

Colorado Department of Transportation Staff Bridge Bridge Detail Manual	Chapter: Table of Contents Effective: March, 05 2024 Supersedes: October, 11 2023
---	---

## Table of Contents

	**	*
<b>Introduction</b>	04/12/00	1
<b>Revision Log</b>	03/05/24	3
<b>Chapter 1 -- General Instructions</b>	03/05/24	18
1.1 Overview of the Design and Construction Process		
1.2 General Steps of Detailing Procedures		
1.3 Corrections of Designer's Detail Notes		
1.4 Structure Number		
1.5 Wall Structure Number		
1.6 Accuracy of Dimensions and Elevations		
1.7 Responsibility for Plan Drawings		
1.8 Checking Plan Drawings		
1.9 Border Information		
1.10 File Naming Conventions		
1.11 ProjectWise Directory Structure		
1.12 Structural Worksheets		
1.13 Structure Component Naming		
1.14 Examples		
<b>Chapter 2 -- Drafting Standards and Procedures</b>	11/17/22	19
2.1 Drawing Layout		
2.2 Configuration Files		
2.3 Scales		
2.4 Strength and Contrast of Lines		
2.5 Text/Lettering		
2.6 Accuracy of Dimensions and Elevations		
2.7 Dimensioning		
2.8 Patterns/Hatching		
2.9 Architectural Treatment		
2.10 Definition of Bent and Skew Angle		

\* Number of pages

\*\* Effective date

- 2.11 Section Cut Line and Identification
- 2.12 Detail Identification
- 2.13 Standard Abbreviations
- 2.14 Arrows
- 2.15 Notes

### **Chapter 3 -- Checking Standards and Procedures**

04/16/18

4

- 3.1 Purpose
- 3.2 Responsibility
- 3.3 Procedures
- 3.4 Detail Check
- 3.5 Quantity Check
- 3.6 Review
- 3.7 Plan Preparation and Assembly
- 3.8 Archiving
- 3.9 Field Information Package
- 3.10 Electronic Checking Standards

### **Chapter 4 -- Reinforcing**

8/18/14

6

- 4.1 Purpose
- 4.2 Reinforcing Steel
- 4.3 Reinforcing Steel Details
- 4.4 Non Coated & Epoxy Coated Reinforcing
- 4.5 Reinforcing Spacing
- 4.6 Reinforcing Hooks
- 4.7 Reinforcing Splices
- 4.8 Reinforcing Cover
- 4.9 Bundled Bars
- 4.10 Dowels
- 4.11 Bars in Section
- 4.12 Reinforcing Quantities

**Chapter 5 -- General Information – Summary Of Quantities** 11/19/21 9

- 5.1 Purpose
- 5.2 Responsibility
- 5.3 General Notes and Design Data
- 5.4 Summary of Quantities
- 5.5 Index of Drawings
- 5.6 Bridge Description
- 5.7 Work Description
- 5.8 Title Block

**Chapter 6 -- General Layout** 11/20/18 10

- 6.1 Purpose
- 6.2 Responsibility
- 6.3 Scales
- 6.4 Orientation of Details
- 6.5 Plan
- 6.6 Longitudinal Section/Elevation
- 6.7 Typical Section
- 6.8 Title Block

**Chapter 7 -- Engineering Geology** 10/11/23 4

- 7.1 Purpose
- 7.2 Responsibility
- 7.3 Scales
- 7.4 Plan and Elevation
- 7.5 Check Items
- 7.6 Title Block

**Chapter 8 -- Bridge Hydraulic Information** 10/11/23 5

- 8.1 Purpose
- 8.2 Responsibility
- 8.3 Check Items
- 8.4 Title Block
- 8.5 Additional Details

**Chapter 9 -- Construction Layout** 03/25/22 11

- 9.1 Purpose
- 9.2 Responsibility
- 9.3 Scales
- 9.4 Combining Details
- 9.5 Horizontal Control Line
- 9.6 Layout Line
- 9.7 Stationing
- 9.8 Centerlines
- 9.9 Dimensions
- 9.10 Angles
- 9.11 Bench Mark
- 9.12 Electrical Conduit & Junction Boxes
- 9.13 Drains
- 9.14 Check Items
- 9.15 Title Block
- 9.16 Typical Notes

