LRFD Steel Bridge Fabrication Specifications

AASHTO

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TABLE OF CONTENTS

SECTION 1: GENERAL 1-1
1.1—Scope 1-1
1.2—Definitions 1-2
1.2.1—Contractor 1-2
1.2.2—Fabricator 1-2
1.2.3—Owner. 1-2
1.2.4—Quality Control Inspector 1-3
1.2.5—Verification Inspector 1-3
1.2.6—Contract Documents 1-3
1.2.7—Primary and Secondary Members. 1-3
1.2.8—Fracture-Critical Members. 1-4
1.2.9—System Redundant Members 1-4
1.3—Fabricator Certification 1-4
1.3.1—Requirements. 1-4
1.3.2—Review of Audit Results. 1-5
SECTION 2: COMMUNICATION 2-1
2.1—General 2-1
2.2—Commencement of Work 2-2
2.3—Prefabrication Meeting 2-3
2.4—Progress Meetings 2-4
SECTION 3: INSPECTION. 3-1
3.1—Quality Control Inspection 3-1
3.2—Verification Inspection 3-1
SECTION 4: SHOP DRAWINGS 4-1
4.1—Approval. 4-1
4.2—Details 4-2
SECTION 5: WRITTEN PROCEDURES 5-1
5.1—Written Procedures 5-1
SECTION 6: MATERIALS. 6-1
6.1—General 6-1
6.2—Test Reports and Certifications 6-2
6.2.1—Buy America 6-2
6.2.2—Certificates of Compliance 6-2
6.3—Identification and Traceability. 6-3
6.3.1—Heat Number Traceability for Primary Members. 6-3
6.3.2—Preservation of Markings. 6-3
6.4—Impact Testing 6-4
6.5—Iron Castings 6-4
6.5.1—Work Quality and Finish 6-4
6.5.2—Cleaning 6-4
6.6—Turned Bolts. 6-4

SECTION 7: HANDLING AND STRORAGE 7-1
7.1—Handling and Storage 7-1
SECTION 8: CUTTING AND SHEARING PLATES AND SHAPES 8-1
8.1—Thermal Cutting 8-1
8.2—Direction of Rolling 8-1
8.3—Sheared Edges 8-2
8.4—Thermal-Cut Edges to be Coated. 8-2
SECTION 9: BASE METAL REPAIR 9-1
9.1—Repairs of Notches or Gouges in Thermal-Cut Edges 9-1
9.1.1—Repairs by Grinding 9-1
9.1.2—Repairs by Welding 9-1
9.2—Repair of Laminar Discontinuities in Base Metal Cut Edges. 9-1
9.2.1—Scope 9-1
9.2.2—Limits 9-2
9.2.3—Repairs by Grinding 9-3
9.2.4—Repairs by Welding 9-3
9.3—Repair of Base Metal Rolled Surfaces 9-4
SECTION 10: BENDING PLATES 10-1
10.1—General. 10-1
10.2—Minimum Plate Bending Radius 10-1
10.3—Damage Preventing During Blending (With or Without Heat). 10-1
10.4—Heat-Assisted Mechanical Bending 10-2
10.5—Upset Shortening 10-2
SECTION 11: HORIZONTALLY CURVING BEAMS AND GIRDERS. 11-1
11.1—Horizontally Curving Beams and Girders. 11-1
SECTION 12: CAMBERING BEAMS AND GIRDERS 12-1
12.1—Cambering Beams and Girders 12-1
SECTION 13: STRAIGHTENING 13-1
13.1—Straightening 13-1
SECTION 14: APPLICATION OF HEAT 14-1
14.1—General. 14-1
14.2—General Heating Process and Equipment 14-1
14.2.1—Maximum Temperature 14-1
14.2.2—Artificial Cooling. 14-2
14.2.3—Heating Tips 14-2
14.2.4—Heating Controls 14-2
14.2.5—Sequencing 14-2
14.3—Upset Shortening Methods 14-3
14.3.1—General 14-3
14.3.2—Heat Curving of Beams and Girders 14-3
14.3.2.1—General 14-3
14.3.2.2—Minimum Radius of Curvature 14-4
14.3.2.2.1—General 14-4

