

IOWA DEPARTMENT OF TRANSPORTATION

To Office: Specification Committee **Date:** April 30, 2025
Attention: **Ref. No.:** 305
From: Eric Johnsen, P.E.
Office: Specifications
Subject: Revised Agenda for May 8, 2025, Specification Committee Meeting

The Specification Committee will meet on Thursday, May 8, 2025, at 9:00 a.m.

The revised agenda is as follows:

1. Article 2317.05, C, PCC Pavement (Pavement Smoothness.

The Construction and Materials Bureau requests to correct an error in a formula.

2. Section 2429, Pre-Engineered Steel Truss Recreational Trail Bridge.

The Bridges and Structures Bureau requests to update specifications for pre-engineered steel truss recreational bridges to better reflect current practices.

3. Section 2544, Cleaning and Filling Cracks for HMA Surfaces.

The Construction and Materials Bureau requests to clarify the MOM and BOP for this section.

4. Article 4183.03, B, 1, Fast Dry Waterborne Traffic Paints.

The Construction and Materials Bureau requests to clarify paint specifications. This item was deferred from the April meeting and has been revised.

5. Various Articles.

The Specifications Section requests revisions to the Standard Specifications for sections that utilize SUDAS Standard specifications as the basis.

6. 1109.05, B, 2, Prompt Payment to Subcontractors.

The Construction and Materials Bureau requests to revise the retainage percent that the Contractor may withhold from subcontractors.

7. 2403.03, P, 2, b, 5, Surface Finish (Structural Concrete).

The Bridges and Structures Bureau and Construction and Materials Bureau request to include patching mix requirement in the Standard Specifications.

Form 510130 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Musgrove/De Vries		Bureau/Office: Construction and Materials		Item 1																										
Submittal Date: 4/21/2025			Proposed Effective Date: October 2025																											
Article No.: 2317.05, C Title: PCC Pavement (Pavement Smoothness)			Other:																											
Specification Committee Action:																														
Deferred:		Not Approved:		Approved Date:																										
Effective Date:																														
Specification Committee Approved Text:																														
Comments:																														
Specification Section Recommended Text: 2317.05, C, PCC Pavement. Replace Table 2317.05-3: Table 2317.05-3: Schedule for Adjustment Payment for PCC Pavements for Primary and Interstate Projects <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="3" style="padding: 5px;">MRI (inches per mile)</th> <th colspan="2" style="padding: 5px;">Dollars per 0.1 mile segment per lane</th> </tr> <tr> <th colspan="2" style="padding: 5px;">Design Thickness</th> </tr> <tr> <th style="padding: 5px;">Full Depth (>6")</th> <th style="padding: 5px;">Overlay (<=6")</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Less than 47.5</td> <td style="padding: 5px;">1,500.00</td> <td style="padding: 5px;">1,250.00</td> </tr> <tr> <td style="padding: 5px;">47.5 to 57.5</td> <td style="padding: 5px;">8,625.00-(150*MRI)</td> <td style="padding: 5px;">5,226.596-(133.2623*MRI) 7,187.50-(125*MRI)</td> </tr> <tr> <td style="padding: 5px;">57.5 to 75</td> <td style="padding: 5px;">Unit Price</td> <td style="padding: 5px;">Unit Price</td> </tr> <tr> <td style="padding: 5px;">75 to 90</td> <td style="padding: 5px;">7,500.00-(100*MRI) (or grind¹)</td> <td style="padding: 5px;">6,250.00-(83.333*MRI) (or grind¹)</td> </tr> <tr> <td style="padding: 5px;">Greater than 90</td> <td style="padding: 5px;">Grind¹</td> <td style="padding: 5px;">Grind¹</td> </tr> <tr> <td colspan="3" style="padding: 5px;">1. Correct these areas below 75.0 inches per mile</td> </tr> </tbody> </table>						MRI (inches per mile)	Dollars per 0.1 mile segment per lane		Design Thickness		Full Depth (>6")	Overlay (<=6")	Less than 47.5	1,500.00	1,250.00	47.5 to 57.5	8,625.00-(150*MRI)	5,226.596-(133.2623*MRI) 7,187.50-(125*MRI)	57.5 to 75	Unit Price	Unit Price	75 to 90	7,500.00-(100*MRI) (or grind ¹)	6,250.00-(83.333*MRI) (or grind ¹)	Greater than 90	Grind ¹	Grind ¹	1. Correct these areas below 75.0 inches per mile		
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Comments:																														
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use <u>Strikeout</u> and <u>Highlight</u>.) C. PCC Pavement. The payment for MRI for PCC pavement will be adjusted as shown in Table 2317.05-3 and Table 2317.05-4. Table 2317.05-3: Schedule for Adjustment Payment for PCC Pavements for Primary and Interstate Projects <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr> <th rowspan="3" style="padding: 5px;">MRI (inches per mile)</th> <th colspan="2" style="padding: 5px;">Dollars per 0.1 mile segment per lane</th> </tr> <tr> <th colspan="2" style="padding: 5px;">Design Thickness</th> </tr> <tr> <th style="padding: 5px;">Full Depth (>6")</th> <th style="padding: 5px;">Overlay (<=6")</th> </tr> </thead> <tbody> <tr> <td style="padding: 5px;">Less than 47.5</td> <td style="padding: 5px;">1,500.00</td> <td style="padding: 5px;">1,250.00</td> </tr> <tr> <td style="padding: 5px;">47.5 to 57.5</td> <td style="padding: 5px;">8,625.00-(150*MRI)</td> <td style="padding: 5px;">5,226.596-(133.2623*MRI) 7,187.50-(125*MRI)</td> </tr> <tr> <td style="padding: 5px;">57.5 to 75</td> <td style="padding: 5px;">Unit Price</td> <td style="padding: 5px;">Unit Price</td> </tr> <tr> <td style="padding: 5px;">75 to 90</td> <td style="padding: 5px;">7,500.00-(100*MRI) (or grind¹)</td> <td style="padding: 5px;">6,250.00-(83.333*MRI) (or grind¹)</td> </tr> <tr> <td style="padding: 5px;">Greater than 90</td> <td style="padding: 5px;">Grind¹</td> <td style="padding: 5px;">Grind¹</td> </tr> </tbody> </table>						MRI (inches per mile)	Dollars per 0.1 mile segment per lane		Design Thickness		Full Depth (>6")	Overlay (<=6")	Less than 47.5	1,500.00	1,250.00	47.5 to 57.5	8,625.00-(150*MRI)	5,226.596-(133.2623*MRI) 7,187.50-(125*MRI)	57.5 to 75	Unit Price	Unit Price	75 to 90	7,500.00-(100*MRI) (or grind ¹)	6,250.00-(83.333*MRI) (or grind ¹)	Greater than 90	Grind ¹	Grind ¹			
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1. Correct these areas below 75.0 inches per mile		
Reason for Revision: Error in table was discovered. The intent was to have the incentive for PCC paving less than or equal to 6" 12.5/15ths of the incentive for PCC greater than 6".		
New Bid Item Required (X one)		No
Bid Item Modification Required (X one)		No
Bid Item Obsolescence Required (X one)		No
Comments:		
County or City Comments:		
Industry Comments:		

