



**MINUTES
OF
IOWA DOT SPECIFICATION COMMITTEE MEETING**

May 11, 2017

Members Present:	Darwin Bishop Donna Buchwald Jeff Devries Mark Brandl Gary Novey Mark Dunn Wes Musgrove Tom Reis, Chair Willy Sorensen	District 3 - Construction Office of Local Systems District 1 - Materials District 6 - Davenport RCE Office of Bridges & Structures Contracts Office of Construction & Materials Specifications Section Office of Traffic & Safety
Members Not Present:	Eric Johnsen, Secretary Brian Smith Charlie Purcell	Specifications Section Office of Design Project Delivery Bureau
Advisory Members Present:	Lisa McDaniel	FHWA
Others Present:	Karla Kudart Dan Harness Kyle Frame Mark Bortle Melissa Serio	FHWA Design Office of Construction & Materials Office of Construction & Materials Office of Construction & Materials

Tom Reis, Specifications Engineer, opened the meeting. The following items were discussed in accordance with the revised agenda dated May 10, 2017:

The Specification Committee met on Thursday, May 11, 2017, at 9:00 a.m. in the NW Wing, 1st Floor Conference Room.

The minutes are as follows:

1. Article 1102.20, Title VI Assurances.

The Office of Employee Services requested to add a new federal requirement.

2. Article 2107.03, C, Preparation of the Site (Embankments).

The Office of Construction & Materials requested to update the specifications to reflect practice to remove topsoil prior to placing fill.

3. Section 2310, Portland Cement Concrete Overlay.

The Office of Construction & Materials requested to remove references to bonded and unbonded overlays from the specification as those are design terms with different meaning than used in the specifications.

4. Article 2403.02, Entrained Air Content (Structural Concrete).

The Office of Construction & Materials requested to apply the same air tolerance used for bridge decks when placed by pumping.

5. Article 2412.02, G, Materials (Concrete Bridge Decks).

The Office of Construction & Materials requested to increase the target air content.

6. Article 2423.01, Description (Support Structures for Highway Signs, Luminaries, and Traffic Signals)

Article 2522.03, Construction (Tower Lighting).

Article 4185.02, Poles and Supports (Highway Lighting Materials).

Article 4187.01, C, 3, a, 2, Anchor Bolts (Materials for Sign Support Structures).

Article 4189.05, Poles, Heads, and Signs (Traffic Signal Equipment).

The Office of Bridges and Structures requested various revisions to the specifications for signal, lighting and sign support structures.

7. Article 2433.05, A, Concrete Drilled Shaft.

The Office of Construction & Materials requested to clarify that the contractor will not receive additional payment for additional testing and work to remediate failed CSL test results.

8. Article 2501.05, E, Pile Cut-offs.

The Office of Construction & Materials requested to clarify specification language that pile cut-offs incorporated into the structure, whether as extensions or to make original plan length, will not be paid for as additional plan quantity.

9. Article 2502.02, Materials (Subdrains).

The Office of Construction & Materials requested to move material requirements for fin drains from Materials I.M. 442 into the specifications.

10. Article 2528.01, C, Traffic Quality Control.

The Office of Construction & Materials requested to require a trained Traffic Control Technician (TCT) be on the project any time work is being accomplished and to personally perform the required functions listed in the specification.

11. Article 2529.03, G, 3, Placing Full Depth Portland Cement Concrete Finish Patches.

The Office of Construction & Materials requested to allow thicker sheathing for insulating patches.

12. Article 2602.03, A, Construction (Water Pollution Control (Soil Erosion)).

The Office of Construction & Materials requested to require ECIPs only on projects that are regulated by a storm water permit and update list of items that shall be considered when developing ECIP.

13. Article 4152.02, Structural Steel.

The Office of Construction & Materials requested to add Charpy impact testing criteria for fracture critical steel members.

14. Article 4186.09, B, Type B Signs.

The Office of Construction & Materials requested to only allow stainless steel bolts, nuts, and washers for type B sign post clips and panels.

15. Article 4196.01, B, Engineering Fabrics.

The Office of Construction & Materials requested to correct engineering fabric requirements.

16. Article 2304.02, B, HMA Option (Detour Pavement).

Article 2529.02, A, Hot Mix Asphalt Mixture (Full Depth Finish Patches).

Article 2530.02, A, Hot Mix Asphalt Patching Material (Partial Depth Finish Patches).

The Office of Construction & Materials requested to allow use of an alternate PG binder grade, since the previously specified PG 64-22S binder may not be readily available.

Form 510130 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Jacqui DiGiacinto Miskimins		Office: Employee Services	Item 1
Submittal Date: 04/10/2017		Proposed Effective Date: ASAP	
Article No.: 1102.20 Title: Title VI Assurances		Other:	
Specification Committee Action: Deferred to a future meeting.			
Deferred: X	Not Approved:	Approved Date:	Effective Date:
Specification Committee Approved Text:			
Comments: The Civil Rights Team requested, prior to the Specification Committee Meeting, to defer this item to allow additional time to consider the impacts and further discussion with the FHWA.			
Specification Section Recommended Text: 1102.20, Title VI Assurance.			
Replace the Article:			
<p>A. To comply with US DOT Order 1050.2 (dated August 24, 1971) the following Appendix A is a contract requirement of each contract and shall be included in each subcontract.</p>			
APPENDIX A			
During the performance of this contract, the contractor, for itself, its assignees and successors in interest (hereinafter referred to as the "contractor") agrees as follows:			
<ol style="list-style-type: none"> 1. <u>Compliance with Regulations:</u> The contractor shall comply with the Regulations relative to nondiscrimination in Federally-assisted programs of the Department of Transportation (hereinafter, "DOT") Title 49, Code of Federal Regulations, Part 21, as they may be amended from time to time, (hereinafter referred to as the Regulations), which are herein incorporated by reference and made a part of this contract. 2. <u>Nondiscrimination:</u> The contractor, with regard to the work performed by it during the contract, shall not discriminate on the grounds of race, color, national origin, sex, age, or disability in the selection and retention of subcontractors, including procurement of materials and leases of equipment. The contractor shall not participate either directly or indirectly in the discrimination prohibited by section 21.5 of the Regulations, including employment practices when the contract covers a program set forth in Appendix B of the Regulations. 3. <u>Solicitations for Subcontracts, Including Procurement of Materials and Equipment:</u> In all solicitations either by competitive bidding or negotiation made by the contractor for work to be performed under a subcontract, including procurement of materials or leases of equipment, each potential subcontractor or supplier shall be notified by the contractor of the contractor's obligations under this contract and the Regulations relative to nondiscrimination on the grounds of race, color, national origin, sex, age, or disability. 4. <u>Information and Reports:</u> The contractor shall provide all information and reports required by the Regulations or directives issued pursuant there to, and shall permit 			

access to its books, records, accounts, other sources of information, and its facilities as may be determined by the Iowa Department of Transportation or Federal Highway Administration to be pertinent to ascertain compliance with such Regulations, orders and instructions. Where any information required of a contractor is in the exclusive possession of another who fails or refuses to furnish this information the contractor shall so certify to the Iowa Department of Transportation or the Federal Highway Administration as appropriate, and shall set forth what efforts it has made to obtain the information.

5. Sanctions for Noncompliance: In the event of the contractor's noncompliance with the nondiscrimination provisions of this contract, the Iowa Department of Transportation shall impose such contract sanctions as it or the Federal Highway Administration may determine to be appropriate, including, but not limited to:
 - a. withholding of payments to the contractor under the contract until the contractor complies, and/or
 - b. cancellation, termination or suspension of the contract, in whole or in part.
6. Incorporation of Provisions: The contractor shall include the provisions of paragraphs (1) through (6) in every subcontract, including procurement of materials and leases of equipment, unless exempt by the Regulations, or directives issued pursuant thereto. The contractor shall take such action with respect to any subcontract or procurement as the Iowa Department of Transportation or the Federal Highway Administration may direct as a means of enforcing such provisions including sanctions for non-compliance: Provided, however, that, in the event a contractor becomes involved in, or is threatened with, litigation with a subcontractor or supplier as a result of such direction, the contractor may request the Iowa Department of Transportation to enter into such litigation to protect the interests of the Iowa Department of Transportation and, in addition, the contractor may request the United States to enter into such litigation to protect the interests of the United States.

B. APPENDIX E

During the performance of this contract, the Contractor, for itself, its assignees, and successors in interest (hereinafter referred to as the "Contractor") agrees to comply with the following non-discrimination statutes and authorities; including but not limited to:

- Title VI of the Civil Rights Act of 1964 (42 U.S.C. § 2000d et seq., 78 stat. 252), (prohibits discrimination on the basis of race, color, national origin); and 49 CFR Part 21;
- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970,(42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended,(prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms "programs or activities" to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on

the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;

- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123) (prohibits discrimination on the basis of race, color, national origin, and sex);
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations;
- Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100);
- Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq).

Comments:

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

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- The Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970,(42 U.S.C. § 4601), (prohibits unfair treatment of persons displaced or whose property has been acquired because of Federal or Federal-aid programs and projects);
- Federal-Aid Highway Act of 1973, (23 U.S.C. § 324 et seq.), (prohibits discrimination on the basis of sex);
- Section 504 of the Rehabilitation Act of 1973, (29 U.S.C. § 794 et seq.), as amended,(prohibits discrimination on the basis of disability); and 49 CFR Part 27;
- The Age Discrimination Act of 1975, as amended, (42 U.S.C. § 6101 et seq.), (prohibits discrimination on the basis of age);
- Airport and Airway Improvement Act of 1982, (49 USC § 471, Section 47123), as amended, (prohibits discrimination based on race, creed, color, national origin, or sex);
- The Civil Rights Restoration Act of 1987, (PL 100-209), (Broadened the scope, coverage and applicability of Title VI of the Civil Rights Act of 1964, The Age Discrimination Act of 1975 and Section 504 of the Rehabilitation Act of 1973, by expanding the definition of the terms “programs or activities” to include all of the programs or activities of the Federal-aid recipients, sub-recipients and contractors, whether such programs or activities are Federally funded or not);
- Titles II and III of the Americans with Disabilities Act, which prohibit discrimination on the basis of disability in the operation of public entities, public and private transportation systems, places of public accommodation, and certain testing entities (42 U.S.C. §§ 12131 -- 12189) as implemented by Department of Transportation regulations at 49 C.F.R. parts 37 and 38;
- The Federal Aviation Administration’s Non-discrimination statute (49 U.S.C. § 47123)(prohibits

<p>discrimination on the basis of race, color, national origin, and sex);</p> <ul style="list-style-type: none"> • Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, which ensures non-discrimination against minority populations by discouraging programs, policies, and activities with disproportionately high and adverse human health or environmental effects on minority and low-income populations; • Executive Order 13166, Improving Access to Services for Persons with Limited English Proficiency, and resulting agency guidance, national origin discrimination includes discrimination because of limited English proficiency (LEP). To ensure compliance with Title VI, you must take reasonable steps to ensure that LEP persons have meaningful access to your programs (70 Fed. Reg. at 74087 to 74100); • Title IX of the Education Amendments of 1972, as amended, which prohibits you from discriminating because of sex in education programs or activities (20 U.S.C. 1681 et seq). 		
<p>Reason for Revision: Federal Highway Administration has made Appendix E a requirement. Appendix A is already included in Specification.</p>		
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:		

