure	Joints have failed and are ineffective.			
	0	Failed	Joints have failed and presents a safety hazard.			

1. When the total quantity of defects for a Condition State is less than 1% of the component, typically the Condition Rating is not affected.
2. The range of percentages defined in the chart for Isolated, Some, and Widespread defect quantities are guidelines and do not have to exactly match the component's actual quantities.
3. The correlation between defect quantities and component Condition Ratings defined in this chart is a guideline and does not have to exactly match the component's actual Condition Rating. The component's actual Condition Rating should typically be within +/- one Condition Rating of this chart.



Appendix E Responsible Party Codes

Appendix E contains the Responsible Party codes in *CL01A – Responsible Party* for entities in Colorado.

Responsible Party (CL01A Codes)
Adams County
Alamosa County
Arapahoe County
Archuleta County
Baca County
Battlement Mesa
Bell Mountain Ranch Metropolitan District
Bent County
Boulder County
Canon City
Carbondale
CDOT
Cedaredge
Chaffee County
Cheyenne County
City & County of Denver
City & County of Denver Department of Aviation
City of Alamosa
City of Arvada
City of Aspen
City of Aurora
City of Black Hawk
City of Boulder
City of Brighton
City of Broomfield
City of Castle Pines
City of Centennial
City of Central City
City of Cherry Hills Village
City of Colorado Springs
City of Commerce City
City of Cripple Creek
City of Englewood
City of Evans
City of Florence
City of Fort Lupton
City of Fountain
City of Glendale
City of Golden
City of Grand Junction
City of Greenwood Village

Responsible Party (CL01A Codes)
Mount Crested Butte
Muller
Northwest Parkway
Otero County
Other - Private
Ouray
Ouray County
Pagosa Springs
Parachute
Park County
Parks and Open
Phillips County
Pitkin County
Private Owner
Prowers County
Pueblo
Pueblo County
Regional Transportation District
Rifle
Rio Blanco County
Rio Grande County
Rocksol
Routt County
Saguache County
San Engineering
San Juan County
San Miguel County
Sedgwick County
Severance
Shrewsbury
Snowmass Village
South Suburban Parks and Recreation
Steamboat Springs
Sterling
Summit County
Teller County
Town of Aguilar
Town of Avon
Town of Basalt
Town of Bayfield
Town of Berthoud



Responsible Party (CL01A Codes)
City of Idaho Springs
City of Lafayette
City of Lakewood
City of Littleton
City of Lone Tree
City of Longmont
City of Louisville
City of Loveland
City of Manitou Springs
City of Northglenn
City of Rocky Ford
City of Salida
City of Sheridan
City of Thornton
City of Walsenburg
City of Westminster
City of Wheat Ridge
City of Woodland Park
Clear Creek County
Coal Creek
Colorado Springs Airport
Conejos County
Cortez
Costilla County
Craig
Crested Butte
Crowley County
Custer County
Dacono
Deer Trail School District
Delta
Delta County
Denver Mountain Parks
Dolores County
Douglas County
Durango
E-470
Eagle County
El Paso County
Elbert County
Fort Collins
Fort Morgan
Fremont County
Fruita

Responsible Party (CL01A Codes)
Town of Blanca
Town of Bonaza
Town of Breckenridge
Town of Buena Vista
Town of Calhan
Town of Castle Rock
Town of Center
Town of Colbran
Town of Columbine Valley
Town of Creede
Town of Crestone
Town of De Beque
Town of Dolores
Town of Eagle
Town of Erie
Town of Estes Park
Town of Firestone
Town of Fraser
Town of Frederick
Town of Frisco
Town of Georgetown
Town of Granby
Town of Grand Lake
Town of Green Mountain Falls
Town of Gypsum
Town of Hot Sulfur Springs
Town of Jamestown
Town of Keenesburg
Town of Kersey
Town of Keystone
Town of La Salle
Town of La Veta
Town of Lake City
Town of Larkspur
Town of Lochbuie
Town of Lyons
Town of Mancos
Town of Manzanola
Town of Marble
Town of Mead
Town of Meeker
Town of Milliken
Town of Minturn
Town of Monument



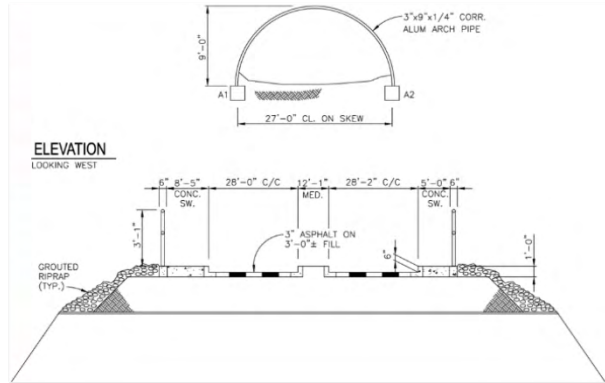
Responsible Party (CL01A Codes)
Garfield County
Gilpin County
Glenwood Springs
Grand County
Grand Elk
Greeley
Gunnison County
Hayden
Hinsdale County
Hudson
Huerfano County
Jackson County
Jacobs
Jefferson County
Johnstown
Kiowa County
Kit Carson County
La Junta
La Plata County
Lake County
Lamar
Larimer County
Las Animas County
Lincoln County
Logan County
Loveland
Manitou Springs Metropolitan District
Mayvue
Mesa County
Mineral County
Moffat County
Montezuma County
Montrose
Montrose County
Morgan

Responsible Party (CL01A Codes)
Town of Morrison
Town of Mountain Village
Town of New Castle
Town of Olathe
Town of Orchard City
Town of Palmer Lake
Town of Paonia
Town of Parker
Town of Pierce
Town of Pitkin
Town of Platteville
Town of Poncha Springs
Town of Red Cliff
Town of Rico
Town of Rockvale
Town of San Luis
Town of Silt
Town of Silver Plume
Town of Silverthorne
Town of Silverton
Town of South Fork
Town of Superior
Town of Telluride
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Town of Wellington
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Trinidad
Unknown
Washington County
Weld County
Windsor
Winter Park
Wray
Yuma County

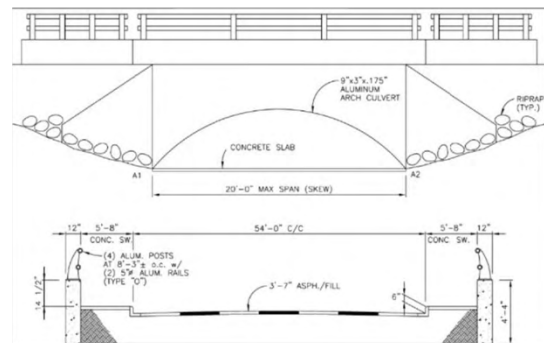


Appendix F Structure Types

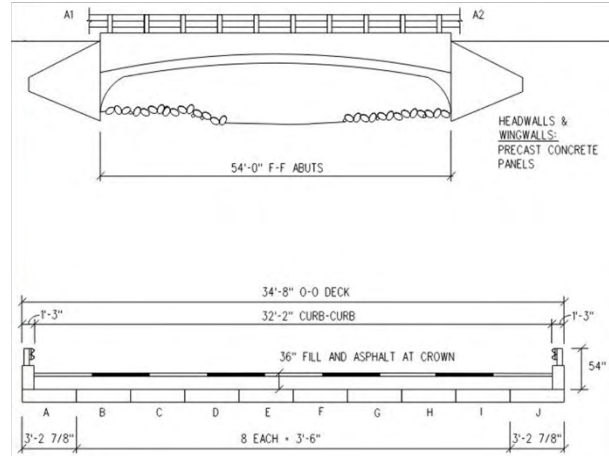
Appendix F contains example photos and sketch section views for each structure type listed in *CL09A – Structure Type*.



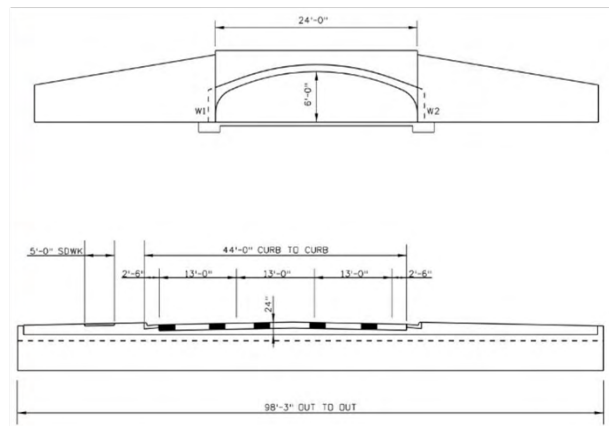
AA - Aluminum Arch



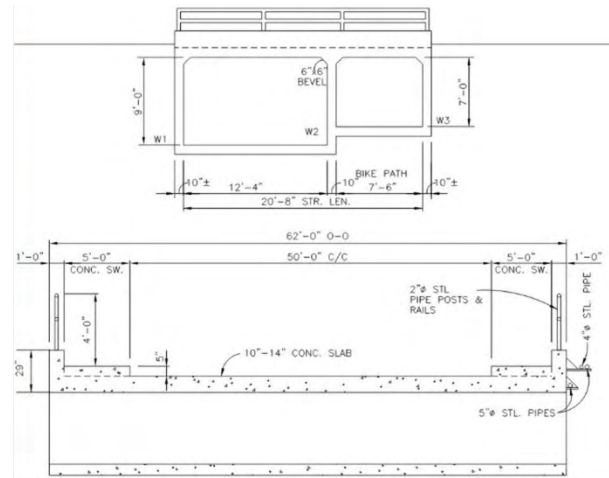
AAC - Aluminum Arch Culvert



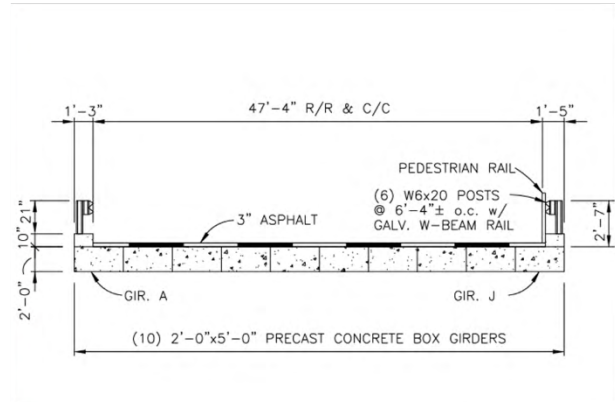
CA - Concrete Arch



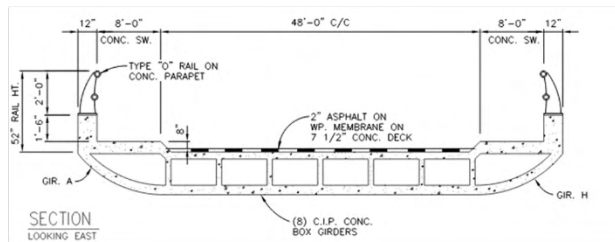
CAC - Concrete Arch Culvert



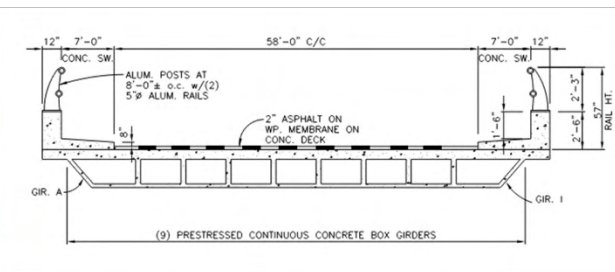
CBC - Concrete Box Culvert



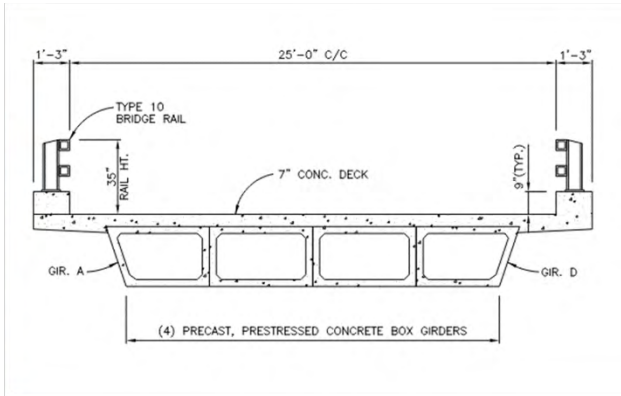
CBG - Concrete Box Girder (no shear keys between the precast girders)



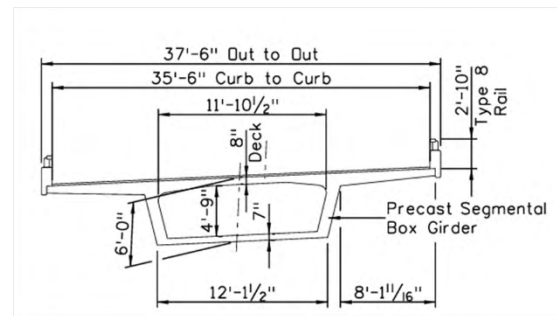
CBGC - Concrete Box Girder Continuous



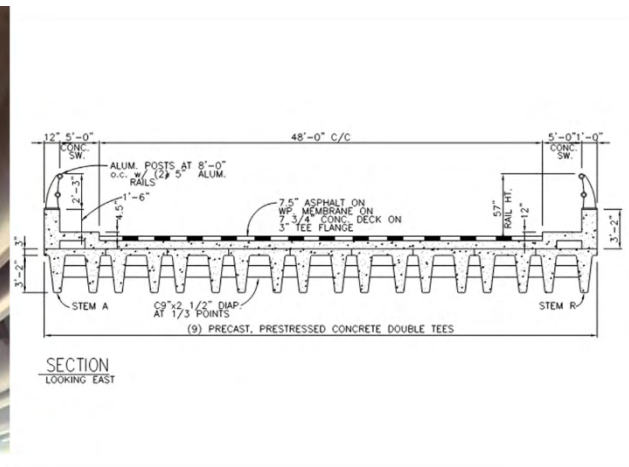
CBGCP - Concrete Box Girder, Continuous Prestressed



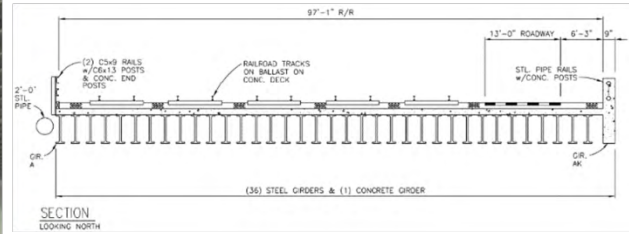
CBGP - Concrete Box Girder, Prestressed



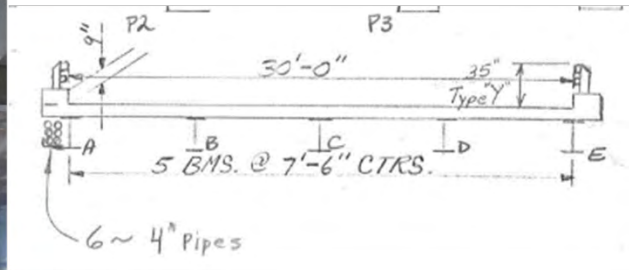
CBGS - Concrete Box Girder, Segmented



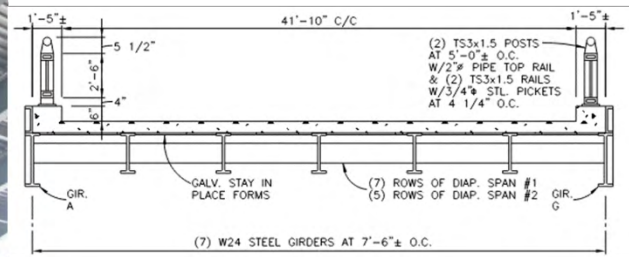
CDTPG - Concrete Double T Prestressed Girder



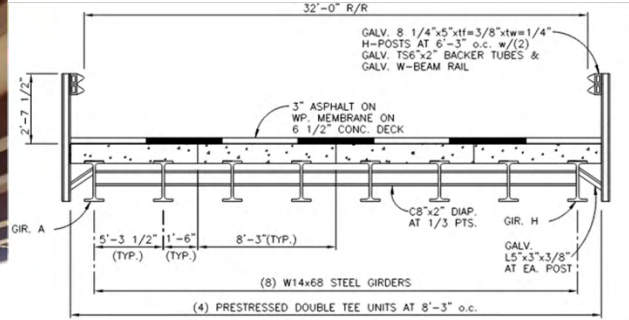
CI - Concrete on I-Beam



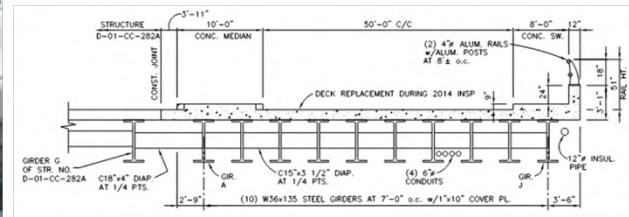
CIC - Concrete on I-Beam, Continuous



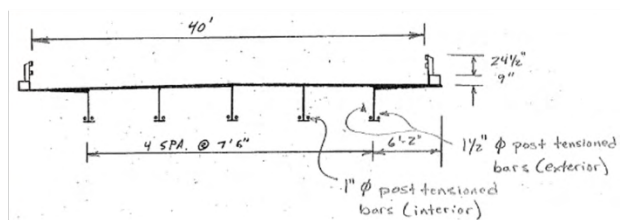
CICK - Concrete on I-Beam, Continuous and Composite



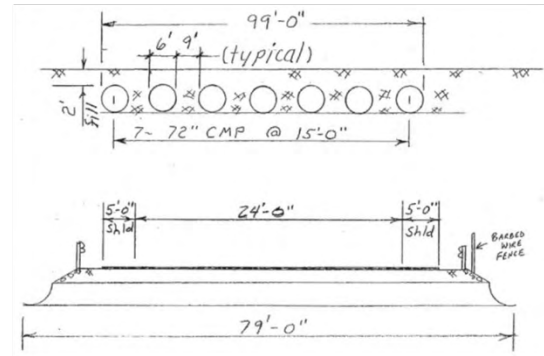
CICKP - Concrete on I-Beam, Continuous, Composite, Prestressed



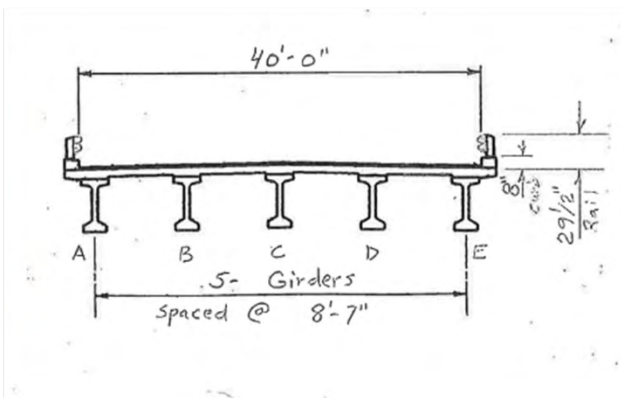
CIK - Concrete on I-Beam, Composite



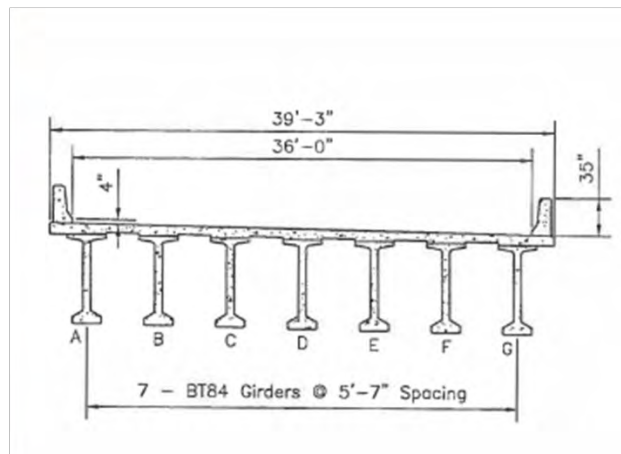
CIKP - Concrete on I-Beam, Composite, Prestressed



CMP - Corrugated Metal Pipe



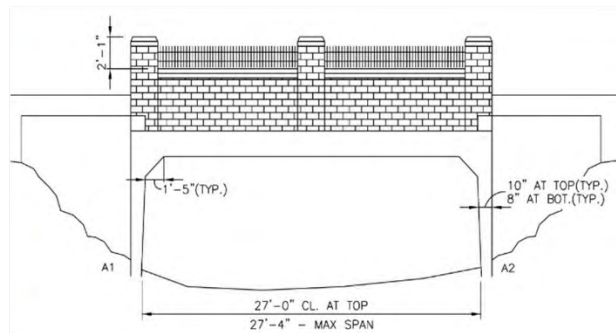
CPG - Concrete Prestressed Girder



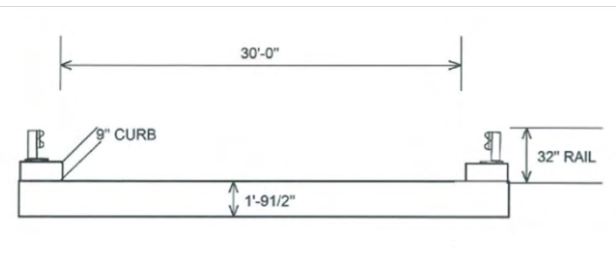
CPGC - Concrete Prestressed Girder, Continuous



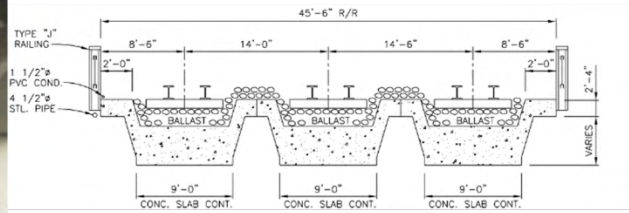
CPP - Corrugated Plastic Pipe



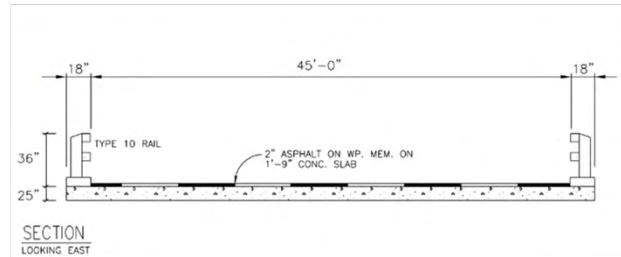
CRF - Concrete Rigid Frame



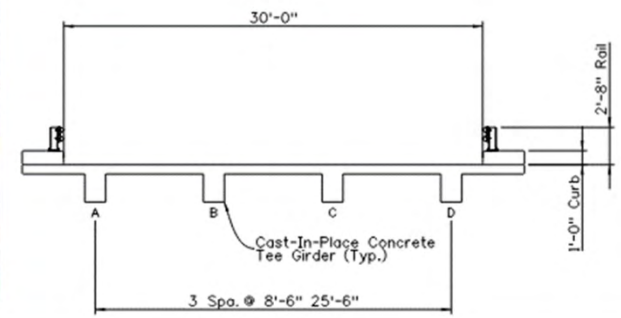
CS - Concrete Slab



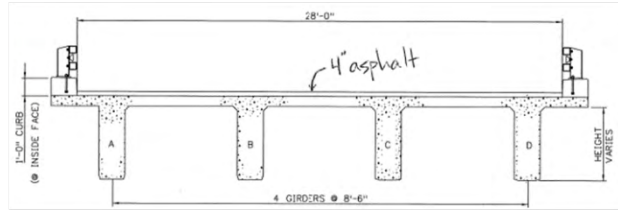
CSC - Concrete Slab Continuous



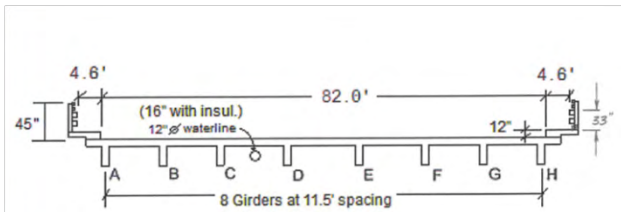
CSCP - Concrete Slab, Continuous Prestressed



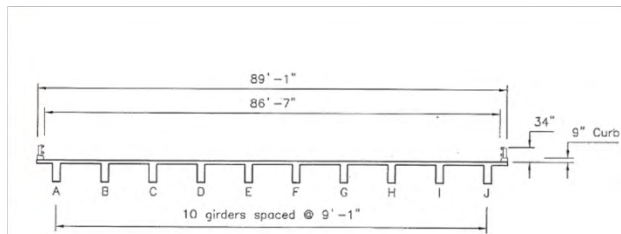
CSG - Concrete Slab and Girder



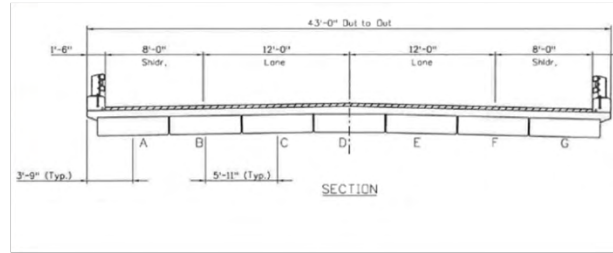
CSGC - Concrete Slab and Girder Continuous



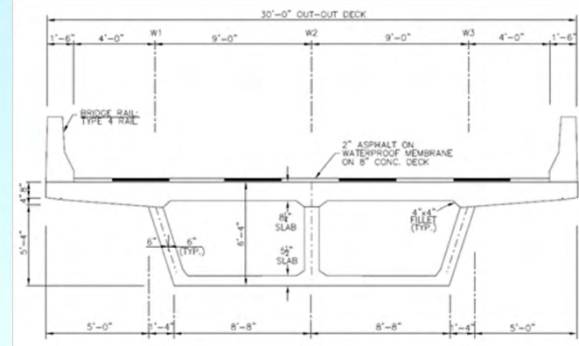
CSGCP - Concrete Slab and Girder, Continuous, Prestressed



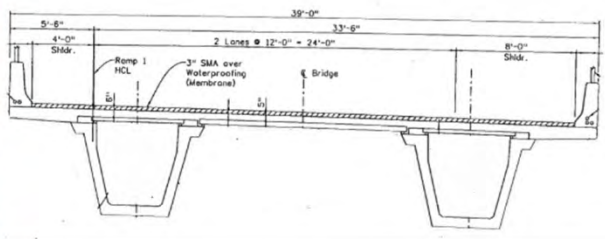
CSGP - Concrete Slab and Girder, Prestressed



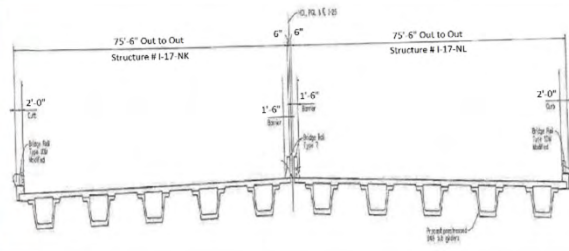
CSP - Concrete Slab, Prestressed (shear keys between the precast slab girders)