Form 510130 (07-24)

**SPECIFICATION REVISION SUBMITTAL FORM**

Submitted by: Michael Nop		Bureau/Office: Bridges & Structures	Item 2
Submittal Date: 4/18/2025		Proposed Effective Date: October 2025	
Section No.: 2429 Title: Pre-Engineered Steel Truss Recreational Trail Bridge		Other:	
Specification Committee Action:			
Deferred:	Not Approved:	Approved Date:	Effective Date:
Specification Committee Approved Text:			
Comments:			
Specification Section Recommended Text: 2429, Pre-Engineered Steel Truss Recreational Bridge. Replace the Section: 2429.01 DESCRIPTION. A. These specifications are for an engineered truss bridge of welded steel construction and are minimum standards for design and construction. B. Install an engineered truss bridge of welded steel construction manufactured by a company on the approved manufacturer's list in Materials I.M. 557, Appendix D. 2429.02 DESIGN AND MATERIALS. A. Design. 1. Designer Qualifications. a. No less than 5 years experience in design and fabrication of engineered bridge trusses. In addition, provide information regarding similar projects that were previously completed, including references. b. Professional Engineer licensed in the State of Iowa. 2. Design Loads and Related Requirements. a. Design shall comply with "LRFD Bridge Design Specifications" and "LRFD Guide Specifications for the Design of Pedestrian Bridges" as adopted by AASHTO. b. Loads and Load Combinations: • Pedestrian load: 90 pounds per square foot applied to the complete width of the deck area shown in the contract documents. • Vehicle load: apply an H5 design vehicle when clear deck width is 7 feet to 10 feet, apply an H10 design vehicle when clear deck width exceeds 10 feet. Vehicle load need not be placed in combinations with pedestrian load. • Buoyancy and stream pressure due to submergence when indicated in the drawings.			

- Wind loads for pedestrian bridges shall be designed as specified in AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals, Articles 3.8 and 3.9. The loading shall be applied over the exposed area in front elevations of both trusses including all enclosures.
 - Fatigue shall be considered. ~~Fracture critical requirements may be waived if indicated in the drawings.~~ The fatigue loading shall be as specified in AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals. The Natural Wind Gust and the Truck-Induced Gust specified in AASHTO only need to be considered as appropriate.
 - Fracture critical requirements are waived except for Charpy V-notch (CVN) testing. Main tension members shall meet CVN toughness requirements for fracture critical members in Article 4152.02.
 - Other AASHTO loads, including seismic, as appropriate.
 - Load combinations as designated by AASHTO.
 - c. Bridge camber to offset full dead load deflections. ~~For flat, single span bridges, camber at center of bridge span should ordinarily be 1% of the total bridge span.~~ Parallel chord single span bridges not on grade shall be cambered an additional 1% of the total bridge span. Bowstring trusses, multi-span bridges, and bridges on grade shall be cambered an additional 0.2% of each bridge span.
 - d. Bridge designed for expansion and contraction with a temperature range of -25°F to 125°F.
 - e. Teflon or other approved slip pads placed between the bearing and setting plates provided by the bridge manufacturer. At least 1 inch clearance provided between the bridges and the abutments.
 - f. ~~Welded Tubular Connection Design: according to the Structural Welding Code from ANSI/AWS D1.1, Chapter 10 Tubular Structures.~~ Welded tubular connection design shall be in accordance with chapter K of the specifications and commentary of the AISC Steel Construction Manual.
 - g. Shop Drawings (Manufacturer's standard schematic drawings and diagrams):
 - 1) Unique drawings prepared to illustrate the specific portion of the project.
 - 2) All relative design information such as member sizes, bridge reactions, and general notes clearly specified.
 - 3) Accurately prepared to be complete in every respect. Include cross referenced details and sheet numbers. Signed and sealed by a Professional Engineer licensed in the State of Iowa.
 - 4) Submit shop drawings according to [Article 1105.03](#).
 - h. Maximum deflection due to pedestrian load not to exceed that specified in AASHTO.
 - i. Vibration not to exceed that specified in AASHTO.
 - j. If intermediate piers are required for the bridge over a railroad, a minimum 25 foot horizontal and vertical clearance, or a distance as specified elsewhere in the contract documents, from the track is required.
- 3. Geometry.**
- a. Low profile (pony truss) half through truss design or as designated in plans.
 - b. Provide one diagonal per panel. ~~Chords, diagonals, verticals, and bracing shall be tube steel.~~
 - c. All members of the truss and deck support system shall be fabricated from square or rectangular hollow structural shapes (HSS), with the exception that floor beams may be wide flange shapes.
- 4. Railings and Accessories.**
- a. All railings:
 - Located on the inside surface of the trusses.
 - Smooth inside surface with no protrusions or depressions.

