IOWA DEPARTMENT OF TRANSPORTATION

To Office:	Specification Committee	**Date:**	October 6, 2020
Attention:		**Ref. No.:**	305
From:	Thomas L. Reis, P.E.		
Office:	Specifications		
Subject:	Agenda for October 8, 2020, Specification Committee Meeting		

The Specification Committee will meet remotely on Thursday, October 8, 2020, at 9:00 a.m.

The revised agenda is as follows:

1. Article 2301.03, E, Placing Reinforcement and Placing Dowel Bars (Portland Cement Concrete Pavement).

The Construction and Materials Bureau requests to add requirements for condition of reinforcement placed in pavement.

2. Article 2301.03, R, Bridge Approach Sections, Reinforced Paved Shoulders, and Full-width Reinforcement for Pavements.

The Construction and Materials Bureau requests to allow a wider range for air content when approaches are placed by pumping.

3. Article 2301.04, A, 2, Method of Measurement (Portland Cement Concrete).

The Construction and Materials Bureau requests to remove coring references as non-destructive thickness testing is becoming the norm.

4. Article 2303.03, D, 6, d, Thickness (Flexible Pavement).

The Construction and Materials Bureau requests to clarify that consideration must be given to adjustments made in the field when enforcing Quality Index for Thickness.

5. Article 2310.02, B, 3, Hot Mix Asphalt Stress Relief Course (PCC OVERLAYS).

The Construction and Materials Bureau requests to clarify that Average Absolute Deviation (AAD) is appropriate for acceptance of lab voids.

6. Article 2413.02, D, 2, Class HPC-O High Performance Concrete (Bridge Deck Surfacing, Repair, and Overlay).

The Construction and Materials Bureau requests to eliminate trial batches and increased moisture testing when using Class HPC-O High Performance Concrete.

7. Article 2506.02, E, Mix Design (Flowable Mortar).

The Construction and Materials Bureau requests to add allowance for alternate mix designs when fly ash is unavailable.

8. Article 2513.03, A, 2, b, 2, Aggregates for Class BR (Concrete Barrier).

The Construction and Materials Bureau requests to clarify the aggregate requirements for Class BR concrete.

9. Article 2520.03, A, 1, General (Field Laboratory).

The Construction and Materials Bureau requests to update field laboratory requirements.

10. Section 2602, Water Pollution Control (Soil Erosion).
Article 4169.12, Perimeter and Slope Sediment Control Device.

The Construction and Materials Bureau requests to create new item for Ditch Check Sediment Control Devices and remove restriction that allows only sediment logs on interstate and primary projects based on results from recent ISU research project.

11. Article 4123.01, Description (Modified Subbase).
Article 4132.01, Description (Special Backfill Material).

The Construction and Materials Bureau requests to add a requirement that RAP not be place below the high water table per Iowa Code.

12. Article 4185.08, Handholes and Junction Boxes (Highway Lighting Materials).
Article 4189.01, A, Handhole (Traffic Signal Equipment).

The Construction and Materials Bureau and Design Bureau request to add HDPE handholes to the specifications.

13. DS-15038, Quality Management Concrete (QM-C).

The Construction and Materials Bureau requests approval of revisions to the Developmental Specifications for Quality Management Concrete (QM-C).

14. DS-15068, Sliplining Existing Pipe Culverts.

The Construction and Materials Bureau requests approval of revisions to the Developmental Specifications for Sliplining Existing Pipe Culverts.

15. DS-15083, High Performance Thin Lift Overlay.

The Construction and Materials Bureau requests approval of revisions to the Developmental Specifications for High Performance Thin Lift Overlay.

Form 510130 (08-15)

IOWADOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / John Hart	**Office:** Construction & Materials	**Item 1**
Submittal Date: September 21, 2020	**Proposed Effective Date:** April 2021	
Article No.: 2301.03 E **Title:** Portland Cement Concrete pavement – Construction	**Other:**	

Specification Committee Action:			
Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments:

Specification Section Recommended Text:

2301.03, E, 1, Placing Reinforcement.