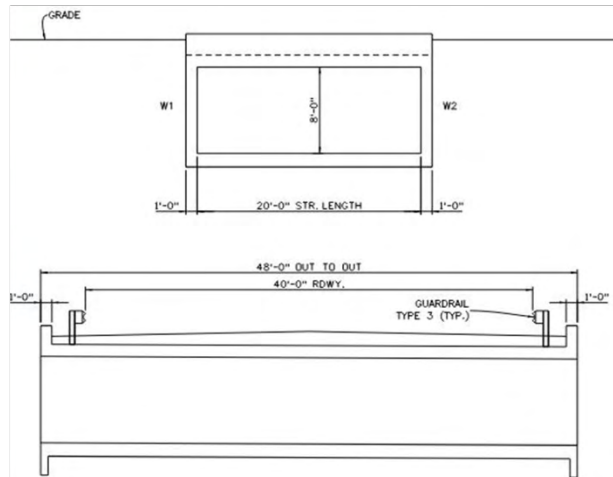
CTGC - Concrete Tub Girder, Continuous



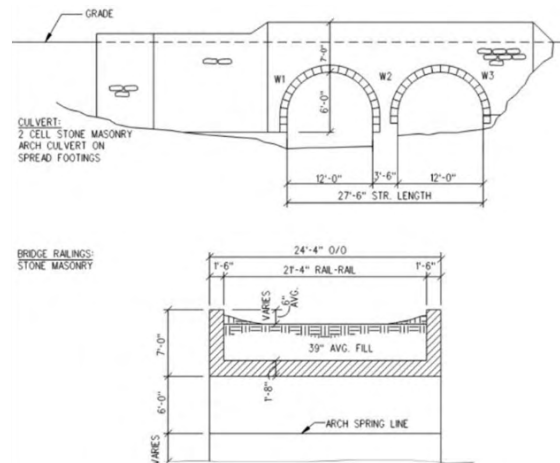
CTGCP - Concrete Tub Girder, Continuous Prestressed



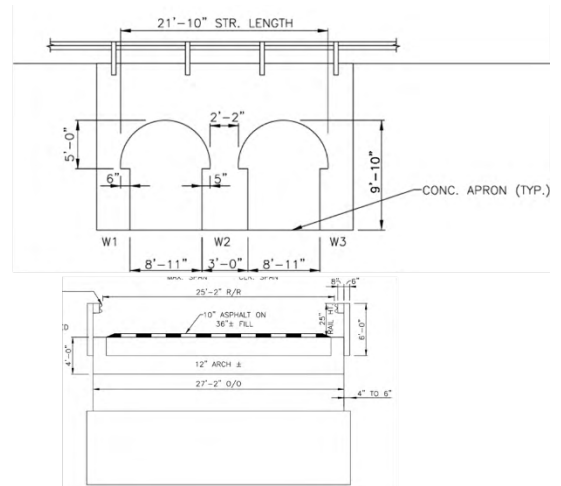
CTGP - Concrete Tub Girder, Prestressed



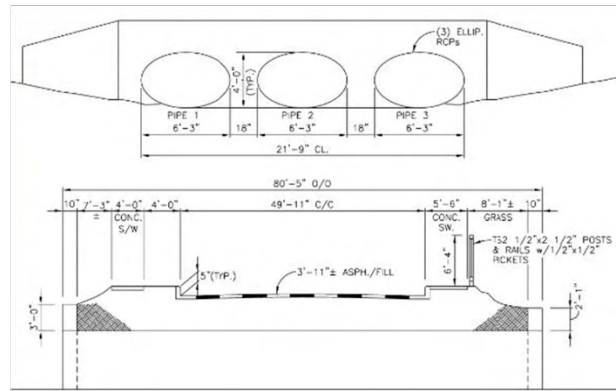
PCBC - Precast Concrete Box Culvert



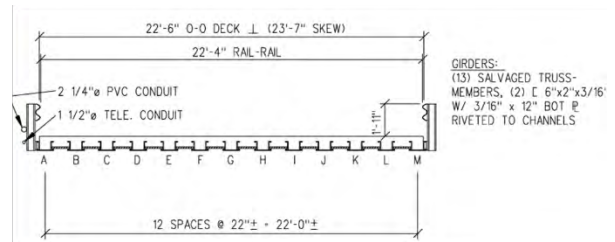
RA - Rubble Arch



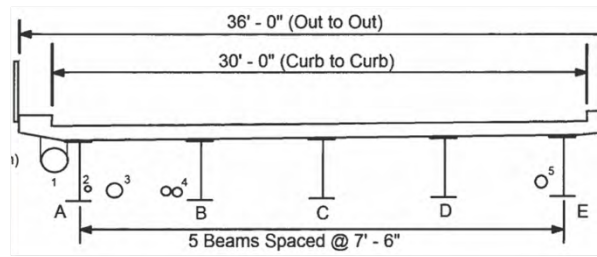
RAC - Rubble Arch Culvert



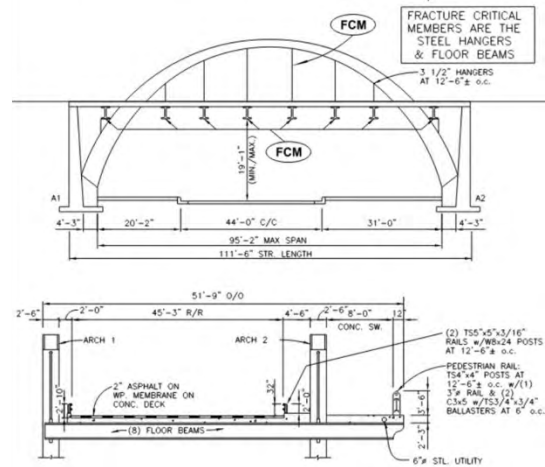
RCPC - Reinforced Concrete Pipe Culvert



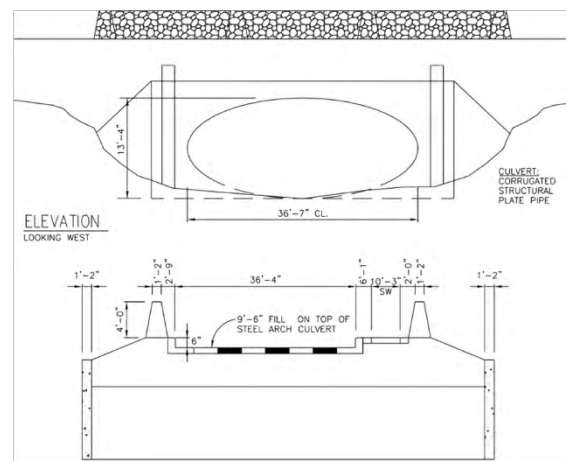
RG - Riveted Girder



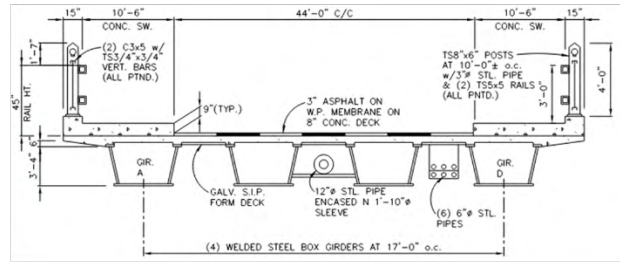
RGC - Riveted Girder, Continuous



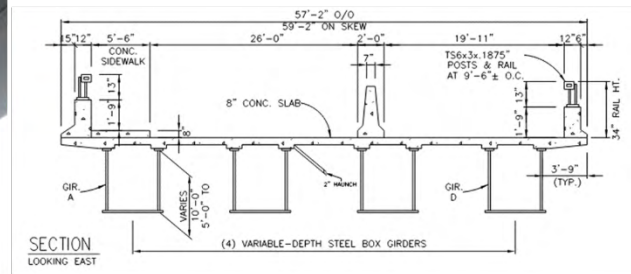
SA - Steel Arch



SAC - Steel Arch Culvert/Multiplate Arch Culvert



SBG - Steel Box Girder



SBGC - Steel Box Girder, Continuous

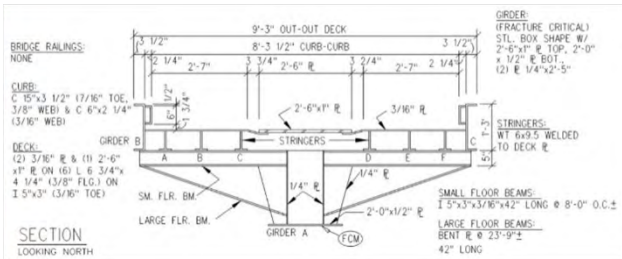
No current examples found in CDOT's database.

SBGCP - Steel Box Girder, Continuous Prestressed

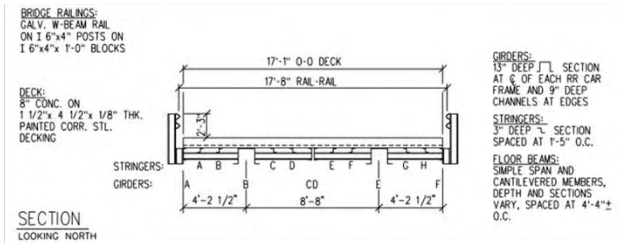


No current examples found in CDOT's database.

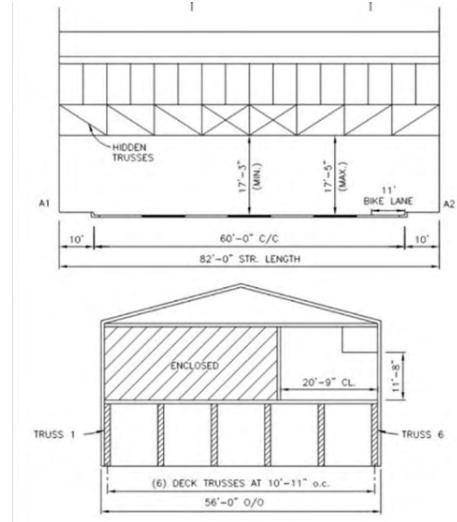
SBGP - Steel Box Girder, Prestressed



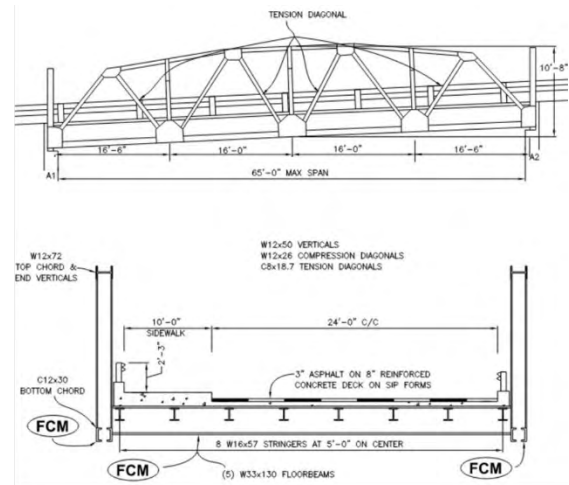
SDG - Steel Deck Girder



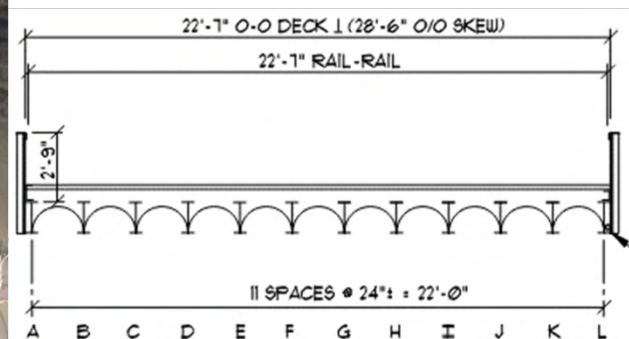
SDGC - Steel Deck Girder, Continuous



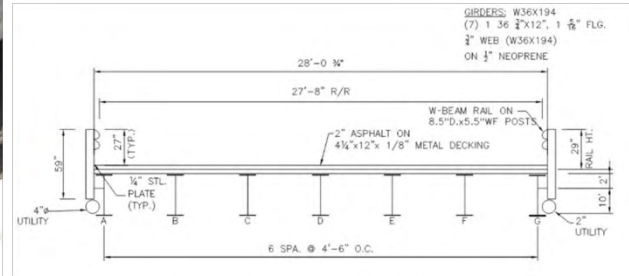
SDT - Steel Deck Truss



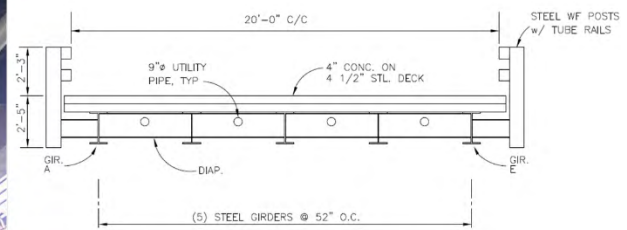
SLT - Steel Low Truss



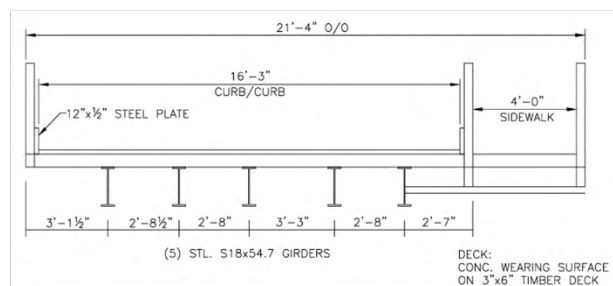
SSE - Steel Stringer, Earth Fill (using 1/2 CMP)



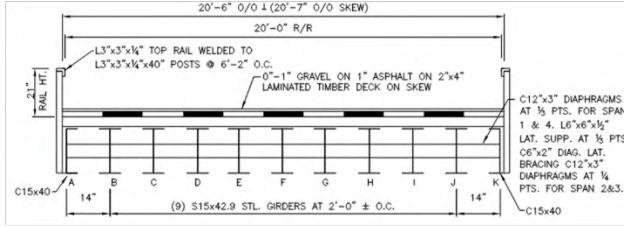
SSM - Steel Stringer, Metal Plank Floor



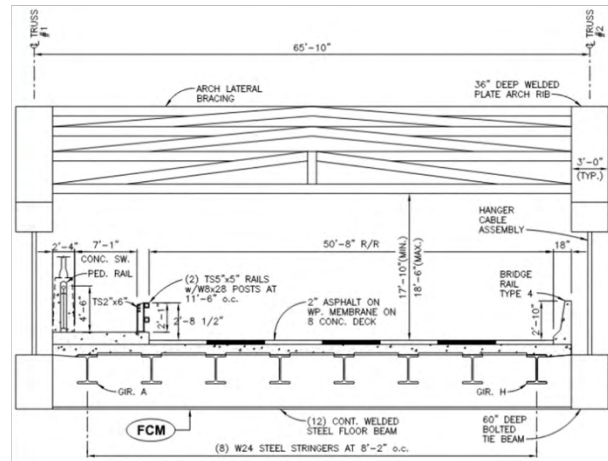
SSMC - Steel Stringer, Metal Plank Floor, Continuous



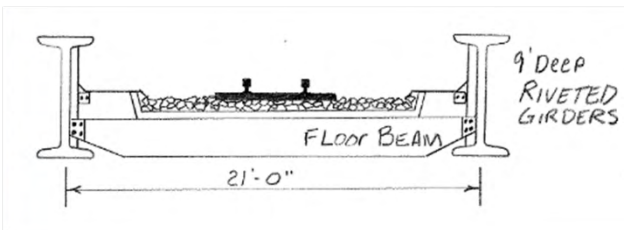
SSS - Steel Stringer, Timber Floor



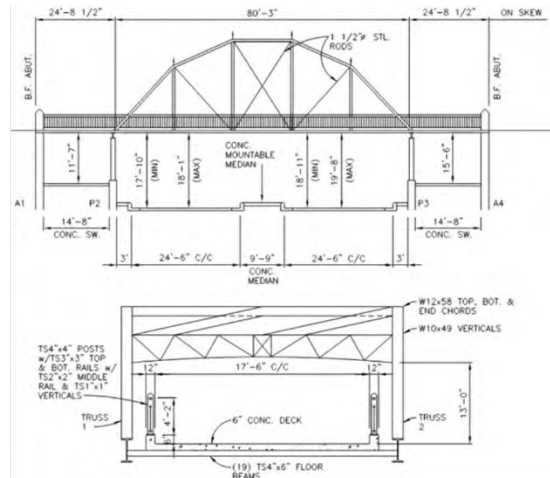
SSSC - Steel Stringer, Continuous, Timber Floor



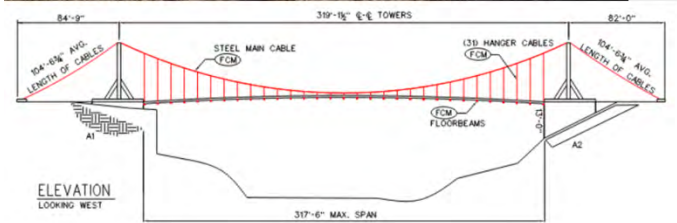
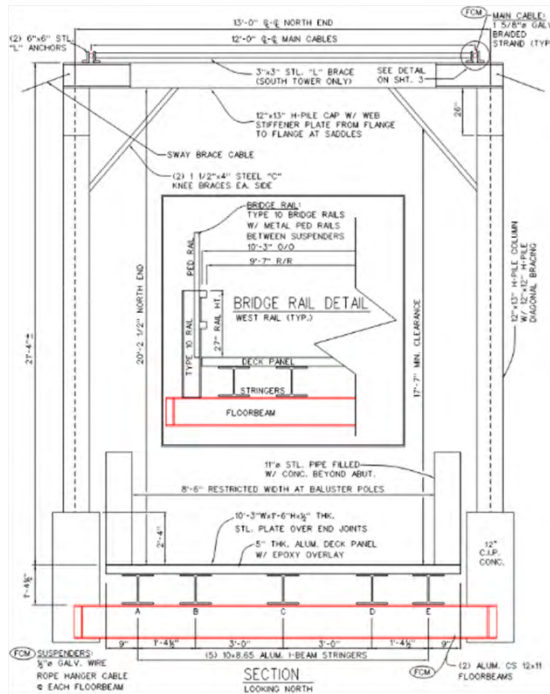
STA - Steel Thru Arch



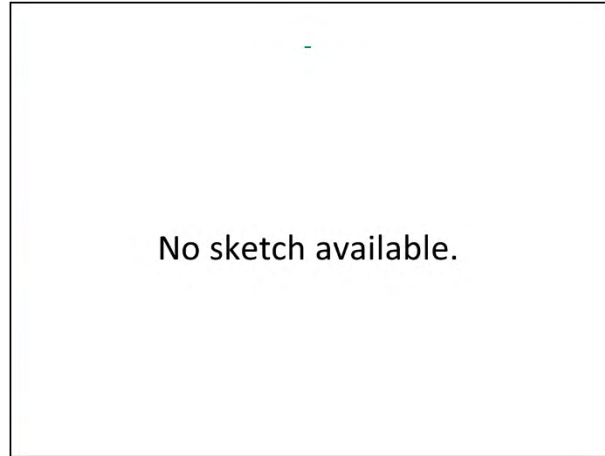
STG - Steel Thru Girder



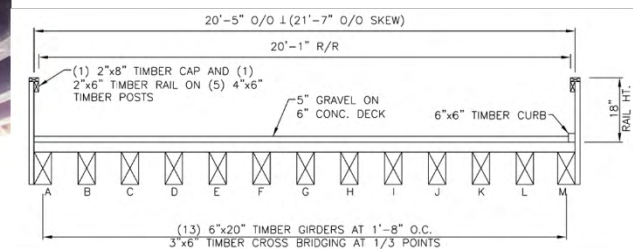
STT - Steel Thru Truss



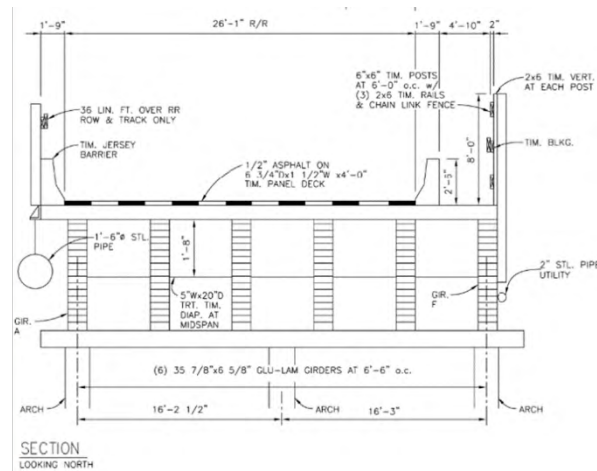
SUSP - Suspension Bridge



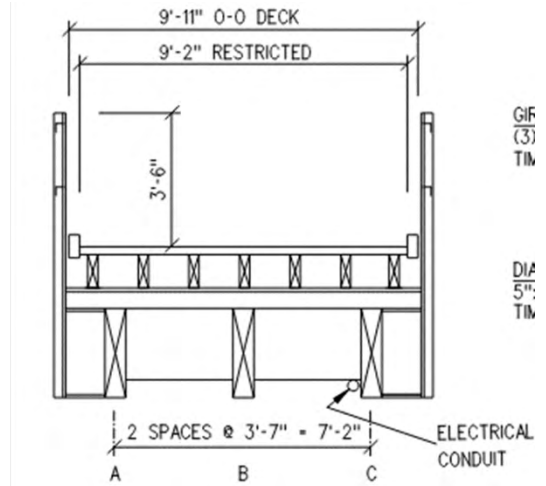
TBC - Timber Box Culvert



TD - Timber Stringer with Concrete Deck



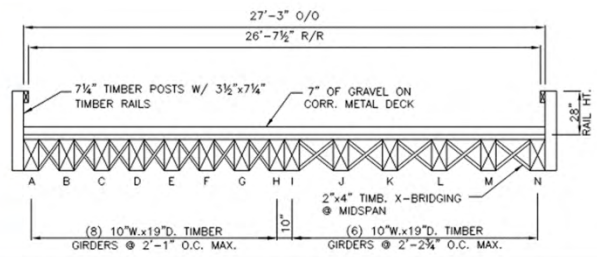
TLA - Timber Laminated Arch (Glulam)



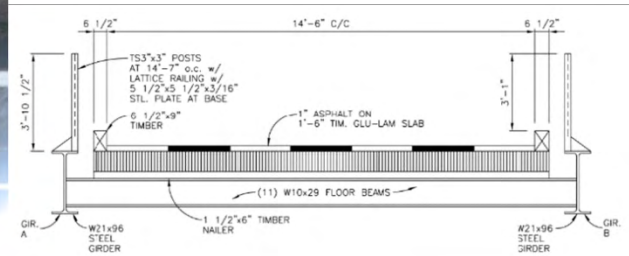
TLS - Timber Laminated Girder (Gluelam)

No current examples found in CDOT's database.

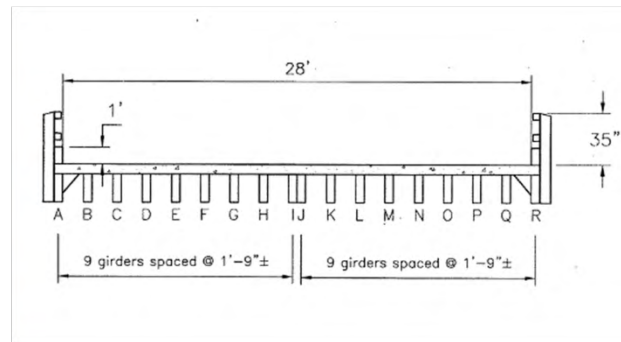
TLT - Timber Low Truss



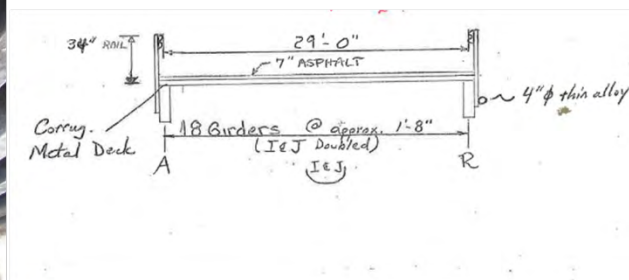
TM - Timber with Metal Deck



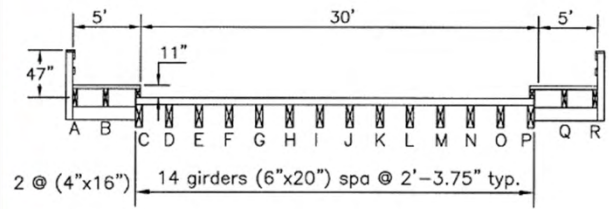
TSLAB - Timber Slab



TTD - Treated Timber Stringer with Concrete Deck



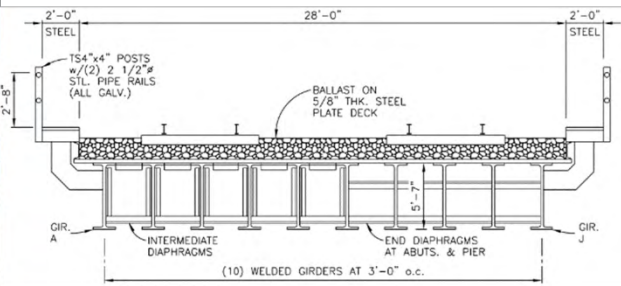
TTM - Treated Timber Stringer with Metal Plank Deck



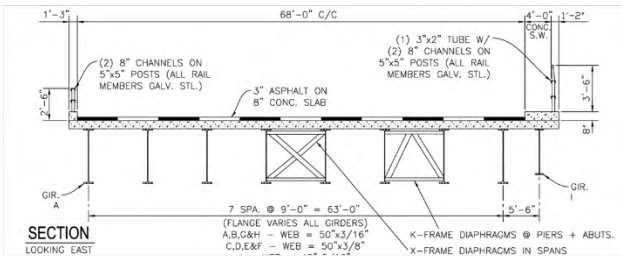
TTS - Timber Stringer with Timber Deck

No current examples found in CDOT's database.

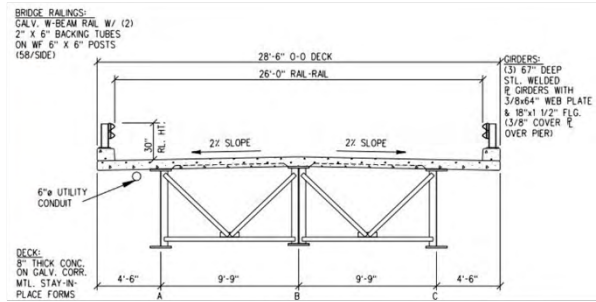
TTT - Timber Thru Truss



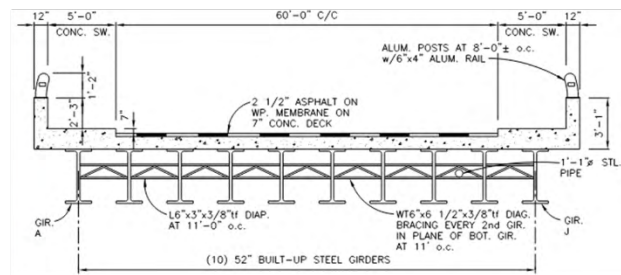
WG - Welded Girder



WGC - Welded Girder, Continuous



WGCK - Welded Girder, Continuous, Composite



WGK - Welded Girder, Composite

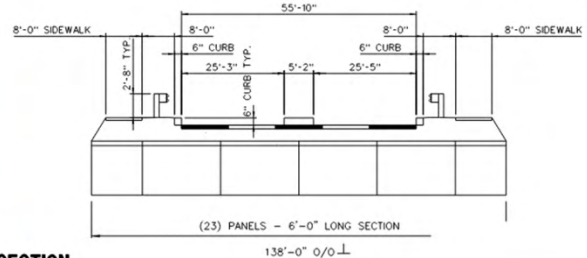


Appendix G Construction Types

Appendix G contains example photos and section views for each construction type listed in CL10A - Construction Type.