- b. Top railings: a minimum of 48 inches above the floor for bicycle applications (AASHTO requires a minimum of 42 inches).
- c. Safety railings: a maximum railing opening size shall not allow passage of a 4 inch sphere. All ends of angles and HSS welded and ground smooth.
- d. Custom railings may be permitted as shown in the plans.

5. Curbs and Toe Plates Rails.

- a. A curb, barrier or toe plate rail shall be provided that prevents the passage of a 4 inch sphere, where any portion of the sphere is within 4 inches of the walking surface.
- b. Trail bridges over roadways shall prevent water runoff over the side of the bridge. Minimum curb height shall be by analysis, but no less than 3 inches.
- c. Toe plates rails, when required, shall be located 2 inches above the floor decks and shall ordinarily have a minimum 4 inch vertical projection.

B. Materials.

1. Structural Thickness.

- Structural tubing: minimum nominal material thickness of 1/4 inch.
- All other structural members: minimum nominal material thickness of at least 5/16 inch except the web thickness of rolled beams or channel shall not be less than 1/4 inch. Railing members are not subject to minimum thickness requirements.

2. Unpainted Bridges.

- Unpainted and fabricated from high strength weathering steel.
- All fabrications produced from high strength, low alloy, atmospheric corrosion resistant ASTM A 606 or ASTM A 242 plate and structural shapes. Structural steel material shall be cold-formed welded and seamless high strength, low-alloy structural tubing with improved atmospheric corrosion resistance meeting the requirements of ASTM A 847, and plates and structural shapes meeting the requirements of ASTM A 588 with a minimum corrosion index of 6.0 per ASTM G 101.
- Minimum yield (F_y) greater than 50,000 psi.

3. Field Splices.

- Bolted with high strength bolts according to ASTM A 325. High strength bolts shall conform to ASTM F 3125 Grade A 325 or ASTM A 449.
- Type 3 bolts are required for Weathering Steel bridges, according to ASTM A 325 or A 449.
- Field connection bolts shall be tightened by the "turn-of-nut method" to obtain proper torque-tension. See [Articles 2408.03, S. 5, b](#) and [2408.03, S. 5, c](#).

4. Welding.

- Materials: according to AWS D1.1.
- Welders: certified according to AWS D1.1.

5. Railings and Accessories.

- Railings (except rub rail): fabricated from steel.
- Rub rail: shall have 5.5 inch vertical projection and be fabricated from treated wood, or naturally durable wood, or steel. Steel rub rails shall have 4 inch minimum vertical projection.

6. Toe Plates Rails.

Toe plates rails, when required, shall be fabricated from plate, HSS, or channel.

7. Anchor Bolts.

Provided by the manufacturer.

2429.03 CONSTRUCTION.

A. Fabrication.

Ensure quality, fabrication, and shop connections comply with AASHTO Specifications for Highway Bridges noted in this specification.

B. Welding.

1. Welding.

- Comply with [Article 2408.03, B.](#)
- Use E70 or E80 series electrodes that have the same weathering characteristics as corrosion-resistance steel, ~~or the gas metal arc welding process (Short Circuiting Transfer) with Carbon Dioxide/Argon shielding gas with ER80-D2 filler material conforming to AWS A5.28.~~

2. Welding Operators.

- Properly accredited experienced operators, each of whom must:
- Submit satisfactory evidence of experience and skill in welding structural steel with the kind of welding to be used in the project, and
- Have demonstrated the ability to make uniform good welds meeting the size and type of weld required.

C. Quality Assurance.

The Manufacturer pays all costs associated with the following inspection requirements for fabrication and finishes:

~~1. Welded tubular connections qualified per AWS D1.1-94 using short circuited gas metal arc process.~~

~~2~~ 1. All welds to be visually inspected.

~~3~~ 2. Base material certifications to be supplied by the material suppliers.

D. Weld Testing.

Have nondestructive weld testing performed by an independent agency. The Manufacturer pays for nondestructive weld testing.

1. Ten percent of all welds are to be magnetic particle tested.
2. Ultrasonic testing is to be performed on all top and bottom chord, full penetration welds. Materials less than 5/16 inches in thickness may need modified test methods.

E. Finishes.

~~Sandblast unpainted weathering steel bridges according to SSPC Surface Preparation Specification No. 6.~~ All surfaces of weathering steel shall be cleaned in accordance with Steel Structures Painting Council Surface Preparation Specifications No. 6, SSPC-SP6 commercial blast cleaning. The steel will be allowed to form a protective weathering patina over time.

F. Delivery and Erection.

1. Manufacturer's Responsibilities.

- Deliver the bridge by truck to a location nearest to the site accessible by roadways.
- Notify the Contractor in advance of the expected arrival time.