Add the Article and **renumber** following Articles:

a. Ensure reinforcement is free from dirt, detrimental scale, rust, paint, oil, and other foreign substances.

~~a~~ b.

~~b~~ c.

~~c~~ d.

2301.03, E, 2, Placing Load Transfer Devices.

Add the Article and **renumber** following Articles:

b. Ensure load transfer devices are coated completely with a bond breaker and are free from dirt and other foreign substances.

~~b~~ c.

~~c~~ d.

~~d~~ e.

Comments:

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

2301.03

E. Placing Reinforcement and Placing Dowel Bars.

1. Placing Reinforcement.

a. Ensure that reinforcement is free from dirt, detrimental scale, rust, paint, oil, and/or other foreign substances.

~~a~~b. Place reinforcement prior to vibration so it will be in its intended position in the completed concrete according to Article 2404.03, D. For slip form paving, tie bars may be installed after vibration, provided the concrete is consolidated around the bars. Reinforcing bars may be supported by approved chairs or be placed in position by a machine or method approved by the Engineer.

~~b~~c. Use approved continuous bolsters with runners to support reinforcement for bridge approach sections. Place supports transversely across the approach and space them longitudinally no

greater than 4 feet. For double reinforced approach sections the top layer of reinforcing may be chaired off the bottom layer of reinforcing using approved continuous high chairs with runners, provided they are positioned directly above the continuous bolsters with runners supporting the bottom layer of reinforcing. Hold epoxy coated reinforcing steel in place with epoxy or plastic coated bar supports and epoxy or plastic coated tie wires. Use continuous bolsters with runners and continuous high chairs with runners, either plastic or steel, meeting the requirements of Materials I.M. 451.01.

~~c~~d. When welded wire fabric reinforcement is used (alternate methods of placing welded wire fabric reinforcement will be considered for approval):

1) Strike the concrete off at the elevation specified for fabric reinforcement.

2) Place the sheets as indicated in the contract documents. Handle and place the fabric carefully to ensure its installation in the proper position. Ensure the fabric is flat.

3) Deposit the balance of the concrete and vibrate in a manner that will not displace or distort the fabric. Sheets that have become bent or kinked may be rejected.

2. Placing Load Transfer Devices.

a. Load transfer devices may be required in the contract documents. Accurately place these assemblies as shown. To prevent their movement during subsequent concrete paving operations, securely stake or fasten to the base to line and grade. Do not use mechanical dowel bar inserters.

b. Ensure that load transfer devices are coated completely with a bond breaker and are free from dirt and/or other foreign substances.

~~b~~c. Do not use damaged assemblies. Ensure horizontal and vertical alignment of the load transfer bars does not exceed 1/4 inch from parallel to line and grade. Place each assembly so bars are in a horizontal plane at T/2 ± 1/2 inch.

~~c~~d. Check placement of each assembly and the position of the bars within the assembly using a suitable template or other device approved by the Engineer. If assembly is found to be placed outside the above tolerances, correct the placement.

~~d~~e. A maximum of three tie wires may remain uncut on each load transfer assembly.

Reason for Revision: This past construction season there were some situations in which the condition of the reinforcement was not acceptable. Based on the discussion and resolution of these issues there was a desire to put stronger language in the specification to clearly identify that contamination of reinforcing steel or dowel bars is not acceptable.

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x
Comments:		
County or City Comments:		
Industry Comments: This has been shared with the ICPA/members.		

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Todd Hanson	**Office:** Construction & Materials	**Item 2**
Submittal Date: September 2020	**Proposed Effective Date:** April 2021	
Article No.: 2301.03, R **Title:** Portland Cement Concrete Pavement	**Other:**	

Specification Committee Action:

Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments:

Specification Section Recommended Text:

2301.03, R, Bridge Approach Sections, Reinforced Paved Shoulders, and Full-width Reinforcement for Pavements.