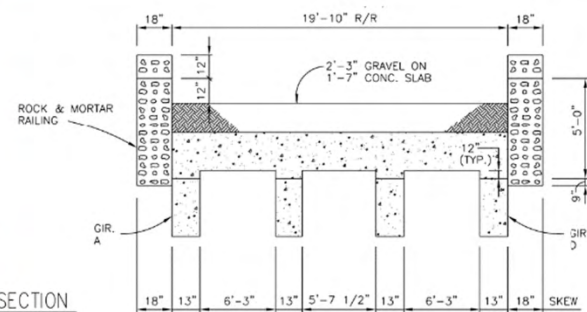


CL10A – Construction Type.



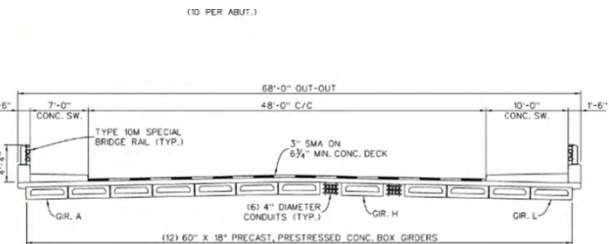
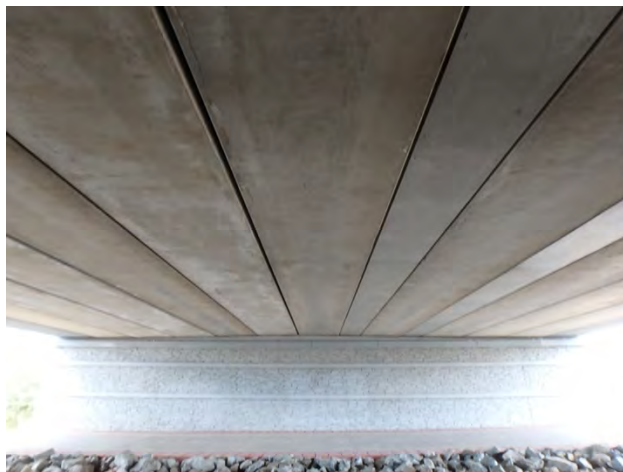
SECTION
LOOKING NORTH

01 - Precast



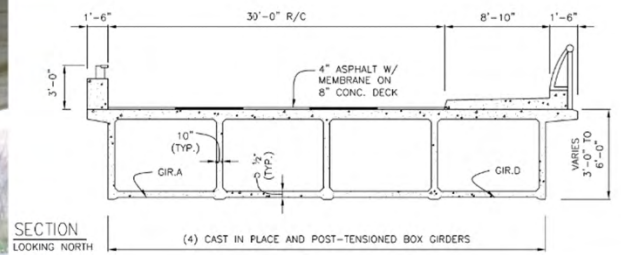
SECTION
LOOKING EAST

02 - Poured in Place

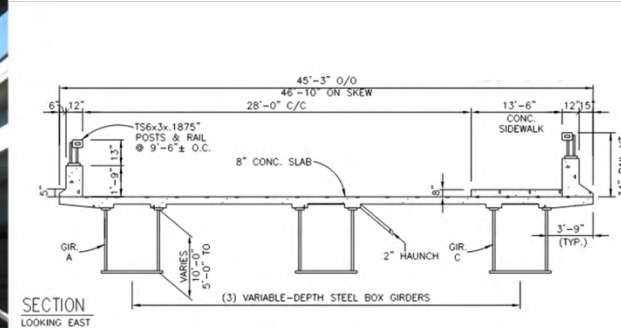


SECTION
LOOKING NORTH

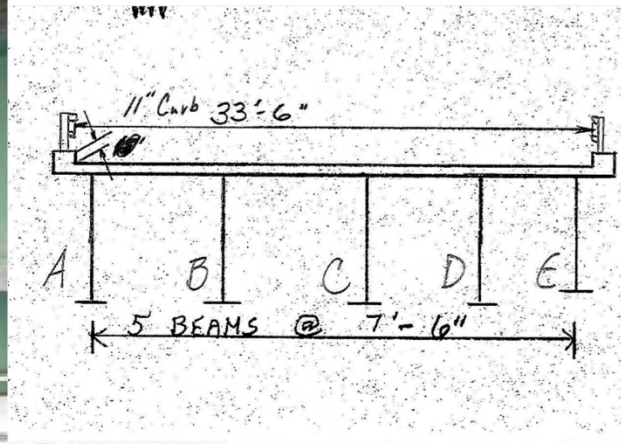
03 - Pre-tensioned



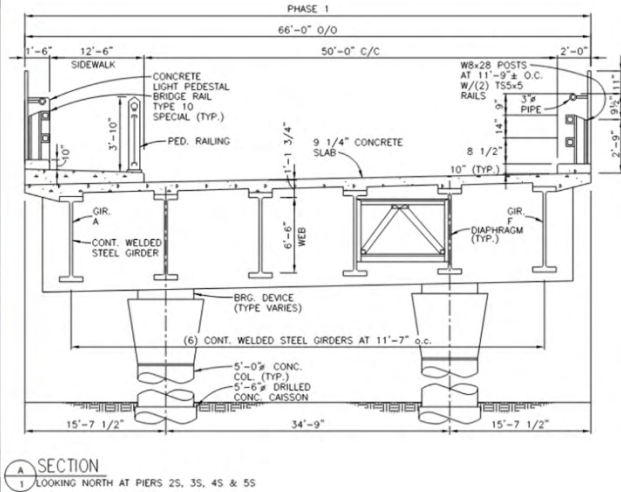
04 - Post-tensioned



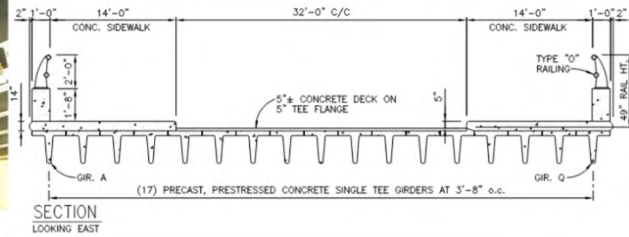
05 - Parabolic



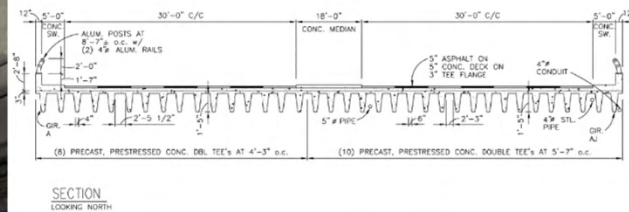
06 - Cantilevered



10 - Curved



20 - Concrete 'T' Girder, Prestressed

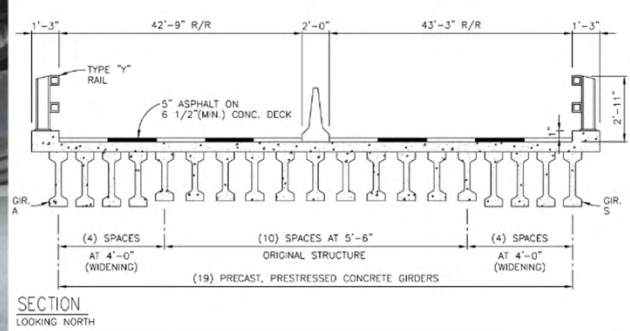


21 - Concrete Twin 'T' Girder, Prestressed

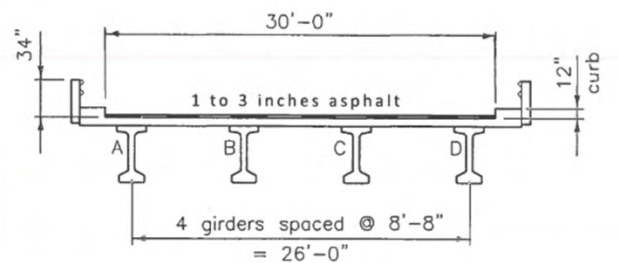


No current examples found in CDOT's database.

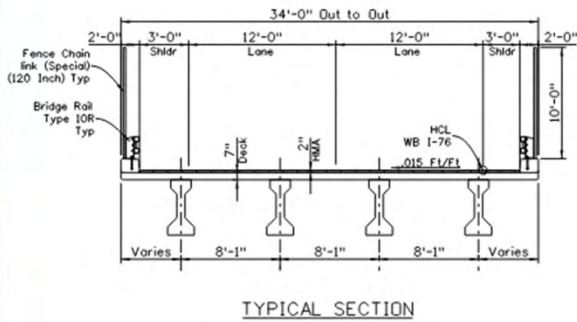
25 - AASHTO Type I, Prestressed



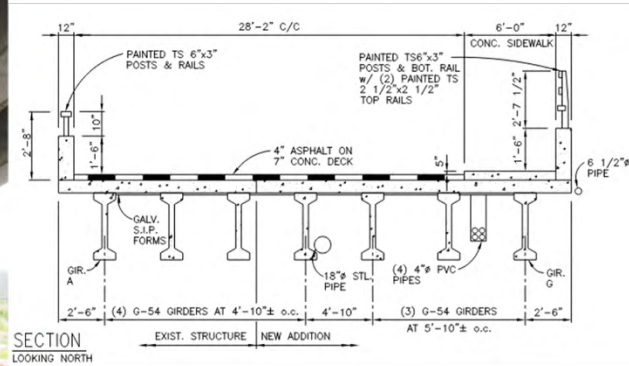
26 - AASHTO Type II, Prestressed



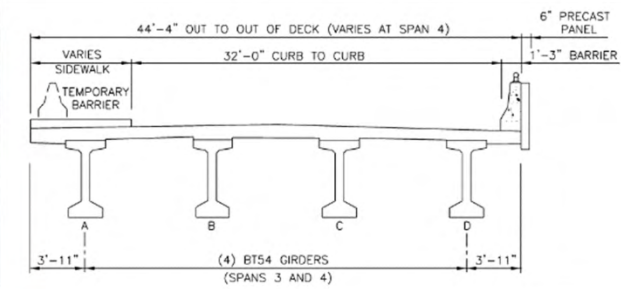
27 - AASHTO Type III, Prestressed



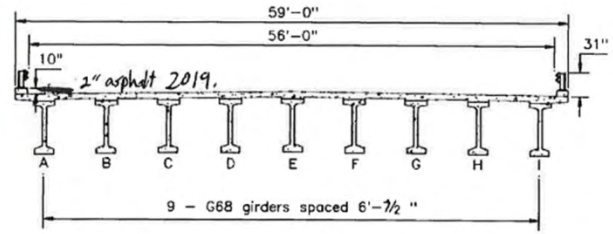
28 - AASHTO Type IV, Prestressed



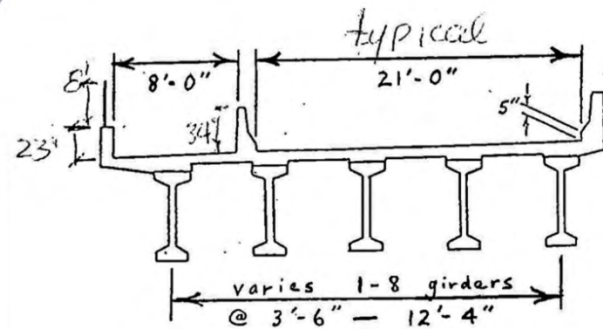
30 - Colorado Type G-54, Prestressed, Simple Span



31 - Colorado Type G-54, Prestressed, Continuous Spans



32 - Colorado Type G-68, Prestressed, Simple Span



33 - Colorado Type G-68, Prestressed, Continuous Spans

No current examples found in CDOT's database.

34 - Colorado Type G-70, Prestressed, Simple Span



No current examples found in CDOT's database.

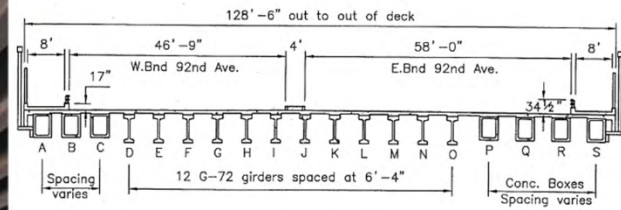
35 - Colorado Type G-70, Prestressed, Continuous Spans

No current examples found in CDOT's database.

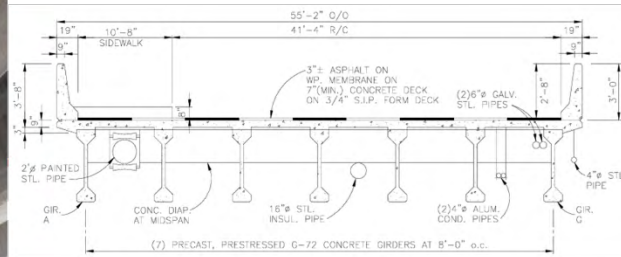
36 - Colorado Type G-78, Prestressed, Simple Span

No current examples found in CDOT's database.

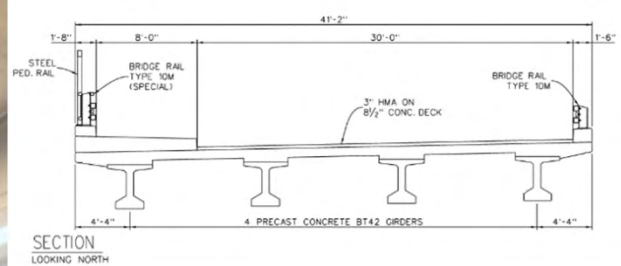
37 - Colorado Type G-78, Prestressed, Continuous Spans



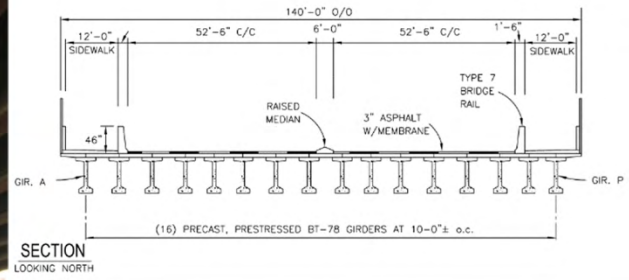
38 - Colorado Type G-72, Prestressed, Simple Span



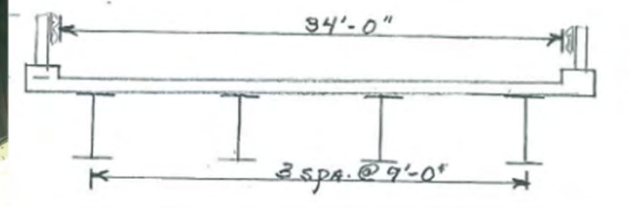
39 - Colorado Type G-72, Prestressed, Continuous Spans



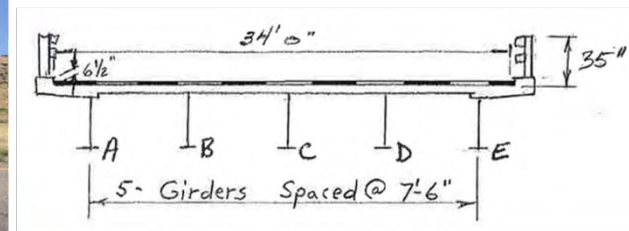
40 - BULBT, Simple Span



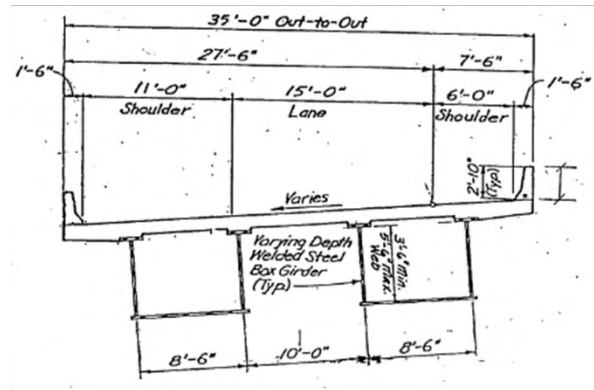
41 - BULBT, Continuous Span



50 - Riveted Plate Girder



51 - Slant Leg



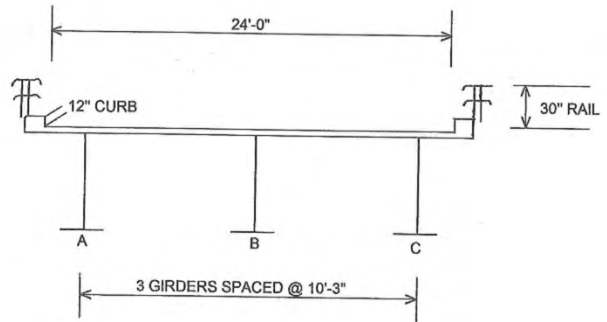
60 - Super Span

No current examples found in CDOT's database.

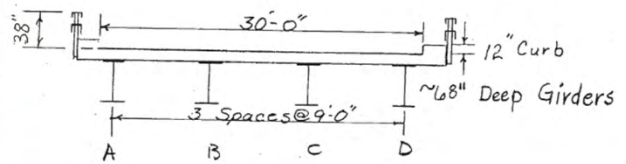
80 - SI/Pin & Link, w/Category III UWI (Water depth 4 to 6 ft)

No current examples found in CDOT's database.

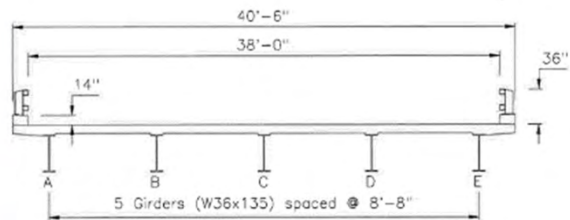
81 - SI/Pin & Link w/Category II UWI (Water depth 7 to 10 ft)



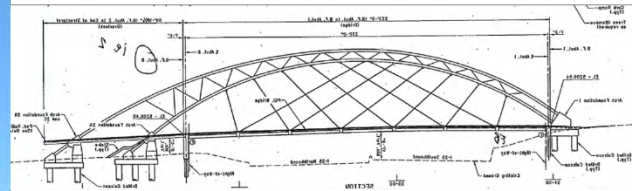
82 - SI/Pin & Link w/Category I UWI (Water depth > 10 ft)



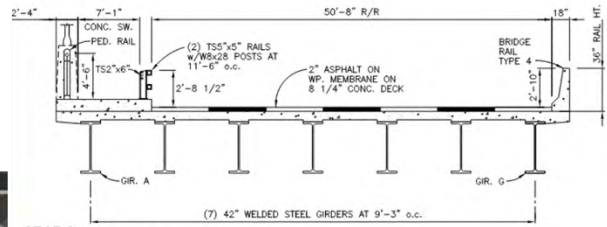
83 - SI/Pin & Link connections



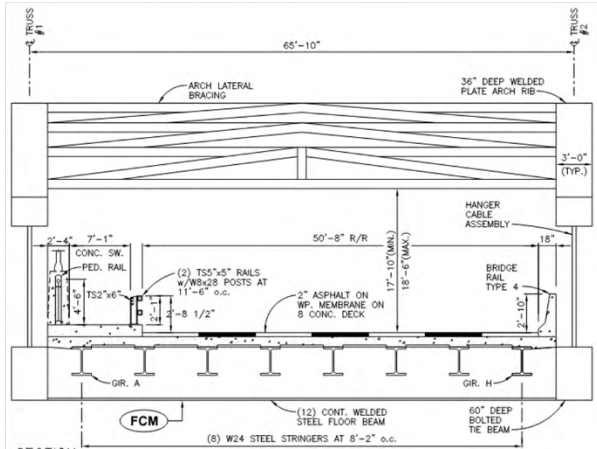
90 - Research Required



91 - Experimental Bridge



SECTION
LOOKING EAST AT SPANS 1 & 3



SECTION
LOOKING EAST AT SPAN 2

99 - Multi-type Girder System



Appendix H Routes

Appendix H contains the route number codes in *RT02 – Route Number* for all highways in the state of Colorado.

Route Number (RT02 Codes)	Route Name	Begin Reference	End Reference
0	N/A	N/A	N/A
001A	SH 1	0	10.053
002A	SH 2	0	9.842
002D	SH 2	19.682	19.944
003A	SH 3	0	2.444
005A	SH 5	0	14.894
006A	US 6	11.08	26.08
006B	US 6	30.123	34.535
006C	US 6	37.161	46.058
006D	US 6	92.275	110.806
006E	US 6	149.718	174.541
006F	US 6	208.659	229.896
006G	US 6	257.079	284.657
006H	US 6	290.98	296.32
006I	US 6	343.519	346.697
006J	US 6	371.69	467.284
006K	US 6	0	0.338
006L	US 6	88.895	91.24
006M	US 6	62.305	88.895
006N	US 6	141.818	141.993
006Z	-	-	-
007A	SH 7	0	33.08
007B	SH 7	49.506	50.639
007C	SH 7	52.29	60.683
007D	SH 7	61.877	77.052
007E	SH 7	0	1.592
008A	SH 8	0	8.683
009A	SH 9	0	46.98
009B	SH 9	47.582	63.732
009C	SH 9	64.673	97.23
009D	SH 9	101.562	138.92
010A	SH 10	0	71.968
011A	SH 11	0	1.35
012A	SH 12	0	70.833
013A	SH 13	1.059	88.635
013B	SH 13	89.58	128.07
013C	SH 13	0	0.222
014A	SH 14	0	32.968
014B	SH 14	34.09	121.713
014C	SH 14	134.77	236.724



Route Number (RT02 Codes)	Route Name	Begin Reference	End Reference
015A	SH 15	0	12.374
015B	SH 15	20.398	30.915
016A	SH 16	0	3.118
017A	SH 17	0	39.052
017B	SH 17	69.024	118.864
021A	SH 21	131.813	139.582
021B	SH 21	141.738	154.112
022A	SH 22	0	2.476
023A	SH 23	0	17.507
024A	US 24	143.4	303.84
024B	US 24	419.95	437.2
024C	US 24	437.2	454.828
024D	US 24	455.882	457.29
024E	US 24	0	2.826
024F	US 24	0	0.548
024G	US 24	310.878	380.464
024H	US 24	303.412	310.878
024I	US 24	4.196	4.323
025A	I 25	0	298.879
025B	SH 25	0	1.948
025C	SH 25	0	4.039
026B	SH 26	11.17	14.14
030A	SH 30	0.083	20.416
034A	US 34	0	149.633
034B	US 34	158.485	259.529
034C	US 34	1.306	1.69
034D	US 34	0	14.711
034E	US 34	0	0.932
034F	US 34	0	0.031
034Z	US 34	0	1.301
035A	SH 35	8.435	9.704
036A	US 36	0	6.982
036B	US 36	0	57.418
036C	US 36	76.394	89.21
036D	US 36	89.21	224.718
036E	US 36	0	0.357
036Z	US 36	0	0.299
039A	SH 39	0	7.571
040A	US 40	0	258.258
040B	US 40	269.441	276.92
040C	US 40	279.208	312.142
040D	US 40	338.57	340.381
040E	US 40	346.29	352.245
040F	US 40	360.201	362.999



Route Number (RT02 Codes)	Route Name	Begin Reference	End Reference
040G	US 40	380.689	382.184
040H	US 40	386.01	486.924
040Z	US 40	0	0.73
041A	SH 41	0	9.505
042A	SH 42	0	4.876
044A	SH 44	0	4.958
045A	SH 45	0	8.734
046A	SH 46	0	6.61
047A	SH 47	0	4.635
050A	US 50	31.76	314.598
050B	US 50	315.709	467.583
050C	US 50	0	16.948
050D	US 50	0	1.539
050Z	US 50	0	2.603
052A	SH 52	0	72.581
052B	SH 52	86.481	111.569
053A	SH 53	0	1.663
055A	SH 55	0	5.659
056B	SH 56	2.821	9.529
057A	SH 57	0	0.534
058A	SH 58	0	5.627
059A	SH 59	0	67.142
059B	SH 59	74.474	173.337
060A	SH 60	0	4.968
060B	SH 60	5.823	20.203
061A	SH 61	0	40.993
062A	SH 62	0	23.414
063A	SH 63	0	56.412
064A	SH 64	0	73.705
065A	SH 65	0	61.377
066B	SH 66	28.693	51.386
067A	SH 67	0	11.047
067B	SH 67	11.562	15.074
067C	SH 67	45.867	50.73
067D	SH 67	76.92	100.036
067E	SH 67	117.349	127.449
067F	SH 67	52.304	69.652
069A	SH 69	0	82.664
070A	I 70	0	449.589
070B	SH 70	0	13.265
070E	SH 70	0	0.222
070F	SH 70	0	0.346
070G	SH 70	0	0.577
070K	SH 70	0	0.212



Route Number (RT02 Codes)	Route Name	Begin Reference	End Reference
070L	SH 70	0	0.4
070M	SH 70	0	0.348
070N	SH 70	0	0.396
070O	SH 70	0	0.353
070P	SH 70	0	0.528
070Q	SH 70	0.137	0.377
070R	SH 70	2.188	2.711
070Z	SH 70	0	1.338
071A	SH 71	0	9.032
071B	SH 71	9.601	14.539
071C	SH 71	16.157	101.063
071D	SH 71	101.973	174.357
071E	SH 71	175.486	201.636
071F	SH 71	205.525	232.899
072A	SH 72	0	29.378
072B	SH 72	32.369	54.064
074A	SH 74	0	18.11
075B	SH 75	5.287	8.524
076A	I 76	0	184.135
076B	-	-	-
078A	SH 78	0	33.272
078B	SH 78	0.006	1.493
079A	SH 79	0	1.24
079B	SH 79	1.58	23.892
082A	SH 82	0	85.293
083A	SH 83	20.368	77.267
084A	US 84	0	27.924
085A	US 85	127.651	137.04
085B	US 85	184.667	210.864
085C	US 85	226.797	265.763
085E	US 85	0	1.515
085F	US 85	0	2.69
085G	US 85	0	1.629
085H	US 85	0	2.239
085L	US 85	265.849	309.542
086A	SH 86	1.854	59.279
086B	SH 86	100	104.348
088A	SH 88	0	14.77
088B	SH 88	16.827	21.734
089A	SH 89	0	34.34
090A	SH 90	0	33.874
090B	SH 90	81.533	89.858
091A	SH 91	0	22.605
092A	SH 92	0	73.259



Route Number (RT02 Codes)	Route Name	Begin Reference	End Reference
093A	SH 93	0	18.849
094A	SH 94	0.548	86.174
095A	SH 95	0	14.085
096A	SH 96	0	58.812
096B	SH 96	69.499	105.83
096C	SH 96	106.036	166.114
096D	SH 96	168.992	207.454
097A	SH 97	0	4.584
100A	SH 100	0	0.419
101A	SH 101	0	21.413
103A	SH 103	0.082	22.488
105A	SH 105	4.731	9.48
105B	SH 105	28.16	32.628
109A	SH 109	0	65.327
109B	SH 109	0	0.184
110A	SH 110	0	0.14
112A	SH 112	0	27.802
113A	SH 113	0	18.83
114A	SH 114	0	61.697
115A	SH 115	0	47.496
116A	SH 116	0	32.322
119A	SH 119	0	41.892
119B	SH 119	44.237	59.089
119C	SH 119	59.089	63.7
120A	SH 120	0	7.186
121A	SH 121	0	26.452
121B	SH 121	0	4.413
125A	SH 125	0	75.406
127A	SH 127	0	9.202
128A	SH 128	0	9.014
128B	SH 128	12.168	14.113
131A	SH 131	0	0.323
131B	SH 131	0.053	68.721
133A	SH 133	0	68.821
133B	SH 133	12.159	16.076
134A	SH 134	0	27.163
135A	SH 135	0	27.484
136A	SH 136	0	4.469
138A	US 138	0	59.823
138Z	-	-	-
139A	SH 139	0	72.065
140A	SH 140	0	23.435
141A	SH 141	0	154.109
141B	US 141	156.746	162.297



Route Number (RT02 Codes)	Route Name	Begin Reference	End Reference
142A	SH 142	0	33.84
144A	SH 144	0	28.796
145A	SH 145	0	116.879
149A	SH 149	0	117.522
150A	SH 150	0	16.114
151A	SH 151	0	33.96
157A	SH 157	0	4.53
159A	SH 159	0	33.661
160A	US 160	0	305.38
160B	SH 160	305.526	306.35
160C	US 160	344.572	497.223
160D	US 160	0	2.488
160Z	US 160	0	0.929
165A	SH 165	0	36.894
167A	SH 167	0	4.86
170A	SH 170	0	6.978
172A	SH 172	0	24.499
177A	SH 177	0	6.111
183A	SH 183	0	1
184A	SH 184	0	8.159
184B	SH 184	8.9	26.599
194A	SH 194	0	20.327
196A	SH 196	0	8.922
202A	SH 202	0	3.228
207A	SH 207	0	5.935
209A	SH 209	0	1.528
224A	SH 224	0	3.634
225A	I 225	0	12.431
227A	SH 227	0	0.332
231A	SH 231	0	2.05
239A	SH 239	0	3.345
257A	SH 257	0	18.487
257B	SH 257	0.037	1.146
265A	SH 265	1.177	3.621
265B	SH 265	0.034	0.147
266A	SH 266	0	11.516
270A	I 270	0	5.986
270B	I 270	0.177	1.1
285A	US 285	0	34.102
285B	US 285	51.159	126.48
285C	US 285	126.853	148.065
285D	US 285	161.789	263.947
287A	US 287	0	77.639
287B	US 287	85.188	133.24



Route Number (RT02 Codes)	Route Name	Begin Reference	End Reference
287C	US 287	282.7	385.223
287Z	US 287	0	1.763
291A	SH 291	0	9.135
300A	SH 300	0	3.356
317A	SH 317	0	12.237
318A	SH 318	0	60.697
325A	SH 325	0	11.395
330A	SH 330	0	11.395
340A	SH 340	0	13.341
347A	SH 347	0	5.248
348A	SH 348	0	17.059
350A	US 350	0	72.718
368A	SH 368	0	12.329
370A	SH 370	0	14.115
371A	SH 371	0	6.067
385A	US 385	95	122.879
385B	US 385	123.682	149.701
385C	US 385	150.251	216.661
385D	US 385	219.448	310.996
385E	US 385	313.849	317.631
389A	SH 389	0	12.803
391A	SH 391	0	9.641
392A	SH 392	95.305	104.455
392B	SH 392	105.439	141.583
394A	SH 394	0	9.378
402A	SH 402	0	4.306
470A	SH 470	0	26.195
470B	SH 470	0	46.398
470N	SH 470	46.398	54.45
470W	SH 470	0	1.212
491A	US 491	0	6.422
491B	US 491	26.217	69.602
491C	US 491	0	0.242
550A	US 550	0	16.8
550B	US 550	20.916	130.219



Appendix I Expansion Device Types

Appendix I contains examples of expansion devices listed in *G18A – Expansion Device Type*.