14.3.2.2.2—Cross-Sectional Criteria 14-4
14.3.2.2.3—Minimum Radius for Doubly-Symmetric Beams and Girders 14-5
14.3.2.2.4—Minimum Radius of Curvature for Singly-Symmetric Beams and Girders 14-6
14.3.2.2.5—Minimum Radius of Curvature for Hybrid Girders 14-7
14.3.3—Heat Cambering or Camber Correction of Beams and Girders 14-8
14.4—Heat Assisted Mechanical Forming 14-8
SECTION 15: THERMAL TREATMENTS 15-1
15.1—Treatment Records 15-1
15.2—Thermal Stress Relief 15-1
15.3—Annealing and Normalizing 15-1
SECTION 16: TOLERANCES 16-1
16.1—Cut Flange Width Tolerance 16-1
16.2—Straightness 16-1
16.2.1—Built-Up Axial Members 16-1
16.2.2—Built-Up Flexural Members 16-1
16.3—Camber 16-1
16.4—Sweep 16-4
16.5—Web Alignment 16-4
16.6—Web Flatness 16-5
16.7—Flange Warpage and Tilt 16-6
16.8—Depth 16-8
16.9—Fit of Stiffeners 16-9
16.9.1—Bearing Stiffeners 16-9
16.9.2—Intermediate Web Stiffeners 16-11
16.10—Abutting Joints 16-11
16.11—Alignment of Mechanically Connected Joints 16-11
16.12—Facing of Bearing Surfaces 16-12
16.13—Steel Pier Caps 16-12
SECTION 17: BOLTED CONNECTIONS 17-1
17.0—Bolted Connections 17-1
17.1—Holes for High-Strength Bolts and Unfinished Bolts 17-1
17.1.1—Tolerances and Workmanship 17-1
17.1.2—Holemaking Methods 17-1
17.2—Holes for Turned Bolts or Other Approved Bearing-Type Bolts 17-2
17.3—Slotted Holes 17-2
17.4—Accuracy of Hole Group 17-3
17.4.1—Edge and End Distance 17-3
17.4.2—Hole Spacing 17-4
17.5—Methods for Aligning Connections 17-4
17.5.1—Drilling in Assembly 17-4
17.5.2—Drilling to Template 17-5
17.5.3—Check Assembly for CNC Drilling 17-5
17.6—Shop Preassembly 17-5

17.6.1—Procedure . . . 17-5
17.6.2—Process . . . 17-9
17.6.3—Special Requirements for Trusses, Arches, and Frames . . . 17-10
17.7—Structural Bolting Using High-Strength Bolts . . . 17-10
17.7.1—Rotational Capacity Testing . . . 17-11
17.7.1.1—General . . . 17-11
17.7.1.2—Exceptions . . . 17-11
17.7.2—Fastener Storage and Conditions . . . 17-12
17.7.3—Preinstallation Verification Testing . . . 17-12
17.7.3.1—Turn-of-Nut and Twist-Off Bolts . . . 17-13
17.7.3.2—Calibrated Wrench . . . 17-13
17.7.3.3—Direct Tension Indicators (DTIs) . . . 17-14
17.7.3.4—Combined Method . . . 17-15
17.7.4—Initial Installation . . . 17-16
17.7.4.1—General . . . 17-16
17.7.4.2—DTIs . . . 17-16
17.7.4.3—Surface Conditions . . . 17-17
17.7.4.3.1—General . . . 17-17
17.7.4.3.2—Slip-Critical Connections . . . 17-17
17.7.4.3.2a—Non-Coated Joints . . . 17-17
17.7.4.3.2b—Coated Joints . . . 17-17
17.7.5—Snug-Tightening . . . 17-18
17.7.5.1—General . . . 17-18
17.7.5.2—DTIs . . . 17-19
17.7.6–Tensioning . . . 17-19
17.7.6.1—General . . . 17-19
17.7.6.2—Turn-of-Nut . . . 17-19
17.7.6.3—Calibrated Wrench . . . 17-19
17.7.6.4—Twist-Off Bolts . . . 17-19
17.7.6.5—DTIs . . . 17-20
17.7.6.6—Combined Method . . . 17-20
17.7.6.7—Bolt Reuse . . . 17-20
17.7.7—Inspection . . . 17-20
17.7.7.1—Inspection Before Installation . . . 17-20
17.7.7.2—Inspection During and After Installation . . . 17-21
17.7.7.3—Torque Test . . . 17-21
17.8—Connections Using Unfinished or Turned Bolts . . . 17-22
17.8.1—General . . . 17-22
17.8.2—Hole Quality . . . 17-23
SECTION 18: SURFACE PREPARATION OF UNCOATED WATHERING STEEL (NON-FAYING SURFACES) . . . 18-1
18.0—**S**urface Preparation of Uncoated Weathering . . . 18-1