- Provide the Contractor information regarding delays after the truck departs the plant, such as inclement weather, delays in permits, rerouting by public agencies, or other circumstances, as soon as possible.
- Advise the Contractor of the actual lifting weights, attachment points, and all other pertinent information needed to install the bridge.

2. Contractor's Responsibilities.

- Provide proper lifting equipment.
- Unload the bridge from the truck at the time of arrival.
- Splice and bolt the components.

2429.04 METHOD OF MEASUREMENT.

Measurement will be by count for each Pre-engineered Steel Truss Recreational Trail Bridge installed.

2429.05 BASIS OF PAYMENT.

- A.** Payment for each Pre-engineered Steel Truss Recreational Trail Bridge furnished and erected will be the contract unit price.
- B.** Payment is full compensation for:
- Designing, manufacturing, delivering, erecting, and assembling the unit complete as shown in the contract documents, and
 - Bearing plates, pads, bolts, anchor bolts, grouting, decking, railing, and any other materials, labor, and equipment necessary to complete the bridge in place. Foundations, footings, abutments, piers, and pier caps will be paid for separately.

Comments:

Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use ~~Strikeout~~ and Highlight.)

2429.01 DESCRIPTION.

- A.** These specifications are for an engineered truss bridge of welded steel construction and are minimum standards for design and construction.
- B.** Install an engineered truss bridge of welded steel construction manufactured by a company on the approved manufacturer's list in [Materials I.M. 557, Appendix D](#).

2429.02 DESIGN AND MATERIALS.

A. Design.

1. Designer Qualifications.

- a.** No less than 5 years experience in design and fabrication of engineered bridge trusses. In addition, provide information regarding similar projects that were previously completed, including references.
- b.** Professional Engineer licensed in the State of Iowa.

2. Design Loads and Related Requirements.

- a.** Design shall comply with "LRFD Bridge Design Specifications" and "LRFD Guide Specifications for the Design of Pedestrian Bridges" as adopted by AASHTO.
- b.** Loads and Load Combinations:
 - Pedestrian load: 90 pounds per square foot applied to the complete width of the deck area shown in the contract documents.
 - Vehicle load: apply an H5 design vehicle when clear deck width is 7 feet to 10 feet, apply an H10 design vehicle when clear deck width exceeds 10 feet. Vehicle load need not be placed in combinations with pedestrian load.
 - Buoyancy and stream pressure due to submergence when indicated in the drawings.

- Wind loads for pedestrian bridges shall be designed as specified in AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals, Articles 3.8 and 3.9. The loading shall be applied over the exposed area in front elevations of both trusses including all enclosures.
 - Fatigue shall be considered. Fracture critical requirements may be waived if indicated in the drawings. The fatigue loading shall be as specified in AASHTO LRFD Specifications for Structural Supports for Highway Signs, Luminaries and Traffic Signals. The Natural Wind Gust and the Truck-Induced Gust specified in AASHTO only need to be considered as appropriate.
 - Fracture critical requirements are waived except for Charpy V-notch (CVN) testing. Main tension members shall meet CVN toughness requirements for fracture critical members in Article 4152.02.
 - Other AASHTO loads, including seismic, as appropriate.
 - Load combinations as designated by AASHTO.
 - c. Bridge camber to offset full dead load deflections. For flat, single span bridges, camber at center of bridge span should ordinarily be 1% of the total bridge span. Parallel chord single span bridges not on grade shall be cambered an additional 1% of the total bridge span. Bowstring trusses, multi-span bridges, and bridges on grade shall be cambered an additional 0.2% of each bridge span.
 - d. Bridge designed for expansion and contraction with a temperature range of -25°F to 125°F.
 - e. Teflon or other approved slip pads placed between the bearing and setting plates provided by the bridge manufacturer. At least 1 inch clearance provided between the bridges and the abutments.
 - f. Welded tubular connection design shall be in accordance with chapter K of the specifications and commentary of the AISC Steel Construction Manual. Welded Tubular Connection Design according to the Structural Welding Code from ANSI/AWS D1.1, Chapter 10 Tubular Structures.
 - g. Shop Drawings (Manufacturer's standard schematic drawings and diagrams):
 - 1) Unique drawings prepared to illustrate the specific portion of the project.
 - 2) All relative design information such as member sizes, bridge reactions, and general notes clearly specified.
 - 3) Accurately prepared to be complete in every respect. Include cross referenced details and sheet numbers. Signed and sealed by a Professional Engineer licensed in the State of Iowa.
 - 4) Submit shop drawings according to Article 1105.03.
 - h. Maximum deflection due to pedestrian load not to exceed that specified in AASHTO.
 - i. Vibration not to exceed that specified in AASHTO.
 - j. If intermediate piers are required for the bridge over a railroad, a minimum 25 foot horizontal and vertical clearance, or a distance as specified elsewhere in the contract documents, from the track is required.
3. **Geometry.**
- a. Low profile (pony truss) half through truss design or as designated in plans.
 - b. Provide one diagonal per panel. Chords, diagonals, verticals, and bracing shall be tube steel.
 - c. All members of the truss and deck support system shall be fabricated from square or rectangular hollow structural shapes (HSS), with the exception that floor beams may be wide flange shapes.
4. **Railings and Accessories.**
- a. All railings:
 - Located on the inside surface of the trusses.
 - Smooth inside surface with no protrusions or depressions.
 - b. Top railings: a minimum of 48 inches above the floor for bicycle applications (AASHTO requires a minimum of 42 inches).
 - c. Safety railings: a maximum railing opening size shall not allow passage of a 4 inch sphere. All ends of angles and HSS welded and ground smooth.
 - d. Custom railings may be permitted as shown in the plans.
5. **Curbs and Toe Rails/Plates.**
- a. A curb, barrier or toe rail/plate shall be provided that prevents the passage of a 4 inch sphere, where any portion of the sphere is within 4 inches of the walking surface.
 - b. Trail bridges over roadways shall prevent water runoff over the side of the bridge. Minimum curb height shall be by analysis, but no less than 3 inches.