1 - Sliding steel plates



2 - Sliding steel plates with fingers



A - Pre molded rubber device



B - Compression joint seal (elastomeric)



C - Compression joint seal (foamed)



D - Parabolic Gland (strip and modular)



O - No expansion device



P - Plug (Rubberized asphalt/pourable)



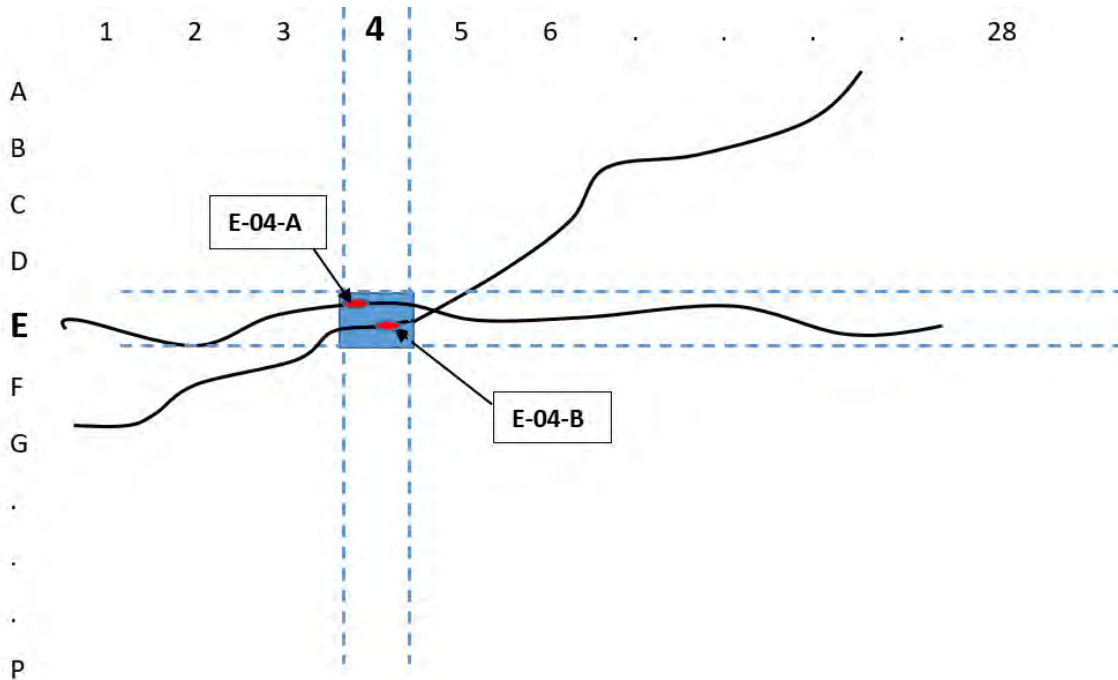
Appendix J Structure Number Procedure

Appendix J contains the structure naming process for On-System Structures, Minor Structures owned by CDOT, and Off-System Structures. All structures are assigned a maximum fifteen (15) character structure number to be recorded in *ID01 – Structure Number*. This number is unique and must never be revised, reused, nor the records deleted, even if the structure is replaced, removed, or the ownership is transferred.

STRUCTURE NUMBER PROCEDURE FOR ON-SYSTEM STRUCTURES

On-System structure numbers are assigned based on quadrangle grid locations within the State. The quadrangle grids are basically squares of 15 minutes of Latitude by 15 minutes of Longitude and are designated with letters A through P vertically and numbers 1 through 28 horizontally on the Colorado map. The structure numbers can range from A-01-A near the northwest corner of Colorado through P-28-ZZZ at the southeast corner.

As an example only, the figure below shows the location of two fictitious structures. The first letter and the following two numbers identify the quadrangle grid the structures are located within, E-04 quadrangle. The last letter(s) are unique to the structure within the grid boundaries and usually assigned in order of construction within the grid, letters A and B in this example. For this example, *ID01 – Structure Number* for each structure is E-04-A and E-04-B.



Example of On-System Structure number procedure

STRUCTURE NUMBER PROCEDURE FOR MINOR STRUCTURES OWNED BY CDOT

Minor structures are assigned structure numbers based on highway number, mile point, and information specific to the function of the structure. The structure number is composed of five parts:

- Digits 1-4 are the route number and the section letter
- Digits 5-10 are the mile point location on the route with an assumed decimal point midway



- Digit 11 is the direction of the travel lanes over the structure

Direction Code	Description
B	Travel lanes in both directions over structure
S	Only southbound travel lanes over structure
N	Only northbound travel lanes over structure
E	Only eastbound travel lanes over structure
W	Only westbound travel lanes over structure

- Digit 12 is the location of the inlet

Inlet Code	Description
R	Inlet is on the right
L	Inlet is on the left
M	Inlet is in the median between travel lanes

- Digit 13, if applicable, is a sequential number starting with one. This digit is used for new minor structure numbers when a structure is replaced (e.g., 006E154140BL1 replaced 006E154140BL or 006E154140BL2 replaced 006E154140BL1)

STRUCTURE NUMBER PROCEDURE FOR OFF-SYSTEM STRUCTURES

Off-System structure numbers are assigned by the owner. There is no specific naming convention for Off-System structures. The only requirement is that the number cannot exceed the fifteen-character limit for *ID01 – Structure Number* and it is unique and never duplicated or changed.



Appendix K FIPS Codes

Appendix K contains the Federal Information Processing System (FIPS) codes in *L02 – County* and *L03 – City/Town* for counties and local municipalities, respectively, in the state of Colorado.

COUNTY FIPS CODES

FIPS Code – County (L02 Codes)
001 - ADAMS
003 - ALAMOSA
005 - ARAPAHOE
007 - ARCHULETA
009 - BACA
011 - BENT
013 - BOULDER
014 - BROOMFIELD
015 - CHAFFEE
017 - CHEYENNE
019 - CLEAR CREEK
021 - CONEJOS
023 - COSTILLA
025 - CROWLEY
027 - CUSTER
029 - DELTA
031 - DENVER
033 - DOLORES
035 - DOUGLAS
037 - EAGLE
039 - ELBERT
041 - EL PASO
043 - FREMONT
045 - GARFIELD
047 - GILPIN
049 - GRAND
051 - GUNNISON
053 - HINSDALE
055 - HUERFANO
057 - JACKSON
059 - JEFFERSON
061 - KIOWA

FIPS Code – County (L02 Codes)
063 - KIT CARSON
065 - LAKE
067 - LA PLATA
069 - LARIMER
071 - LAS ANIMAS
073 - LINCOLN
075 - LOGAN
077 - MESA
079 - MINERAL
081 - MOFFAT
083 - MONTEZUMA
085 - MONTROSE
087 - MORGAN
089 - OTERO
091 - OURAY
093 - PARK
095 - PHILLIPS
097 - PITKIN
099 - PROWERS
101 - PUEBLO
103 - RIO BLANCO
105 - RIO GRANDE
107 - ROUTT
109 - SAGUACHE
111 - SAN JUAN
113 - SAN MIGUEL
115 - SEDGWICK
117 - SUMMIT
119 - TELLER
121 - WASHINGTON
123 - WELD
125 - YUMA



CITY/TOWN/MUNICIPALITY FIPS CODES

FIPS Code – City/Town (L03 Codes)	Designation	County
0 - Non City*	-	-
0000 - Non City*	-	-
00000 - Non City	-	-
00001 - Unknown*	-	-
00113 - Non City*	-	-
00760 - Aguilar	Town	Las Animas County
00925 - Akron	Town	Washington County
01090 - Alamosa	City	Alamosa County
01530 - Alma	Town	Park County
02355 - Antonito	Town	Conejos County
03235 - Arriba	Town	Lincoln County
03455 - Arvada	City	Adams County, Jefferson County
03456 - Arvada*	-	-
03620 - Aspen	City	Pitkin County
03950 - Ault	Town	Weld County
04000 - Aurora	City	Adams County, Arapahoe County, Douglas County
04001 - Aurora*	-	-
04110 - Avon	Town	Eagle County
04935 - Basalt	Town	Eagle County, Pitkin County
05265 - Bayfield	Town	La Plata County
06090 - Bennett	Town	Adams County, Arapahoe County
06255 - Berthoud	Town	Larimer County, Weld County
06530 - Bethune	Town	Kit Carson County
06970 - Black Forest	CDP	El Paso County
07025 - Black Hawk	City	Gilpin County
07190 - Blanca	Town	Costilla County
07410 - Blue River	Town	Summit County
07571 - Bonanza	Town	Saguache County
07575 - Bonanza*	-	-
07795 - Boone	Town	Pueblo County
07850 - Boulder	City	Boulder County
08070 - Bow Mar	Town	Arapahoe County, Jefferson County
08345 - Branson	Town	Las Animas County
08400 - Breckenridge	Town	Summit County
08675 - Brighton	City	Adams County, Weld County
09115 - Brookside	Town	Fremont County
09280 - Broomfield	City	Broomfield County
09555 - Brush	City	Morgan County
-1 - Non City*	-	-
10105 - Buena Vista	Town	Chaffee County
10600 - Burlington	City	Kit Carson County
11260 - Calhan	Town	El Paso County
11645 - Campo	Town	Baca County



FIPS Code – City/Town (L03 Codes)	Designation	County
11810 - Canon City	City	Fremont County
12030 - Carbondale*	-	-
12045 - Carbondale	Town	Garfield County
12325 - Cascade-Chipita Par	CDP	El Paso County
12387 - Castle Pines	City	Douglas County
12415 - Castle Rock	Town	Douglas County
12635 - Cedaredge	Town	Delta County
12815 - Centennial	City	Arapahoe County
12855 - Center	Town	Rio Grande County, Saguache County
12910 - Central City	City	Clear Creek County, Gilpin County
13460 - Cheraw	Town	Otero County
13845 - Cherry Hills Village	City	Arapahoe County
14175 - Cheyenne Wells	Town	Cheyenne County
14587 - Cimarron Hills	CDP	El Paso County
15165 - Clifton	CDP	Mesa County
15330 - Coal Creek	Town	Fremont County
15550 - Cokedale	Town	Las Animas County
15605 - Collbran	Town	Mesa County
15935 - Colorado City	CDP	Pueblo County
16000 - Colorado Springs	City	El Paso County
16385 - Columbine Valley	Town	Arapahoe County
16495 - Commerce City	City	Adams County
17375 - Cortez	City	Montezuma County
17760 - Craig	City	Moffat County
17925 - Crawford	Town	Delta County
17980 - Creede	Town	Mineral County
18310 - Crested Butte	Town	Gunnison County
18420 - Crestone	Town	Saguache County
18530 - Cripple Creek	City	Teller County
18640 - Crook	Town	Logan County
18750 - Crowley	Town	Crowley County
19080 - Dacono	City	Weld County
19355 - De Beque	Town	Mesa County
19630 - Deer Trail	Town	Arapahoe County
19795 - Del Norte	Town	Rio Grande County
19850 - Delta	City	Delta County
20000 - Denver	City	Denver County
20440 - Dillon	Town	Summit County
20495 - Dinosaur	Town	Moffat County
20770 - Dolores	Town	Montezuma County
21265 - Dove Creek	Town	Dolores County
22000 - Eagle*	-	-
22035 - Durango	City	La Plata County
22145 - Eads	Town	Kiowa County



FIPS Code – City/Town (L03 Codes)	Designation	County
22200 - Eagle	Town	Eagle County
22207 - Eagle-Vail*	-	-
22860 - Eaton	Town	Weld County
23025 - Eckley	Town	Yuma County
23135 - Edgewater	City	Jefferson County
23740 - Elizabeth	Town	Elbert County
23795 - El Jebel	CDP	Eagle County
24620 - Empire	Town	Clear Creek County
24785 - Englewood	City	Arapahoe County
24950 - Erie	Town	Boulder County, Weld County
25115 - Estes Park	Town	Larimer County
25280 - Evans	City	Weld County
25390 - Evergreen	CDP	Jefferson County
25610 - Fairplay	Town	Park County
26270 - Federal Heights	City	Adams County
26600 - Firestone	Town	Weld County
26765 - Flagler	Town	Kit Carson County
26875 - Fleming	Town	Logan County
27040 - Florence	City	Fremont County
27370 - Fort Carson	CDP	El Paso County
27425 - Fort Collins	City	Larimer County
27700 - Fort Lupton	City	Weld County
27810 - Fort Morgan	City	Morgan County
27865 - Fountain	City	El Paso County
27975 - Fowler	Town	Otero County
28105 - Foxfield	Town	Arapahoe County
28305 - Fraser	Town	Grand County
28360 - Frederick	Town	Weld County
28690 - Frisco	Town	Summit County
28745 - Fruita	City	Mesa County
29185 - Garden City	Town	Weld County
29680 - Genoa	Town	Lincoln County
29735 - Georgetown	Town	Clear Creek County
29955 - Gilcrest	Town	Weld County
30340 - Glendale	City	Arapahoe County
30780 - Glenwood Springs	City	Garfield County
30835 - Golden	City	Jefferson County
31550 - Granada	Town	Prowers County
31605 - Granby	Town	Grand County
31660 - Grand Junction	City	Mesa County
31715 - Grand Lake	Town	Grand County
31825 - Parachute*	-	-
32155 - Greeley	City	Weld County
32650 - Green Mountain Falls	Town	El Paso County, Teller County



FIPS Code – City/Town (L03 Codes)	Designation	County
33035 - Greenwood Village	City	Arapahoe County
33310 - Grover	Town	Weld County
33640 - Gunnison	City	Gunnison County
33695 - Gypsum	Town	Eagle County
34520 - Hartman	Town	Prowers County
34740 - Haswell	Town	Kiowa County
34960 - Haxtun	Town	Phillips County
35070 - Hayden	Town	Routt County
36410 - Highlands Ranch	CDP	Douglas County
36610 - Hillrose	Town	Morgan County
37215 - Holly	Town	Prowers County
37270 - Holyoke	City	Phillips County
37380 - Hooper	Town	Alamosa County
37545 - Hotchkiss	Town	Delta County
37600 - Hot Sulphur Springs	Town	Grand County
37820 - Hudson	Town	Weld County
37875 - Hugo	Town	Lincoln County
38370 - Idaho Springs	City	Clear Creek County
38535 - Ignacio	Town	La Plata County
38590 - Iliff	Town	Logan County
39195 - Jamestown	Town	Boulder County
39855 - Johnstown	Town	Larimer County, Weld County
39965 - Julesburg	Town	Sedgwick County
40185 - Keenesburg	Town	Weld County
40377 - Ken Caryl	CDP	Jefferson County
40515 - Kersey	Town	Weld County
40570 - Kim	Town	Las Animas County
40790 - Kiowa	Town	Elbert County
41010 - Kit Carson	Town	Cheyenne County
41560 - Kremmling	Town	Grand County
41835 - Lafayette	City	Boulder County
42055 - La Jara	Town	Conejos County
42110 - La Junta	City	Otero County
42330 - Lake City	Town	Hinsdale County
42495 - Lakeside	Town	Jefferson County
43000 - Lakewood	City	Jefferson County
43110 - Lamar	City	Prowers County
43310 - Lamar*	-	-
43550 - Larkspur	Town	Douglas County
43605 - La Salle	Town	Weld County
43660 - Las Animas	City	Bent County
44100 - La Veta	Town	Huerfano County
44320 - Leadville	City	Lake County
44980 - Limon	Town	Lincoln County



FIPS Code – City/Town (L03 Codes)	Designation	County
45255 - Littleton	City	Arapahoe County, Douglas County, Jefferson County
45530 - Lochbuie	Town	Adams County, Weld County
45695 - Log Lane Village	Town	Morgan County
45955 - Lone Tree	City	Douglas County
45970 - Longmont	City	Boulder County, Weld County
46355 - Louisville	City	Boulder County
46454 - Loveland*	-	-
46456 - Loveland*	-	-
46465 - Loveland	City	Larimer County
47070 - Lyons	Town	Boulder County
48060 - Manassa	Town	Conejos County
48115 - Mancos	Town	Montezuma County
48445 - Manitou Springs	City	El Paso County
48500 - Manzanola	Town	Otero County
48555 - Marble	Town	Gunnison County
49600 - Mead	Town	Weld County
49875 - Meeker	Town	Rio Blanco County
50040 - Merino	Town	Logan County
50480 - Milliken	Town	Weld County
50920 - Minturn	Town	Eagle County
51250 - Moffat	Town	Saguache County
51635 - Monte Vista	City	Rio Grande County
51690 - Montezuma	Town	Summit County
51745 - Montrose	City	Montrose County
51800 - Monument	Town	El Paso County
52075 - Morrison	Town	Jefferson County
52350 - Mountain View	Town	Jefferson County
52550 - Mountain Village	Town	San Miguel County
52570 - Mount Crested Butte	Town	Gunnison County
53120 - Naturita	Town	Montrose County
53175 - Nederland	Town	Boulder County
53395 - New Castle	Town	Garfield County
54330 - Northglenn	City	Adams County, Weld County
54880 - Norwood	Town	San Miguel County
54935 - Nucla	Town	Montrose County
55045 - Nunn	Town	Weld County
55155 - Oak Creek	Town	Routt County
55540 - Olathe	Town	Montrose County
55705 - Olney Springs	Town	Crowley County
55870 - Ophir	Town	San Miguel County
55980 - Orchard City	Town	Delta County
56145 - Ordway	Town	Crowley County
56365 - Otis	Town	Washington County
56420 - Ouray	City	Ouray County



FIPS Code – City/Town (L03 Codes)	Designation	County
56475 - Ovid	Town	Sedgwick County
56860 - Pagosa Springs	Town	Archuleta County
56970 - Palisade	Town	Mesa County
57025 - Palmer Lake	Town	El Paso County
57245 - Paoli	Town	Phillips County
57300 - Paonia	Town	Delta County
57400 - Parachute	Town	Garfield County
57630 - Parker	Town	Douglas County
58235 - Peetz	Town	Logan County
59005 - Pierce	Town	Weld County
59830 - Pitkin	Town	Gunnison County
60160 - Platteville	Town	Weld County
60600 - Poncha Springs	Town	Chaffee County
61315 - Pritchett	Town	Baca County
62000 - Pueblo	City	Pueblo County
62660 - Ramah	Town	El Paso County
62880 - Rangely	Town	Rio Blanco County
63045 - Raymer	Town	Weld County
63265 - Red Cliff	Town	Eagle County
64090 - Rico	Town	Dolores County
64200 - Ridgway	Town	Ouray County
64255 - Rifle	City	Garfield County
64970 - Rockvale	Town	Fremont County
65190 - Rocky Ford	City	Otero County
65740 - Romeo	Town	Conejos County
66895 - Rye	Town	Pueblo County
67005 - Saguache	Town	Saguache County
67280 - Salida	City	Chaffee County
67830 - Sanford	Town	Conejos County
68105 - San Luis	Town	Costilla County
68655 - Sawpit	Town	San Miguel County
68930 - Sedgwick	Town	Sedgwick County
69040 - Seibert	Town	Kit Carson County
69150 - Severance	Town	Weld County
69645 - Sheridan	City	Arapahoe County
69700 - Sheridan Lake	Town	Kiowa County
70195 - Silt	Town	Garfield County
70250 - Silver Cliff	Town	Custer County
70360 - Silver Plume	Town	Clear Creek County
70525 - Silverthorne	Town	Summit County
70580 - Silverton	Town	San Juan County
70635 - Simla	Town	Elbert County
71680 - Snowmass*	-	-
71755 - Snowmass Village	Town	Pitkin County



FIPS Code – City/Town (L03 Codes)	Designation	County
72395 - South Fork	Town	Rio Grande County
73330 - Springfield	Town	Baca County
73715 - Starkville	Town	Las Animas County
73825 - Steamboat Springs	City	Routt County
73935 - Sterling	City	Logan County
74430 - Stratmoor	CDP	El Paso County
74485 - Stratton	Town	Kit Carson County
74815 - Sugar City	Town	Crowley County
75640 - Superior	Town	Boulder County, Jefferson County
75970 - Swink	Town	Otero County
76795 - Telluride	Town	San Miguel County
77290 - Thornton	City	Adams County, Weld County
77510 - Timnath	Town	Larimer County, Weld County
78610 - Trinidad	City	Las Animas County
79270 - Two Buttes	Town	Baca County
80040 - Vail	Town	Eagle County
80865 - Victor	City	Teller County
81030 - Vilas	Town	Baca County
81690 - Vona	Town	Kit Carson County
82130 - Walden	Town	Jackson County
82350 - Walsenburg	City	Huerfano County
82460 - Walsh	Town	Baca County
82735 - Ward	Town	Boulder County
82900 - Non City*	-	-
83120 - Non City*	-	-
83230 - Wellington	Town	Larimer County
83450 - Westcliffe	Town	Custer County
83835 - Westminster	City	Adams County, Jefferson County
8400 - Breckenridge*	-	-
84440 - Wheat Ridge	City	Jefferson County
84770 - Wiggins	Town	Morgan County
85045 - Wiley	Town	Prowers County
85155 - Williamsburg	Town	Fremont County
85485 - Windsor	Town	Larimer County, Weld County
85705 - Winter Park	Town	Grand County
86090 - Woodland Park	City	Teller County
86117 - Woodmoor	CDP	El Paso County
86310 - Wray	City	Yuma County
86475 - Yampa	Town	Routt County
86750 - Yuma	City	Yuma County
93 - Non City*	-	-