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Melissa Serio		Office: Construction & Materials	Item 2
Submittal Date: April 20, 2017		Proposed Effective Date: October 2017 GS	
Article No.: 2107.03, C Title: Preparation of the Site (Embankments)		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text: 2107.03, C, 1 Replace the Article: Where the height of proposed embankment at the center line is 5 feet or less, remove sod (after thorough disking) from the area. Place the sod on the area to be occupied by the outer portion of the embankment as provided in Article 2107.03, D. Strip topsoil as required by the contract documents.			
Comments:			
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and Highlight.) 2107.03, C, 1 Replace the Article: 1. Where the height of proposed embankment at the center line is 5 feet or less, remove sod (after thorough disking) from the area. Place the sod on the area to be occupied by the outer portion of the embankment as provided in Article 2107.03, D. Strip topsoil as required by the contract documents.			
Reason for Revision: Update to reflect practice to remove topsoil prior to placing fill.			
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: No changes			
County or City Comments:			
Industry Comments:			

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Kevin Merryman		Office: Construction and Materials	Item 3
Submittal Date: April 20, 2017		Proposed Effective Date: October 2017	
Section No.: 2310 Title: Portland Cement Concrete Overlay		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text:			
2310.01, Description.			
Replace the Article:			
Overlay an existing pavement with one of the following types of a PCC overlay. Existing pavements may include any of the following:			
A. Bonded overlay: a PCC overlay over an existing PCC pavement.			
B. Unbonded overlay: a PCC overlay over an existing pavement where a stress relief layer is placed on top of the existing PCC pavement or a PCC overlay over an existing eComposite pavement (flexible pavement over PCC).			
C. Pavement with a stress relief layer placed over the top.			
G D. Whitotopping: a PCC overlay over an existing, full depth flexible pavement.			
2310.02, A, 3.			
Replace the Article:			
Unless otherwise specified, use coarse aggregate for bonded overlays over existing PCC pavement that is the same type of aggregate as the existing pavement.			
2310.02, B, 1.			
Replace the Article:			
When required by the contract documents, Use an HMA stress relief course for unbonded overlays consisting of a nominal 1 inch course of HMA meeting the requirements of Section 2303 .			
2310.03, B, 2, a.			
Replace the Article:			
When required for bonded overlays over existing PCC pavement, prepare the surface by shot blasting, waterblasting, or scarifying. Scarify to a nominal depth of 1/4 inch.			
2310.03, C, 2, Joints.			
Replace the Article:			
a. Unbonded Overlays and Whitotopping.			
Place joints as shown in the contract documents.			

b. Bonded Overlays.

For overlays over existing PCC pavements:

- 1) Place joints directly over joints and cracks in the existing pavement.
- 2) Saw joints to the full depth of the overlay.
- 3) Ensure joints are at least as wide as the joint or crack in the existing pavement.

2310.03, D, 3.

Replace the Article:

Place bonded concrete overlays over existing PCC pavements between June 1 and September 30.

Comments:

Section 2310. Portland Cement Concrete (PCC) Overlay

2310.01 DESCRIPTION.

Overlay an existing pavement with one of the following types of an PCC overlay. Existing pavements may include any of the following:

A. Bonded overlay: a PCC overlay over an existing PCC pavement.

B. Unbonded overlay: a PCC overlay over an existing pavement where a stress relief layer is placed on top of the existing PCC pavement or a PCC overlay over an existing composite pavement (flexible pavement over PCC).

C. Whitotopping: a PCC overlay over an existing, full depth flexible pavement.

A. PCC pavement

B. Composite pavement (flexible pavement over PCC)

C. Pavement with a stress relief layer placed over the top

D. Full depth flexible pavement

2310.02 MATERIALS.

A. Concrete.

Meet the requirements of [Article 2301.02](#).

1. Use Class C concrete for PCC Overlays as specified in [Materials I.M. 529](#), except use a C-3WR or C-4WR mix design for Bonded Overlays. Allowable substitutions shall comply with [Article 2301.02, B](#).
2. For coarse aggregate, meet the requirements of [Section 4109.02](#), Aggregate Gradation Table, Gradation No. 3 or 5. Ensure the nominal maximum coarse aggregate size is no greater than one-third the overlay thickness.
3. Unless otherwise specified, use coarse aggregate for bonded overlays over existing PCC pavement that is the same type of aggregate as the existing pavement.

B. Hot Mix Asphalt Stress Relief Course.

1. When required in the contract documents, Use an HMA stress relief course for unbonded overlays consisting of a nominal 1 inch course of HMA meeting the requirements of [Section 2303](#).
2. Use PG 58-28S asphalt binder.
3. Use a mixture meeting the following:
 - a. Standard Traffic (ST), 3/8 inch HMA mix requirements.
 - b. Target air voids of 3.0%.

- c. No maximum film thickness restriction and no minimum filler/bitumen ratio restriction.
- d. Type B Aggregate (or better) with no percent crushed particle requirements and gradation falling below the restricted zone.

C. Seal Coat Bond Breaker.

Meet the requirements of [Article 2307.02](#).

2310.03 CONSTRUCTION.

Apply the requirements of [Section 2301](#) to this work with the modifications identified below.

A. Scarifying, Shotblasting, or Waterblasting Equipment.

Use power operated equipment capable of uniformly scarifying or removing the existing surface in a satisfactory manner and to depths required. Other types of removal devices may be used if their operation is suitable and if they can be demonstrated to the satisfaction of the Engineer. The contract documents will include a pay item for such work.

B. Preparation of Surface.

1. General.

- a. If full depth base repair is included in the project, complete it prior to preparation of the existing pavement surface.
- b. When required, include the entire area to be resurfaced in preparation of the existing pavement surface. Materials removed in the preparation operation may be placed in the shoulder area unless specified otherwise in the contract documents.

2. Surface Preparation.

- a. When required for ~~bonded~~ overlays ~~over existing PCC pavement~~, prepare the surface by shot blasting, waterblasting, or scarifying. Scarify to a nominal depth of 1/4 inch.
- b. Ensure preparation removes all dirt, oil, foreign materials, laitance, or loose material from the surface and edges against which new concrete will be placed.

3. Pavement Scarification.

- a. When required, prepare surface by scarifying per [Section 2214](#).
- b. At the direction of the Engineer, trim high spots found in the existing flexible pavement. This work will be accomplished during the scarification operation, only at isolated locations, and will be considered incidental to the pavement scarification.
- c. **Seal Coat Bond Breaker.**
Prior to placement of the PCC overlay, place two applications of a seal coat bond breaker to scarified PCC surfaces per [Article 2307.03](#) and as modified per [Article 2316.03, B, 2, b](#). Do not allow traffic on bond breaker before it has set.

4. Hot Mix Asphalt Stress Relief Course.

Construct in accordance with [Article 2303.03](#). Use Class II Compaction, except use only static steel wheeled rollers. [Article 2303.04](#) shall also apply.

C. Placing and Finishing Overlay.

1. General.

- a. Apply [Section 2317](#) to all PCC Pavement bid items of a Primary project if any individual PCC Pavement bid item for that project is 5000 square yards or greater. Apply [Section 2316](#) to all other Primary projects and when specifically required for other projects.
- b. Clean existing surface of loose or adhering foreign material prior to and during placement of PCC.
- c. Ensure existing pavement surface is free of standing water during PCC placement.
- d. Ensure temperature of existing pavement surface does not exceed 120°F during PCC placement. Water may be applied to cool existing pavement surface provided standing water is not present during PCC placement.

2. Joints.

- a. ~~Unbonded Overlays and Whitetopping.~~
Place joints as shown in the contract documents.
- b. ~~Bonded Overlays.~~

For overlays over existing PCC pavements:

- 1) Place joints directly over joints and cracks in the existing pavement.
- 2) Saw joints to the full depth of the overlay.
- 3) Ensure joints are at least as wide as the joint or crack in the existing pavement.

D. Limitation of Operations.

1. At forecasted air temperatures below 55°F use the maturity method to determine the opening time. Do not place resurfacing concrete when the air or pavement temperature is below 40°F.
2. The Contractor may use the shoulders for construction activities. It will be the Contractor's responsibility to repair the shoulders, as the Engineer deems necessary, to restore the shoulders to a condition acceptable for shoulder work. This work shall be done at no additional cost to the Contracting Authority. The Contractor may elect to limit the use and vehicle loadings to minimize this work and its cost.
3. Place ~~bonded~~ concrete overlays **over existing PCC pavements** between June 1 and September 30.

Reason for Revision: To remove references to bonded and unbonded overlays from the specification as those are design terms with different meaning than used in the specifications.

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

Comments: Bid items with bonded, unbonded, and whitetopping will need to be deleted and new bid items for PCC Overlay will need to be created.

County or City Comments:

Industry Comments: This was discussed with industry at the ICPA/IDOT joint spec. meeting in March of 2017.

Form 510130 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove		Office: Construction & Materials	Item 4
Submittal Date: April 20, 2017		Proposed Effective Date: October 2017	
Article No.: 2403.02 Title: Entrained Air Content (Structural Concrete)		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text: 2403.02, B, 3, Entrained Air Content.			
<p>Add to the end of the Article: When concrete is placed by pumping, use a target value of 7.5% +/- 2.0%.</p>			
Comments:			
<p>Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and Highlight.) 2403.02.B MATERIALS.</p> <p>3. Entrained Air Content. Use an approved air entraining agent complying with Section 4103 to accomplish air entrainment. Air content will be tested according to Materials I.M. 318. The intended air entrainment is 6%. To allow for loss during placement, use a target value of 6.5%, with a maximum variation of -1.0% and +2.0%, for the air content of fresh, unvibrated structural concrete. When concrete is placed by pumping, use a target value of 7.5% +/-2.0%.</p>			
Reason for Revision: Since there are applications utilizing pumping for structural concrete, apply the same air tolerance used for bridge decks when placed by pumping.			
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 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove		Office: Construction & Materials	Item 5
Submittal Date: April 20, 2017		Proposed Effective Date: October 2017	
Article No.: 2412.02 Title: Concrete Bridge Decks		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text: 2412.02, G. Replace the second sentence: When concrete is placed by pumping, use a target value of 7.05% +/-2.0%.			
Comments:			
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and <u>Highlight</u> .) 2412.02 MATERIALS. G. Meet requirements of Article 2403.02.B.3 for entrained air content. When concrete is placed by pumping, use a target value of 7.50% +/-2.0%.			
Reason for Revision: With 5% as the lower limit, vibration could cause air to drop below 5% in the finished deck. Freeze thaw durability is a concern below 5% in Iowa. Increase the target 0.5% to keep the lower limit at 5.5% consistent with Article 2403.			
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 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Gary Novey		Office: Bridges and Structures	Item 6
Submittal Date: 5/9/2017		Proposed Effective Date: October 2017	
Article Numbers and Titles: 2423.01: Support Structures for Highway Signs, Luminaries, and Traffic Signals (Description) 2522.03: Tower Lighting (Construction) 4185.02: Highway Lighting Materials (Poles and Supports) 4187.01: Materials for Sign Support Structures (General Requirements) 4189.05: Traffic Signal Equipment (Poles, Heads, and Signs)		Other:	
Specification Committee Action: Approved with changes.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: 2423.01, Description. Replace the second sentence: Design according to the contract documents and the applicable AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. specifications for highway signs, luminaries, and traffic signals.			
2522.03, E, Lighting Tower. Replace the first sentence: Ensure the structural design of the tower and its appurtenances meet the requirements of AASHTO 2013 "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition 2009" and interims, with the following clarifications:			
2522.03, E, 1, Wind Velocity. Replace the title and Article: Wind Velocity Speed. Use a design wind velocity (V) of 90 mph basic wind speed (3 second gust) with a 50 year mean recurrence interval for strength design. Fatigue requirements shall be Category I with 2nd second mode vortex shedding included. Use HMLT Category I with yearly mean wind velocity of 11 mph for fatigue design.			
2522.03, E, 4, Anchor Bolts, Washers, and Nuts. Replace the title and Article: Anchor Bolts, Nuts, and Washers, and Nuts.			