**Chapter 10 -- Foundation Layout**

05/31/23 10

- 10.1 Purpose
- 10.2 Responsibility
- 10.3 Scales
- 10.4 Orientation of Details
- 10.5 Layout Line
- 10.6 Work Line
- 10.7 Reference Points
- 10.8 Bent Lines
- 10.9 Horizontal Control Lines
- 10.10 Stationing
- 10.11 Dimensions
- 10.12 Piling and Caissons
- 10.13 Angles
- 10.14 Check Items
- 10.15 Title Block
- 10.16 Typical Notes

**Chapter 11 -- Abutment Details**

11/17/22 21

- 11.1 Purpose
- 11.2 Responsibility
- 11.3 Scales
- 11.4 Orientation of Details
- 11.5 Opposite Hand Details
- 11.6 Wingwall Length (U-Type)
- 11.7 Wingwall Designation
- 11.8 Size of Bearing Seat
- 11.9 Horizontal Control Line
- 11.10 Layout Line
- 11.11 Stationing
- 11.12 Centerlines
- 11.13 Elevations
- 11.14 Dimensions
- 11.15 Angles
- 11.16 Anchor Bolts
- 11.17 Leveling Pads
- 11.18 Piling
- 11.19 Reinforced Concrete Details
- 11.20 Miscellaneous Concrete Details
- 11.21 Check items
- 11.22 Title Block
- 11.23 Typical Notes
- 11.24 Examples

**Chapter 12 -- Pier Details**

09/14/20 16

- 12.1 Purpose
- 12.2 Responsibility
- 12.3 Scales
- 12.4 Orientation of Details
- 12.5 Opposite Hand Details
- 12.6 Horizontal Control Line
- 12.7 Layout Line
- 12.8 Stationing
- 12.9 Centerlines
- 12.10 Elevations
- 12.11 Pier Cap Slopes
- 12.12 Dimensions
- 12.13 Angles
- 12.14 Anchor Bolts
- 12.15 Piling
- 12.16 Pier Nose Angle
- 12.17 Reinforced Concrete Details
- 12.18 Check items
- 12.19 Title Block
- 12.20 Typical Notes

**Chapter 13.1 -- Concrete Superstructure Details**

05/31/23 13

- 13.1.1 Purpose
- 13.1.2 Responsibility
- 13.1.3 Scales
- 13.1.4 Orientation of Details
- 13.1.5 Horizontal Control Line
- 13.1.6 Order of Sheets
- 13.1.7 Dimensions
- 13.1.8 Girder Worksheets
- 13.1.9 Deck Reinforcing Details
- 13.1.10 Additional Deck Details
- 13.1.11 Checking
- 13.1.12 Title Block



**Chapter 13.2 -- Steel Superstructure Details**

10/08/86 24

- 13.2.1 Purpose
- 13.2.2 Responsibility
- 13.2.3 Structural Steel (General)
- 13.2.4 Welding
- 13.2.5 Welding Symbols
- 13.2.6 Fillet Welds
- 13.2.7 Field Welds
- 13.2.8 Bolted Connections
- 13.2.9 Scales
- 13.2.10 Combining Details
- 13.2.11 Framing Plan
- 13.2.12 Girder Elevation
- 13.2.13 Diaphragm Details
- 13.2.14 Transverse Stiffener Details
- 13.2.15 Bearing Stiffener Details
- 13.2.16 Lateral Bracing Details
- 13.2.17 Splice Details
- 13.2.18 Miscellaneous Details
- 13.2.19 Camber and Dead Load Deflections
- 13.2.20 Slab
- 13.2.21 Bearing Details
- 13.2.22 Railing Details
- 13.2.23 Title Blocks