*Codes not used

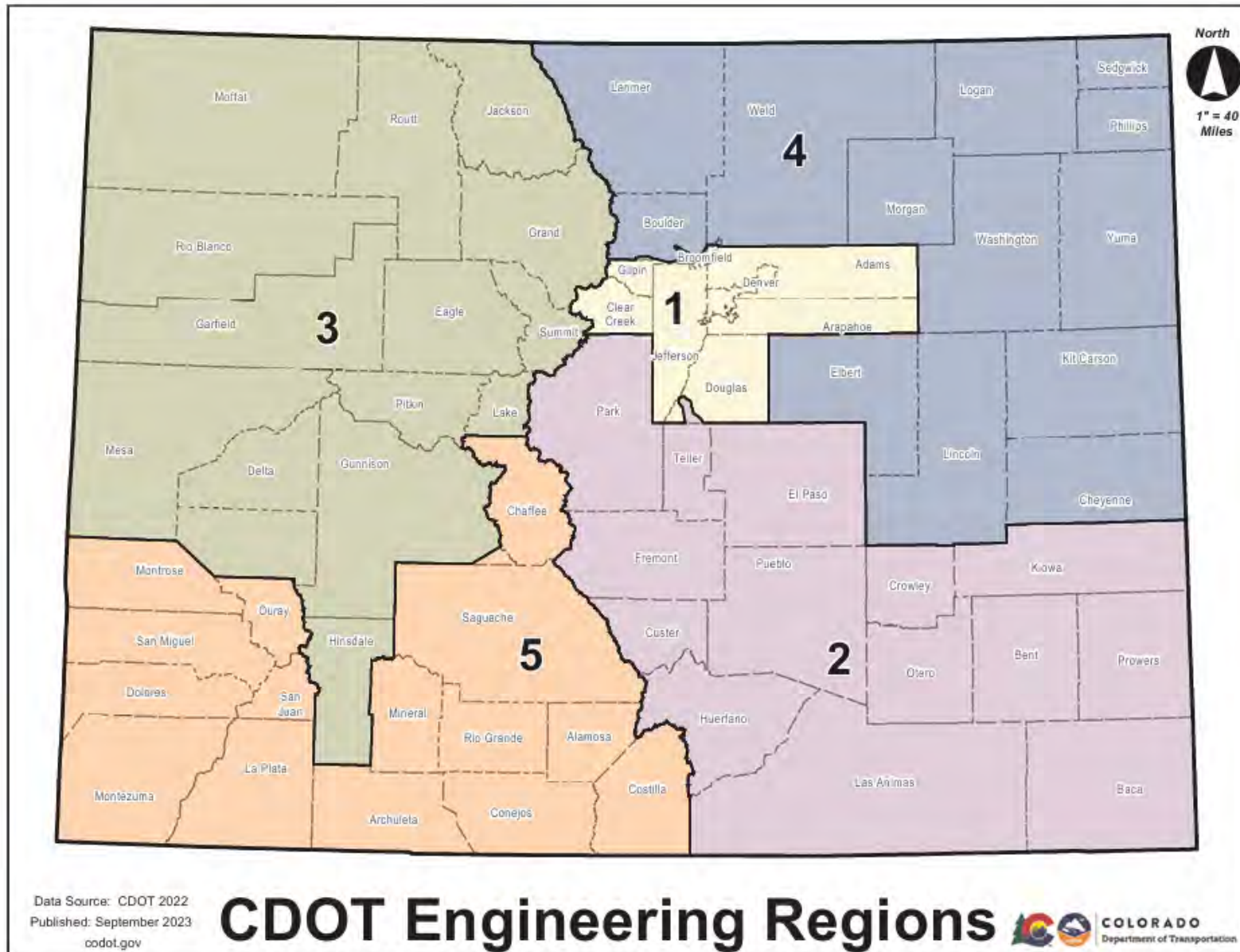


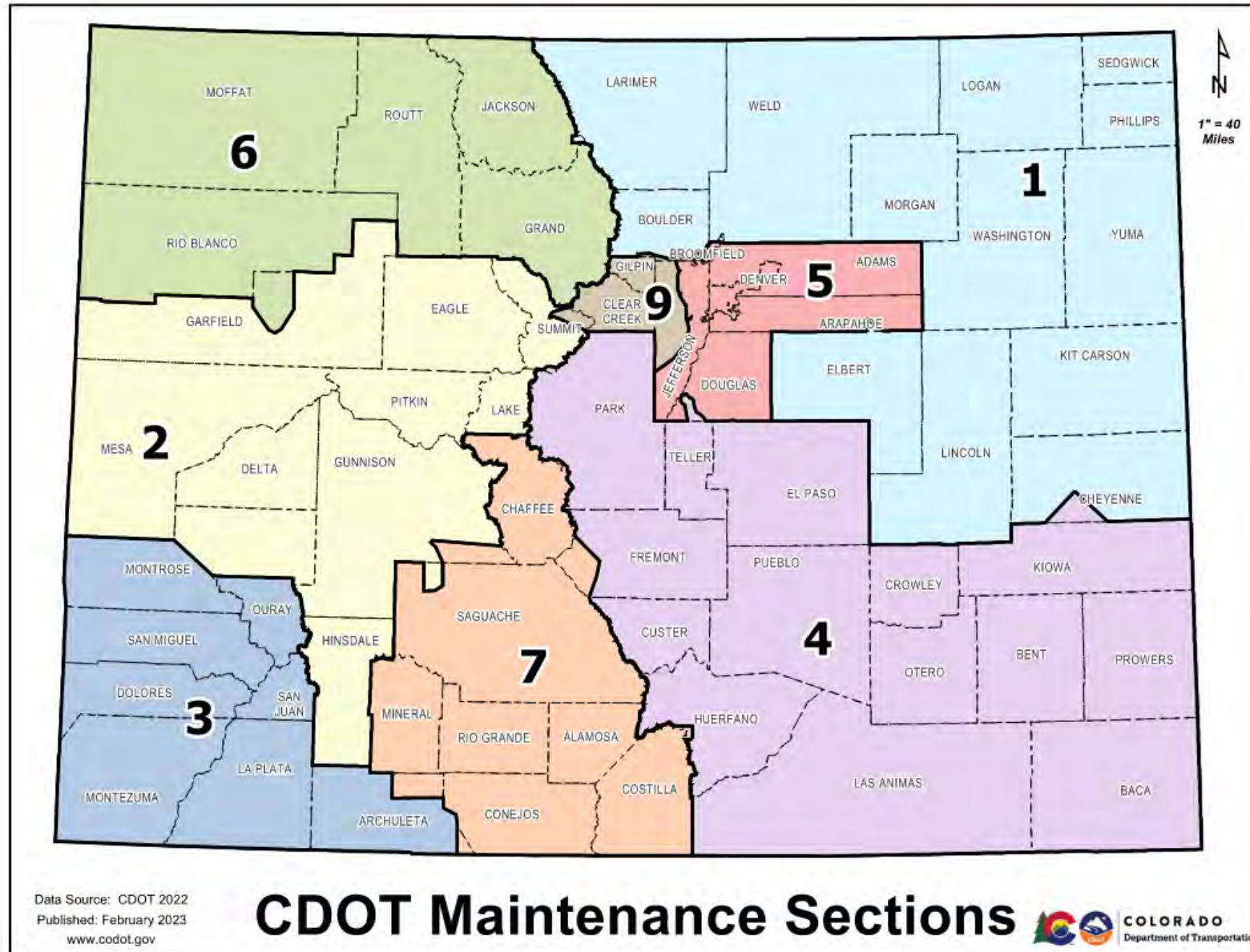
Appendix L Organizational Boundary Maps

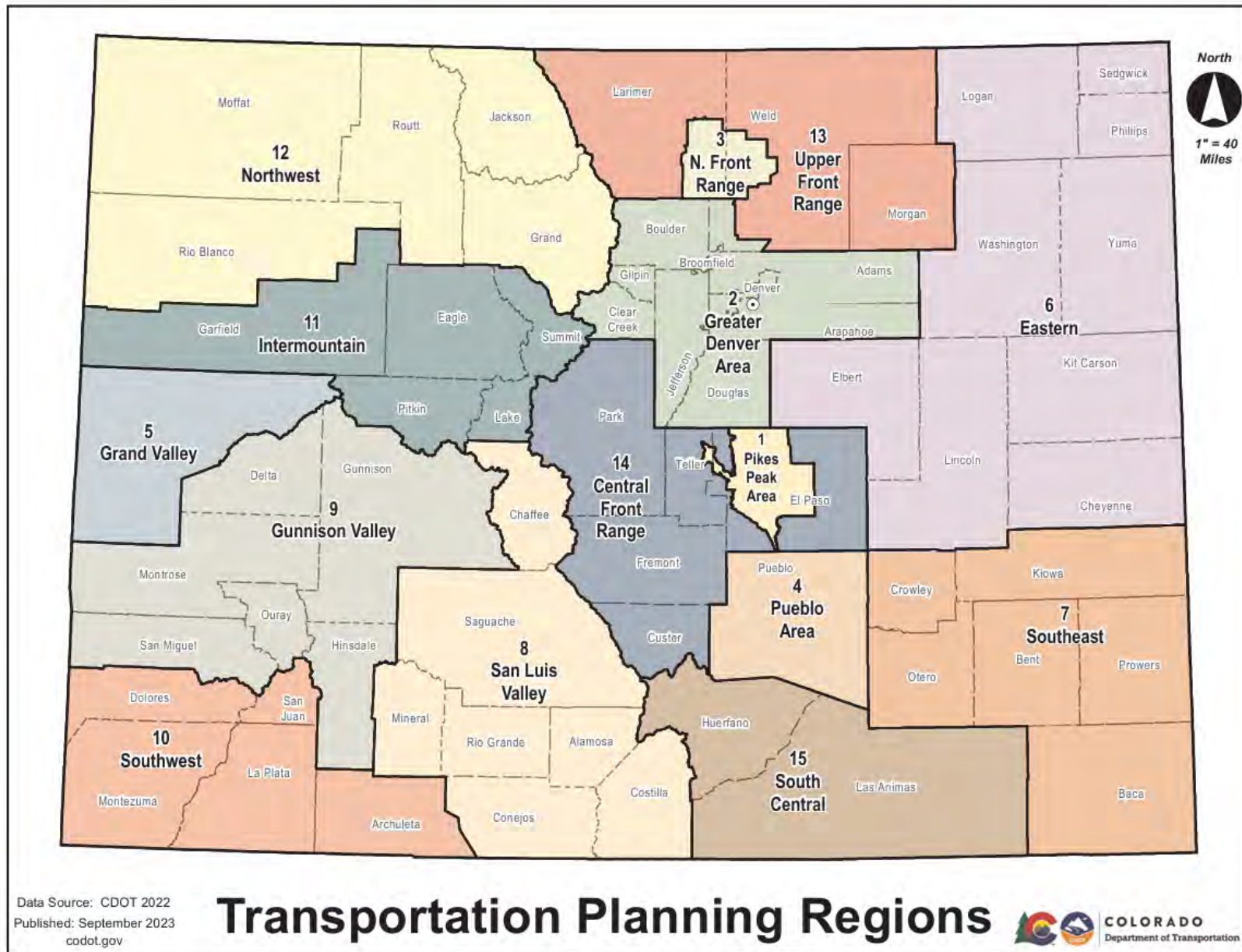
Appendix L contains the boundary and informational maps for:

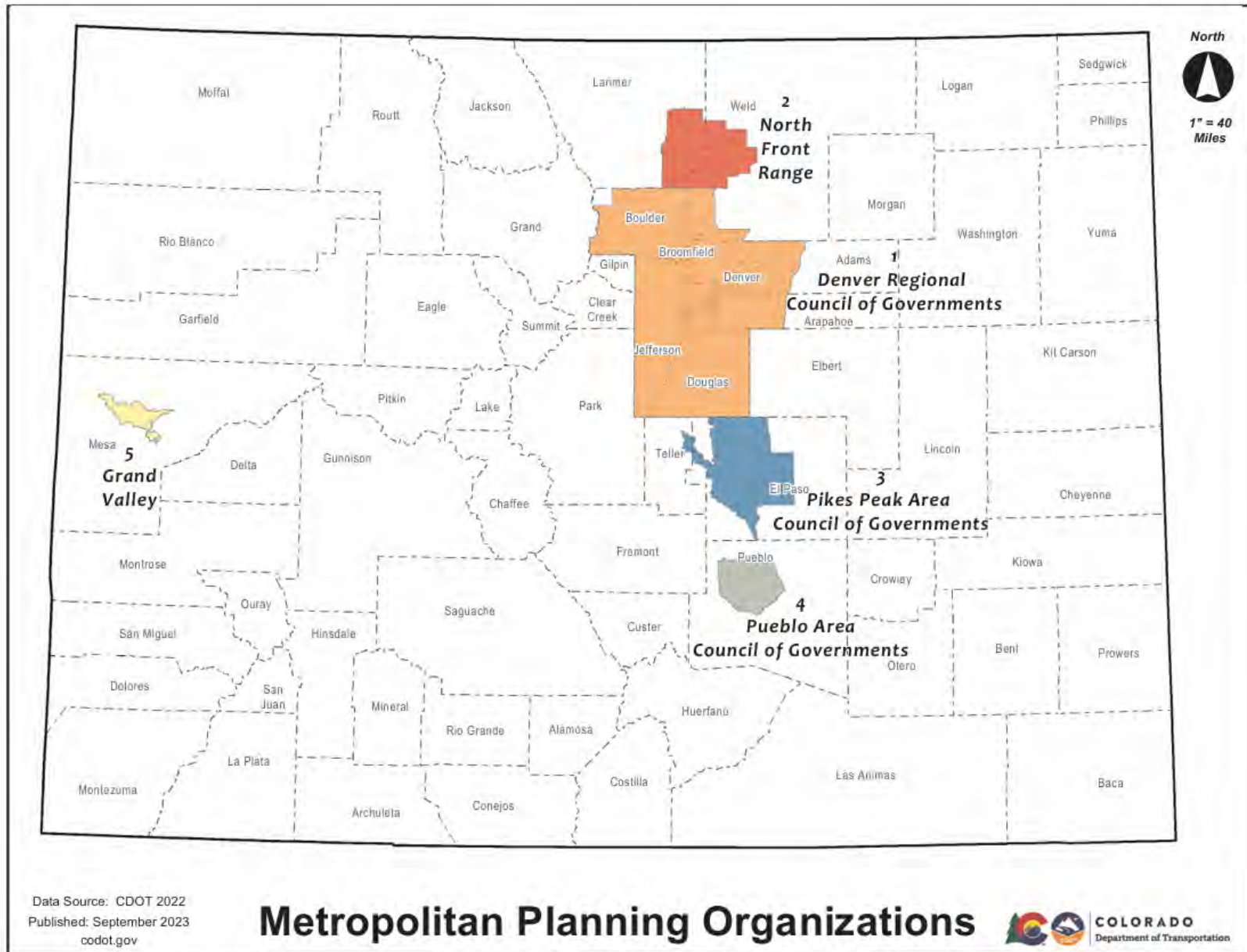
1. CDOT Engineering Regions
2. CDOT Maintenance Sections
3. CDOT Transportation Planning Regions
4. Colorado Metropolitan Planning Organizations
5. Highway Functional Classifications

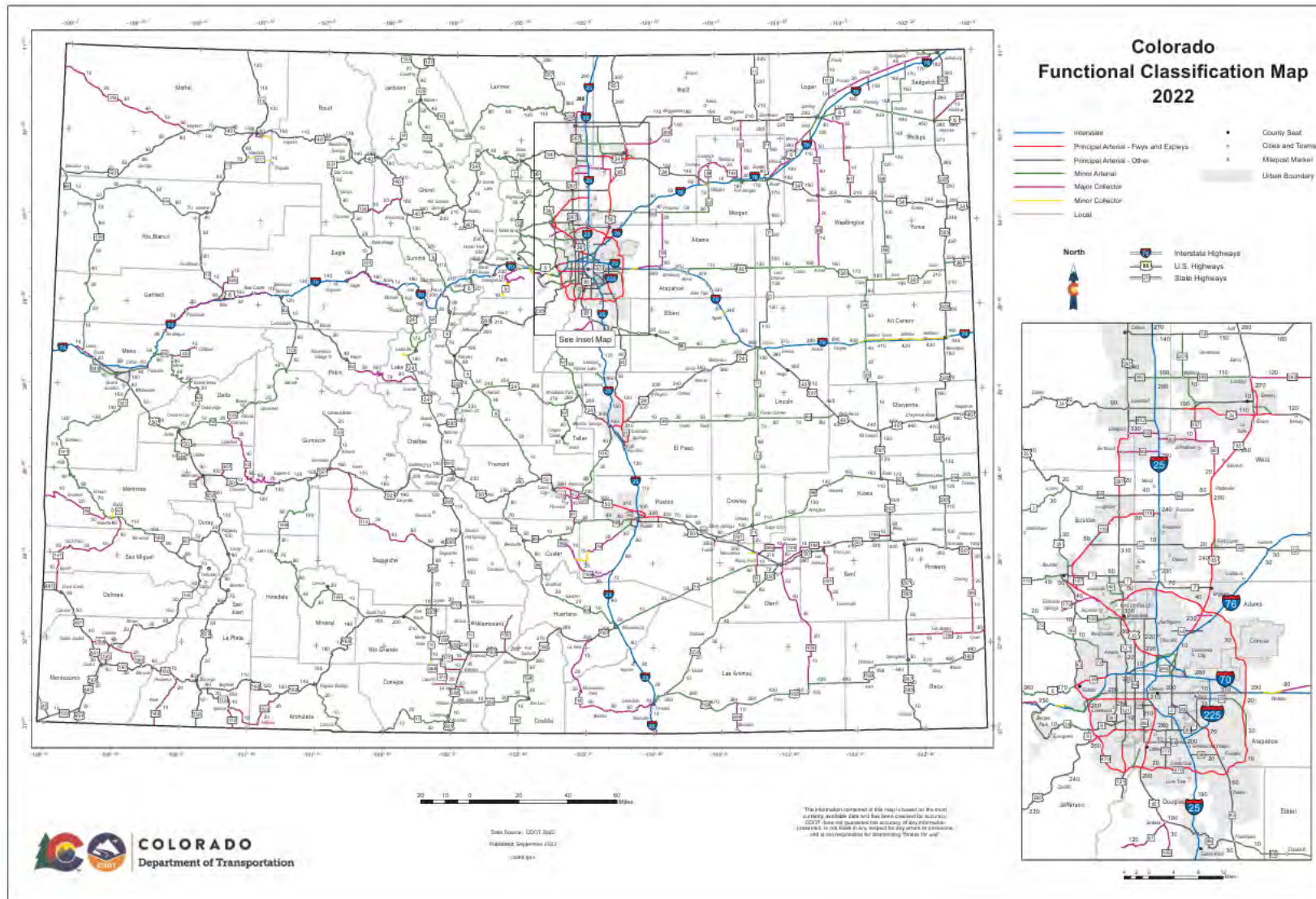
For the most updated boundary and informational maps refer to CDOT's Online Transportation Information System (OTIS).







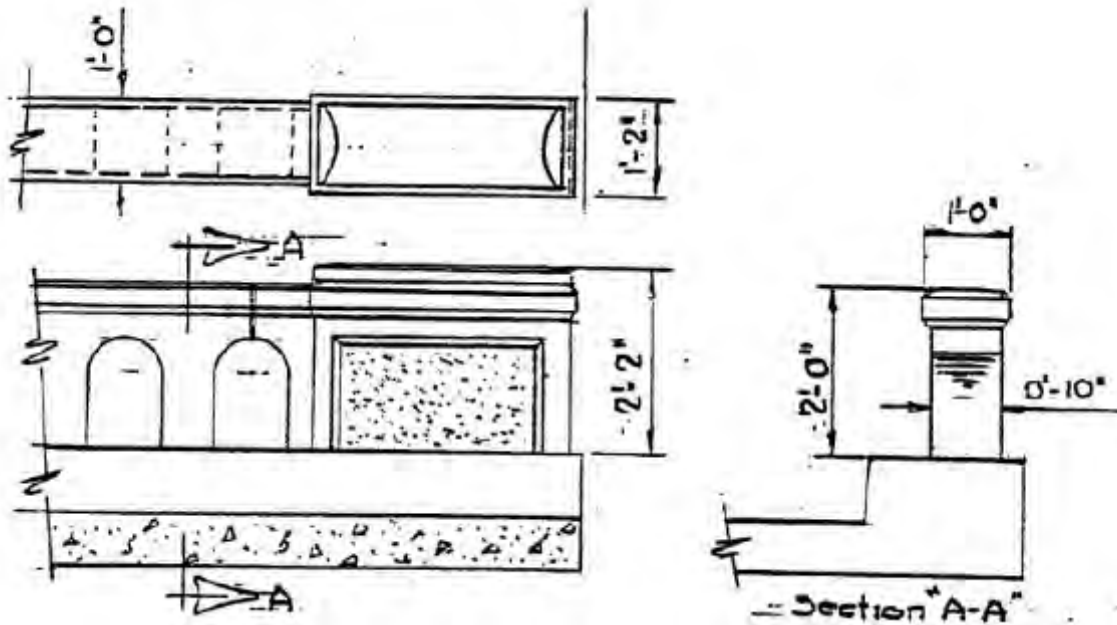




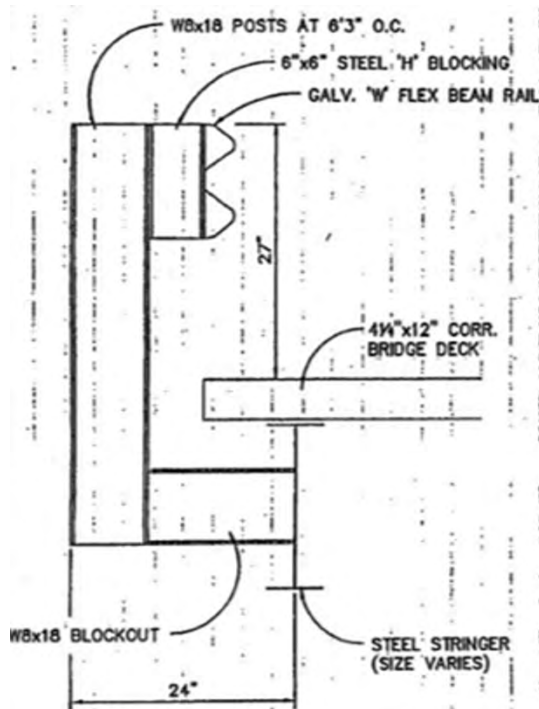


Appendix M Traffic Safety Features and Bridge Rail Types

Appendix M contains sketches of various types of bridge rail designs for rail types listed in *RH03A – Structure Rail Type*. The suggested code for *RH06A – Structure Rail* for each rail type is presented below the corresponding sketch.

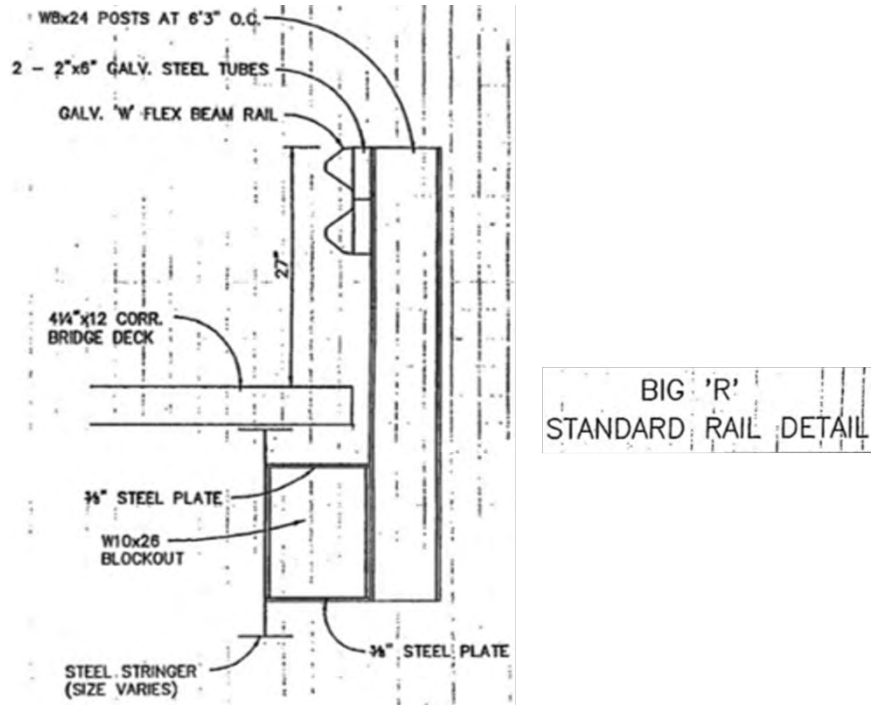


Rail Type A (RH06A = 0)

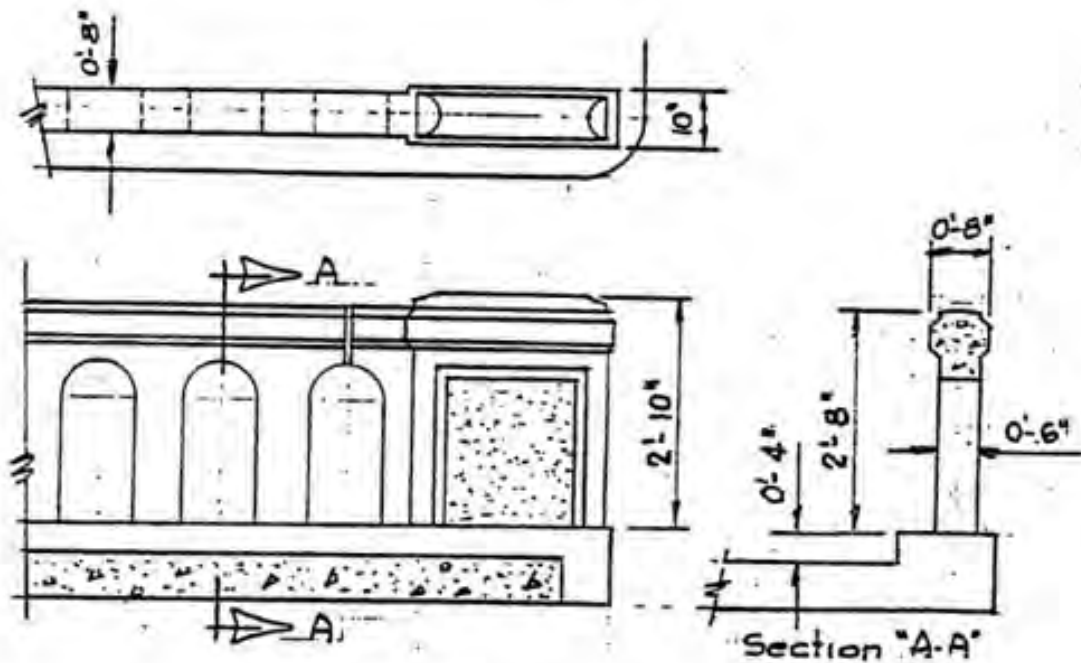


WELD COUNTY
STANDARD RAIL DETAIL

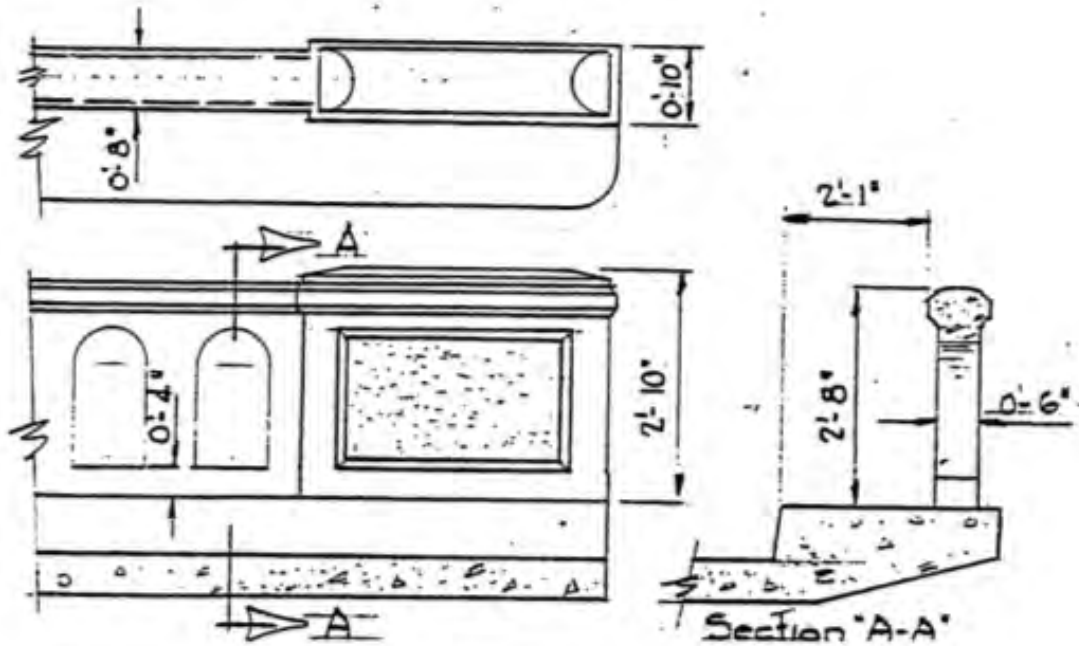
Rail Type AA (RH06A = 0)



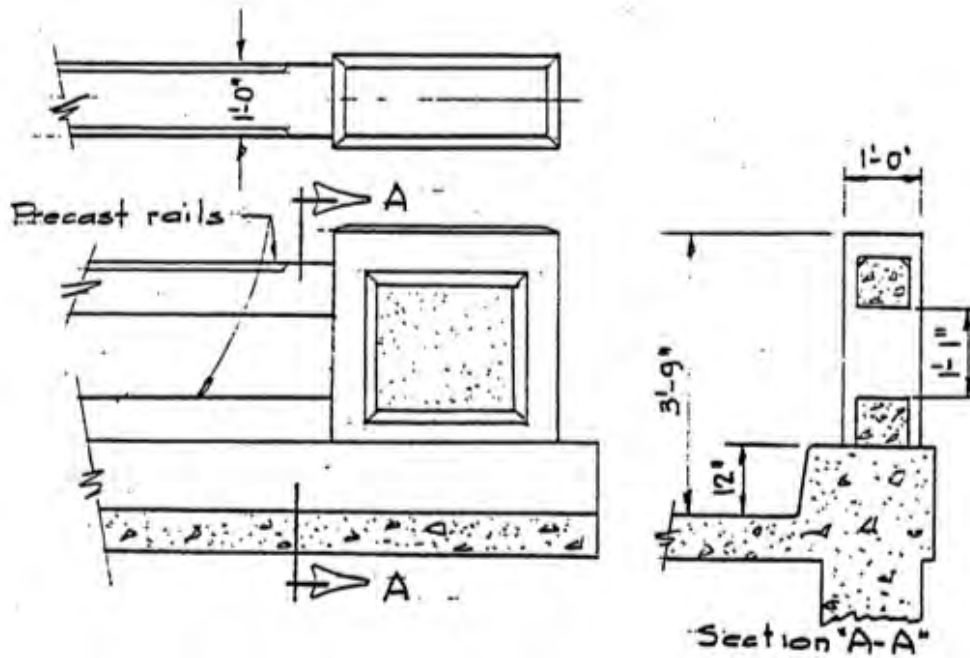
Rail Type AB (RH06A = 0)