- ~~a. Ensure galvanizing for anchor bolts, washers, and nuts meets the requirements of ASTM F 2329 with zinc temperature bath limited to 850°F; or ASTM B 695, Class 55, Type I Coating.~~
- ~~b. Furnish each anchor bolt with one leveling nut, and two one anchoring nuts, and one jam nut on the exposed end and one of the following on the embedded end: nut, nut and plate, or nut and anchor bolt assembly ring plate. Use anchor bolts, nuts, and washers that: meet the requirements of comply with Materials I.M. 453.08. Anchor bolts shall be ASTM F 1554, Grade 105. Meet the following requirements:~~
- a. Anchor Bolts.**
- 1) Use full-length galvanized bolts.
 - 2) Comply with ASTM F 1554, Grade 105, S4 (-20°F).
 - 3) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
 - 4) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
 - 5) Do not bend or weld anchor bolts.
- b. Nuts.**
- 1) Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
 - 2) Use heavy hex.
 - 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
 - 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
 - 5) Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.
- c. Washers.**
Comply with ASTM F 436 Type 1.
- d. Galvanizing.**
Galvanize entire anchor bolt assembly consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F.
Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

2522.03, E, 7, b.

Replace the second two bullets:

- Radiographically inspect ~~100% of the full penetration sections of the longitudinal seam weld at the base plate connection location~~ the full length of all full-penetration sections of longitudinal seam welds on all tower poles, and
- Use the magnetic particle method to inspect ~~a random 10% of the partial penetration section of the longitudinal seam welds.~~ the partial-penetration section of longitudinal seam welds as follows: Inspect a random 25% of all tower poles, inspecting 4 inches in every 4 feet of weld length, starting from the connection end. If there are fewer than four tower poles, at least one pole shall be randomly selected.

4185.02, A, 3.

Replace the third sentence:

~~Ensure the structural design of the light pole is based on the~~ Comply with AASHTO 2013 Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

4185.02, A, 4.

Replace the first sentence:

The assembled lighting unit, consisting of the pole and all attachments including mastarms, luminaires, and breakaway base or slip base, as specified, complete and in place in the footing anchor bolts, is required to withstand ~~windloading equal~~ a wind load corresponding to a 90 mph

basic wind speed (3 second gust) ~~of 80 mph~~ without fracture or apparent deformation of components.

4185.02, B, Anchor Bolt and Slip-Base Plate Fasteners for Lighting Poles.

Replace Articles 2 through 7:

~~2. Furnish anchor bolts that:~~

- ~~• Meet the requirements of ASTM F 1554, Grade 105~~
- ~~• Are full-length galvanized according to ASTM F 2329, and~~
- ~~• Are Unified Coarse Thread Series with Class 2A tolerance.~~

2. Anchor Bolts, Nuts, and Washers.

Furnish each anchor bolt with one leveling nut, one anchoring nut, and one jam nut (if required) on the exposed end and one of the following on the embedded end: nut, nut and plate, or nut and anchor bolt assembly ring plate. Use anchor bolts, nuts, and washers that comply with [Materials I.M. 453.08](#). Meet the following requirements:

a. Anchor Bolts.

- 1) Use straight full-length galvanized bolts.
- 2) Comply with ASTM F 1554, Grade 105, S4 (-20°F).
- 3) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- 4) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- 5) Do not bend or weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process with no mixed processes in a lot of fastener assemblies.

~~3. Color code the end of each anchor bolt intended to project from the concrete in red to identify the grade.~~

~~4 3. If slip bases are furnished, furnish 1 inch by 4 1/2 inch bolts that:~~

- ~~• Are high-strength bolts meeting the requirements of ASTM A 325, and~~
- ~~• Are fully mechanically galvanized to ASTM B 695, Class 55, Type I.~~

~~5 4. Furnish washers that: comply with ASTM F 436 Type 1.~~

- ~~• Meet the requirements of ASTM F 436, and~~
- ~~• Are galvanized~~

~~6 5. Furnish nuts that meet the following requirements:~~

- ~~• Meet the requirements of ASTM A 563,~~
- ~~• Are grade DH,~~

- ~~Are heavy hex, and~~
- ~~Are galvanized according to the requirements of ASTM F 2329, or ASTM B 695, Class 55, Type 1.~~
- Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
- Use heavy hex.
- Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.

6. Galvanizing.

Galvanize hardware according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

- ~~7. Nuts may be over-tapped according to the allowance requirements of ASTM A 563. Nuts may be tapped oversize only enough to provide a finger free fit.~~

4185.02, D, 2.

Replace the Article:

Designed according to AASHTO 2013 Standards and Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

4187.01, C, 3, Anchor Bolts, Nuts, and Washers.

Replace the Article:

~~Meet the following requirements:~~ Furnish each anchor bolt with one leveling nut, one anchoring nut, and one jam nut on the exposed end and one of the following on the embedded end if the anchor bolt is straight: nut, nut and plate, or nut and anchor bolt assembly ring plate. Use anchor bolts, nuts, and washers that comply with [Materials I.M. 453.08](#). Meet the following requirements:

a. Anchor Bolts.

- 1) Use full-length galvanized bolts.
- 2) Comply with either ASTM F 1554, Grade 55, S1; or Grade 105, ~~S5~~ S4 (-20°F).
- 3) Grade 55 anchor bolts may be straight or include a 90 degree bend.
- 4) Grade 105 anchor bolts shall be straight.
- ~~3~~ 5) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- ~~4~~ 6) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- ~~5~~ 7) Do not bend or weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly (~~anchor bolt, nuts and washers~~) consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

4189.05, C, 2.

Replace the second sentence:

Use a 90 mph basic wind speed (3 second gust) with a 50 year mean recurrence interval for strength design.

4189.05, C, 3, Hardware.

Replace the Article:

- ~~a. Equip poles and mast arms with all necessary hardware and anchor bolts to provide for a complete installation without additional parts.~~
- ~~b. Use anchor bolts complying with ASTM F 1554 Grade 105 S5 Class 2A threaded to a minimum of 6 inches at one end and having a 4 inch long, 90 degree bend at the other end.~~
- ~~c. Use washers complying with ASTM F 436 Type 1.~~
- ~~d. Use heavy hex nuts complying with ASTM A 563 Grade DH Class 2B.~~
- ~~e. Ensure all hardware is made of steel and is hot-dipped galvanized according to ASTM F 2329 with a zinc bath temperature limited to 850°F or mechanically galvanized according to ASTM B 695, Class 55, Type 1~~

4189.05, C, Traffic Signal Poles and Mast Arms.

Add the Article:

4. Anchor Bolts, Nuts, and Washers.

Furnish each anchor bolt with one leveling nut, one anchoring nut, and one jam nut (if required) on the exposed end and one of the following on the embedded end: nut, nut and plate, or nut and anchor bolt assembly ring plate. Use anchor bolts, nuts, and washers that comply with [Materials I.M. 453.08](#). Meet the following requirements:

a. Anchor Bolts.

- 1) Use straight full-length galvanized bolts.
- 2) Comply with ASTM F 1554, Grade 105, S4 (-20°F).
- 3) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- 4) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- 5) Do not bend or weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

Comments: Added to Article 2522.03, E, 4, a clarification of wind velocity for fatigue design.
Added an additional ASTM specification to Article 2522.03, E, 4, b and Article 4187.01, C, 3, b.
Removed the allowance to bend anchor bolts from Article 4187.01, C, 3, a, 7.

Clarified the galvanization requirements in Article 4185.02, B, 2, d.

Specification Section Recommended Text:

2423.01, Description.

Replace the second sentence:

Design according to the contract documents and the applicable AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. specifications for highway signs, luminaries, and traffic signals.

2522.03, E, Lighting Tower.

Replace the first sentence:

Ensure the structural design of the tower and its appurtenances meet the requirements of AASHTO 2013 "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, Fifth Edition 2009" and interims, with the following clarifications:

2522.03, E, 1, Wind Velocity.

Replace the title and Article:

Wind Velocity Speed.

Use a design wind velocity (V) of 90 mph basic wind speed (3 second gust) with a 50 year mean recurrence interval for strength design. Fatigue requirements shall be Category I with 2nd second mode vortex shedding included. Use HMLT Category I for fatigue design.

2522.03, E, 4, Anchor Bolts, Washers, and Nuts.

Replace the title and Article:

Anchor Bolts, Nuts, and Washers, and Nuts.

~~a.~~ Ensure galvanizing for anchor bolts, washers, and nuts meets the requirements of ASTM F 2329 with zinc temperature bath limited to 850°F; or ASTM B 695, Class 55, Type I Coating.

~~b.~~ Furnish each anchor bolt with one leveling nut, and two one anchoring nuts, and one jam nut on the exposed end and one of the following on the embedded end: nut, nut and plate, or nut and anchor bolt assembly ring plate. Use anchor bolts, nuts, and washers that ~~meet the requirements of~~ comply with Materials I.M. 453.08. ~~Anchor bolts shall be ASTM F 1554, Grade 105.~~ Meet the following requirements:

a. Anchor Bolts.

- 1) Use full-length galvanized bolts.
- 2) Comply with ASTM F 1554, Grade 105, S4 (-20°F).
- 3) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- 4) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- 5) Do not bend or weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH.
- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM

B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

2522.03, E, 7, b.

Replace the second two bullets:

- Radiographically inspect ~~100% of the full penetration sections of the longitudinal seam weld at the base plate connection location~~ the full length of all full-penetration sections of longitudinal seam welds on all tower poles, and
- Use the magnetic particle method to inspect ~~a random 10% of the partial penetration section of the longitudinal seam welds.~~ the partial-penetration section of longitudinal seam welds as follows: Inspect a random 25% of all tower poles, inspecting 4 inches in every 4 feet of weld length, starting from the connection end. If there are fewer than four tower poles, at least one pole shall be randomly selected.

4185.02, A, 3.

Replace the third sentence:

~~Ensure the structural design of the light pole is based on the~~ Comply with AASHTO 2013 Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

4185.02, A, 4.

Replace the first sentence:

The assembled lighting unit, consisting of the pole and all attachments including mastarms, luminaires, and breakaway base or slip base, as specified, complete and in place in the footing anchor bolts, is required to withstand ~~wind loading equal~~ a wind load corresponding to a 90 mph basic wind speed (3 second gust) ~~of 80 mph~~ without fracture or apparent deformation of components.

4185.02, B, Anchor Bolt and Slip-Base Plate Fasteners for Lighting Poles.