Add the Article:

5. When concrete is placed by pumping, use a target value for air content of 7.5% ± 2.0%.

Comments:

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

R. Bridge Approach Sections, Reinforced Paved Shoulders, and Full-width Reinforcement for Pavements.

Add paragraph 5.

5. When concrete is placed by pumping, use a target value for air content of 7.5% plus or minus 2.0%.

Reason for Revision: When bridge approaches are placed by the bridge contractor they are often placed by pumping. This allows a wider range for air content when placed by pumping.

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x

Comments:

County or City Comments:

Industry Comments: Requested by IRMCA at Technical Committee meeting.

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / John Hart	**Office:** Construction & Materials	**Item 3**
Submittal Date: September 21, 2020	**Proposed Effective Date:** April 2021	
Article No.: 2301.04, A **Title:** Portland Cement Concrete pavement – Method of Measurement	**Other:**	

Specification Committee Action:

Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments:

Specification Section Recommended Text:

2301.04, A, 2.

Replace the Article:

2. ~~The coring~~ Requirements for thickness do not apply to detour pavements, paved drives, and temporary pavements. The thickness of pavement constructed will be determined ~~from core depths~~ as follows:

a. The division of sections, lots, and ~~core~~ thickness measurement locations will be determined by the Engineer according to Materials I.M. 346.

~~**b.** At locations determined by the Engineer, cut samples from the pavement, as directed above, by drilling with a core drill that will provide samples with a 4 inch outside diameter. Restore the surface by tamping low-slump concrete into the hole, finishing, and texturing. The Engineer will witness the core drilling, and identify and measure the cores immediately. The Engineer will measure the cores and determine the thickness index according to Materials I.M. 346. After measurement on the grade, deliver the cores to the Engineer's office or field laboratory. When cores are not measured on the grade, the Engineer will take immediate possession of the cores.~~

~~**c.** Determine thickness for sections of the same design thickness 3500 square yards or less, by probing plastic concrete in accordance with Materials I.M. 396.~~

~~**d.** Only sections which are cored will be included in the thickness index determination. Areas not cored or probed will be paid for at the contract unit price.~~

b. For Interstate and Primary projects, evaluate pavement thickness for sections of the same design thickness more than 3500 square yards using non-destructive testing according to Materials I.M. 346 Method A.

c. For non-Primary projects evaluate pavement thickness for sections of the same design thickness more than 3500 square yards by coring according to Materials I.M. 346 Method B. The specification will be adopted in its entirety.

~~**c**~~ **d.** Determine thickness for sections of the same design thickness 3500 square yards or less, by probing plastic concrete in accordance with Materials I.M. 396.

~~**d**~~ **e.** Only sections which are ~~cored~~ evaluated for thickness will be included in the thickness index determination. Areas not ~~cored or probed~~ evaluated for thickness will be paid for at the contract unit price.

Comments:

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

2. ~~The coring~~ Requirements for thickness do not apply to detour pavements, paved drives, and temporary pavements. The thickness of pavement constructed will be determined ~~from core depths~~ as follows:

a. The division of sections, lots, and ~~core~~ thickness measurement locations will be determined by the Engineer according to Materials I.M. 346.

~~**b.** At locations determined by the Engineer, cut samples from the pavement, as directed above, by drilling with a core drill that will provide samples with a 4 inch outside diameter. Restore the surface by tamping low-slump concrete into the hole, finishing, and texturing. The Engineer will witness the core drilling, and identify and measure the cores immediately. The Engineer will measure the cores and determine the thickness index according to Materials I.M. 346. After measurement on the grade, deliver the cores to the Engineer's office or field laboratory. When cores are not measured on the grade, the Engineer will take immediate possession of the cores.~~

~~**c.** Determine thickness for sections of the same design thickness 3500 square yards or less, by probing plastic concrete in accordance with Materials I.M. 396.~~

~~**d.** Only sections which are cored will be included in the thickness index determination. Areas not cored or probed will be paid for at the contract unit price.~~

b. For all Interstate and Primary projects, evaluate pavement thickness for sections of the same design thickness more than 3500 square yards using non-destructive testing according to Materials I.M. 346 Method A.

c. For non-Primary projects evaluate pavement thickness for sections of the same design thickness more than 3500 square yards by coring according to Materials I.M. 346 Method B. The specification will be adopted in its entirety.

d. Determine thickness for sections of the same design thickness 3500 square yards or less, by probing plastic concrete in accordance with Materials I.M. 396.

e. Only sections which are ~~cored~~ evaluated for thickness will be included in the thickness index determination. Areas not ~~cored or probed~~ evaluated for thickness will be paid for at the contract unit price.