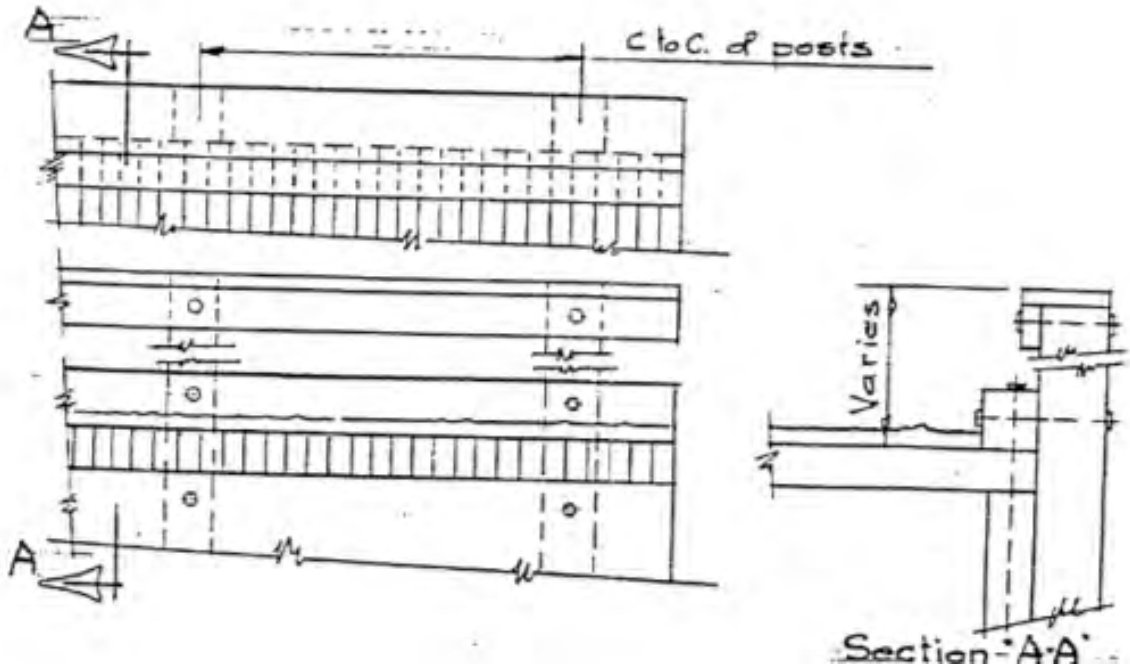
Rail Type B (RH06A = 0)



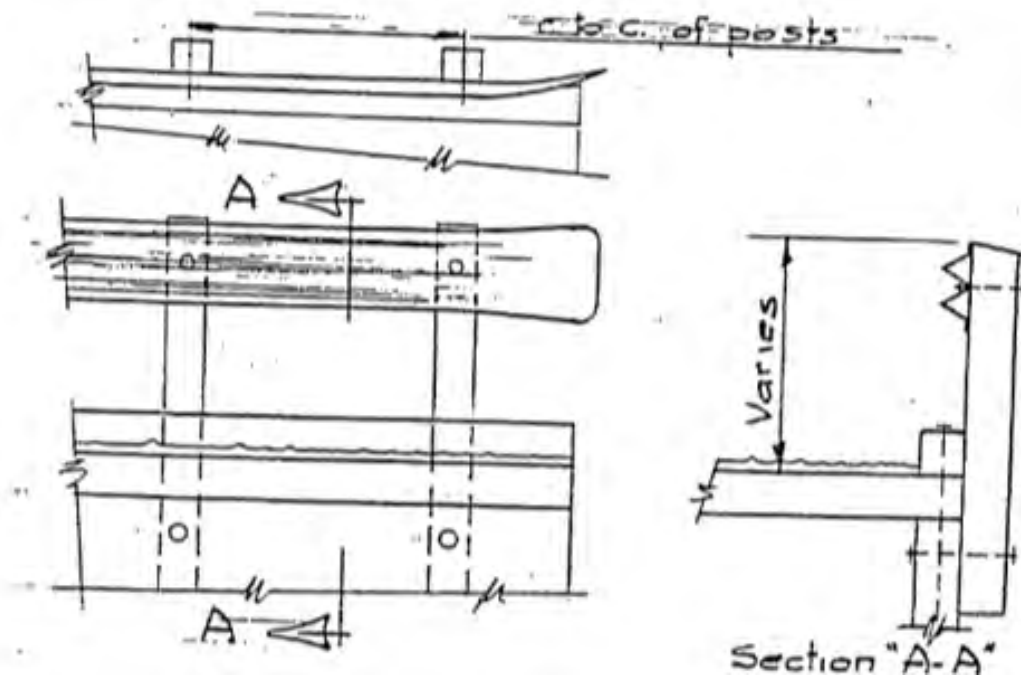
Rail Type C (RH06A = 0)



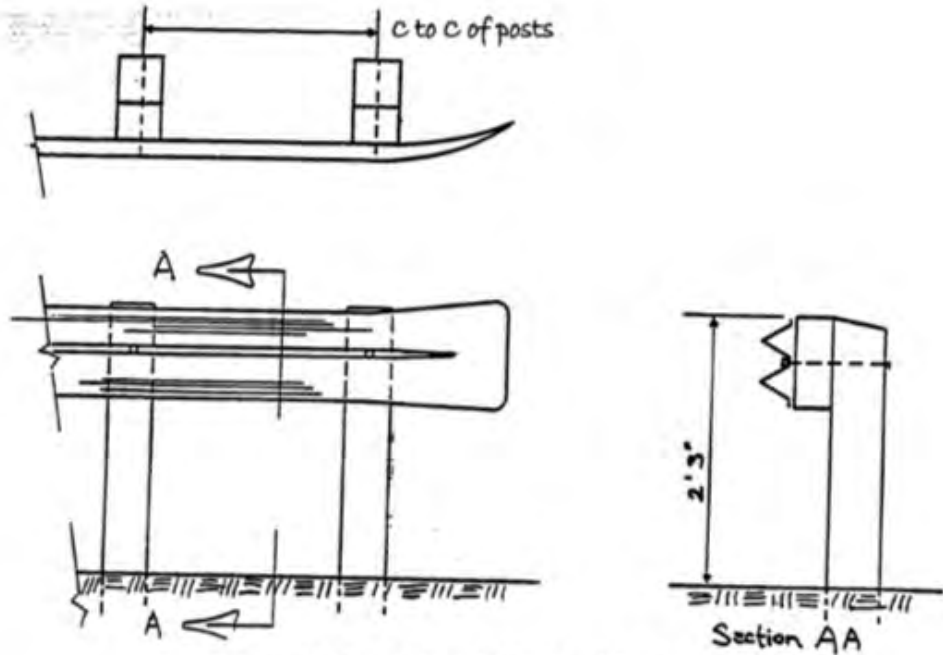
Rail Type D (RH06A = 0)



Rail Type E (RH06A = 0)

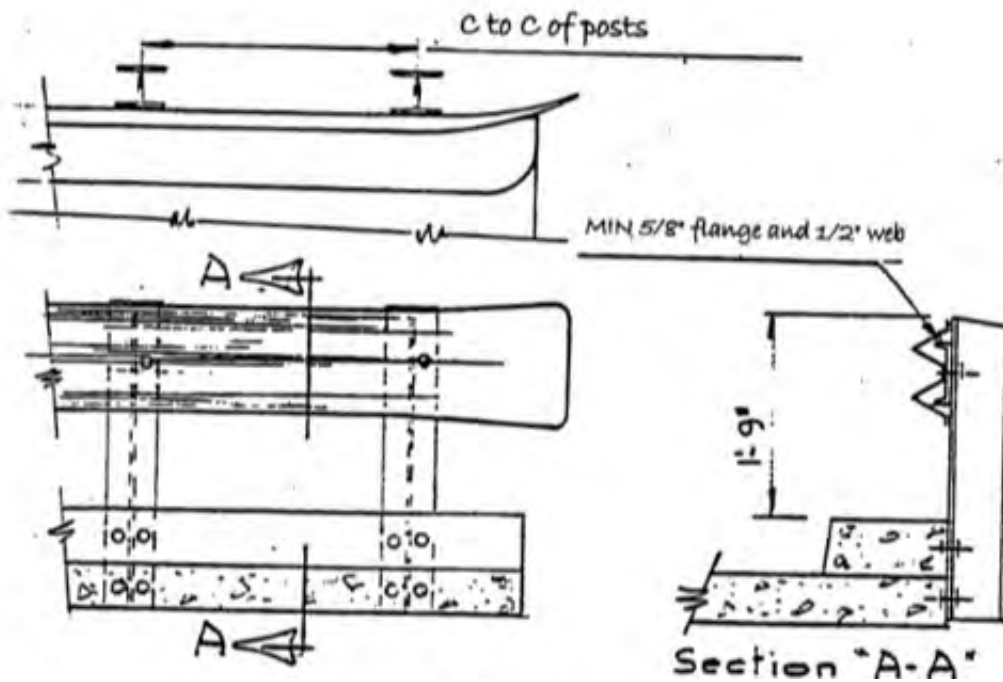


Rail Type F (RH06A = 0)

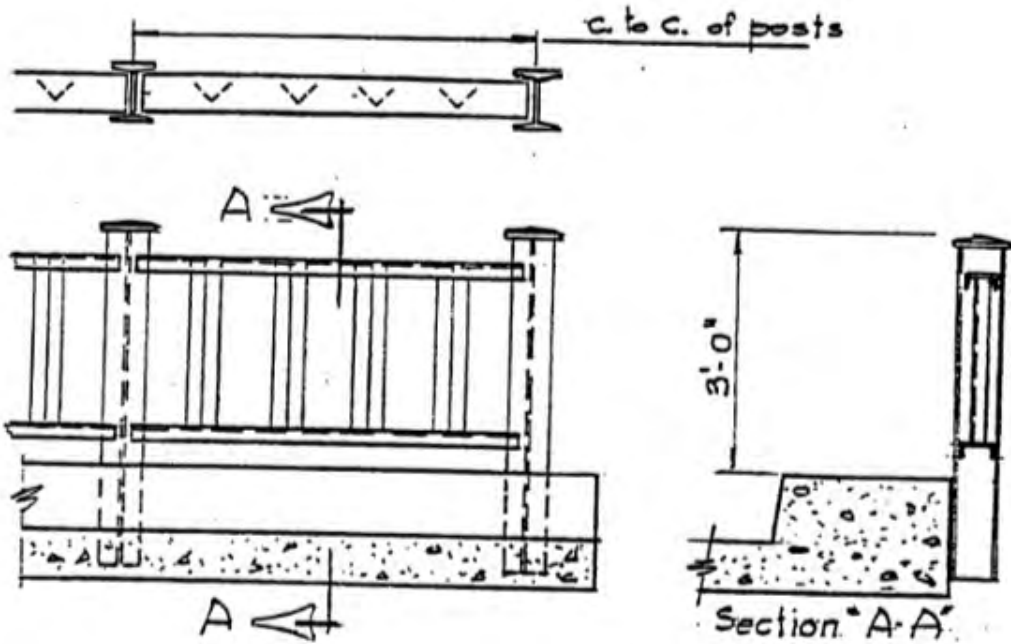


For CBC's and Pipe Culverts with Fill

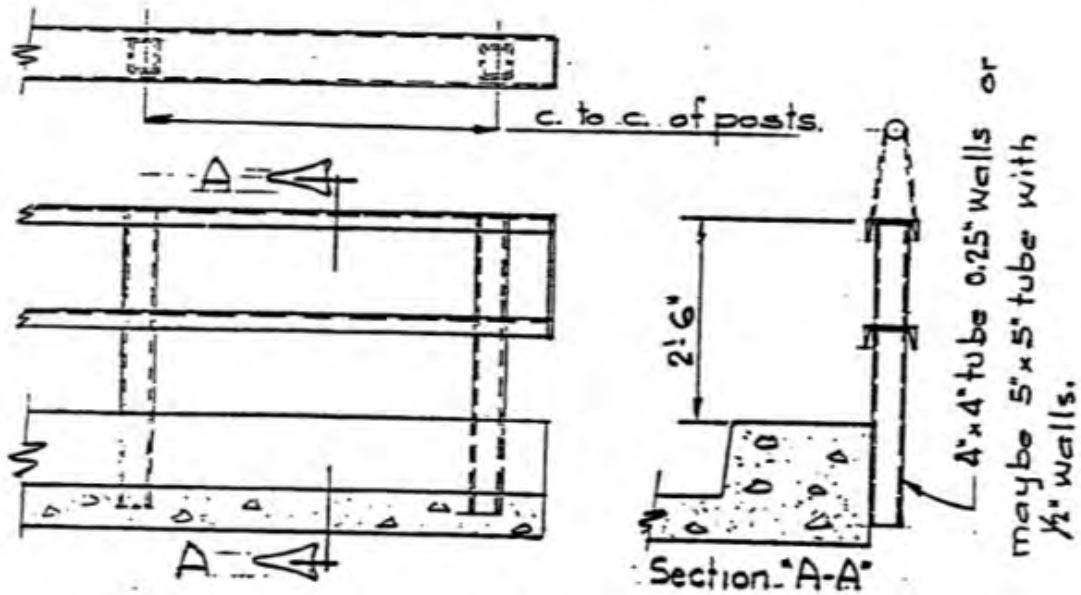
Rail Type FB (RH06A = 1)



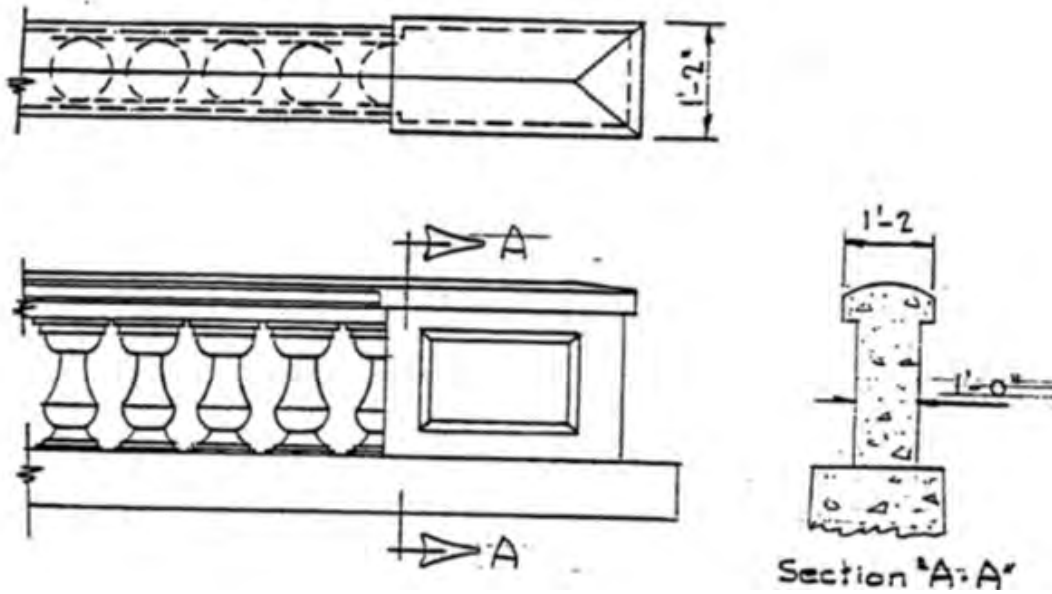
Rail Type G (RH06A = 0)



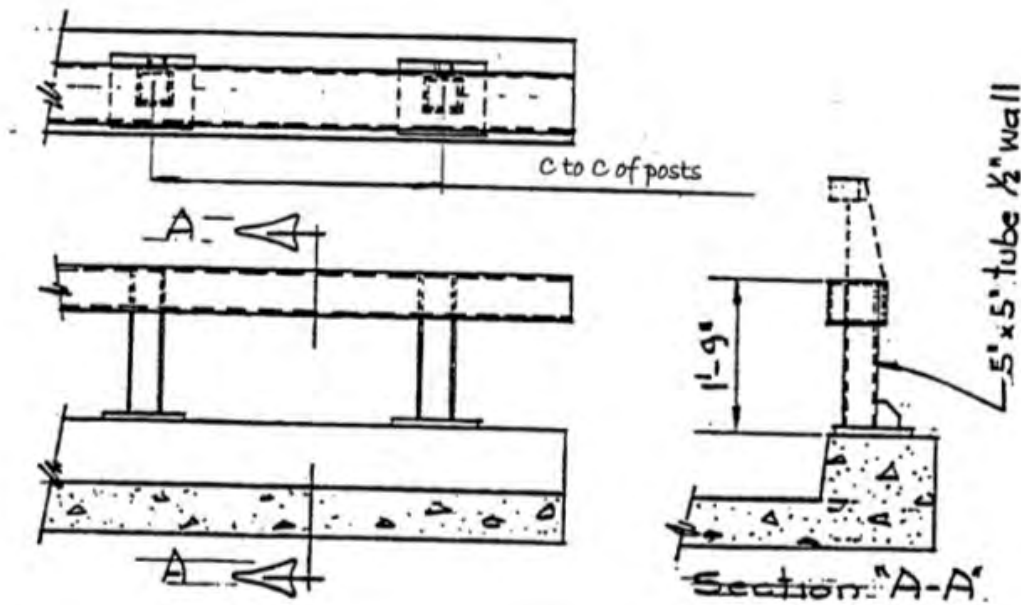
Rail Type J (RH06A = 0)



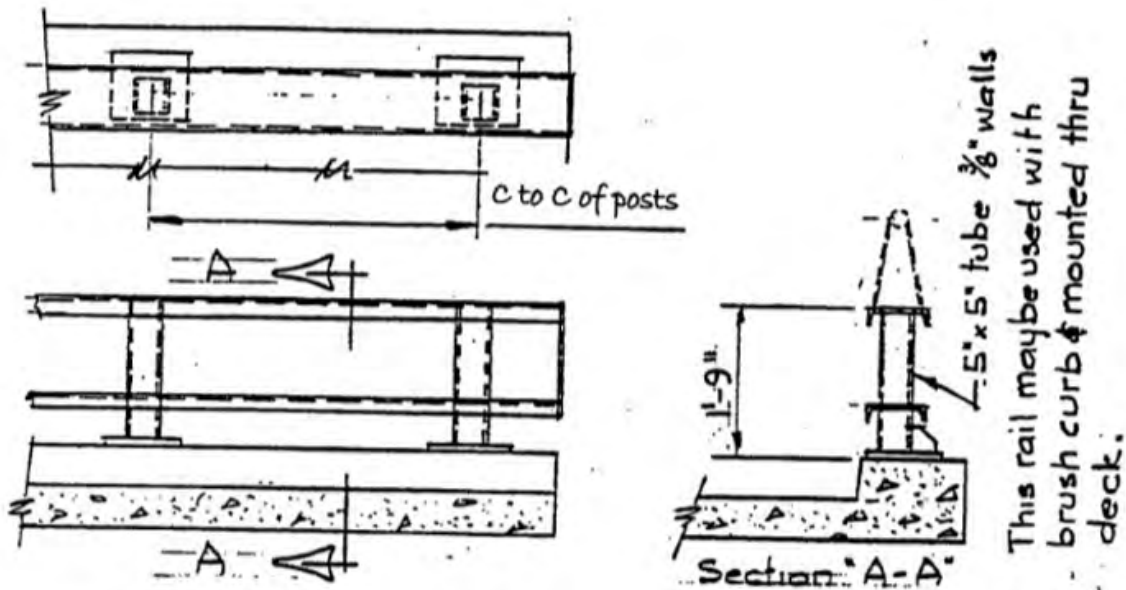
Rail Type K (RH06A = 0)



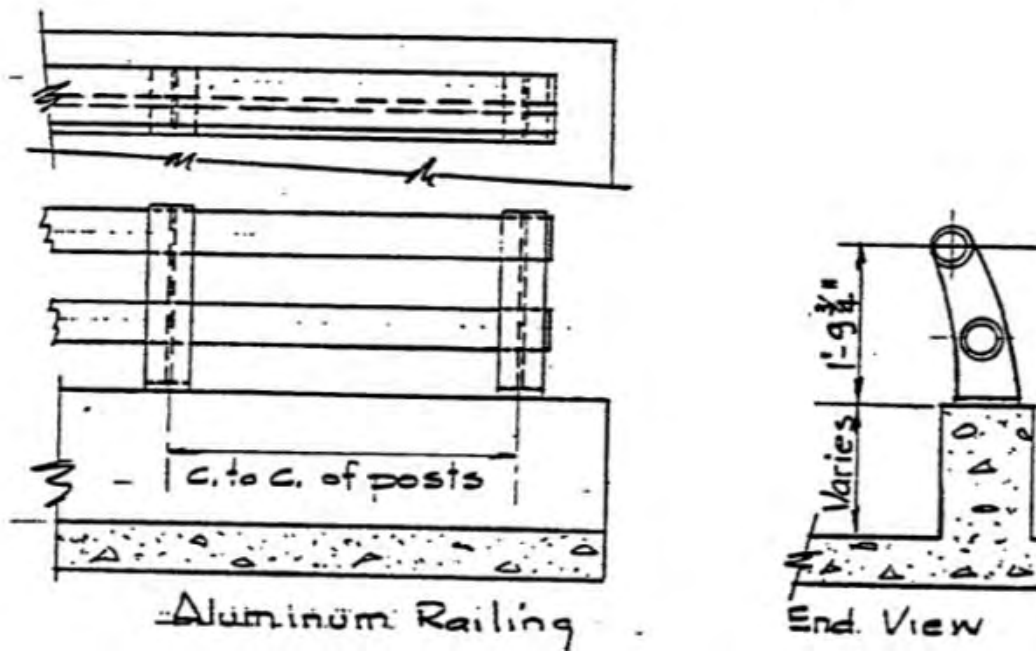
Rail Type L (RH06A = 0)



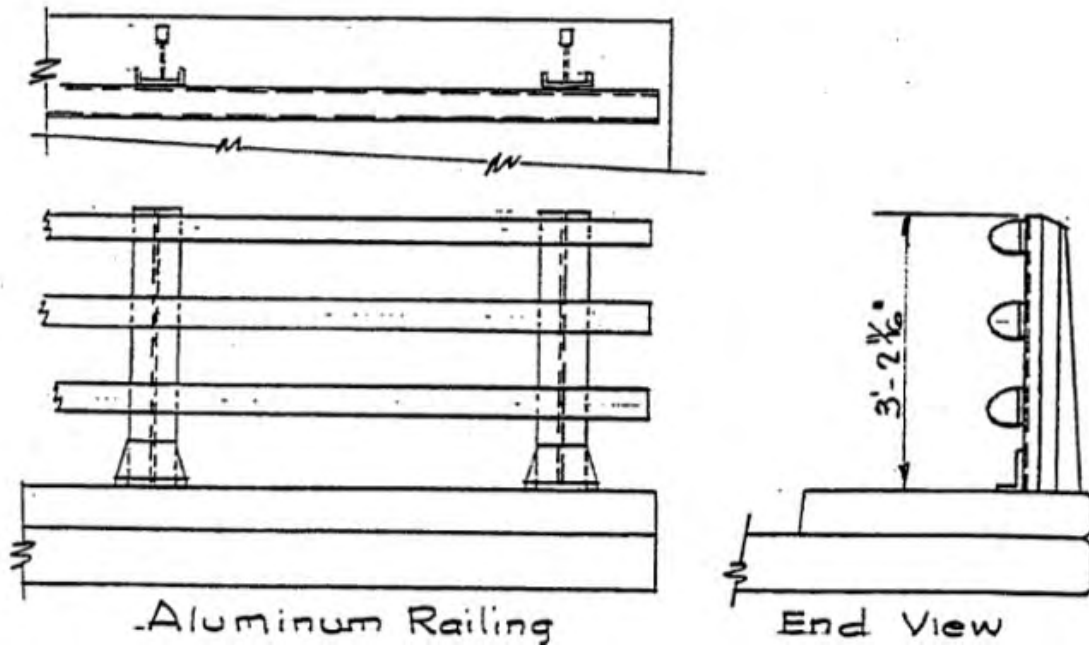
Rail Type M (RH06A = 0)



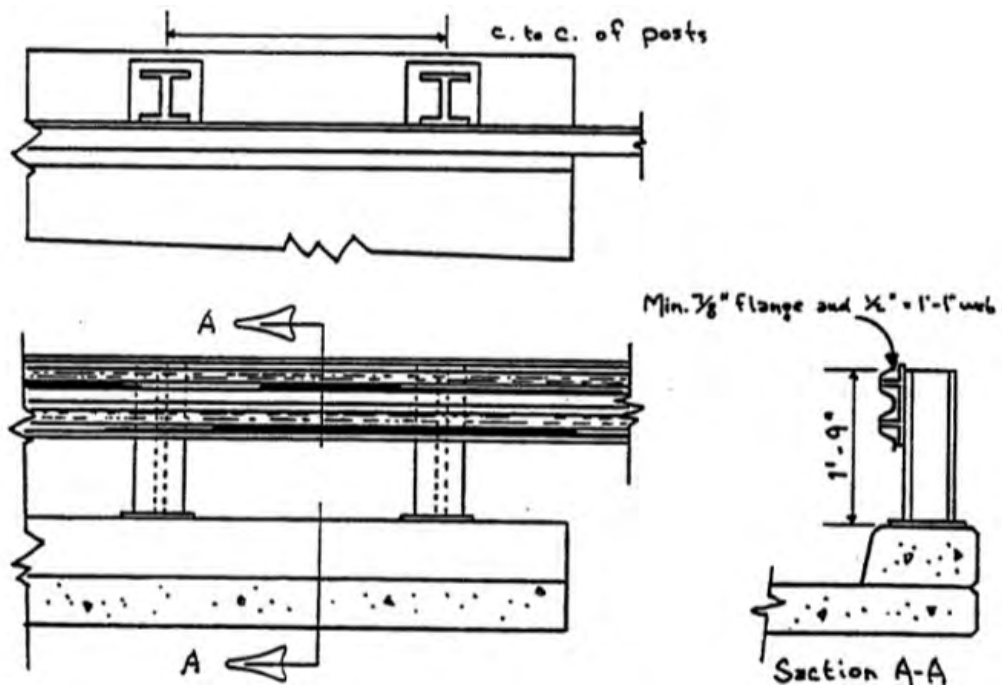
Rail Type N (RH06A = 0)