Replace Articles 2 through 7:

~~2. Furnish anchor bolts that:~~

- ~~Meet the requirements of ASTM F 1554, Grade 105~~
- ~~Are full-length galvanized according to ASTM F 2329, and~~
- ~~Are Unified Coarse Thread Series with Class 2A tolerance.~~

2. Anchor Bolts, Nuts, and Washers.

Furnish each anchor bolt with one leveling nut, one anchoring nut, and one jam nut (if required) on the exposed end and one of the following on the embedded end: nut, nut and plate, or nut and anchor bolt assembly ring plate. Use anchor bolts, nuts, and washers that comply with [Materials I.M. 453.08](#). Meet the following requirements:

a. Anchor Bolts.

- 1) Use straight full-length galvanized bolts.
- 2) Comply with ASTM F 1554, Grade 105, S4 (-20°F).
- 3) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- 4) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- 5) Do not bend or weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.

- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process.

~~3. Color code the end of each anchor bolt intended to project from the concrete in red to identify the grade.~~

~~4 3. If slip bases are furnished, furnish 1 inch by 4 1/2 inch bolts that:~~

- ~~• Are high-strength bolts meeting the requirements of ASTM A 325, and~~
- ~~• Are fully mechanically galvanized to ASTM B 695, Class 55, Type I.~~

~~5 4. Furnish washers that: comply with ASTM F 436 Type 1.~~

- ~~• Meet the requirements of ASTM F 436, and~~
- ~~• Are galvanized~~

~~6 5. Furnish nuts that meet the following requirements:~~

- ~~• Meet the requirements of ASTM A 563,~~
- ~~• Are grade DH,~~
- ~~• Are heavy hex, and~~
- ~~• Are galvanized according to the requirements of ASTM F 2329, or ASTM B 695, Class 55, Type I.~~
- Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
- Use heavy hex.
- Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.

6. Galvanizing.

Galvanize hardware according to the requirements of ADTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

~~7. Nuts may be over-tapped according to the allowance requirements of ASTM A 563. Nuts may be tapped oversize only enough to provide a finger free fit.~~

4185.02, D, 2.

Replace the Article:

Designed according to AASHTO 2013 Standards and Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

4187.01, C, 3, Anchor Bolts, Nuts, and Washers.

Replace the Article:

~~Meet the following requirements:~~ Furnish each anchor bolt with one leveling nut, one anchoring nut, and one jam nut on the exposed end and one of the following on the embedded end if the anchor bolt is straight: nut, nut and plate, or nut and anchor bolt assembly ring plate. Use anchor bolts, nuts, and washers that comply with [Materials I.M. 453.08](#). Meet the following requirements:

a. Anchor Bolts.

- 1) Use full-length galvanized bolts.
- 2) Comply with either ASTM F 1554, Grade 55, S1; or Grade 105, S5 S4 (-20°F).
- 3) Grade 55 anchor bolts may be straight or include a 90 degree bend.
- 4) Grade 105 anchor bolts shall be straight.
- 3 5) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- 4 6) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- 5 7) Do not bend or weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH.
- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly (~~anchor bolt, nuts and washers~~) consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

4189.05, C, 2.

Replace the second sentence:

Use a 90 mph basic wind speed (3 second gust) with a 50 year mean recurrence interval for strength design.

4189.05, C, 3, Hardware.

Replace the Article:

- ~~a. Equip poles and mast arms with all necessary hardware and anchor bolts to provide for a complete installation without additional parts.~~
- ~~b. Use anchor bolts complying with ASTM F 1554 Grade 105 S5 Class 2A threaded to a minimum of 6 inches at one end and having a 4 inch long, 90 degree bend at the other end.~~
- ~~c. Use washers complying with ASTM F 436 Type 1.~~
- ~~d. Use heavy hex nuts complying with ASTM A 563 Grade DH Class 2B.~~
- ~~e. Ensure all hardware is made of steel and is hot dipped galvanized according to ASTM F 2329 with a zinc bath temperature limited to 850°F or mechanically galvanized according to ASTM B 695, Class 55, Type 1~~

4189.05, C, Traffic Signal Poles and Mast Arms.

Add the Article:

4. Anchor Bolts, Nuts, and Washers.

Furnish each anchor bolt with one leveling nut, one anchoring nut, and one jam nut (if required) on the exposed end and one of the following on the embedded end: nut, nut and

plate, or nut and anchor bolt assembly ring plate. Use anchor bolts, nuts, and washers that comply with [Materials I.M. 453.08](#). Meet the following requirements:

a. Anchor Bolts.

- 1) Use straight full-length galvanized bolts.
- 2) Comply with ASTM F 1554, Grade 105, S4 (-20°F).
- 3) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- 4) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- 5) Do not bend or weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

Comments:

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

Section 2423. Support Structures for Highway Signs, Luminaires, and Traffic Signals

2423.01 DESCRIPTION.

Fabricate, furnish, and erect support structures for highway signs, luminaires, and traffic signals. Design according to the contract documents and the applicable AASHTO ~~Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.~~ specifications for highway signs, luminaries, and traffic signals.

Section 2522. Tower Lighting

...

2522.03 CONSTRUCTION.

...

E. Lighting Tower.

Ensure the structural design of the tower and its appurtenances meet the requirements of AASHTO 2013 "Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals, ~~Fifth Edition 2009~~" and ~~interims~~, with the following clarifications:

1. Wind ~~Velocity~~ Speed.

Use a ~~design wind velocity~~ 90 mph basic wind speed (3-second gust) (~~V~~) of 90 mph with a 50-year mean recurrence interval for strength design. ~~Fatigue requirements shall be Category I with 2nd second mode vortex shedding included~~ Use HMLT Category I for fatigue design.

...

4. Anchor Bolts, Washers, and Nuts.

- a. Ensure galvanizing for anchor bolts, washers, and nuts meets the requirements of ASTM F 2329 with zinc temperature bath limited to 850°F; or ASTM B 695, Class 55, Type I Coating.
- b. Furnish each anchor bolt with one leveling nut and two anchoring nuts. Use anchor bolts, nuts, and washers that meet the requirements of [Materials I.M. 453.08](#). Anchor bolts shall be ASTM F 1554, Grade 105.

4. Anchor Bolts, Nuts, and Washers.

Furnish each anchor bolt with one leveling nut, one anchoring nut and one jam nut on the exposed end and one of the following on the embedded end: nut, nut and plate, or nut and anchor assembly ring plate. Use anchor bolts, nuts, and washers that comply with [Materials I.M. 453.08](#). Meet the following requirements:

a. Anchor Bolts.

- 1) Use straight full-length galvanized bolts.
- 2) Comply with ASTM F 1554, Grade 105, S4 (-20°F).
- 3) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- 4) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- 5) Do not bend or weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) Refer to [Articles 2522.03, H, 2, b through h](#) for tightening procedure and requirements.

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

...

7. Longitudinal Seam Welds.

...

b. Inspection:

- Visually inspect all welds,
- Radiographically inspect 400% of the full penetration sections of the longitudinal seam weld at the base plate connection location the full length of all full-penetration sections of longitudinal seam welds on all tower poles, and
- Use the magnetic particle method to inspect a random 10% of the partial penetration section of the longitudinal seam welds, the partial-penetration section of longitudinal seam welds as follows: Inspect a random 25 percent of all tower poles, inspecting 4 inches in every 4 feet of weld length, starting from the connection end. If there are fewer than four tower poles, at least one pole shall be randomly selected.

Section 4185. Highway Lighting Materials

...

4185.02 POLES AND SUPPORTS.

A. General.

...

- 3. Dimensions and other details will be shown in the contract documents. Furnish poles and mastarms meeting the mounting height and mastarm length shown in the contract documents. ~~Ensure the~~

structural design of the light pole is based on the Comply with AASHTO 2013 Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

4. The assembled lighting unit, consisting of the pole and all attachments including mastarms, luminaires, and breakaway base or slip base, as specified, complete and in place in the footing anchor bolts, is required to withstand windloading equal a wind load corresponding to a 90 mph basic wind speed (3-second gust) of 80 mph without fracture or apparent deformation of components. Furnish poles in one section. Ensure each standard is designed for a luminaire dead load of 75 pounds and a projected area of 1.5 square feet, except that in the case of twin mastarms, these values are applied to each mastarm.

...

B. Anchor Bolt and Slip-Base Plate Fasteners for Lighting Poles.

...

2. Furnish anchor bolts that:

- Meet the requirements of ASTM F 1554, Grade 105
- Are full length galvanized according to ASTM F 2329, and
- Are Unified Coarse Thread Series with Class 2A tolerance.

2. Anchor Bolts, Nuts, and Washers.

Furnish each anchor bolt with one leveling nut, one anchoring nut and one jam nut (if required) on the exposed end and one of the following on the embedded end: nut, nut and plate, or nut and anchor assembly ring plate. Use anchor bolts, nuts, and washers that comply with [Materials I.M. 453.08](#). Meet the following requirements:

a. Anchor Bolts.

- 1) Use straight full-length galvanized bolts.
- 2) Comply with ASTM F 1554, Grade 105, S4 (-20°F).
- 3) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- 4) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- 5) Do not bend or weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) Refer to [Articles 2522.03, H, 2, b](#) through h for tightening procedure and requirements.

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process.

3. Color code the end of each anchor bolt intended to project from the concrete in red to identify the grade.

- 3 4. If slip bases are furnished, furnish 1 inch by 4 1/2 inch bolts that:

- Are high-strength bolts meeting the requirements of ASTM A 325, and
- Are fully mechanically galvanized to ASTM B 695, Class 55, Type 1.

45. Furnish washers that:

- Meet the requirements of ASTM F 436, and
- Are galvanized

• Comply with ASTM F 436 Type 1

•

•

56. Furnish nuts that:

- Meet the requirements of ASTM A 563,
- Are grade DH,

- ~~Are heavy hex, and~~
- ~~Are galvanized according to the requirements of ASTM F 2329, or ASTM B 695, Class 55, Type 1.~~
- ~~Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H~~
- ~~Use heavy hex~~
- ~~Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.~~
- ~~Nuts may be over-tapped according to the allowance requirements of ASTM A 563~~
- ~~Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.~~

~~7. Nuts may be over-tapped according to the allowance requirements of ASTM A 563. Nuts may be tapped oversize only enough to provide a finger free fit.~~

6. Galvanizing.

Galvanize hardware according to the requirements of ADTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850 F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

...

D. Breakaway (Transformer) Base.

Furnish bases meeting the following requirements:

...

2. Designed according to AASHTO 2013 Standards and Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals.

Section 4187. Materials for Sign Support Structures

4187.01 GENERAL REQUIREMENTS.

Furnish materials for aluminum alloy or galvanized steel sign support structures meeting the following requirements:

...

C. Fasteners for Aluminum Alloy and Galvanized Steel Superstructures and Anchor Bolts.

...

~~3. Anchor Bolts, Nuts, and Washers.~~

~~Meet the following requirements:~~

~~a. Anchor Bolts.~~

- ~~1) Use full-length galvanized bolts.~~
- ~~2) Comply with either ASTM F 1554, Grade 55, S1; or Grade 105, S5.~~
- ~~3) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.~~
- ~~4) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.~~
- ~~5) Do not bend or weld anchor bolts.~~

~~b. Nuts.~~

- ~~1) Comply with ASTM A 563, Grade DH.~~
- ~~2) Use heavy hex.~~
- ~~3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.~~
- ~~4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.~~
- ~~5) Refer to Articles 2522.03, H, 2, b through h for tightening procedure and requirements.~~

~~c. Washers.~~

~~Comply with ASTM F 436 Type 1.~~

~~d. Galvanizing.~~

~~Galvanize entire anchor bolt assembly (anchor bolt, nuts and washers) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.~~

3. Anchor Bolts, Nuts, and Washers.

Furnish each anchor bolt with one leveling nut, one anchoring nut and one jam nut on the exposed end and one of the following on the embedded end: nut, nut and plate, or nut and anchor assembly ring plate. Use anchor bolts, nuts, and washers that comply with [Materials I.M. 453.08](#). Meet the following requirements:

a. Anchor Bolts.