- c. Toe **railsplates**, when required, shall be located 2 inches above the floor decks and shall ordinarily have a minimum 4 inch vertical projection.

B. Materials.

1. Structural Thickness.

- Structural tubing: minimum **nominal** material thickness of 1/4 inch.
- All other structural members: minimum **nominal** material thickness of at least 5/16 inch except the web thickness of rolled beams or channel shall not be less than 1/4 inch. Railing members are not subject to minimum thickness requirements.

2. Unpainted Bridges.

- Unpainted and fabricated from high strength weathering steel.
- ~~All fabrications produced from high strength, low alloy, atmospheric corrosion resistant ASTM A 606 or ASTM A 242 plate and structural shapes.~~ Structural steel material shall be cold-formed welded and seamless high strength, low-alloy structural tubing with improved atmospheric corrosion resistance meeting the requirements of ASTM A847, and plates and structural shapes meeting the requirements of ASTM A588 with a minimum corrosion index of 6.0 per ASTM G101.
- Minimum yield (F_y) greater than 50,000 psi.

3. Field Splices.

- ~~Bolted with high strength bolts according to ASTM A 325.~~ High strength bolts shall conform to ASTM F 3125 Grade A 325 or ASTM A 449.
- Type 3 bolts are required for Weathering Steel bridges, ~~according to ASTM A 325 or A 490.~~
- Field connection bolts shall be tightened by the "turn-of-nut method" to obtain proper ~~tension~~torque. See [Articles 2408.03, S. 5, b](#) and [2408.03, S. 5, c](#).

4. Welding.

- Materials: according to AWS **D1.1**.
- Welders: certified according to AWS D1.1.

5. Railings and Accessories.

- Railings (except rub rail): fabricated from steel.
- Rub rail: shall have 5.5 inch vertical projection and be fabricated from treated wood, **or** naturally durable wood, ~~or steel.~~ Steel rub rails shall have 4 inch minimum vertical projection.

6. Toe **RailsPlates.**

Toe **railsplates**, when required, shall be fabricated from plate, **HSS**, or channel.

7. Anchor Bolts.

Provided by the manufacturer.

2429.03 CONSTRUCTION.

A. Fabrication.

Ensure quality, fabrication, and shop connections comply with AASHTO Specifications for Highway Bridges noted in this specification.

B. Welding.

1. Welding.

Comply with [Article 2408.03, B](#).

Use E70 or E80 series electrodes that have the same weathering characteristics as corrosion-resistance steel, ~~or the gas metal arc welding process (Short Circuiting Transfer) with Carbon Dioxide/Argon shielding gas with ER80-D2 filler material conforming to AWS A5.28.~~

2. Welding Operators.

Properly accredited experienced operators, each of whom must:

Submit satisfactory evidence of experience and skill in welding structural steel with the kind of welding to be used in the project, and

Have demonstrated the ability to make uniform good welds meeting the size and type of weld required.

C. Quality Assurance.

The Manufacturer pays all costs associated with the following inspection requirements for fabrication and finishes:

~~2. Welded tubular connections qualified per AWS D1.1 94 using short circuited gas metal arc process.~~

12. All welds to be visually inspected.

23. Base material certifications to be supplied by the material suppliers.

D. Weld Testing.

Have nondestructive weld testing performed by an independent agency. The Manufacturer pays for nondestructive weld testing.

1. Ten percent of all welds are to be magnetic particle tested.

2. Ultrasonic testing is to be performed on all top and bottom chord, full penetration welds. Materials less than 5/16 inches in thickness may need modified test methods.

E. Finishes.

~~Sandblast unpainted weathering steel bridges according to SSPC Surface Preparation Specification No. 6.~~
6. All surfaces of weathering steel shall be cleaned in accordance with Steel Structures Painting Council Surface Preparation Specifications No. 6, SSPC-SP6 commercial blast cleaning. The steel will be allowed to form a protective weathering patina over time.

F. Delivery and Erection.

1. Manufacturer's Responsibilities.

Deliver the bridge by truck to a location nearest to the site accessible by roadways.

Notify the Contractor in advance of the expected arrival time.

Provide the Contractor information regarding delays after the truck departs the plant, such as inclement weather, delays in permits, rerouting by public agencies, or other circumstances, as soon as possible.

Advise the Contractor of the actual lifting weights, attachment points, and all other pertinent information needed to install the bridge.

2. Contractor's Responsibilities.

Provide proper lifting equipment.

Unload the bridge from the truck at the time of arrival.

Splice and bolt the components.

2429.04 METHOD OF MEASUREMENT.

Measurement will be by count for each Pre-engineered Steel Truss Recreational Trail Bridge installed.

2429.05 BASIS OF PAYMENT.

A. Payment for each Pre-engineered Steel Truss Recreational Trail Bridge furnished and erected will be the contract unit price.