18.1—Blast Cleaning 18-1
18.2—Markings 18-1
SECTION 19: ORTHOTROPIC-DECK SUPERSTRUCTURES 19-1
19.1—General 19-1
19.2—Flatness of Panels 19-1
19.3—Straightness of Longitudinal Stiffeners Subject to Calculated Compressive Stress, Including Orthotropic Deck Ribs 19-2
19.4—Straightness of Transverse Web Stiffeners and Other Stiffeners Not Subject to Calculated Compressive Stress 19-2
SECTION 20: PINS AND ROLLERS 20-1
20.1—General 20-1
20.2—Boring Pin Holes 20-1
20.3—Threads for Bolts and Pins 20-1
SECTION 21: EYEBARS 21-1
21.1—Eyebars 21-1
SECTION 22: ULTRASONIC IMPACT TREATMENT 22-1
22.1—Ultrasonic Impact Treatment 22-1
SECTION 23: MARKING AND SHIPPING 23-1
23.1—Marking and Shipping 23-1
SECTION 24: MEASUREMENT FOR PAYMENT 24-1
24.1—Measurement for Payment 24-1
SECTION 25: REFERENCES 25-1
APPENDIX A (INFORMATIONAL): ITEMS TO BE SPECIFIED IN THE CONTRACT DOCUMENTS: A-1
APPENDIX B (INFORMATIONAL): AASHTO DESIGNATION OF PRIMARY AND SECONDARY MEMBERS (BDS TABLE 6.6.2.1-1) B-1
APPENDIX C (INFORMATIONAL): TABULATION OF WEB FLATNESS TOLERANCES (ARTICLE 16.6) C-1
APPENDIX D (INFORMATIONAL): SAMPLE ULTRASONIC IMPACT TREATMENT (UIT) PROCEDURE D-1

LIST OF ABBREVIATIONS

AISC	American Institute of Steel Construction
AREMA	American Railway Engineering and Maintenance-of-Way Association
AWS	American Welding Society
BCS	*AASHTO LRFD Bridge Construction Specifications*
BDS	*AASHTO LRFD Bridge Design Specifications*
CNC	computer-numerically-controlled
CVN	Charpy V-notch
D1.5M/D1.5	AASHTO/AWS D1.5M/D1.5 *Bridge Welding Code*
DTI	direct tension indicator
FCM	fracture-critical member
HPS	high-performance steel
MT	magnetic particle testing
MTR	material test report (or mill test report)
NDE	nondestructive evaluation
PIV	preinstallation verification
PT	penetrant testing
Q&T	quenched and tempered
QC	quality control
RC	rotational capacity
RCSC	Research Council on Structural Connections
RCSC Specification	RCSC *Specification for Structural Joints Using High-Strength Bolts*
RT	radiographic testing
SDLF	steel dead load fit
SPDI	single-point diamond interchange
TDLF	total dead load fit
TMCP	thermo-mechanically controlled processing
TSC	thermal spray coating
UIT	ultrasonic impact treatment
UT	ultrasonic testing

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Section 1:

GENERAL

1.1—SCOPE

These Specifications shall govern vehicular steel bridge fabrication. This work shall consist of furnishing and fabricating steel structures and structural steel portions of other structures in accordance with these Specifications and the contract documents.

Details of design which are permitted to be selected by the Fabricator or Contractor shall conform to the provisions of the current *AASHTO LRFD Bridge Design Specifications* (BDS). All numbered references herein to specific Articles in the BDS shall refer to the 9th Edition.

Fabrication and welding, in addition to the requirements of these Specifications, shall conform to the provisions of the current AASHTO/AWS D1.5M/D1.5 *Bridge Welding Code* (D1.5M/D1.5).

Primary members or portions thereof designated in the contract documents as fracture critical members (FCMs) or system redundant mmbers (SRMs) shall conform to the provisions of Clause 12 of the current D1.5M/D1.5.

Coatings shall be considered outside the scope of these Specifications. Fabrication of pedestrian bridges, non-bridge structures or components such as expansion joints, bearings, or tubular members shall also be considered outside the scope of this specification.

C1.1

The primary objective of these Specifications is to achieve quality and value in the fabrication of vehicular steel bridges and to help standardize vehicular steel bridge fabrication across the nation.

Historically, state Departments of Transportation (DOTs) have written their fabrication specifications based on AASHTO standards and their own individual experiences. Though this approach has worked reasonably well, many owners and fabricators recognized that all would benefit from a common specification because:

- Variations among projects in the shop would be minimized because fabricators would not need different practices, procedures, and operations for each owner, and minimizing variation improves quality and reduces errors.
- Economy in bridge fabrication would improve because fabricators would not have to change their methods and production variables from owner to owner.
- Expertise in steel bridge fabrication could be shared among states, resulting in a well-rounded, consistent fabrication standard.
- Owners would be able to share their resources, minimizing the effort each would otherwise have to expend to maintain a bridge fabrication specification.

These Specifications are based on existing state specifications, the AASHTO/NSBA Steel Bridge Collaboration S2.1, *Steel Bridge Fabrication Guide Specification* (S2.1); the AASHTO *L RFD Bridge Construction Specifications* (BCS); the AASHTO *LRFD Bridge Design Specifications* (BDS); and the AASHTO/AWS D1.5M/D1.5 *Bridge Welding Code* (D1.5M/D1.5). These Specifications defer to D1.5, the U.S. customary units specification in AASHTO/AWS D1.5M/D1.5, for specific welding requirements and for weld qualification testing requirements. The Owner is also encouraged to refer to the FHWA *Welding Reference Manual* for additional detailed information on welding. More information about AWS is available from their website at https://www.aws.org.

These Specifications assume that coating provisions are addressed in the referring Owner's standard specifications. For painting, the Owner is encouraged to refer to Steel Bridge Collaboration