Reason for Revision: The current DS for non-destructive thickness testing has been used for approximately 10 years and is widely accepted on Iowa DOT PCC projects. Based on this it was felt that it was time to make the DS part of the Standard Specification. In addition, it was desired to identify how Local Agencies would handle thickness testing as they do not have MIT scan devices nor is the Iowa DOT in a position to guarantee use of MIT scan devices or staff to process Local Agency non-destructive thickness testing results.

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x
Comments:		
County or City Comments: This has been shared with Local Systems. Language referencing projects let by the Department were removed based on comments.		
Industry Comments: This has been shared with the ICPA/members.		

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Jeff Schmitt	**Office:** Construction & Materials	**Item 4**
Submittal Date: 9-22-2020	**Proposed Effective Date:** April 2021 GSS	
Article No.: 2303.03, D, 6, d. **Title:** CONSTRUCTION – QA Program (Acceptance of Asphalt Mixtures - Thickness)		

Specification Committee Action:

Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments:

Specification Section Recommended Text:

2303.03, D, 6, d, Thickness.

Add the Article and **renumber** following Article:

3) Establish the intended thickness daily with consideration given to field conditions and tie-in features.

~~**3**~~ **4)** When the quality index falls below 0.00, the Engineer may declare the lot or parts of the lot defective. If the final lift has not been placed, the Engineer may approve additional thickness to be placed on succeeding lifts to ensure a final grade as intended. The unit price of the defective lot will be used for payment of the additional material.

Comments:

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

<u>ADD THE FOLLOWING</u>:

d. Thickness.

3) Establish the intended thickness daily with consideration given to field conditions and tie-in features.

~~**3**~~**4)** When the quality index falls below 0.00, the Engineer may declare the lot or parts of the lot defective. If the final lift has not been placed, the Engineer may approve additional thickness to be placed on succeeding lifts to ensure a final grade as intended. The unit price of the defective lot will be used for payment of the additional material.

Reason for Revision: Add language to clarify that consideration must be given to adjustments made in the field versus what may be shown on the plans, such as slope corrections and runouts, when enforcing Quality Index for Thickness.

New Bid Item Required (X one)	**Yes**	**No** X
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** X

Comments: Revision was discussed with industry at SAC Meeting on September 22, 2020.
County or City Comments:
Industry Comments:

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IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Jeff Schmitt	**Office:** Construction & Materials	**Item 5**
Submittal Date: 9-22-2020	**Proposed Effective Date:** April 2021 GSS	
Article No.: 2310.02, B, 3, e **Title:** PCC OVERLAYS - MATERIALS (Hot Mix Asphalt Stress Relief Course)	**Other:**	

Specification Committee Action:

Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments:

Specification Section Recommended Text:

2310.02, B, 3.

Add the Article:

e. Apply Article 2303.05, A, 3, a, 2 of the Standard Specifications for AAD Acceptance of lab voids.

Comments:

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

ADD TO ARTICLE:

PCC OVERLAYS

2310.02 MATERIALS.

B. Hot Mix Asphalt Stress Relief Course.

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.
   - **e.** Apply 2303.05, A, 3, a, 2 of the Standard Specifications for AAD Acceptance of lab voids.

Reason for Revision: HMA Stress Relief Course should be treated similarly to Interlayer mixes. Add language to clarify that Average Absolute Deviation (AAD) is appropriate for acceptance of lab voids in this situation.