**Chapter 13.3 -- Prestressed Concrete Superstructure Details**

05/31/23 20

- 13.3.1 Purpose
- 13.3.2 Responsibility
- 13.3.3 Scales
- 13.3.4 Orientation of Details
- 13.3.5 Horizontal Control Line
- 13.3.6 Order of Sheets
- 13.3.7 Dimensions
- 13.3.8 Girder Worksheets
- 13.3.9 Deck Reinforcing Details
- 13.3.10 Additional Deck Details
- 13.3.11 Checking
- 13.3.12 Title Block
- 13.3.13 Examples

**Chapter 14 – Bridge Deck Elevations Sheets**

03/25/22 13

- 14.1 Purpose
- 14.2 Responsibility
- 14.3 Text / Lettering
- 14.4 Project Information
- 14.5 Horizontal Alignment Data
- 14.6 Vertical Alignment Data
- 14.7 Cross slopes and transitions
- 14.8 Layout Line Data
- 14.9 Dead Load Deflection Data
- 14.10 Bent Lines (Transverse Lines)
- 14.11 Longitudinal Lines (Girder Lines)
- 14.12 Display of Bent Lines and Longitudinal Lines
- 14.13 Roadway Approaches Data
- 14.14 Deck Section Schematic
- 14.15 Examples of Bridge Deck Elevations Sheets

**Chapter 15.1 -- Wall Details**

07/23/13 32

- 15.1.1 Purpose
- 15.1.2 Responsibility
- 15.1.3 Scales
- 15.1.4 Orientation of Details
- 15.1.5 Control
- 15.1.6 Dimensions
- 15.1.7 Worksheets
- 15.1.8 Check Items for all Wall Types
- 15.1.9 Cast-In-Place Wall Examples & Check Items
- 15.1.10 MSE Wall Examples & Check Items
- 15.1.11 Soil Nail Wall Examples & Check Items
- 15.1.12 Caisson Wall Examples & Check Items
- 15.1.13 Sound Barrier Examples & Check Items
- 15.1.14 Sheet Pile Wall and Miscellaneous Examples & Check Items

**Chapter 15.2 -- Miscellaneous Structures**

01/16/20 20

- 15.2.1 Purpose
- 15.2.2 Responsibility
- 15.2.3 Scales
- 15.2.4 Orientation of Details
- 15.2.5 Control
- 15.2.6 Dimensions
- 15.2.7 Angles
- 15.2.8 Worksheets
- 15.2.9 Check Items for All Structure Types
- 15.2.10 Culvert Examples and Check Items
- 15.2.11 Pedestrian Bridge Examples
- 15.2.12 Non S-Standard (Special) Sign Structure Examples & Check Items

**Chapter 16 -- Repair Details**

08/31/22 67

- 16.1 Purpose
- 16.2 Responsibility
- 16.3 Scales
- 16.4 Orientation of Details
- 16.5 Control
- 16.6 Centerlines
- 16.7 Elevations
- 16.8 Dimensions
- 16.9 Angles
- 16.10 Temporary Support
- 16.11 Worksheets
- 16.12 Plan Sheet Information
  - (A) Bridgerail Replacement
  - (B) Expansion Joint Replacement
  - (C) Deck Rehabilitation
  - (D) Pier Cap and Column Repair
  - (E) Impact Repair
  - (F) Corbel Placement
  - (G) Timber Pile Repair
  - (H) Timber Bridge Girder Repair
  - (I) Falsework
  - (J) Wall Repair
  - (K) Steel Corrosion/Fatigue Repair
  - (L) Culvert Repair
  - (M) Bearing Replacement

**Chapter 17 – Inspection Sketches**

02/10/23 16

- 17.1 Purpose
- 17.2 Responsibility
- 17.3 Requirements
- 17.4 Culvert Representation
- 17.5 Tunnel Representation
- 17.6 Examples

<b>Appendix A -- Acronyms &amp; Abbreviations</b>	06/18/21	17
<b>Appendix B -- Microstation Configuration Details</b>	01/31/14	20
<b>Appendix C -- Autocad</b>	07/29/11	3