- 1) Use full-length galvanized bolts.
- 2) Comply with ASTM F 1554, Grade 55, S1 or ASTM F 1554, Grade 105, S4 (-20°F).
- 3) **Grade 55 anchor bolts may be straight or include a 90 degree bend.**
- 4) **Grade 105 anchor bolts must be straight.**
- 5) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- 6) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- 7) Do not weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) **Refer to [Articles 2522.03, H, 2, b](#) through h for tightening procedure and requirements.**

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies

Section 4189. Traffic Signal Equipment

...

4189.05 POLES, HEADS, AND SIGNS.

C. Traffic Signal Poles and Mast Arms.

...

2. Pole Design.

Comply with AASHTO 2013 Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals. Use a 90 mph basic wind speed (3-second gust) with a 50-year mean recurrence interval for strength design. Use Category II for fatigue design. Apply only natural wind gust loads (i.e., do not apply galloping loads, vortex shedding loads, or truck-induced gust loads) for fatigue design. Install vibration mitigation devices on all traffic signal pole mast arms over 60 feet in length as shown in the standard details.

...

3. Hardware.

- a. Equip poles and mast arms with all necessary hardware and anchor bolts to provide for a complete installation without additional parts.
- ~~b. Use anchor bolts complying with ASTM F 1554 Grade 105 S5 Class 2A threaded to a minimum of 6 inches at one end and having a 4 inch long, 90 degree bend at the other end.~~
- ~~c. Use washers complying with ASTM F 436 Type 1.~~
- ~~d. Use heavy hex nuts complying with ASTM A 563 Grade DH Class 2B.~~
 - e. ~~Ensure all hardware is made of steel and is hot-dipped galvanized according to ASTM F 2329 with a zinc bath temperature limited to 850°F or mechanically galvanized according to ASTM B 695, Class 55, Type 1~~

4. Anchor Bolts, Nuts, and Washers.

Furnish each anchor bolt with one leveling nut, one anchoring nut and one jam nut (if required) on the exposed end and one of the following on the embedded end: nut, nut and plate, or nut and anchor assembly ring plate. Use anchor bolts, nuts, and washers that comply with [Materials I.M. 453.08](#). Meet the following requirements:

a. Anchor Bolts.

- 1) Use straight full-length galvanized bolts.
- 2) Comply with ASTM F 1554, Grade 105, S4 (-20°F).
- 3) Threads are to comply with ANSI/ASME B1.1 for UNC thread series, Class 2A tolerance.
- 4) The end of each anchor bolt intended to project from the concrete is to be color coded to identify the grade.
- 5) Do not bend or weld anchor bolts.

b. Nuts.

- 1) Comply with ASTM A 563, Grade DH or ASTM A 194, Grade 2H.
- 2) Use heavy hex.
- 3) Use ANSI/ASME B1.1 for UNC thread series, Class 2B tolerance.
- 4) Nuts may be over-tapped according to the allowance requirements of ASTM A 563.
- 5) Refer to [Articles 2522.03, H, 2, b](#) through h for tightening procedure and requirements.

c. Washers.

Comply with ASTM F 436 Type 1.

d. Galvanizing.

Galvanize entire anchor bolt assembly consisting of anchor bolts, nuts, and washers (and plates or anchor bolt assembly ring plate, if used) according to the requirements of ASTM B 695, Class 55 Type 1 or ASTM F 2329 with zinc bath temperature limited to 850°F. Galvanize entire assembly by the same zinc-coating process, with no mixed processes in a lot of fastener assemblies.

Reasons for Revisions: High-mast lighting towers, light poles and traffic signal poles are to comply with the AASHTO *Standard Specifications for Structural Supports for Highway Signs, Luminaires, and Traffic Signals*, Sixth Edition, 2013 (AASHTO LTS-6).

Different sign truss standards currently comply with different AASHTO specifications—e.g., steel overhead sign truss standards comply with AASHTO LTS-5 (2009), steel cantilever sign truss standards comply with AASHTO LRFD LTS-1 (2015), and roadside dynamic message sign support standards comply with AASHTO LTS-5 (2009).

AASHTO LTS-6 (2013) does not include a separate vortex shedding wind load for high-mast lighting towers because it is incorporated in a combined wind pressure range used for fatigue design.

Anchor bolt, nut, and washer information in Article 2522.03, E, 4 updated to same format as Article 4187.01, C, 3.

Longitudinal seam weld inspection information in Article 2522.03, E, 7 updated to conform to AASHTO LTS-6.

ASTM F 1554 Supplementary Requirement S5 (Charpy impact testing) has been incorporated into Supplementary Requirement S4.

Hooked anchor bolts are not permitted by AASHTO LTS-6 (2013) for ASTM F 1554 Grade 105 steel.

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 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Neal Fobian		Office: Construction & Materials	Item 7
Submittal Date: 04/17/2017		Proposed Effective Date: October 2017	
Article No.: 2433.05, A Title: Concrete Drilled Shaft		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text: 2433.05, A, 2. Replace the fifth bullet: CSL pipe and testing, investigation and remediation of shafts with defects or poor quality concrete (as defined by Publication No. FHWA-NHI-10-016 Drilled Shaft Manual) identified by CSL tests, shaft inspection, and			
Comments:			
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and Highlight .) Add items covered by the Basis of Payment to Article 2433.05.A.2			
2. Payment is full compensation for all equipment, labor, and materials (except reinforcing steel) necessary to satisfactorily construct the shafts including: <ul style="list-style-type: none"> • Drilling and excavation of shaft and possible rock socket, • Casing, • Installation and removal of temporary casing, • Furnishing and placing concrete, • CSL pipe and testing, investigation and remediation of shafts with defects or poor quality concrete (as defined by Publication No. FHWA-NHI-10-016 Drilled Shaft Manual) identified by CSL tests, shaft inspection, and • Disposal of excavated materials and water, and all other materials. 			
Reason for Revision: Recently there have been some request for contract modifications and questions asked during the bidding process concerning the contractor getting extra payment for additional testing and work to remediate failed CSL test results. This change is to clarify that the contractor will not receive additional payment for this work.			
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 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Neal Fobian		Office: Construction & Materials	Item 8
Submittal Date: 04/17/2017		Proposed Effective Date: October 2017	
Article No.: 2501.05, E Title: Pile Cut-offs		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text: 2501.05, E, 1. Replace the Article: Pile cut-offs not used as extensions on the same contract become the property of the Contractor. Steel pile cut-offs used as extensions on the same contract will not be paid for as additional plan quantity.			
Comments:			
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and Highlight.)			
Remove highlighted strikeout words in two sentences in Article 2501.05.E.1			
E. Pile Cut-Offs.			
1. Pile cut-offs not used as extensions on the same contract become the property of the Contractor. Steel pile cut-offs used as extensions on the same contract will not be paid for as additional plan quantity.			
2. All piles, or portions thereof, which become the property of the Contractor shall be removed from the project site by the Contractor.			
Reason for Revision: To clarify specification language that pile cut-offs incorporated into the structure, whether as extensions or to make original plan length, will not be paid for as additional plan quantity.			
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:			

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Melissa Serio		Office: Construction & Materials	Item 9
Submittal Date: April 20, 2017		Proposed Effective Date: October 2017 GS	
Article No.: 2502.02 Title: Materials (Subdrains)		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text: 2502.02, Materials Add the following Article: E. Prefabricated Pavement Edge Drain (Fin Drain). 1. Core. Comply with the following requirements: <ul style="list-style-type: none"> • Minimum compressive strength of 40 psi according to ASTM D 1621. • Minimum flow rate of 15 gallons per minute per foot when measured under a gradient of 0.1 at a minimum compressive stress of 10 psi according to ASTM D 4716. 2. Engineering Fabric. Meet the requirements of Article 4196.01, B, 2. 3. Inspection and acceptance will be according to Materials I.M. 442.			
Comments:			
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and Highlight.)			
2502.02, Materials Add the following Article: E. Prefabricated Pavement Edge Drain (Fin Drain) 1. Core: Comply with the following requirements: <ul style="list-style-type: none"> • Minimum compressive strength of 40 psi according to ASTM D 1621. • Minimum flow rate of 15 gallons per minute per foot when measured under a gradient of 0.1 at a minimum compressive stress of 10 psi according to ASTM D 4716. 2. Engineering Fabric: Meet the requirements of 4196.01, B, 2. 3. Inspection and acceptance will be according to Materials I.M. 442.			
Reason for Revision: Move material requirements from Materials IM 442 into the 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: No changes		
County or City Comments:		
Industry Comments:		

Form 510130 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Mark Bortle	Office: Construction & Materials	Item 10
Submittal Date: April 7, 2017	Proposed Effective Date: October 2017 GS	
Article No.: 2528.01, C Title: Traffic Quality Control	Other:	

Specification Committee Action: Deferred to a future meeting.

Deferred: X	Not Approved:	Approved Date:	Effective Date:
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Specification Committee Approved Text:

Comments: Defer item due to concerns expressed by the AGC and possible rewording of specification language to reinforce intent. It is desired to discuss again at the Specification Committee late summer with implantation with the April 2018 GS. The Specifications Section and Office of Construction and Materials will work to resolve the concerns being addressed by the AGC.

Specification Section Recommended Text:

2528.01, C, Traffic Quality Control.

Replace the Article:

1. Until January 1, 2019, maintain a Traffic Control Technician on staff, even though the traffic control portion of the contract may be subcontracted. Beginning January 1, 2019, provide a Traffic Control Technician on the project site any time work is being accomplished. The Traffic Control Technician is required to have attended and passed the exam in an ATSSA Traffic Control Technician, IMSA Work Zone Traffic Control, Minnesota DOT Traffic Control Supervisor training class, or Texas Engineering Extension Service Work Zone Traffic Control training class. This Traffic Control Technician is responsible for overall management of the Contractor's quality control program for traffic control. Starting on January 1, 2019 the Traffic Control Technician shall retake and pass the exam in one of the approved classes every 5 years.
2. On a daily basis as the project is constructed, perform the following quality control work associated with monitoring and documenting traffic control conditions (beginning January 1, 2019, this shall be completed by the Traffic Control Technician):
 - a. Review all traffic control operations for compliance with contract documents and maintain a project traffic control daily diary in a format provided by the Contracting Authority. Submit this diary to the Engineer. It will become a part of the Contracting Authority's permanent project records. The Engineer may require submission of completed portions of the daily diary at routine intervals during construction of the project. In the diary include:
 - Listing and station location of traffic control used each day referenced to the appropriate Standard Road Plan, project plan sheet, etc.,
 - All reviews of traffic control devices and operations, whether satisfactory or unsatisfactory, and corrections made,
 - Approved changes to the contract document's traffic control,
 - Incidentals affecting the efficiency and safety of traffic, and
 - A daily list of trained flaggers used, including hours worked.
 - b. Monitor traffic and traffic control operations and submit proposed Traffic Control Plan changes to the Engineer for approval.