New Bid Item Required (X one)	**Yes**	**No** X
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** X

Comments: Revision was discussed with industry at SAC Meeting on September 22, 2020.

County or City Comments:
Industry Comments:

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IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Todd Hanson	**Office:** Construction & Materials	**Item 6**
Submittal Date: September 2020	**Proposed Effective Date:** April 2021	
Article No.: 2413.02, D, 2 **Title:** Class HPC-O High Performance Concrete (Bridge Deck Surfacing, Repair, and Overlay)	**Other:**	

Specification Committee Action:

Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments:

Specification Section Recommended Text:

2413.02, D, 2, Class HPC-O High Performance Concrete.

Replace Articles c through g:

~~**c.** Increase moisture testing of coarse and fine aggregate to ensure batch-to-batch consistency and reduce water addition at job site. Perform moisture testing of coarse and fine aggregate prior to batching when batch weights are determined and then again half-way through the placement.~~

~~**d**~~ **c.** Air content is to be the same as required for Class O PCC.

~~**e**~~ **d.** Use Type IS or Type IP cement. If Type I/II is used, 25% replacement with GGBFS is required.

~~**f**~~ **e.** Limit fly ash substitution to 20% replacement by weight.

~~**g.** For projects with deck overlay quantities greater than 1800 square yards, make a trial batch of the mix (minimum 3 cubic yards) at the anticipated concrete temperature during delivery. Initially test the slump and air content. Let the mixer run for the time anticipated, including batching, delivery to the project, estimated waiting time for discharge of the load, and the time to discharge the load. Test the slump and air content again. If the slump at the discharge time is 2 inches or less, the proposed mix is not suitable and an additional trial batch will be required. The intent is to ensure the admixture or combination of admixtures will maintain the desired slump without additional water at the discharge site. If unacceptable slump loss occurs during the project placement so that the slump is 2 inches or less, one or all of the following steps will be required:~~

~~**1)** Change the dosage rate of admixture(s).~~

~~**2)** Change the brand of admixture(s).~~

~~**3)** Change the location of mixing admixture(s). For example: incorporate admixture(s) in the ready mix truck on the project site instead of at the ready mix plant.~~

~~**4)** Reduce the concrete temperature. For example: use ice or chilled water.~~

Comments:

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

c. ~~Increase moisture testing of coarse and fine aggregate to ensure batch-to-batch consistency and reduce water addition at job site. Perform moisture testing of coarse and fine aggregate prior to batching when batch weights are determined and then again half-way through the placement.~~

c.~~d.~~ Air content is to be the same as required for Class O PCC.
d.~~e.~~ Use Type IS or Type IP cement. If Type I/II is used, 25% replacement with GGBFS is required.
e.f. Limit fly ash substitution to 20% replacement by weight.
~~**g.** For projects with deck overlay quantities greater than 1800 square yards, make a trial batch of the mix (minimum 3 cubic yards) at the anticipated concrete temperature during delivery. Initially test the slump and air content. Let the mixer run for the time anticipated, including batching, delivery to the project, estimated waiting time for discharge of the load, and the time to discharge the load. Test the slump and air content again. If the slump at the discharge time is 2 inches or less, the proposed mix is not suitable and an additional trial batch will be required. The intent is to ensure the admixture or combination of admixtures will maintain the desired slump without additional water at the discharge site. If unacceptable slump loss occurs during the project placement so that the slump is 2 inches or less, one or all of the following steps will be required:~~
~~**1)** Change the dosage rate of admixture(s).~~
~~**2)** Change the brand of admixture(s).~~
~~**3)** Change the location of mixing admixture(s). For example: incorporate admixture(s) in the ready mix truck on the project site instead of at the ready mix plant.~~
~~**4)** Reduce the concrete temperature. For example: use ice or chilled water.~~

Reason for Revision: Most overlays are too small to require additional moisture testing. We do not do additional moisture testing on a full-depth bridge deck placements, regardless of size. Trial batches are not needed since we have significant experience with this mix compared to when it was initially used in the DS and implemented into the general specification.