B. Payment is full compensation for:

Designing, manufacturing, delivering, erecting, and assembling the unit complete as shown in the contract documents, and

Bearing plates, pads, bolts, anchor bolts, grouting, decking, railing, and any other materials, labor, and equipment necessary to complete the bridge in place. Foundations, footings, abutments, piers, and pier caps will be paid for separately.

Reason for Revision: Revisions are recommended after discussion with an industry representative to clarify requirements and better align the specification with current practices.

New Bid Item Required (X one)	Yes	No X
Bid Item Modification Required (X one)	Yes	No X
Bid Item Obsolescence Required (X one)	Yes	No X
Comments:		
County or City Comments:		
Industry Comments:		

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**SPECIFICATION REVISION SUBMITTAL FORM**

Submitted by: Wes Musgrove/ Brian Johnson		Bureau/Office: Construction & Materials	Item 3
Submittal Date: 4/10/25		Proposed Effective Date: Oct 2025 GS revision	
Section No.: 2544 Title: Cleaning and Filling Cracks for HMA Surfaces		Other	
Specification Committee Action:			
Deferred:	Not Approved:	Approved Date:	Effective Date:
Specification Committee Approved Text:			
Comments:			
Specification Section Recommended Text: 2544.04, B, Hot Mix Asphalt for Crack Filling. Replace the article 1. Weight of hot mixture used for filling cracks larger than 1 inch. Mixture not used in the work will be deducted, based on actual scaled weights or estimates. 2. Tack-coat material will not be measured separately for payment. 2544.02, C, 2. Replace the article Blotting material and tack-coat material will not be measured separately for payment 2544.05, Basis of Payment. Replace the article A. Payment for cleaning and filling cracks will be the contract unit price as follows: 4 A.Cleaning and Filling Cracks (Pavement Maintenance) or Cleaning and Filling Cracks (Shoulder Maintenance). 1. Per mile for pavement or shoulders on which the cracks were cleaned and filled. 2. Includes all equipment and labor necessary for cleaning cracks as well as filling cracks and placing any necessary blotting material. 2 B.Hot Mix Asphalt for Crack Filling. 1. Per ton for HMA used in filling cracks over 1 inch. 2. Includes furnishing the hot mix asphalt including tack coat to the project site.			

3 C. Filler Material (Maintenance).

1. Per gallon.
2. Includes furnishing filler material to project site as well as blotting material.

B. Payments are full compensation for:

- Cleaning the cracks,
- Furnishing and placing the HMA,
- Filler material,
- All blotting material and tack-coat material that is necessary, and
- Furnishing all equipment and labor.

Comments:

Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use ~~Strikeout~~ and Highlight.)

2544.04 METHOD OF MEASUREMENT.

A. Cleaning and Filling Cracks.

B. Hot Mix Asphalt for Crack Filling.

1. Weight of hot mixture used for filling cracks larger than 1 inch. Mixture not used in the work will be deducted, based on actual scaled weights or estimates.
2. Tack-coat material will not be measured separately for payment.

C. Filler Material (Maintenance).

1. Computed according to [Article 2307.04, B](#). The total quantity will include the material placed in cracks and used to cover map-cracked areas.
2. Blotting material ~~and tack-coat material~~ will not be measured separately for payment.

2544.05 BASIS OF PAYMENT.

A. Payment for cleaning and filling cracks will be the contract unit price as follows:

1 A. Cleaning and Filling Cracks (Pavement Maintenance) or Cleaning and Filling Cracks (Shoulder Maintenance).

- a. Per mile for pavement or shoulders on which the cracks were cleaned and filled.
- b. Includes all equipment and labor necessary for cleaning cracks as well as filling cracks and placing any necessary blotting material.

2 B. Hot Mix Asphalt for Crack Filling.

- a. Per ton for HMA used in filling cracks over 1 inch.
- b. Includes furnishing the hot mix asphalt including tack coat to the project site.

3 C. Filler Material (Maintenance).

- a. Per gallon.
- b. Includes furnishing filler material to project site as well as blotting material.

B. Payments are full compensation for:

- ~~Cleaning the cracks,~~
- ~~Furnishing and placing the HMA,~~
- ~~Filler material,~~
- ~~All blotting material and tack-coat material that is necessary, and~~
- ~~Furnishing all equipment and labor.~~

Reason for Revision: This clarifies that all material incidental to cleaning and filling cracks is included in the bid item price.		
New Bid Item Required (X one)	Yes	No X
Bid Item Modification Required (X one)	Yes	No X
Bid Item Obsolescence Required (X one)	Yes	No X
Comments:		
County or City Comments:		
Industry Comments:		

Form 510130 (07-24)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Ben Hucker		Bureau/Office: Construction / Maintenance	Item 4
Submittal Date: 3/19/2025		Proposed Effective Date: October 2025	
Article No.: 4183.03, B, 1, a Title: Fast Dry Waterborne Traffic Paints		Other:	
Specification Committee Action:			
Deferred:	Not Approved:	Approved Date:	Effective Date:
Specification Committee Approved Text:			
Comments:			
Specification Section Recommended Text: 4183.03, B, 1, a, Pigment Content. Replace the Article: Percent pigment by weight of the finished product to be from 58.0 55.0% to 63.0 65.0% as tested by ASTM D 3723. The white paint must contain a minimum of 1 pound per gallon of TiO ₂ ASTM D 476 Type II Rutile 92% minimum TiO ₂ tested in accordance with ASTM D 1394 or ASTM D 4764. The total solids of high build paint when tested in accordance with ASTM D 2369 must be a minimum of 76% by weight.			
Comments: Revision was changed from the previous meeting to eliminate the allowable variance from the target values to simplify things.			
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and Highlight.) 4183.03 FAST DRY WATERBORNE TRAFFIC PAINTS. A. General Requirements. 1. Use paint that: - Is capable of being heated and spray applied up to a temperature of 120F without damaging the formulation or serviceability of the product and the traffic striping equipment. - Is not damaged or deteriorates when reheated or if held under heated conditions for 6 hours. - Provides proper anchorage and refraction for glass beads when the beads are applied at the rate of 6 pounds per gallon. - Is free of heavy metals as defined by the US EPA. - Free of skins, pigment agglomerates, and foreign matter. - Shows no evidence of excessive settling, gelling, skinning, spoilage, or livering upon storage in sealed containers under normal above freezing temperatures within a 12 month period in the sealed delivery container. 2. When the air temperature is below the freezing point (32F (0C)), ship or store the paint in an insulated vehicle or storage building with heating capability to ensure the inside temperature is held above freezing.			
B. Specific Requirements.			