- c. Coordinate all changes to the Traffic Control Plan.
 - d. Coordinate all traffic control operations, including those of subcontractors and suppliers.
3. After January 1, 2019, on a daily basis as the project is constructed, the Traffic Control Technician shall perform the following work:
- a. Review traffic control operations for compliance with contract documents and maintain project traffic control daily diary in a format provided by the Contracting Authority. Submit diary to the Engineer. It will become a part of the Contracting Authority's permanent project records. The Engineer may require submission of completed portions of the daily diary at routine intervals during construction of the project. In the diary include:
 - Listing and station location of traffic control used each day referenced to the appropriate Standard Road Plan, project plan sheet, etc.,
 - Reviews of traffic control devices and operations, whether satisfactory or unsatisfactory, and corrections made,
 - Approved changes to the traffic control,
 - Incidentals affecting efficiency and safety of traffic, and
 - A daily list of trained flaggers used, including hours worked.
 - b. Monitor traffic and traffic control operations and submit proposed Traffic Control Plan changes to the Engineer for approval.
 - c. Coordinate changes to the Traffic Control Plan.
 - d. Coordinate traffic control operations, including those of subcontractors and suppliers.

Comments:

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

2528.01.C. Traffic Quality Control.

- 1. Until January 1, 2019, maintain ~~Maintain~~ a Traffic Control Technician on staff, even though the traffic control portion of the contract may be subcontracted. After January 1, 2019, a Traffic Control Technician shall be on project site any time work is being accomplished. The Traffic Control Technician is required to have attended and passed the exam in an ATSSA Traffic Control Technician, IMSA Work Zone Traffic Control, Minnesota DOT Traffic Control Supervisor training class, or Texas Engineering Extension Service Work Zone Traffic Control training class. This Traffic Control Technician is responsible for overall management of the Contractor's quality control program for traffic control. Starting on January 1, 2019 the Traffic Control Technician shall retake and pass the exam in one of the approved classes every five (5) years.
- 2. Until January 1, 2019, on ~~On~~ a daily basis as the project is constructed, perform the following quality control work associated with monitoring and documenting traffic control conditions:
 - a. Review all traffic control operations for compliance with contract documents and maintain a project traffic control daily diary in a format provided by the Contracting Authority. Submit this diary to the Engineer. It will become a part of the Contracting Authority's permanent project records. The Engineer may require submission of completed portions of the daily diary at routine intervals during construction of the project. In the diary include:
 - Listing and station location of traffic control used each day referenced to the appropriate Standard Road Plan, project plan sheet, etc.,
 - All reviews of traffic control devices and operations, whether satisfactory or unsatisfactory, and corrections made,
 - Approved changes to the contract document's traffic control,
 - Incidentals affecting the efficiency and safety of traffic, and
 - A daily list of trained flaggers used, including hours worked.
 - b. Monitor traffic and traffic control operations and submit proposed Traffic Control Plan changes to the Engineer for approval.
 - c. Coordinate all changes to the Traffic Control Plan.
 - d. Coordinate all traffic control operations, including those of subcontractors and suppliers.

3. After January 1, 2019, on a daily basis as the project is constructed, the Traffic Control Technician shall perform the following quality control work associated with monitoring and documenting traffic control conditions:
- a. Review all traffic control operations for compliance with contract documents and maintain a project traffic control daily diary in a format provided by the Contracting Authority. Submit this diary to the Engineer. It will become a part of the Contracting Authority's permanent project records. The Engineer may require submission of completed portions of the daily diary at routine intervals during construction of the project. In the diary include:
 - Listing and station location of traffic control used each day referenced to the appropriate Standard Road Plan, project plan sheet, etc.,
 - All reviews of traffic control devices and operations, whether satisfactory or unsatisfactory, and corrections made,
 - Approved changes to the contract document's traffic control,
 - Incidentals affecting the efficiency and safety of traffic, and
 - A daily list of trained flaggers used, including hours worked.
 - b. Monitor traffic and traffic control operations and submit proposed Traffic Control Plan changes to the Engineer for approval.
 - c. Coordinate all changes to the Traffic Control Plan.
 - d. Coordinate all traffic control operations, including those of subcontractors and suppliers.

Reason for Revision: The revision requires a trained Traffic Control Technician (TCT) to be on the project any time work is being accomplished and to personally perform the required functions listed in the specification. This revision also requires the TCT to renew their training every five (5) years which is similar to other Department training requirements.

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: See attached AGC comments.

MEMBER COMMENTS

Ron just wondering why this training can't be offered through the DOT just like other requirements such as Aggregate Testing and Erosion Control.

Jesse

It's a pretty big deal. What problem are they trying to solve?

We would need to get all of our superintendents trained. Not too big of a deal, but what if they're at the hardware store, are we out of compliance?

You need to ask all the subs like guardrail, erosion control, etc. that might be working on a bridge repair job when we're not there. They would need to have someone trained.

How is the DOT going to enforce it? We currently send in proof of training of someone in the company. We won't have proof of subs' training.

I agree with Roberts points on this. What problem is the DOT trying to solve?

Seems they are creating one with this specification revision.

We agree with Robert, this is a big deal. Adding another layer of administration/personnel/cost to projects that will have to be passed along to the taxpayers. Sort of sounds like a union-backed position of job creation. We do not agree with this revision and recommend that it not be approved.

Huge deal Ron.

* General Contractor's would about have to hire a person for every project they have. How else could you rely on the multitude of sub-contractors many projects have to perform this as per specs?

* I am un-aware of any contractor that has such a surplus of reliable employees that they have one to babysit projects, one per project. How many projects are ongoing in the state at any given time that are bid as per IDOT specs? State, County & City? The number of "trucks" sitting idle in the industry, right now today, is staggering, the only reason is that we cannot find qualified people, licensed and insurable to drive them. This position may require someone with a little more "knowledge" than an "average" truck driver.

* Company vehicle (at least subsidized/funded), unknown hours, who relieves the person when they have to leave the project for breaks? It is a full time job when the weather is nice and work is being performed, during bad weather and periods of inactivity, this site specific, trained person, still has bills to pay, the cost will be ongoing. These costs (if we can find the people to staff them) could easily be in excess of \$1,000 / day / shift.

* If this position can even be "staffed", it sure as hell **should not be incidental to any item**, it is "project monitoring".

* Like every other specification, including TQC as it is now, every inspector, every RCE office, every district in the state holds every contractor accountable in different ways from reasonable to

ridiculous. Contractors already bid work differently depending on what district the work is in, this is just going to "price more contractors out of competitiveness".

* The insurance companies need to be aware of these changes. I am pretty sure the rates will not decrease. We already have to hold the IDOT harmless for anything unless they are 100% solely at fault. Short of an IDOT employee committing murder, off the project and out of sight of any contractor, they are un-accountable for their actions already. Why do we have to take responsibility, for every stupid thing, everyone who drives a car does?

Agree with Craig 100%

From a bridge contractor perspective, subcontractors such as seeders and guardrail guys are not likely to be able to comply with the TCT requirement. I also don't understand what this accomplishes that the current TCT requirements do not.

This is pretty tough. Can they tell us what the problem is and maybe we can figure out a different way to solve it? I've read the other comments and someone thought it should be a bid item but I'm not sure this can be accomplished at any (practical) price.

Ron, this really needs more thought or explanation by the DOT. Doesn't make any sense? I would like to know what is not working with the current specification they forced on us the first time.

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Kevin Merryman		Office: Construction and Materials	Item 11
Submittal Date: March 9, 2017		Proposed Effective Date: October 2017	
Article No.: 2529.03, G, 3 Title: Placing Full Depth Portland Cement Concrete Finish Patches		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text: 2529.03, G, 3. Replace the fourth sentence: Cover the blanket-type cover completely with insulation board having the following properties: cellulosic fiber sheathing with a minimum nominal 3/4 inch thickness.			
Comments:			
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and Highlight .)			
G. Placing Full Depth Portland Cement Concrete Finish Patches.			
3. After the concrete has been finished and surface water has disappeared, cure the concrete. Place curing materials no later than 20 minutes after completing finishing operations. Cure concrete by completely covering it with an insulating blanket-type cover consisting of a layer of closed cell polystyrene foam protected by at least one layer of plastic film, rated by the manufacturer with a minimum R-value of 0.5. Cover the blanket-type cover completely with insulation board having the following properties: cellulosic fiber sheathing with a minimum nominal 3/4 inch thickness. The board may be wrapped with plastic film to protect it from rain. Place the board over the patch and adjacent surface and hold it tightly in place with weights to retain all possible heat in the concrete.			
Reason for Revision: Industry has stated that 3/4" cellulosic sheathing is no longer being manufactured. Changing to a minimum thickness allows thicker sheathing to be used.			
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:			

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Melissa Serio		Office: Construction & Materials	Item 12
Submittal Date: April 20, 2017		Proposed Effective Date: October 2017 GS	
Article No.: 2602.03, A Title: Water Pollution Control (Soil Erosion), Construction		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text: 2602.03, A.			
<p>Replace the Article: For projects regulated by a NPDES storm water permit, Pprior to the preconstruction conference furnish the Engineer an initial ECIP for accomplishment of temporary and permanent erosion and sediment control.</p> <p>In the ECIP, include stages for erosion and sediment control work to address Contractor's timetable and sequence for major activities or stages on the contract. including ECIP stages shall consider as a minimum:</p> <ul style="list-style-type: none"> • Initial controls required prior to land disturbing activities, • Intended timetable and sequence of major land disturbing activities, • Number of earthwork balances for the contract, Construction staging to limit disturbed areas, • Sensitive areas requiring special consideration, • Anticipated suspension of work and stabilization of disturbed areas, • Compliance with Pollution Prevention Plan (PPP), and • Method of erosion control on haul roads. and borrow pits, and • Removal of excess materials from project. 			
Comments:			
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use Strikeout and Highlight.)			
2602.03, A.			
Replace the Article:			
2602.03 CONSTRUCTION.			
<p>A. For projects regulated by a NPDES storm water permit, Pprior to the preconstruction conference furnish the Engineer an initial ECIP for accomplishment of temporary and permanent erosion and sediment control.</p> <p>In the ECIP, include stages for erosion and sediment control work to address Contractor's timetable and sequence for major activities or stages on the contract. ECIP stages shall consider at a minimum including:</p> <ul style="list-style-type: none"> • Initial controls required prior to land disturbing activities, • Intended timetable and sequence of major land disturbing activities, • Number of earthwork balances for the contract, Construction staging to limit disturbed areas, • Sensitive areas requiring special consideration, 			

<ul style="list-style-type: none"> • Anticipated suspension of work and stabilization of disturbed areas, • Compliance with Pollution Prevention Plan (PPP), and • Method of erosion control on haul roads, and borrow pits, and • Removal of excess materials from project. 		
<p>Reason for Revision: To require ECIPs only on projects that are regulated by a storm water permit and update list of items that shall be considered when developing ECIP.</p>		
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: No changes		
County or City Comments:		
Industry Comments:		

Form 510130 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Curtis Carter	Office: Construction & Materials	Item 13
Submittal Date: April 7, 2017		Proposed Effective Date: October 2017 GS
Article No.: 4152.02		Other:
Title: Structural Steel		

Specification Committee Action: Approved as recommended.

Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
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Specification Committee Approved Text: See Specification Section Recommended Text.

Comments:

Specification Section Recommended Text:

4152.02, Structural Steel.

Renumber and Replace Article C and **Add** the Article:

C. For members designated in the contract documents as Fracture Critical, apply Charpy V-notch toughness requirements of Table 4152.02-2. Ensure members are sampled and tested according to AASHTO T 243 (ASTM A 673).

D. The contract documents may also designate other members to which toughness requirements apply.

Replace Table 4152.02-1:

Table 4152.02-1: Non-Fracture Critical Impact Test Requirements

Grade	Thickness (in.)	Minimum Average Energy, ft.lbf. at °F
36T ^(a)	to 4, incl.	15 at 40
50T ^(a, b) , 50WT ^(a, b)	to 2, incl. over 2 to 4, incl.	15 at 40 20 at 40
HPS 50WT ^(a, b)	to 4, incl.	20 at 10
HPS 70WT ^(c, d)	to 4, incl.	25 at -10
HPS 100WT ^(c)	to 2 1/2, incl. over 2 1/2 to 4, incl.	25 at -30 35 at -30

(a) CVN-impact testing shall be at "H" heat frequency testing according to in accordance with ASTM A 673.

(b) If the yield point of the material structural product exceeds 65 ksi, reduce the testing temperature for the minimum average energy required shall be reduced by 15°F for each increment or fraction of 10 ksi above 65 ksi. The yield point is the value given on the certified "Mill Test Report".

(c) CVN-impact testing shall be at "P" plate frequency testing according to in accordance with ASTM A 673.

(d) If the yield strength of the structural product exceeds 85 ksi, the testing temperature for the minimum average energy required shall be reduced by 15°F for each increment or fraction of 10 ksi above 85 ksi. The yield strength is the value given in on the certified "Mill Test Report".

Add Table 4152.02-2:

Table 4152.02-2: Fracture Critical Impact Test Requirements

Grade	Thickness (in.)	Minimum Test Value Energy, ft.lbf.	Minimum Average Energy, ft.lbf. at °F
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36F ^(a)	to 4, incl.	20	25 at 40
50F ^(a, b) , 50WF ^(a, b)	to 2, incl. over 2 to 4, incl.	20 24	25 at 40 30 at 40
HPS 50WF ^(a, b)	to 4, incl.	24	30 at 10
HPS 70WF ^(a, c)	to 4, incl.	28	35 at -10
HPS 100WF ^(a)	to 2 1/2, incl. over 2 1/2 to 4, incl.	28 Not Applicable	35 at -30 Not Permitted
<p>(a) CVN-impact testing shall be at "P" frequency in accordance with ASTM A 673 except for plates, for which the sampling shall be as follows:</p> <p>(1) As-rolled (including control-rolled and TMCP) plates shall be sampled at each end of each plate-as-rolled.</p> <p>(2) Normalized plates shall be sampled at one end of each plate, as heat treated.</p> <p>(3) Quenched and tempered plates shall be sampled at each end of each plate, as heat treated.</p> <p>(b) If the yield point of the structural product exceeds 65 ksi, the testing temperature for the minimum average energy and minimum test value energy required shall be reduced by 15°F for each increment or fraction of 10 ksi above 65 ksi. The yield point is the value given on the certified "Mill Test Report".</p> <p>(c) If the yield strength of the structural product exceeds 85 ksi, the testing temperature for the minimum average energy and minimum test value energy required shall be reduced by 15°F for each increment or fraction of 10 ksi above 85 ksi. The yield strength is the value given on the certified "Mill Test Report".</p>			

Comments:

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

4152.02 STRUCTURAL STEEL.

- A.** Use the type and quality designated in the contract documents. When not specifically designated, use structural carbon steel meeting the requirements of ASTM A 709 Grade 36. Miscellaneous items not commonly rolled from steel meeting these requirements may be furnished in other grades of steel with the Engineer's approval.
- B.** Unless noted otherwise, apply Charpy V-notch toughness requirements of Table 4152.02-1 to the following members. Ensure members are sampled and tested according to AASHTO T 243 (ASTM A 673).
 - 1. Flange and web plates of welded plate girders.
 - 2. Rolled section main beams, stringers, and welded cover plates.
 - 3. Flange and web splice plates.
 - 4. Rolled or welded floor beams, abutment diaphragms, and cross frames carrying direct live loads, and all parts, except shear connectors, welded to each of these members.
 - 5. Lateral bracings and connecting gusset plates in horizontally curved bridges.
- C.** For members designated in the contract documents as Fracture Critical, apply Charpy V-notch toughness requirements of Table 4152.02-2. Ensure members are sampled and tested according to AASHTO T 243 (ASTM A 673).
- GD.** The contract documents may also designate other members to which toughness requirements apply.

Table 4152.02-1: Non-Fracture Critical Impact Test Requirements

Grade	Thickness (in.)	Minimum Average Energy, ft.lbf. at °F
36T ^(a)	to 4, incl.	15 at 40
50T ^(a, b) , 50WT ^(a, b)	to 2, incl. over 2 to 4, incl.	15 at 40 20 at 40
HPS 50WT ^(a, b)	to 4, incl.	20 at 10
HPS 70WT ^{(c), (d)} , HPS 100WT ^(e)	to 4, incl. to 2 1/2	25 at -10 25 at -30

	over 2 1/2 to 4	35 at -30
HPS 100WT ^(c)	to 2 1/2, incl. over 2 1/2 to 4, incl.	25 at -30 35 at -30
<p>(a) CVN-impact testing of shall be at "H" heat frequency testing according to in accordance with ASTM A 673.</p> <p>(b) If the yield point of the material structural product exceeds 65 ksi, reduce the testing temperature for the minimum average energy required shall be reduced by 15°F for each increment or fraction of 10 ksi above 65 ksi. The yield point is the value given on the certified "Mill Test Report".</p> <p>(c) CVN-impact testing of shall be at "P" plate frequency testing according to in accordance with ASTM A 673.</p> <p>(d) If the yield strength of the structural product exceeds 85 ksi, the testing temperature for the minimum average energy required shall be reduced by 15°F for each increment or fraction of 10 ksi above 85 ksi. The yield strength is the value given in on the certified "Mill Test Report".</p>		

Table 4152.02-2: Fracture Critical Impact Test Requirements

Grade	Thickness (in.)	Minimum Test Value Energy, ft.lbf.	Minimum Average Energy, ft.lbf. at °F
36F ^(a)	to 4, incl.	20	25 at 40
50F ^(a, b) , 50WF ^(a, b)	to 2, incl. over 2 to 4, incl.	20 24	25 at 40 30 at 40
HPS 50WF ^(a, b)	to 4, incl.	24	30 at 10
HPS 70WF ^(a, c)	to 4, incl.	28	35 at -10
HPS 100WF ^(a)	to 2 1/2, incl. over 2 1/2 to 4, incl.	28 Not Applicable	35 at -30 Not Permitted
<p>(a) CVN-impact testing shall be at "P" frequency in accordance with ASTM A 673 except for plates, for which the sampling shall be as follows:</p> <p>(4) As-rolled (including control-rolled and TMCP) plates shall be sampled at each end of each plate-as-rolled.</p> <p>(5) Normalized plates shall be sampled at one end of each plate, as heat treated.</p> <p>(6) Quenched and tempered plates shall be sampled at each end of each plate, as heat treated.</p> <p>(b) If the yield point of the structural product exceeds 65 ksi, the testing temperature for the minimum average energy and minimum test value energy required shall be reduced by 15°F for each increment or fraction of 10 ksi above 65 ksi. The yield point is the value given on the certified "Mill Test Report".</p> <p>(c) If the yield strength of the structural product exceeds 85 ksi, the testing temperature for the minimum average energy and minimum test value energy required shall be reduced by 15°F for each increment or fraction of 10 ksi above 85 ksi. The yield strength is the value given on the certified "Mill Test Report".</p>			

Reason for Revision: Adds Charpy impact testing criteria for fracture critical steel members. DOT structure contracts occasionally require the fabrication and testing of fracture critical members. The current version of the specification does not address testing criteria for fracture critical steel members.

Proposed revisions also include minor modifications to the text/formatting of Table 4152.02-1 for better consistency with current version of ASTM A709, which Table 4152.02-1 is based on.

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 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Kyle Frame		Office: Construction & Materials	Item 14
Submittal Date: 4/12/2017		Proposed Effective Date: Oct. 2017	
Article No.: 4186.09, B Title: Type B Signs		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text:			
4186.09, B, Type B Signs.			
<p>Replace the Article: Ensure the fittings described in the paragraphs below, when combined with the aluminum sections and posts, form a complete, assembled sign unit that will meet the specified strength requirements. Though aluminum hardware is specified, equivalent hardware may be furnished in stainless steel or galvanized steel as approved by the Department. Galvanizing is to meet the requirements of ASTM F 2329, or ASTM B 633, Fe/Zn 25.</p>			
<p>1. Stainless Steel Bolts. Use the minor thread diameter in determining stress area.</p> <p>a. Use post clip bolts and panel bolts made from aluminum wire or rod meeting the requirements of ASTM B 211, Alloy 2024-T4. Comply with ASTM A 320 Class 1 Grade B8, Class 1A Grade B8A, or Class 2 Grade B8; or ASTM F 593 Group 1 Alloy 304 or 304L, Group 2 Alloy 316 or 316L, or Group 3 Alloy 321 or 347 meeting Condition A, CW1 or CW2.</p> <ul style="list-style-type: none"> • Post clip bolts: 3/8 inch in diameter and 1 3/4 inches in length, square or rectangular head, manufactured according to the dimensions and details shown in the contract documents. • Panel bolts: 3/8 inch in diameter and 3/4 inch in length with hexagonal head. <p>b. Thread fit is to conform with ANSI, Class 2A.</p>			
<p>2. Stainless Steel Nuts. For Type B signs, use nuts manufactured from any aluminum alloy listed in ASTM B 211 or from stainless steel and meeting the following requirements: Comply with ASTM A 194 Grade 8, 8A, 8C, 8CA, 8M, 8MA, 8T, or 8TA; or ASTM F 594 Group 1 Alloy 304 or 304L, Group 2 Alloy 316 or 316L, or Group 3 Alloy 321 or 347 meeting Condition A, CW1 or CW2 Use same alloy properties (i.e. group, alloy, class and condition) as those of the bolts specified.</p> <p>a. Post clip nuts:</p> <ul style="list-style-type: none"> • Finished, finished thick, regular, or heavy hexagonal, self locking nuts for 3/8 inch bolts, but all nuts to be of the same type. • Able to withstand a proof load, at room temperature, of 4,730 pounds. <p>b. Self locking nuts: comply with Article 4186.09, A, 3.</p> <p>c. Panel bolt nuts:</p>			

- Finished hexagonal nuts for 3/8 inch bolts. Able to stand a proof load of 4,200 pounds.
- Thread fit is to conform with ANSI, Class 2B.