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x

Comments:

County or City Comments:

Industry Comments:

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Todd Hanson	**Office:** Construction & Materials	**Item 7**
Submittal Date: September 2020	**Proposed Effective Date:** April 2021	
Article No.: 2506.02, E **Title:** Mix Design (Flowable Mortar)	**Other:**	

Specification Committee Action:			
Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**
Specification Committee Approved Text:			
Comments:			

Specification Section Recommended Text:
2506.02, E, Mix Design.

Add the Article:

3. Alternate Mix Designs.

a. When fly ash is not available, a mix design without fly ash may be submitted to the District Materials Engineer. Approval of the design will be based on a trial batch and trial placement.

b. Mix design may include use of flowable fill admixtures or increased dosage of air entraining admixture.

c. Meet minimum compressive strength of 125 psi.

Comments:

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

Add new paragraph 3.

3. Alternate Mix Designs
   a. When fly ash is not available, a mix design without fly ash may be submitted to the District Materials Engineer. Approval of the design will be based on a trial batch and trial placement.
   b. Mix design may include the use of flowable fill admixtures or increased dosage of air entraining admixture.
   c. Meet minimum compressive strength of 125 psi.

Reason for Revision: We have had several ready mix producers not have fly ash available for flowable mortar. Alternate mixes designs utilizing flowable fill admixtures or high air contents have been used with better results than flowable mortar mixes.

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x
Comments:		
County or City Comments:		

Industry Comments:

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Todd Hanson	**Office:** Construction & Materials	**Item 8**
Submittal Date: September 2020	**Proposed Effective Date:** April 2021	
Article No.: 2513.03, A, 2, b, 2 **Title:** Concrete Barrier	**Other:**	

Specification Committee Action:			
Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**
Specification Committee Approved Text:			
Comments:			

Specification Section Recommended Text:
2513.03, A, 2, b, 2.

Replace the last sentence of the Article:

Meet quality requirements in Division 41 for each ~~individual~~ aggregate used.

Comments:

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

2) Aggregates for Class BR. Use a well graded combination of aggregates complying with Materials I.M. 532. Meet quality requirements in Division 41 for each ~~individual~~ aggregate used.

Reason for Revision: BR mixes are based on combined grading, not individual aggregate gradations. Each aggregate just needs to meet quality requirements.

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x

Comments:

County or City Comments:

Industry Comments:

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IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Melissa Serio	**Office:** Construction & Materials	**Item 9**
Submittal Date: 9/21/20	**Proposed Effective Date:** April 2021 GS	
Article No.: 2520.03, A, 1 **Title:** General (Field Laboratory)	**Other:**	

Specification Committee Action:			
Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**
Specification Committee Approved Text:			
Comments:			

Specification Section Recommended Text:

2520.03, A, 1, General.

Replace Article k:

A microwave, laboratory stove, or stoves with hoods vented to an exhaust fan.

Replace Article n:

~~Wireless connectivity.~~ Provide a device to allow multiple inspectors to access the internet wirelessly, such as a mobile hotspot. Provide a minimum of ~~3~~ 10 GB of data usage monthly. This device will be considered a part of the field laboratory and shall stay with the field laboratory. If the field laboratory and field office are located adjacent to each other, one device may be adequate to cover both, so long as the signal can be accessed from both trailers. The Contracting Authority will pay data charges for usage above the monthly minimum.

Comments:

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

2520.03, A, 1.

Replace Articles:

k. A microwave, laboratory stove, or stoves with hoods vented to an exhaust fan

and

n. Wireless connectivity. Provide a device to allow multiple inspectors to access the internet wirelessly, such as a mobile hotspot. Provide a minimum of ~~3~~ 10 GB of data usage monthly. This device will be considered a part of the field laboratory and shall stay with the field laboratory. If the field laboratory and field office are located adjacent to each other, one device may be adequate to cover both, so long as the signal can be accessed from both trailers. The Contracting Authority will pay data charges for usage above the monthly minimum.

Reason for Revision: Item discussed at May 19, 2020 DCE meeting. Increase data usage and add option of microwave.