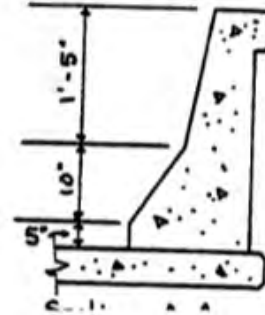
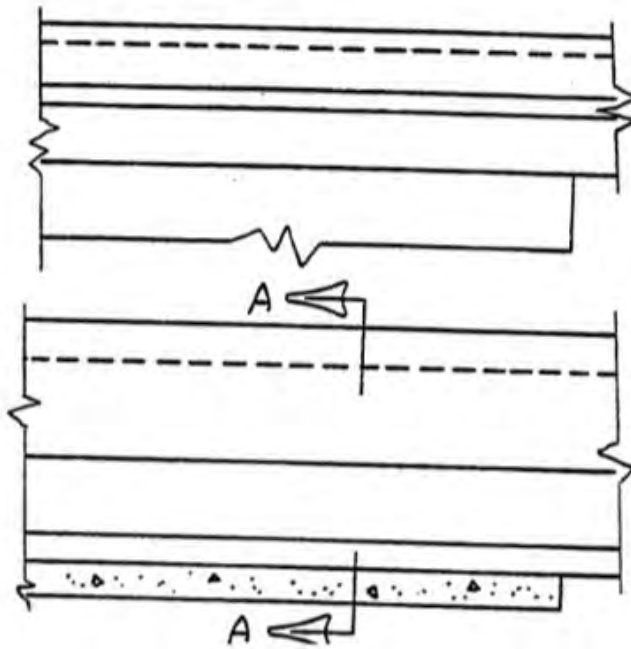
Rail Type O (RH06A = 0)



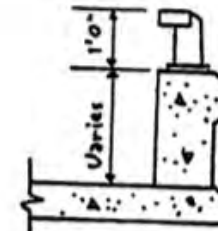
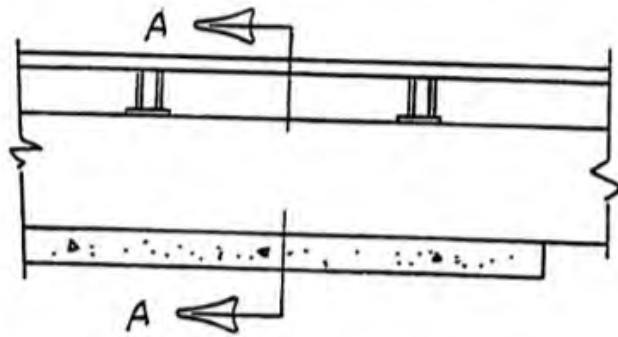
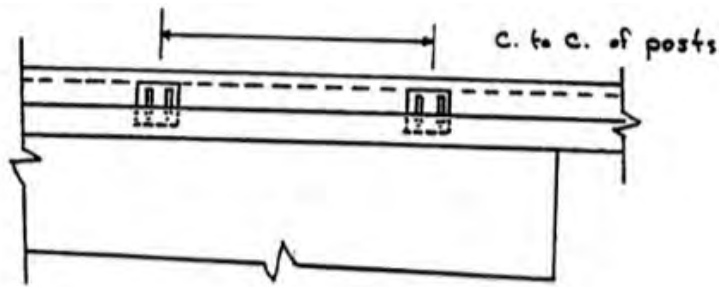
Rail Type P (RH06A = 0)



Rail Type Q (RH06A = 1)

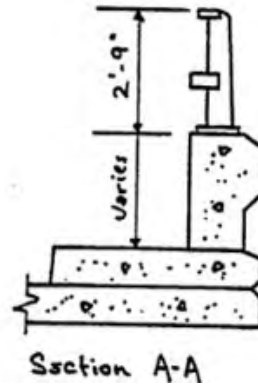
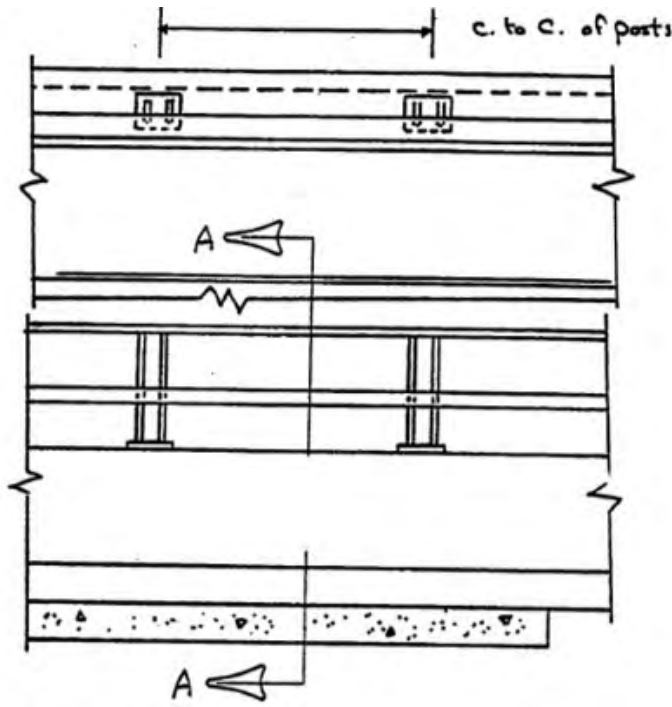


Rail Type R (RH06A = 1)

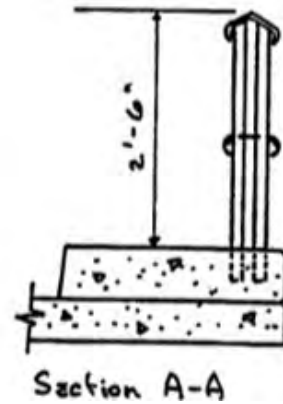
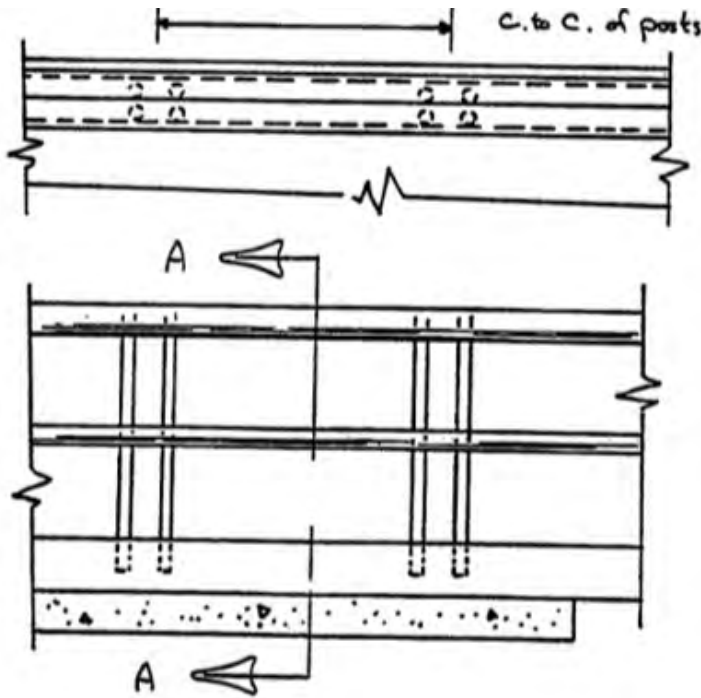


Section A-A

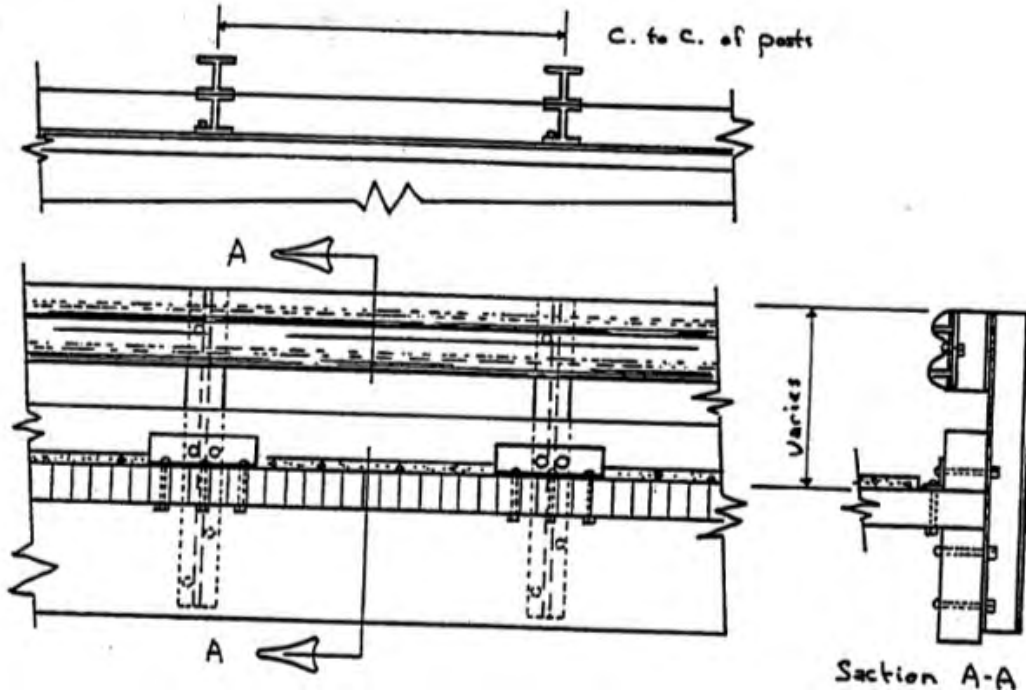
Rail Type S (RH06A = 1)



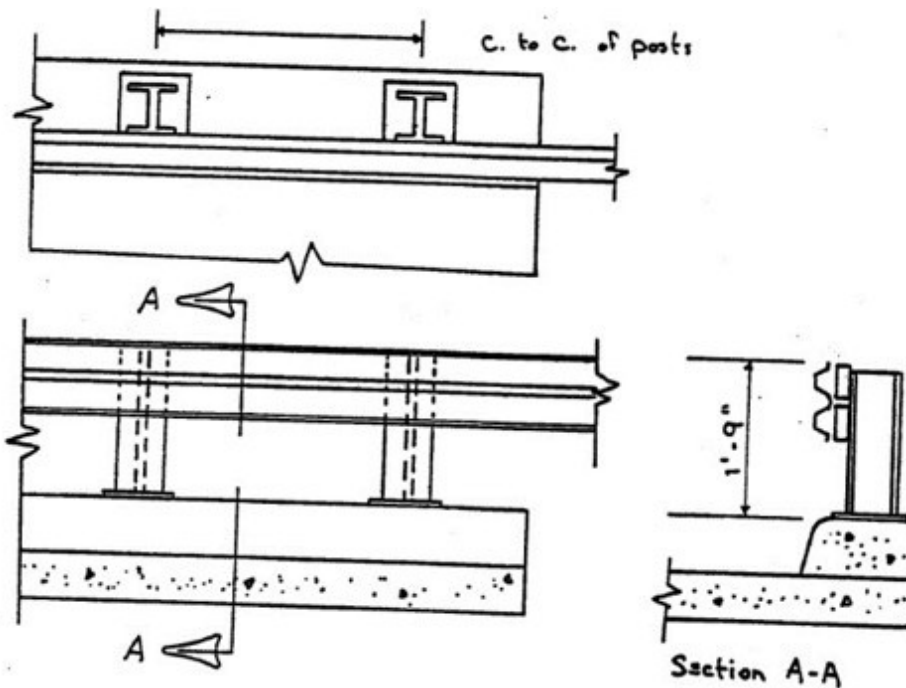
Rail Type T (RH06A = 1)



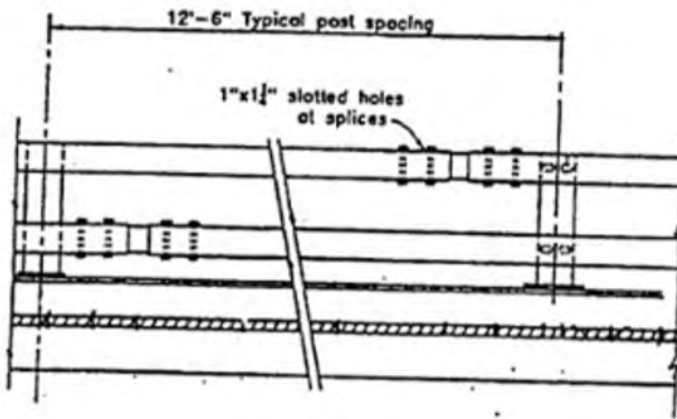
Rail Type U (RH06A = 0)



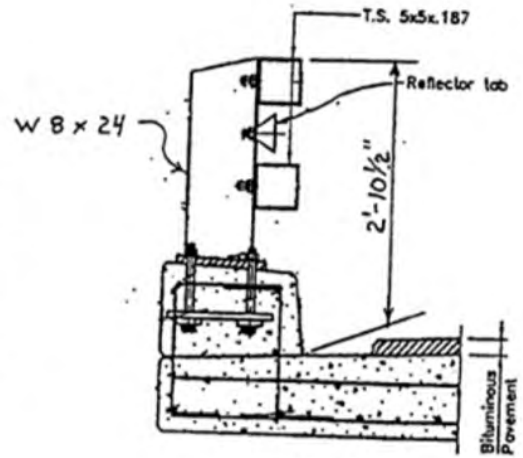
Rail Type V (RH06A = 1)



Rail Type W (RH06A = 1)



ELEVATION - BRIDGE RAIL



SECTION

Rail Type Y (RH06A = 1)

Appendix N Data Item Index

Appendix N documents the corresponding SNBI Item number, frequency, and data set for each CO SNBI Item.

CO SNBI Item	SNBI or CDOT	Corresponding SNBI Item	Frequency	Data Set
E01 – Element Number	SNBI	B.E.01	Each Inspection	Elements
E02 – Element Parent Number	SNBI	B.E.02	Each Inspection	Elements
E03 – Element Total Quantity	SNBI	B.E.03	Each Inspection	Elements
CS01 – Element Quantity Condition State One	SNBI	B.CS.01	Each Inspection	Elements
CS02 – Element Quantity Condition State Two	SNBI	B.CS.02	Each Inspection	Elements
CS03 – Element Quantity Condition State Three	SNBI	B.CS.03	Each Inspection	Elements
CS04 – Element Quantity Condition State Four	SNBI	B.CS.04	Each Inspection	Elements
Previous Inspection Date	CDOT	N/A	Each Inspection	Inspections
Current Inspection Date	CDOT	N/A	Each Inspection	Inspections
Target Date	CDOT	N/A	Each Inspection	Inspections
Next Inspection Interval	SNBI	B.IE.05	Each Inspection	Inspections
Schedule String	CDOT	N/A	Each Inspection	Inspections
EP01 – Load Configuration	SNBI	B.EP.01	Initial	Posting Evaluation
EP02 – Load Rating	SNBI	B.EP.02	Initial	Posting Evaluation
EP03 – Posting Type	SNBI	B.EP.03	Each Inspection	Posting Evaluation
EP04 – Posting Value	SNBI	B.EP.04	Each Inspection	Posting Evaluation
EP05A – Posting	CDOT	N/A	Initial	Load Rating
EP06A – Load Rating Organization	CDOT	N/A	Initial	Load Rating
EP07A – Load Rater Name	CDOT	N/A	Initial	Load Rating
EP08A – Load Rater Initials	CDOT	N/A	Initial	Load Rating
EP09A – Checker Name	CDOT	N/A	Initial	Load Rating
EP10A – Checker Initials	CDOT	N/A	Initial	Load Rating
EP11A – Rating Package Review Date	CDOT	N/A	Initial	Load Rating
EP12A – Rating Package Reviewer	CDOT	N/A	Initial	Load Rating
EP13A – Rating Calculations Complete	CDOT	N/A	Initial	Load Rating
EP14A – Rating Package Complete	CDOT	N/A	Initial	Load Rating
EP15A – Entire Structure Rated	CDOT	N/A	Initial	Load Rating
EP16A – Rating Input Files Archived	CDOT	N/A	Initial	Load Rating

CO SNBI Item	SNBI or CDOT	Corresponding SNBI Item	Frequency	Data Set
EP17A – Rating Output Files Archived	CDOT	N/A	Initial	Load Rating
EP18A – Rating Assigned To	CDOT	N/A	Initial	Load Rating
EP19A – Rating Software Used	CDOT	N/A	Initial	Load Rating
EP20A – BrR Rating Runs	CDOT	N/A	Initial	Load Rating
EP21A – BrR Rating Analysis	CDOT	N/A	Initial	Load Rating
EP22A – BrR Rating System Based	CDOT	N/A	Initial	Load Rating
EP23A – Rating Asphalt Thickness	CDOT	N/A	Initial	Load Rating
EP24A – Girder Operating Rating, Tons	CDOT	N/A	Initial	Load Rating
EP25A – Overload Color Code	CDOT	N/A	Initial	Load Rating
EP26A – Overload Color Code Live Load	CDOT	N/A	Initial	Load Rating
EP27A – Operating Controlling Member	CDOT	N/A	Initial	Load Rating
EP27B – Inventory Controlling Member	CDOT	N/A	Initial	Load Rating
EP28A – Rating Comment	CDOT	N/A	Initial	Load Rating
LR01 – Design Load	SNBI	B.LR.01	Initial	Load Rating
LR02 – Design Method	SNBI	B.LR.02	Initial	Load Rating
LR03 – Load Rating Date	SNBI	B.LR.03	Initial	Load Rating
LR03A – Load Rating Check Date	CDOT	N/A	Initial	Load Rating
LR04 – Operating Rating Method	SNBI	B.LR.04	Initial	Load Rating
LR04A – Inventory Rating Method	CDOT	N/A	Initial	Load Rating
LR05 – Inventory Load Rating	SNBI	B.LR.05	Initial	Load Rating
LR06 – Operating Load Rating	SNBI	B.LR.06	Initial	Load Rating
LR07 – Controlling Legal Load Rating Factor	SNBI	B.LR.07	Initial	Load Rating
LR08 – Routine Permit Loads	SNBI	B.LR.08	Initial	Load Rating
LR09A – Within 1 Mile	CDOT	N/A	Initial	Load Rating
LR10A – BrR Structure Number	CDOT	N/A	Initial	Load Rating
LR11A – Plans Available	CDOT	N/A	Initial	Load Rating
LR12A – Overload Critical Structure	CDOT	N/A	Initial	Load Rating
PS01A – Load Posting Structure Status	SNBI	B.PS.01	Initial	Primary
PS01B – Load Posting Status Code	SNBI	B.PS.01	Each Inspection	Primary
PS02 – Posting Status Change Date	SNBI	B.PS.02	Each Inspection	Inspections
PS03A – Posting - CO Legal Trucks	CDOT	N/A	Each Inspection	Primary

CO SNBI Item	SNBI or CDOT	Corresponding SNBI Item	Frequency	Data Set
PS03B – Posting - SHV Trucks	CDOT	N/A	Each Inspection	Primary
PS03C – Posting - EV Trucks	CDOT	N/A	Each Inspection	Primary
PS03D – Temporary Structure	CDOT	N/A	Initial	Primary
AP01 – Approach Alignment Rating	SNBI	B.AP.01	Each Inspection	Primary
AP02 – Overtopping Likelihood	SNBI	B.AP.02	Each Inspection	Primary
AP03 – Scour Vulnerability	SNBI	B.AP.03	Initial	Primary
AP04 – Scour Plan of Action	SNBI	B.AP.04	Initial	Primary
AP04A – Scour Documentation	CDOT	N/A	Initial	Primary
AP04B – Monitoring Comment	CDOT	N/A	Initial	Primary
AP04C – Monitoring Trigger	CDOT	N/A	Initial	Primary
AP04D – Closure Trigger	CDOT	N/A	Initial	Primary
AP04E – Mobilize Trigger	CDOT	N/A	Initial	Primary
AP04F – Scour Watch	CDOT	N/A	Initial	Primary
AP05 – Seismic Vulnerability	SNBI	B.AP.05	Initial	Primary
AP12A – SNBI Deskside Review Complete	CDOT	N/A	Initial	Primary
AP12B – SNBI Field Verification Complete	CDOT	N/A	Initial	Primary
C01 – Deck Rating	SNBI	B.C.01	Each Inspection	Primary
C02 – Superstructure Rating	SNBI	B.C.02	Each Inspection	Primary
C03 – Substructure Rating	SNBI	B.C.03	Each Inspection	Primary
C04 – Culvert Rating	SNBI	B.C.04	Each Inspection	Primary
C05 – Railing Condition Rating	SNBI	B.C.05	Each Inspection	Primary
C06 – Railing Transition Condition Rating	SNBI	B.C.06	Each Inspection	Primary
C07 – Bearing Condition Rating	SNBI	B.C.07	Each Inspection	Primary
C08 – Joint Condition Rating	SNBI	B.C.08	Each Inspection	Primary
C09 – Channel Condition Rating	SNBI	B.C.09	Each Inspection	Primary
C10 – Channel Protection Rating	SNBI	B.C.10	Each Inspection	Primary
C11 – Scour Condition Rating	SNBI	B.C.11	Each Inspection	Primary
C12 – Overall Condition	SNBI	B.C.12	Each Inspection	Primary
C13 – Lowest Condition Rating	SNBI	B.C.13	Each Inspection	Primary
C14 – NSTM Inspection Rating	SNBI	B.C.14	Each Inspection	Primary
C15 – Underwater Condition Rating	SNBI	B.C.15	Each Inspection	Primary

CO SNBI Item	SNBI or CDOT	Corresponding SNBI Item	Frequency	Data Set
CL01 – Owner	SNBI	B.CL.01	Initial	Primary
CL01A – Responsible Party	CDOT	N/A	Initial	Primary
CL02 – Maintenance Responsibility	SNBI	B.CL.02	Initial	Primary
CL03 – Federal or Tribal Land Access	SNBI	B.CL.03	Initial	Primary
CL04 – Historical Significance	SNBI	B.CL.04	Initial	Primary
CL05 – Toll	SNBI	B.CL.05	Initial	Primary
CL06 – Emergency Evacuation Designation	SNBI	B.CL.06	Initial	Primary
CL07A – Structure Status	CDOT	N/A	Initial	Primary
CL08A – Structure Class	CDOT	N/A	Initial	Primary
CL09A – Structure Type	CDOT	N/A	Initial	Primary
CL10A – Construction Type	CDOT	N/A	Initial	Primary
CL11A – Features Intersected	CDOT	N/A	Initial	Primary
CL11B – Feature Carried	CDOT	N/A	Initial	Primary
CL12A – Service Type On	CDOT	N/A	Initial	Primary
CL13A – Service Type Under	CDOT	N/A	Initial	Primary
CL14A – BTE Eligibility	CDOT	N/A	Initial	Primary
CL15A – Federal Submission	CDOT	N/A	Initial	Primary
F01A – Feature Type	SNBI	B.F.01	Initial	Features
F01B – Feature Designation	SNBI	B.F.01	Initial	Features
F02 – Feature Location	SNBI	B.F.02	Initial	Features
F03 – Feature Name	SNBI	B.F.03	Initial	Features
RT01A – Route Designation	SNBI	B.RT.01	Initial	Routes
RT02 – Route Number	SNBI	B.RT.02	Initial	Routes
RT03 – Route Direction	SNBI	B.RT.03	Initial	Routes
RT03C – Primary Routelog	CDOT	N/A	Initial	Routes
RT04 – Route Type	SNBI	B.RT.04	Initial	Routes
RT05 – Level of Service	SNBI	B.RT.05	Initial	Routes
H01 – Functional Classification	SNBI	B.H.01	Initial	Features
H02 – Urban Code	SNBI	B.H.02	Initial	Features
H03 – NHS	SNBI	B.H.03	Initial	Features
H04 – National Highway Freight Network	SNBI	B.H.04	Initial	Features

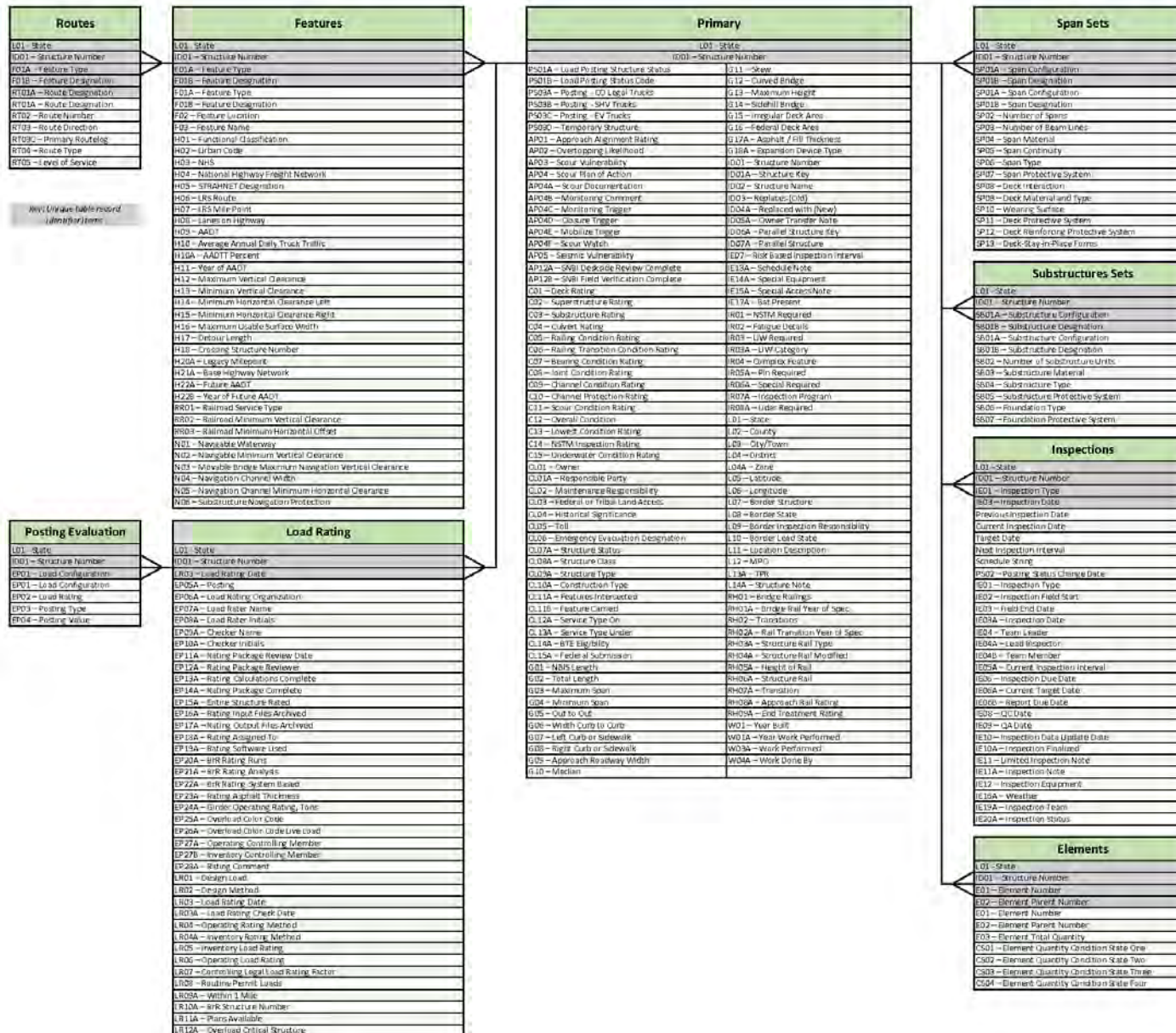
CO SNBI Item	SNBI or CDOT	Corresponding SNBI Item	Frequency	Data Set
H05 – STRAHNET Designation	SNBI	B.H.05	Initial	Features
H06 – LRS Route	SNBI	B.H.06	Initial	Features
H07 – LRS Mile Point	SNBI	B.H.07	Initial	Features
H08 – Lanes on Highway	SNBI	B.H.08	Initial	Features
H09 – AADT	SNBI	B.H.09	Initial	Features
H10 – Average Annual Daily Truck Traffic	SNBI	B.H.10	Initial	Features
H10A – AADTT Percent	CDOT	N/A	Initial	Features
H11 – Year of AADT	SNBI	B.H.11	Initial	Features
H12 – Maximum Vertical Clearance	SNBI	B.H.12	Each Inspection	Features
H13 – Minimum Vertical Clearance	SNBI	B.H.13	Each Inspection	Features
H14 – Minimum Horizontal Clearance Left	SNBI	B.H.14	Each Inspection	Features
H15 – Minimum Horizontal Clearance Right	SNBI	B.H.15	Each Inspection	Features
H16 – Maximum Usable Surface Width	SNBI	B.H.16	Initial	Features
H17 – Detour Length	SNBI	B.H.17	Initial	Features
H18 – Crossing Structure Number	SNBI	B.H.18	Initial	Features
H20A – Legacy Milepoint	CDOT	N/A	Initial	Features
H21A – Base Highway Network	CDOT	N/A	Initial	Features
H22A – Future AADT	CDOT	N/A	Initial	Features
H22B – Year of Future AADT	CDOT	N/A	Initial	Features
RR01 – Railroad Service Type	SNBI	B.RR.01	Initial	Features
RR02 – Railroad Minimum Vertical Clearance	SNBI	B.RR.02	Initial	Features
RR03 – Railroad Minimum Horizontal Offset	SNBI	B.RR.03	Initial	Features
N01 – Navigable Waterway	SNBI	B.N.01	Initial	Features
N02 – Navigable Minimum Vertical Clearance	SNBI	B.N.02	Initial	Features
N03 – Movable Bridge Maximum Navigation Vertical Clearance	SNBI	B.N.03	Initial	Features
N04 – Navigation Channel Width	SNBI	B.N.04	Initial	Features
N05 – Navigation Channel Minimum Horizontal Clearance	SNBI	B.N.05	Initial	Features
N06 – Substructure Navigation Protection	SNBI	B.N.06	Initial	Features
G01 – NBIS Length	SNBI	B.G.01	Initial	Primary
G02 – Total Length	SNBI	B.G.02	Initial	Primary
G03 – Maximum Span	SNBI	B.G.03	Initial	Primary