3. Stainless Steel Washers.

- ~~Use washers made of a quality of material approved by the Engineer.~~ Comply with ANSI B18.22.1 for the bolts specified.
- Meet requirements of ASTM A 240. Use same alloy properties (i.e. group, alloy, class and condition) as those of the bolts specified.
- ~~Post clip washers and panel bolt washers are to be flat 7/16 inch I.D. by 1 inch O.D. by 0.078 inch.~~
- ~~A thickness tolerance of ± 0.006 inch is allowed.~~

4. Post Clips.

- Use aluminum castings manufactured according to the contract documents.
- Ensure clips are able to withstand the load requirements of the bolt specified.

5. Edge Trim Molding.

Meet the following requirements:

- Molding is attached to the signs by means of self tapping, 300 series, stainless steel, machine screws, Size 8-32.
- Pan head, binding head, or truss head screen is used.
- A screw is installed 1/2 inch from the end of each section of molding. Intermediate screws are installed no more than 12 inches apart.

Comments:

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

B. Type B Signs.

Ensure the fittings described in the paragraphs below, when combined with the aluminum sections and posts, form a complete, assembled sign unit that will meet the specified strength requirements. ~~Though aluminum hardware is specified, equivalent hardware may be furnished in stainless steel or galvanized steel as approved by the Department. Galvanizing is to meet the requirements of ASTM F 2329, or ASTM B 633, Fe/Zn 25.~~

1. Stainless Steel Bolts.

Use the minor thread diameter in determining stress area.

- Comply with ASTM A 320 Class 1 Grade B8, Class 1A Grade B8A, or Class 2 Grade B8; or ASTM F 593 Group 1 Alloy 304 or 304L, Group 2 Alloy 316 or 316L, or Group 3 Alloy 321 or 347 meeting Condition A, CW1 or CW2.
- ~~Use post clip bolts and panel bolts made from aluminum wire or rod meeting the requirements of ASTM B 211, Alloy 2024 T4.~~
 - **Post clip bolts:** 3/8 inch in diameter and 1 3/4 inches in length, square or rectangular head, manufactured according to the dimensions and details shown in the contract documents.
 - **Panel bolts:** 3/8 inch in diameter and 3/4 inch in length with hexagonal head.
- Thread fit is to conform with ANSI, Class 2A.

2. Stainless Steel Nuts.

Comply with ASTM A 194 Grade 8, 8A, 8C, 8CA, 8M, 8MA, 8T, or 8TA; or ASTM F 594 Group 1 Alloy 304 or 304L, Group 2 Alloy 316 or 316L, or Group 3 Alloy 321 or 347 meeting Condition A, CW1 or CW2 Use same alloy properties (i.e. group, alloy, class and condition) as those of the bolts specified.

~~For Type B signs, use nuts manufactured from any aluminum alloy listed in ASTM B 211 or from stainless steel and meeting the following requirements:~~

a. Post clip nuts:

- Finished, finished thick, regular, or heavy hexagonal, self locking nuts for 3/8 inch bolts, but all nuts to be of the same type.
- Able to withstand a proof load, at room temperature, of 4,730 pounds.

b. Self locking nuts: comply with Article 4186.09, A, 3.

<p>c. Panel bolt nuts:</p> <ul style="list-style-type: none"> • Finished hexagonal nuts for 3/8 inch bolts. Able to stand a proof load of 4,200 pounds. • Thread fit is to conform with ANSI, Class 2B. <p>3. Stainless Steel Washers.</p> <p>a. Use washers made of a quality of material approved by the Engineer.</p> <ul style="list-style-type: none"> a. Comply with ANSI B18.22.1 for the bolts specified. b. Meet requirements of ASTM A 240. Use same alloy properties (i.e. group, alloy, class and condition) as those of the bolts specified. c. Post clip washers and panel bolt washers are to be flat 7/16 inch I.D. by 1 inch O.D. by 0.078 inch. d. A thickness tolerance of ± 0.006 inch is allowed. 		
<p>Reason for Revision: Aluminum bolts and nuts have been breaking in service. This change will only allow stainless steel bolts, nuts and washers for type B sign post clips and panels.</p>		
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:		

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Melissa Serio	Office: Construction & Materials	Item 15
Submittal Date: April 20, 2017	Proposed Effective Date: October 2017 GS	
Article No.: 4196.01, B Title: Subsurface Drainage and Embankment Erosion Control (Engineering Fabrics)	Other:	

Specification Committee Action: Approved as recommended.

Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
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Specification Committee Approved Text: See Specification Section Recommended Text.

Comments:

Specification Section Recommended Text:

4196.01, B, 2, Table 4196.01-2.

Replace the Table:

Table 4196.01-2: Fabric for use in Subsurface Drains

Property	Value	Test Method
Grab strength, dry, minimum average value in either principal direction	90 lbs.	ASTM D 4632
Elongation, dry, minimum average value in either principal direction	20%	ASTM D 4632
Permittivity, minimum	0.02 – 0.30 0.1 sec ⁻¹	ASTM D 4491
Apparent Opening Size, maximum	US Sieve No. 40	ASTM D 4751

4196.01, B, 3, Table 4196.01-3.

Replace the Table:

Table 4196.01-3: Fabric for use as Embankment Erosion Control

Property	Value	Test Method
Grab strength, dry, minimum average value in either principal direction	150 lbs.	ASTM D 4632
Elongation, dry, minimum average value in either principal direction	20%	ASTM D 4632
Permittivity, minimum	0.02 – 0.30 0.1 sec ⁻¹	ASTM D 4491
Apparent Opening Size, maximum	US Sieve No. 40	ASTM D 4751

Comments:

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

4196.01, B, 2, Table 4196.01-2.

Replace the Table:

Table 4196.01-2: Fabric for use in Subsurface Drains

Property	Value	Test Method
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Grab strength, dry, minimum average value in either principal direction	90 lbs.	ASTM D 4632
Elongation, dry, minimum average value in either principal direction	20%	ASTM D 4632
Permittivity, minimum	0.02-0.30 0.1 sec ⁻¹	ASTM D 4491
Apparent Opening Size, maximum	US Sieve No. 40	ASTM D 4751

4196.01, B, 3, Table 4196.01-3.

Replace the Table:

Table 4196.01-3: Fabric for use as Embankment Erosion Control

Property	Value	Test Method
Grab strength, dry, minimum average value in either principal direction	150 lbs.	ASTM D 4632
Elongation, dry, minimum average value in either principal direction	20%	ASTM D 4632
Permittivity, minimum	0.02-0.30 0.1 sec ⁻¹	ASTM D 4491
Apparent Opening Size, maximum	US Sieve No. 40	ASTM D 4751

Reason for Revision: Permittivity test results are provided as minimum average roll values, so value should be a minimum. Also, values were not updated in 2012 when property was changed from permeability to permittivity.

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: No changes		
County or City Comments:		
Industry Comments:		

Form 510130 (08-15)



SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Jeff Schmitt		Office: Construction & Materials	Item 16
Submittal Date: 2015.05.01		Proposed Effective Date: October 2017 GS	
Article No.: 2304.02, B Title: HMA Option. (Detour Pavement) Article No.: 2529.02, A. Title: Hot Mix Asphalt Mixture. (Full Depth Finish Patches) Article No.: 2530.02, A. Title: Hot Mix Asphalt Patching Material. (Partial Depth Finish Patches)		Other:	
Specification Committee Action: Approved as recommended.			
Deferred:	Not Approved:	Approved Date: 05/11/2017	Effective Date: 10/17/2017
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments:			
Specification Section Recommended Text: 2304.02, B, Hot Mix Asphalt Option. Replace the Article: Design a mixture per Materials I.M. 510 for the following: <ol style="list-style-type: none"> For detour pavements or median crossovers on interstates and multi-lane primary highways, use a High Traffic (HT) surface or intermediate mixture, with PG 64-22S or PG 58-28H asphalt binder. The surface lift requires L-4 friction aggregate. For detour pavements on all other primary highways, use a High Traffic (HT) surface or intermediate mixture with a PG 64-22S or PG 58-28H asphalt binder. For detour pavements on non-primary projects use a Standard Traffic (ST) surface or intermediate mixture with a PG 64-22S or PG 58-28H asphalt binder. 2529.02, A, Hot Mix Asphalt Mixture. Replace the second sentence: Use an asphalt binder meeting or exceeding PG 64-22S or PG 58-28H.			
2530.02, A, Hot Mix Asphalt Patching Material. Replace the Article: Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a Standard Traffic (ST) 3/8 or 1/2 inch surface mixture. Use an asphalt binder that meets or exceeds PG 64-22S or PG 58-28H. For partial depth patches on HMA overlay projects, the binder grade specified for mainline intermediate or surface course may be			

substituted.		
Comments:		
Member's Requested Change: (Do not use 'Track Changes', or 'Mark-Up'. Use <u>Strikeout</u> and <u>Highlight</u>.)		
2304.02, B, HMA Option.		
Design a mixture per Materials I.M. 510 for the following:		
<ol style="list-style-type: none"> 1. For detour pavement carrying less than 10,000,000 total 20 year ESALs, use HMA 1,000,000 ESAL surface or intermediate course, 1/2 inch or 3/4 inch, with PG 64-22 asphalt binder. For detour pavements or median crossovers on interstates and multi-lane primary highways, use a 10,000,000 ESAL High Traffic (HT) surface or intermediate mixture, with PG 64-22S <u>or PG 58-28H</u> asphalt binder. The surface lift requires L-4 friction aggregate. 2. For detour pavement carrying more than 10,000,000 total 20 year ESALs, use HMA 10,000,000 ESAL surface or intermediate course, 3/4 inch, with PG 64-22 asphalt binder. For detour pavements on all other primary highways, use a 3,000,000 ESAL High Traffic (HT) surface or intermediate mixture with a PG 64-22S <u>or PG 58-28H</u> asphalt binder. 3. For median crossovers, use HMA 10,000,000 ESAL surface or intermediate course, 3/4 inch, with PG 64-22 asphalt binder. Apply compaction per Section 2303. The surface lift requires L-4 friction aggregate. For detour pavements on non-primary projects use a 1,000,000 ESAL Standard Traffic (ST) surface or intermediate mixture with a PG 64-22S <u>or PG 58-28H</u> asphalt binder. 		
2530.02, A, Hot Mix Asphalt Patching Material.		
Replace the Article:		
<p>Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a 300,000 ESAL Standard Traffic (ST) surface mixture. <u>with Use an asphalt binder meeting or exceeding PG 64-22S</u> <u>or PG 58-28H</u> Performance Graded asphalt binder.</p>		
2530.02, A, Hot Mix Asphalt Patching Material.		
Replace the Article:		
<p>Unless stated elsewhere in the contract documents, use HMA meeting or exceeding Section 2303 requirements for a 300,000 ESAL Standard Traffic (ST) 3/8 or 1/2 inch (9.5 mm or 12.5 mm) <u>surface mixture.</u> <u>with Use an asphalt binder that meets or exceeds PG 64-22S or PG 58-28H.</u> For partial depth patches on HMA overlay projects, the binder grade specified for the mainline intermediate or surface course may be substituted Performance Graded asphalt binder.</p>		
Reason for Revision: District Materials Engineers requested a specification change to allow use of an alternate PG binder grade, since the previously specified PG 64-22S binder may not be readily available. PG 58-28H binder will be equal or better in performance, more readily available and will typically reduce the number of different binder grades required on the project.		
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: Reducing / combining the number of binder grades reduces the number of binder tanks required on the plant site, which is very desirable for portable plant operations.

County or City Comments:

Industry Comments: APAI & many HMA contractors have expressed support for the change.