1. Composition.

The composition of the paint is left to the discretion of the manufacturer as long as the finished product meets the following requirements and applicable Federal, State, or local regulations for products of this type.

a. Pigment Content.

Percent pigment by weight of the finished product to be from ~~558.0%~~ to ~~653.0%~~ as tested by ASTM D 3723. The white paint must contain a minimum of 1 pound per gallon of TiO₂ ASTM D 476 Type II Rutile 92% minimum TiO₂ tested in accordance with ASTM D 1394 or ASTM D 4764. The total solids of high build paint when tested in accordance with ASTM D 2369 must be a minimum of 76% by weight.

b. Resin Solids.

Composed of 100% acrylic emulsion polymer (per [Materials I.M. 483.03](#)) or approved equal that allow finished paint products to meet all other areas of the specifications.

c. Nonvolatile Vehicle.

1) No less than 42.0% by weight for white paint and no less than 44.0% by weight for yellow paint.

2) Use the the following formula for calculating nonvolatile vehicle (NVV):

$$NVV = (N - P) / (100 - P)$$

Where:

N = the percent by weight of non-volatiles as determined by ASTM D 2369

P = the percent weight of pigment as determined by ASTM D 3723

Reason for Revision: In extended discussions with industry and moving to be in line with AASHTO M 348, the lower percent pigments for paints tend to perform better in the long run. Due to this it is decided to lower the bottom threshold for percent pigment from 58% down to 55%, upper from 63% to 65%. Very small change for manufacturers and will allow a greater product range for approval.

New Bid Item Required (X one)	Yes	No X
Bid Item Modification Required (X one)	Yes	No X
Bid Item Obsolescence Required (X one)	Yes	No X

Comments:

County or City Comments: This specification revision was sent to the Local Systems Bureau on February 3, 2025. They were asked to forward to all interested parties and comments were invited to be sent in through February 28, 2025. No comments were received.

Industry Comments: This specification revision was presented to the Iowa ATSSA Chapter at their meeting on February 4, 2025. Comments were invited to be sent in through February 28, 2025. No comments were received.

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SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Eric Johnsen		Bureau/Office: Specifications	Item 5
Submittal Date:		Proposed Effective Date: October 2025	
Article No.: Title:		Other: SUDAS Standard Specification Revisions	
Specification Committee Action:			
Deferred:	Not Approved:	Approved Date:	Effective Date:
Specification Committee Approved Text:			
Comments:			
Specification Section Recommended Text: 2504.03, L, 2, a, General. Add the Article and renumber Articles: 3) Complete inspections under the supervision of a competent employee who has completed NASSCO's Pipeline Assessment Certification Program. 3 4) Notify the Engineer of the extent of noncompliance with the low spot depth tolerances. 4 5) Re-inspect sewers after any corrective action has been completed. 2504.03, L, 2, Video Inspection. Add the Article: d. Inspection Acceptance. The Engineer may reject low quality videos or videos failing to meet specifications. 2552.04, Method of Measurement. Add the Articles and renumber Article: E. PCC Pipe Support Over Existing Utility. Measurement will be by each location. F. Reinforced PCC Beam Utility Line Support. Measurement will be by each location. E G.Trench Compaction Testing. 2552.05, Basis of Payment. Add the Articles and renumber Article: F. PCC Pipe Support Over Existing Utility. 1. Payment will be at the unit price per each for each pipe support specified. 2. Payment is full compensation for furnishing and placing all required PCC pipe supports and associated materials.			

G. Reinforced PCC Beam Utility Line Support.

1. Payment will be at the unit price per each for each reinforced PCC beam utility line support specified.
2. Payment is full compensation for furnishing and placing the required length of reinforced PCC beam utility line support and associated materials.

F H.Trench Compaction Testing.

4149.02, A, 2, Solid Wall Polyvinyl Chloride Pipe 18 inch to 27 inch.

Replace the title:

Solid Wall Polyvinyl Chloride Pipe 18 inch to ~~27~~ 48 inch.

4149.02, A, 4, Closed Profile Polyvinyl Chloride Pipe 21 inch to 36 inch.

Replace the title:

Closed Profile Polyvinyl Chloride Pipe 21 inch to ~~36~~ 60 inch.

4149.04, H, 1, c, 3.

Replace the Article:

~~Do not use when heat shrinkable infiltration barrier is used.~~ If a heat shrinkable infiltration barrier is used, ensure surface temperature does not exceed 300°F during installation process.

4149.04, J, 1, d, Heat Shrink Sleeve.