New Bid Item Required (X one)	**Yes**	**No** x

Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x
Comments: None		
County or City Comments:		
Industry Comments:		

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IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Melissa Serio	**Office:** Construction & Materials	**Item 10**
Submittal Date: 9/21/20	**Proposed Effective Date:** April 2021 GS	
Section No.: 2602 **Title:** Water Pollution Control (Soil Erosion) **Article No.:** 4169.12 **Title:** Perimeter and Slope Sediment Control Device	**Other:**	

Specification Committee Action:			
Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**
Specification Committee Approved Text:			
Comments:			

Specification Section Recommended Text:
2602.03, C.

Replace the second bullet:

Constructing or installing perimeter and slope and ditch check sediment control devices ~~(straw wattles, wood excelsior logs, or filter socks filled with compost filter material)~~, and

2602.04, Method of Measurement.

Replace the titles of the Articles:

I. Perimeter and Slope or Ditch Check Sediment Control Device.
Linear feet to the nearest foot of each size.

J. Removal of Perimeter and Slope or Ditch Check Sediment Control Device.
Linear feet to the nearest foot.

2602.05, A.

Replace the titles of the Articles:

9. Perimeter and Slope or Ditch Check Sediment Control Device.
Per linear foot for length of device of each size properly installed.

10. Removal of Perimeter and Slope or Ditch Check Sediment Control Device.
Per linear foot for the length of device removed.

4169.12, Perimeter and Slope Sediment Control Device.

Replace the Article and title:

Perimeter and Slope or Ditch Check Sediment Control Device.
~~Interstate and Primary highway projects shall use sediment logs only.~~

1. Provide wattles, sediment logs, and filter socks consisting of the following materials contained in a tube of photo degradable fabric or synthetic netting:

a. Wattles: Cereal straw or native grass straw certified by the Iowa Crop Improvement Association or other state's Crop Improvement Associations as Certified Noxious Weed Seed Free Mulch. Wattles with observed seed heads of any type will not be accepted.

b. Sediment logs: Wood excelsior fibers with 80% of the wood excelsior fibers being 6 inches long or longer.

c. Filter socks: Compost (from an approved source meeting Article 4169.08), wood chips, or mulch.

2. Fill wattles, sediment logs, and filter socks using a mechanical device. Hand filling of wattles, sediment logs, and filter socks will not be allowed.

3. Ensure wattles, sediment logs, and filter socks do not contain:
- A visible admixture of refuse or other physical contaminants,
- Germination or growth inhibiting factors, or
- Material toxic to plant growth.

4. Ensure wattles, sediment logs, and filter socks have waterproof identification tags printed using permanent ink and containing manufacturer's name and address. For wattles and sediment logs, tags shall be attached to the inside of the netting of each wattle or sediment log. For filter socks, tags shall be attached to the outside of each sock.

5. Approved sediment logs, wattles, and filter socks are listed in Materials I.M. 469.10, Appendix E. ~~Wattles and filter socks will be accepted based on the manufacturer's certification.~~

Comments:

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

2602.03, C.
Replace second bullet:

- Constructing or installing perimeter and slope and ditch check sediment control devices ~~(straw wattles, wood excelsior logs, or filter socks filled with compost filter material)~~, and

2602.04, I and J.
Replace Articles:

I. Perimeter and Slope or Ditch Check Sediment Control Device.
Linear feet to the nearest foot of each size.

J. Removal of Perimeter and Slope or Ditch Check Sediment Control Device.
Linear feet to the nearest foot.

2602.05, A, 9 and 10.
Replace Articles:

9. Perimeter and Slope or Ditch Check Sediment Control Device.
Per linear foot for length of device of each size properly installed.

10. Removal of Perimeter and Slope or Ditch Check Sediment Control Device.
Per linear foot for the length of device removed.