CO SNBI Item	SNBI or CDOT	Corresponding SNBI Item	Frequency	Data Set
G04 – Minimum Span	SNBI	B.G.04	Initial	Primary
G05 – Out to Out	SNBI	B.G.05	Initial	Primary
G06 – Width Curb to Curb	SNBI	B.G.06	Initial	Primary
G07 – Left Curb or Sidewalk	SNBI	B.G.07	Initial	Primary
G08 – Right Curb or Sidewalk	SNBI	B.G.08	Initial	Primary
G09 – Approach Roadway Width	SNBI	B.G.09	Initial	Primary
G10 – Median	SNBI	B.G.10	Initial	Primary
G11 – Skew	SNBI	B.G.11	Initial	Primary
G12 – Curved Bridge	SNBI	B.G.12	Initial	Primary
G13 – Maximum Height	SNBI	B.G.13	Initial	Primary
G14 – Sidehill Bridge	SNBI	B.G.14	Initial	Primary
G15 – Irregular Deck Area	SNBI	B.G.15	Initial	Primary
G16 – Federal Deck Area	SNBI	B.G.16	Initial	Primary
G17A – Asphalt / Fill Thickness	CDOT	N/A	Initial	Primary
G18A – Expansion Device Type	CDOT	N/A	Initial	Primary
ID01 – Structure Number	SNBI	B.ID.01	Initial	Primary
ID01A – Structure Key	CDOT	N/A	Initial	Primary
ID02 – Structure Name	SNBI	B.ID.02	Initial	Primary
ID03 – Replaces (Old)	SNBI	B.ID.03	Initial	Primary
ID04A – Replaced with (New)	CDOT	N/A	Initial	Primary
ID05A – Owner Transfer Note	CDOT	N/A	Initial	Primary
ID06A – Parallel Structure Key	CDOT	N/A	Initial	Primary
ID07A – Parallel Structure	CDOT	N/A	Initial	Primary
IE01 – Inspection Type	SNBI	B.IE.01	Each Inspection	Inspections
IE02 – Inspection Field Start	SNBI	B.IE.02	Each Inspection	Inspections
IE03 – Field End Date	SNBI	B.IE.03	Each Inspection	Inspections
IE03A – Inspection Date	CDOT	N/A	Each Inspection	Inspections
IE04 – Team Leader	SNBI	B.IE.04	Each Inspection	Inspections
IE04A – Lead Inspector	CDOT	N/A	Each Inspection	Inspections
IE04B – Team Member	CDOT	N/A	Each Inspection	Inspections
IE05A – Current Inspection Interval	CDOT	N/A	Each Inspection	Inspections

CO SNBI Item	SNBI or CDOT	Corresponding SNBI Item	Frequency	Data Set
IE06 – Inspection Due Date	SNBI	B.IE.06	Each Inspection	Inspections
IE06A – Current Target Date	CDOT	N/A	Each Inspection	Inspections
IE06B – Report Due Date	CDOT	N/A	Each Inspection	Inspections
IE07 – Risk Based Inspection Interval	SNBI	B.IE.07	Initial	Primary
IE08 – QC Date	SNBI	B.IE.08	Each Inspection	Inspections
IE09 – QA Date	SNBI	B.IE.09	Each Inspection	Inspections
IE10 – Inspection Data Update Date	SNBI	B.IE.10	Each Inspection	Inspections
IE10A – Inspection Finalized	CDOT	N/A	Each Inspection	Inspections
IE11 – Limited Inspection Note	SNBI	B.IE.11	Each Inspection	Inspections
IE11A – Inspection Note	CDOT	N/A	Each Inspection	Inspections
IE12 – Inspection Equipment	SNBI	B.IE.12	Each Inspection	Inspections
IE13A – Schedule Note	CDOT	N/A	Initial	Primary
IE14A – Special Equipment	CDOT	N/A	Initial	Primary
IE15A – Special Access Note	CDOT	N/A	Each Inspection	Primary
IE16A – Weather	CDOT	N/A	Each Inspection	Inspections
IE17A – Bat Present	CDOT	N/A	Each Inspection	Primary
IE19A – Inspection Team	CDOT	N/A	Each Inspection	Inspections
IE20A – Inspection Status	CDOT	N/A	Each Inspection	Inspections
IR01 – NSTM Required	SNBI	B.IR.01	Initial	Primary
IR02 – Fatigue Details	SNBI	B.IR.02	Initial	Primary
IR03 – UW Required	SNBI	B.IR.03	Initial	Primary
IR03A – UW Category	CDOT	N/A	Initial	Primary
IR04 – Complex Feature	SNBI	B.IR.04	Initial	Primary
IR05A – Pin Required	CDOT	N/A	Initial	Primary
IR06A – Special Required	CDOT	N/A	Initial	Primary
IR07A – Inspection Program	CDOT	N/A	Initial	Primary
IR08A – Lidar Required	CDOT	N/A	Each Inspection	Primary
L01 – State	SNBI	B.L.01	Initial	Primary
L02 – County	SNBI	B.L.02	Initial	Primary
L03 – City/Town	SNBI	B.L.03	Initial	Primary
L04 – District	SNBI	B.L.04	Initial	Primary

CO SNBI Item	SNBI or CDOT	Corresponding SNBI Item	Frequency	Data Set
L04A – Zone	CDOT	N/A	Initial	Primary
L05 – Latitude	SNBI	B.L.05	Initial	Primary
L06 – Longitude	SNBI	B.L.06	Initial	Primary
L07 – Border Structure	SNBI	B.L.07	Initial	Primary
L08 – Border State	SNBI	B.L.08	Initial	Primary
L09 – Border Inspection Responsibility	SNBI	B.L.09	Initial	Primary
L10 – Border Lead State	SNBI	B.L.10	Initial	Primary
L11 – Location Description	SNBI	B.L.11	Initial	Primary
L12 – MPO	SNBI	B.L.12	Initial	Primary
L13A – TPR	CDOT	N/A	Initial	Primary
L14A – Structure Note	CDOT	N/A	Each Inspection	Primary
RH01 – Bridge Railings	SNBI	B.RH.01	Initial	Primary
RH01A – Bridge Rail Year of Spec	CDOT	N/A	Initial	Primary
RH02 – Transitions	SNBI	B.RH.02	Initial	Primary
RH02A – Rail Transition Year of Spec	CDOT	N/A	Initial	Primary
RH03A – Structure Rail Type	CDOT	N/A	Initial	Primary
RH04A – Structure Rail Modified	CDOT	N/A	Initial	Primary
RH05A – Height of Rail	CDOT	N/A	Initial	Primary
RH06A – Structure Rail	CDOT	N/A	Initial	Primary
RH07A – Transition	CDOT	N/A	Initial	Primary
RH08A – Approach Rail Rating	CDOT	N/A	Initial	Primary
RH09A – End Treatment Rating	CDOT	N/A	Initial	Primary
SB01A – Substructure Configuration	SNBI	B.SB.01	Initial	Substructure Sets
SB01B – Substructure Designation	SNBI	B.SB.01	Initial	Substructure Sets
SB02 – Number of Substructure Units	SNBI	B.SB.02	Initial	Substructure Sets
SB03 – Substructure Material	SNBI	B.SB.03	Initial	Substructure Sets
SB04 – Substructure Type	SNBI	B.SB.04	Initial	Substructure Sets
SB05 – Substructure Protective System	SNBI	B.SB.05	Initial	Substructure Sets
SB06 – Foundation Type	SNBI	B.SB.06	Initial	Substructure Sets
SB07 – Foundation Protective System	SNBI	B.SB.07	Initial	Substructure Sets
SP01A – Span Configuration	SNBI	B.SP.01	Initial	Span Sets

CO SNBI Item	SNBI or CDOT	Corresponding SNBI Item	Frequency	Data Set
SP01B – Span Designation	SNBI	B.SP.01	Initial	Span Sets
SP02 – Number of Spans	SNBI	B.SP.02	Initial	Span Sets
SP03 – Number of Beam Lines	SNBI	B.SP.03	Initial	Span Sets
SP04 – Span Material	SNBI	B.SP.04	Initial	Span Sets
SP05 – Span Continuity	SNBI	B.SP.05	Initial	Span Sets
SP06 – Span Type	SNBI	B.SP.06	Initial	Span Sets
SP07 – Span Protective System	SNBI	B.SP.07	Initial	Span Sets
SP08 – Deck Interaction	SNBI	B.SP.08	Initial	Span Sets
SP09 – Deck Material and Type	SNBI	B.SP.09	Initial	Span Sets
SP10 – Wearing Surface	SNBI	B.SP.10	Initial	Span Sets
SP11 – Deck Protective System	SNBI	B.SP.11	Initial	Span Sets
SP12 – Deck Reinforcing Protective System	SNBI	B.SP.12	Initial	Span Sets
SP13 – Deck-Stay-in-Place Forms	SNBI	B.SP.13	Initial	Span Sets
W01 – Year Built	SNBI	B.W.01	Initial	Primary
W01A – Year Work Performed	SNBI	B.W.02	Initial	Primary
W03A – Work Performed	SNBI	B.W.03	Initial	Primary
W04A – Work Done By	CDOT	N/A	Initial	Primary





Appendix O Item Number Mapping

Appendix O documents the corresponding SNBI Item numbers and previous CO SIA Coding Guide Numbers for each CO SNBI Item.

CO SNBI Item	Corresponding SNBI Item	CO SIA Coding Guide Number
E01 – Element Number	B.E.01	N/A
E02 – Element Parent Number	B.E.02	N/A
E03 – Element Total Quantity	B.E.03	N/A
CS01 – Element Quantity Condition State One	B.CS.01	N/A
CS02 – Element Quantity Condition State Two	B.CS.02	N/A
CS03 – Element Quantity Condition State Three	B.CS.03	N/A
CS04 – Element Quantity Condition State Four	B.CS.04	N/A
Previous Inspection Date	N/A	N/A
Current Inspection Date	N/A	N/A
Target Date	N/A	N/A
Next Inspection Interval	B.IE.05	Item 91
Schedule String	N/A	Agency Userkey 4
EP01 – Load Configuration	B.EP.01	N/A
EP02 – Load Rating	B.EP.02	Item 64/Item 66/Items 129A to 129J
EP03 – Posting Type	B.EP.03	N/A
EP04 – Posting Value	B.EP.04	N/A
EP05A – Posting	N/A	Item 70
EP06A – Load Rating Organization	N/A	Item 66C
EP07A – Load Rater Name	N/A	Item 66N
EP08A – Load Rater Initials	N/A	Item 66I
EP09A – Checker Name	N/A	Item 66CN
EP10A – Checker Initials	N/A	Item 66CI
EP11A – Rating Package Review Date	N/A	Item 66R
EP12A – Rating Package Reviewer	N/A	Item 66RN
EP13A – Rating Calculations Complete	N/A	Item 66CC
EP14A – Rating Package Complete	N/A	Item 66RPC
EP15A – Entire Structure Rated	N/A	Item 66ESR
EP16A – Rating Input Files Archived	N/A	Item 66IFA
EP17A – Rating Output Files Archived	N/A	Item 66OFA
EP18A – Rating Assigned To	N/A	Item 66RA
EP19A – Rating Software Used	N/A	Item 66RS
EP20A – BrR Rating Runs	N/A	Item 66VR
EP21A – BrR Rating Analysis	N/A	Item 66VA
EP22A – BrR Rating System Based	N/A	Item 66VSB
EP23A – Rating Asphalt Thickness	N/A	Item 66TR
EP24A – Girder Operating Rating, Tons	N/A	Item 66A
EP25A – Overload Color Code	N/A	Item 139
EP26A – Overload Color Code Live Load	N/A	Item 139OVLDLL
EP27A – Operating Controlling Member	N/A	Item 66S



CO SNBI Item	Corresponding SNBI Item	CO SIA Coding Guide Number
EP27B – Inventory Controlling Member	N/A	Item 66SI
EP28A – Rating Comment	N/A	CDOT Rating Structure Notes
LR01 – Design Load	B.LR.01	Item 31
LR02 – Design Method	B.LR.02	Item 31D
LR03 – Load Rating Date	B.LR.03	Item 130
LR03A – Load Rating Check Date	N/A	Item 130C
LR04 – Operating Rating Method	B.LR.04	Item 63
LR04A – Inventory Rating Method	N/A	Item 65
LR05 – Inventory Load Rating	B.LR.05	Item 66
LR06 – Operating Load Rating	B.LR.06	Item 64
LR07 – Controlling Legal Load Rating Factor	B.LR.07	N/A
LR08 – Routine Permit Loads	B.LR.08	N/A
LR09A – Within 1 Mile	N/A	Item 129K
LR10A – BrR Structure Number	N/A	Item 66VSTR
LR11A – Plans Available	N/A	Item 500
LR12A – Overload Critical Structure	N/A	Item 139OVLD
PS01A – Load Posting Structure Status	B.PS.01	Item 103
PS01B – Load Posting Status Code	B.PS.01	Item 41
PS02 – Posting Status Change Date	B.PS.02	N/A
PS03A – Posting - CO Legal Trucks	N/A	Item 41A
PS03B – Posting - SHV Trucks	N/A	Item 41B
PS03C – Posting - EV Trucks	N/A	Item 41C
PS03D – Temporary Structure	N/A	Item 103
AP01 – Approach Alignment Rating	B.AP.01	Item 72
AP02 – Overtopping Likelihood	B.AP.02	Item 71
AP03 – Scour Vulnerability	B.AP.03	Item 113
AP04 – Scour Plan of Action	B.AP.04	N/A
AP04A – Scour Documentation	N/A	Bridge Userkey 6
AP04B – Monitoring Comment	N/A	Bridge UserKey 1
AP04C – Monitoring Trigger	N/A	Bridge Userkey 2
AP04D – Closure Trigger	N/A	Bridge Userkey 3
AP04E – Mobilize Trigger	N/A	Bridge Userkey 4
AP04F – Scour Watch	N/A	Item 113M
AP05 – Seismic Vulnerability	B.AP.05	N/A
AP12A – SNBI Deskside Review Complete	N/A	N/A
AP12B – SNBI Field Verification Complete	N/A	N/A
C01 – Deck Rating	B.C.01	Item 58
C02 – Superstructure Rating	B.C.02	Item 59
C03 – Substructure Rating	B.C.03	Item 60
C04 – Culvert Rating	B.C.04	Item 62
C05 – Railing Condition Rating	B.C.05	N/A
C06 – Railing Transition Condition Rating	B.C.06	N/A
C07 – Bearing Condition Rating	B.C.07	N/A



CO SNBI Item	Corresponding SNBI Item	CO SIA Coding Guide Number
C08 – Joint Condition Rating	B.C.08	N/A
C09 – Channel Condition Rating	B.C.09	Item 61
C10 – Channel Protection Rating	B.C.10	Item 61
C11 – Scour Condition Rating	B.C.11	N/A
C12 – Overall Condition	B.C.12	N/A
C13 – Lowest Condition Rating	B.C.13	Item 67
C14 – NSTM Inspection Rating	B.C.14	N/A
C15 – Underwater Condition Rating	B.C.15	N/A
CL01 – Owner	B.CL.01	Item 22
CL01A – Responsible Party	N/A	N/A
CL02 – Maintenance Responsibility	B.CL.02	Item 21
CL03 – Federal or Tribal Land Access	B.CL.03	Item 105
CL04 – Historical Significance	B.CL.04	Item 37
CL05 – Toll	B.CL.05	Item 20
CL06 – Emergency Evacuation Designation	B.CL.06	N/A
CL07A – Structure Status	N/A	Bridge Status
CL08A – Structure Class	N/A	Agency Userkey 3
CL09A – Structure Type	N/A	Item 120A
CL10A – Construction Type	N/A	Item 120B
CL11A – Features Intersected	N/A	Item 6A
CL11B – Feature Carried	N/A	Item 7
CL12A – Service Type On	N/A	Item 42A
CL13A – Service Type Under	N/A	Item 42B
CL14A – BTE Eligibility	N/A	N/A
CL15A – Federal Submission	N/A	Agency Userkey 2
F01A – Feature Type	B.F.01	N/A
F01B – Feature Designation	B.F.01	N/A
F02 – Feature Location	B.F.02	N/A
F03 – Feature Name	B.F.03	N/A
RT01A – Route Designation	B.RT.01	N/A
RT02 – Route Number	B.RT.02	Item 5D/Item 5E
RT03 – Route Direction	B.RT.03	Item 102
RT03C – Primary Routelog	N/A	Roadway Userkey 4
RT04 – Route Type	B.RT.04	Item 5B
RT05 – Level of Service	B.RT.05	Item 5C
H01 – Functional Classification	B.H.01	Item 26
H02 – Urban Code	B.H.02	N/A
H03 – NHS	B.H.03	Item 104
H04 – National Highway Freight Network	B.H.04	Item 110
H05 – STRAHNET Designation	B.H.05	Item 100
H06 – LRS Route	B.H.06	Item 13A/Item 13B
H07 – LRS Mile Point	B.H.07	Item 11
H08 – Lanes on Highway	B.H.08	Item 28A/28B



CO SNBI Item	Corresponding SNBI Item	CO SIA Coding Guide Number
H09 – AADT	B.H.09	Item 29
H10 – Average Annual Daily Truck Traffic	B.H.10	N/A
H10A – AADTT Percent	N/A	Item 109
H11 – Year of AADT	B.H.11	Item 30
H12 – Maximum Vertical Clearance	B.H.12	Item 10
H13 – Minimum Vertical Clearance	B.H.13	Item 53/Item 54A/Item 54B
H14 – Minimum Horizontal Clearance Left	B.H.14	Item 55A/Item 56
H15 – Minimum Horizontal Clearance Right	B.H.15	Item 55A/Item 55B
H16 – Maximum Usable Surface Width	B.H.16	Item 47
H17 – Detour Length	B.H.17	Item 19
H18 – Crossing Structure Number	B.H.18	N/A
H20A – Legacy Milepoint	N/A	Roadway Userkey 1
H21A – Base Highway Network	N/A	Item 12
H22A – Future AADT	N/A	Item 114
H22B – Year of Future AADT	N/A	Item 115
RR01 – Railroad Service Type	B.RR.01	N/A
RR02 – Railroad Minimum Vertical Clearance	B.RR.02	N/A
RR03 – Railroad Minimum Horizontal Offset	B.RR.03	N/A
N01 – Navigable Waterway	B.N.01	N/A
N02 – Navigable Minimum Vertical Clearance	B.N.02	N/A
N03 – Movable Bridge Maximum Navigation Vertical Clearance	B.N.03	N/A
N04 – Navigation Channel Width	B.N.04	N/A
N05 – Navigation Channel Minimum Horizontal Clearance	B.N.05	N/A
N06 – Substructure Navigation Protection	B.N.06	N/A
G01 – NBIS Length	B.G.01	N/A
G02 – Total Length	B.G.02	Item 49
G03 – Maximum Span	B.G.03	Item 48
G04 – Minimum Span	B.G.04	N/A
G05 – Out to Out	B.G.05	Item 52
G06 – Width Curb to Curb	B.G.06	Item 51
G07 – Left Curb or Sidewalk	B.G.07	Item 50A
G08 – Right Curb or Sidewalk	B.G.08	Item 50B
G09 – Approach Roadway Width	B.G.09	Item 32
G10 – Median	B.G.10	Item 33
G11 – Skew	B.G.11	Item 34
G12 – Curved Bridge	B.G.12	N/A
G13 – Maximum Height	B.G.13	N/A
G14 – Sidehill Bridge	B.G.14	N/A
G15 – Irregular Deck Area	B.G.15	N/A
G16 – Federal Deck Area	B.G.16	N/A
G17A – Asphalt / Fill Thickness	N/A	Item 66T
G18A – Expansion Device Type	N/A	Item 124



CO SNBI Item	Corresponding SNBI Item	CO SIA Coding Guide Number
ID01 – Structure Number	B.ID.01	Item 8
ID01A – Structure Key	N/A	Item 8A
ID02 – Structure Name	B.ID.02	Item 8B
ID03 – Replaces (Old)	B.ID.03	Item 8R
ID04A – Replaced with (New)	N/A	Item 8RR
ID05A – Owner Transfer Note	N/A	CDOT Bridge Userkey 7
ID06A – Parallel Structure Key	N/A	Item 8P
ID07A – Parallel Structure	N/A	Item 101
IE01 – Inspection Type	B.IE.01	Inspection Type
IE02 – Inspection Field Start	B.IE.02	N/A
IE03 – Field End Date	B.IE.03	Item 90/Item 93A/Item 93B/Item 93C
IE03A – Inspection Date	N/A	N/A
IE04 – Team Leader	B.IE.04	Item 90C
IE04A – Lead Inspector	N/A	N/A
IE04B – Team Member	N/A	N/A
IE05A – Current Inspection Interval	N/A	N/A
IE06 – Inspection Due Date	B.IE.06	N/A
IE06A – Current Target Date	N/A	N/A
IE06B – Report Due Date	N/A	N/A
IE07 – Risk Based Inspection Interval	B.IE.07	N/A
IE08 – QC Date	B.IE.08	N/A
IE09 – QA Date	B.IE.09	N/A
IE10 – Inspection Data Update Date	B.IE.10	N/A
IE10A – Inspection Finalized	N/A	N/A
IE11 – Limited Inspection Note	B.IE.11	N/A
IE11A – Inspection Note	N/A	Condition Inspection Notes
IE12 – Inspection Equipment	B.IE.12	N/A
IE13A – Schedule Note	N/A	Schedule Notes
IE14A – Special Equipment	N/A	Item 133
IE15A – Special Access Note	N/A	CDOT Bridge Userkey 8
IE16A – Weather	N/A	Condition Inspection Notes
IE17A – Bat Present	N/A	Agency Userkey 9
IE19A – Inspection Team	N/A	Item 90B
IE20A – Inspection Status	N/A	N/A
IR01 – NSTM Required	B.IR.01	Item 92AA
IR02 – Fatigue Details	B.IR.02	N/A
IR03 – UW Required	B.IR.03	Item 92BA
IR03A – UW Category	N/A	N/A
IR04 – Complex Feature	B.IR.04	N/A
IR05A – Pin Required	N/A	Item 92CA
IR06A – Special Required	N/A	N/A
IR07A – Inspection Program	N/A	Agency Userkey 1
IR08A – Lidar Required	N/A	N/A



CO SNBI Item	Corresponding SNBI Item	CO SIA Coding Guide Number
L01 – State	B.L.01	Item 1A
L02 – County	B.L.02	Item 3
L03 – City/Town	B.L.03	Item 4
L04 – District	B.L.04	Item 2E/Item 2M
L04A – Zone	N/A	N/A
L05 – Latitude	B.L.05	Item 16/Item 16DD
L06 – Longitude	B.L.06	Item 17/Item 17DD
L07 – Border Structure	B.L.07	Item 99
L08 – Border State	B.L.08	Item 98AA
L09 – Border Inspection Responsibility	B.L.09	Item 98B
L10 – Border Lead State	B.L.10	N/A
L11 – Location Description	B.L.11	Item 9
L12 – MPO	B.L.12	Item 2MPO
L13A – TPR	N/A	Item 2T
L14A – Structure Note	N/A	Admin Structure Notes
RH01 – Bridge Railings	B.RH.01	N/A
RH01A – Bridge Rail Year of Spec	N/A	N/A
RH02 – Transitions	B.RH.02	N/A
RH02A – Rail Transition Year of Spec	N/A	N/A
RH03A – Structure Rail Type	N/A	Item 125A
RH04A – Structure Rail Modified	N/A	Item 125B
RH05A – Height of Rail	N/A	Item 36H
RH06A – Structure Rail	N/A	Item 36A
RH07A – Transition	N/A	Item 36B
RH08A – Approach Rail Rating	N/A	Item 36C
RH09A – End Treatment Rating	N/A	Item 36D
SB01A – Substructure Configuration	B.SB.01	N/A
SB01B – Substructure Designation	B.SB.01	N/A
SB02 – Number of Substructure Units	B.SB.02	N/A
SB03 – Substructure Material	B.SB.03	N/A
SB04 – Substructure Type	B.SB.04	N/A
SB05 – Substructure Protective System	B.SB.05	N/A
SB06 – Foundation Type	B.SB.06	N/A
SB07 – Foundation Protective System	B.SB.07	N/A
SP01A – Span Configuration	B.SP.01	N/A
SP01B – Span Designation	B.SP.01	N/A
SP02 – Number of Spans	B.SP.02	Item 45/Item 46
SP03 – Number of Beam Lines	B.SP.03	N/A
SP04 – Span Material	B.SP.04	Item 43A/Item 44A
SP05 – Span Continuity	B.SP.05	Item 43/Item 44
SP06 – Span Type	B.SP.06	Item 43B/Item 44B
SP07 – Span Protective System	B.SP.07	N/A
SP08 – Deck Interaction	B.SP.08	N/A



CO SNBI Item	Corresponding SNBI Item	CO SIA Coding Guide Number
SP09 – Deck Material and Type	B.SP.09	Item 107
SP10 – Wearing Surface	B.SP.10	Item 108A
SP11 – Deck Protective System	B.SP.11	Item 108B
SP12 – Deck Reinforcing Protective System	B.SP.12	Item 108C
SP13 – Deck-Stay-in-Place Forms	B.SP.13	N/A
W01 – Year Built	B.W.01	Item 27
W01A – Year Work Performed	B.W.02	Item 106
W03A – Work Performed	B.W.03	Item 75A
W04A – Work Done By	N/A	Item 75B



Appendix P Manual Updates

Appendix P is to document revisions to this manual.

- Version 1.0 – 2026