Replace the first paragraph:

Heat-shrinkable wrap around sleeve designed for protection of buried and exposed sanitary sewer manholes. Do not use with ~~polypropylene or~~ polyethylene adjustment rings.

Comments: These revisions have not been approved by the SUDAS Board of Directors yet. Any revisions will be reflected in final Standard Specification revisions.

Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use ~~Strikeout~~ and Highlight.)

Reason for Revision: Revisions to SUDAS Standard Specifications that are the basis for DOT Standard Specifications.

New Bid Item Required (X one)	Yes X	No
Bid Item Modification Required (X one)	Yes	No X
Bid Item Obsolescence Required (X one)	Yes	No X

Comments: New bid items for PCC Pipe Support Over Existing Utility and Reinforced PCC Beam Utility Line Support will be required.

County or City Comments:

Industry Comments:

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**SPECIFICATION REVISION SUBMITTAL FORM**

Submitted by: Wes Musgrove		Bureau/Office: Construction & Materials	Item 6
Submittal Date: 4/29/2025		Proposed Effective Date: July 1, 2025	
Article No.: 1109.05, B, 2 Title: Prompt Payment to Subcontractors		Other:	
Specification Committee Action:			
Deferred:	Not Approved:	Approved Date:	Effective Date:
Specification Committee Approved Text:			
Comments:			
Specification Section Recommended Text: 1109.05, B, 2. Replace the Article: The Contractor may withhold up to 5% 3% of each progress estimate on work performed by subcontractors as subcontractor retainage.			
Comments: This will need to be incorporated by proposal note starting with the July letting.			
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and Highlight.)			
Reason for Revision: Comply with changes to Iowa Code Section 573 recently passed by the legislature and signed by the Governor. Retainage by the Contracting Authority was already at 3% in the Standard Specifications.			
New Bid Item Required (X one)	Yes	No X	
Bid Item Modification Required (X one)	Yes	No X	
Bid Item Obsolescence Required (X one)	Yes	No X	
Comments:			
County or City Comments:			
Industry Comments:			

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SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Kimball Olson/Wes Musgrove		Bureau/Office: Bridges & Structures/Construction & Materials	Item 7
Submittal Date: 4/29/2025		Proposed Effective Date: October 2025	
Article No.: 2403.03, P, 2, b, 5 Title: Surface Finish (Structural Concrete)		Other:	
Specification Committee Action:			
Deferred:	Not Approved:	Approved Date:	Effective Date:
Specification Committee Approved Text:			
Comments:			
Specification Section Recommended Text: 2403.03, P, 2, b, 5. Add after the second sentence: Include white cement at an approximate rate of one part white cement to two parts gray cement to lighten the patching mix. When cured, patches shall match or be slightly lighter than the surrounding concrete.			
Comments:			
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and Highlight.) Section 2403. Structural Concrete 2403.03 CONSTRUCTION. P. Surface Finish. Finish and seal concrete surfaces exposed, or will likely be exposed, after the structure is completed as follows:			
1. Finish concrete floors and concrete sidewalks as provided in Sections 2412, 2413, and 2511. 2. Provide a Class 1, finish to horizontal surfaces not cast against a form and not subject to wear (for example, bridge seats, tops of backwalls, piers, abutments, wingwalls, retaining walls, spandrel walls, struts between pedestal piers, and horizontal surfaces of curbs and sidewalks of the bridge). Bridge beam seats shall be finished to the plan elevation with a tolerance of +/- 0.02 feet. For all other surfaces required to be finished, provide a Class 2, finish to low water line or 1 foot below the finished ground line. a. Class 1, Floated Surface Finish. Overfill forms with concrete. Strike off concrete to the required elevation with a template and thoroughly work the surface with a wood float until the surface is uniformly smooth, dense, and true. b. Class 2, Strip Down Surface Finish. Immediately after removal of the forms, complete the following: 1) Remove rods and other devices used as form ties to the extent contemplated in their design. 2) Remove paper or fiber tubes used to facilitate removal of rod ties.			

- 3) Except as designated below, cut off wires used as form ties flush with the surface of the concrete and drive them 1/4 inch below the surface.
- 4) Remove all fins and irregular projections from the concrete surfaces required to be finished.
- 5) On surfaces, thoroughly clean the cavities produced by form ties and all other holes, honeycomb spots, and broken corners and edges. After being saturated with water, carefully fill, point, and true with a mortar of cement and fine aggregate of the same kind as that which was used in the concrete being finished. **Include white cement at an approximate rate of 1 part white cement to 2 parts gray cement to lighten the patching mix. When cured, patches shall match or be slightly lighter than the surrounding concrete.** Shallow voids, other than honeycomb, which appear on the formed surface after proper consolidation will not be considered as holes and need not be filled unless they appear in an abnormal concentration.
- 6) Clean the entire surface required to be finished of stains from form oil or other substances.
- 7) Ensure the resulting surfaces are true and uniform.
- 8) Clip off flush with the surface wire ties or reinforcing steel chairs protruding through culvert barrels or the bottom of bridge floors.
- 9) Leave construction and expansion joints in the completed work carefully tooled and free from mortar and concrete.
- 10) Leave expansion joint filler exposed for its full length and thickness and with clean true edges.

Reason for Revision: This will not only eliminate special plan notes that have been included on aesthetic structure projects for years, it will also improve the finished appearance of all structures that require patching after form stripping.

New Bid Item Required (X one)	Yes	No X
Bid Item Modification Required (X one)	Yes	No X
Bid Item Obsolescence Required (X one)	Yes	No X
Comments:		
County or City Comments:		
Industry Comments:		