4169.12

Replace Articles:

4169.12 PERIMETER AND SLOPE OR DITCH CHECK SEDIMENT CONTROL DEVICE.

A. General.

~~Interstate and Primary highway projects shall use sediment logs only.~~

1. Provide wattles, sediment logs, and filter socks consisting of the following materials contained in a tube of photo degradable fabric or synthetic netting:

a. Wattles: Cereal straw or native grass straw certified by the Iowa Crop Improvement Association or other state's Crop Improvement Associations as Certified Noxious Weed Seed Free Mulch. Wattles with observed seed heads of any type will not be accepted.

b. Sediment logs: Wood excelsior fibers with 80% of the wood excelsior fibers being 6 inches long or longer.

c. Filter socks: Compost (from an approved source meeting Article 4169.08), wood chips, or mulch.

And

5. Approved sediment logs, wattles, and filter socks are listed in Materials I.M. 469.10, Appendix E. ~~Wattles and filter socks will be accepted based on the manufacturer's certification.~~

Reason for Revision: Create new item for Ditch Check Sediment Control Devices. Standard Road Plan EC-204 will also be modified. Ditch check devices involve more effort and materials to install than devices on slopes or as perimeter control.

Remove restriction that allows only sediment logs on interstate and primary projects based on results from recent ISU research project.

New Bid Item Required (X one)	**Yes x**	**No**
Bid Item Modification Required (X one)	**Yes x**	**No**
Bid Item Obsoletion Required (X one)	**Yes**	**No** x

Comments: Create new 2602 bid items "Ditch Check Sediment Control Device, 12 in. Dia." And "Ditch Check Sediment Control Device, 20 in. Dia.".

Modify existing 2602 bid item "Removal of Perimeter and Slope Sediment Control Device" to "Removal of Perimeter and Slope or Ditch Check Sediment Control Device".

County or City Comments:

Industry Comments: Proposed revisions were discussed at annual Erosion Control and Landscaping industry meeting on August 5, 2020. We received follow-up comment/concern from sediment log manufacturer regarding change to 4169.12 to allow all three types of devices (logs, wattles, and socks) on interstate and primary projects. Some of the concerns are being addressed with revisions to Materials IM 469.10.

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Melissa Serio	**Office:** Construction & Materials	**Item 11**
Submittal Date: 9/21/20	**Proposed Effective Date:** April 2021 GS	
Article No.: 4123.01 **Title:** Description (Modified Subbase) **Article No.:** 4132.01 **Title:** Description (Special Backfill Material)	**Other:**	

Specification Committee Action:

Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments:

Specification Section Recommended Text:

4123.01, Description.

Add as the last bullet:

- Do not place RAP below high water table.

4132.01, Description.

Add as the last bullet:

- Do not place Reclaimed HMA below high water table.

Comments:

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

4123.01

Add to the end of the last bullet:

RAP shall not be used if the material is placed within the high water table.

4132.01

Add to the end of the last bullet:

Reclaimed HMA shall not be used if the material is placed within the high water table.

Reason for Revision: To ensure compliance with Iowa Code, Chapter 108 (Beneficial Use Determinations: Solid By-Products as Resources and Alternative Cover Material), specifically 108.4(12) which states that asphalt shall not be used as a substitute for conventional aggregate if placed within the high water table. This might occur if the materials are used in a buried, non-road base scenario.

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x
Comments: None		
County or City Comments:		
Industry Comments:		

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Daniel Harness / Mike Kennerly / Wes Musgrove / Kyle Frame/Scott Sommers	**Office:** Design / Construction and Materials	**Item 12**
Submittal Date: 9-21-2020	**Proposed Effective Date:** 4-21-2020	
Article No.: 4185.08 **Title:** Handholes and Junction Boxes **Article No.:** 4189.01, A **Title:** Handhole	**Other:**	

Specification Committee Action:			
Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**

Specification Committee Approved Text:

Comments:

Specification Section Recommended Text:

4185.08, Handholes and Junction Boxes.

Add the Article:

D. HDPE Handhole and Cover.

1. **Size:** Provide handhole and cover with a minimum inside diameter of 24 inches and minimum of 24 inches depth. Handhole to be conical in shape with taper from top to bottom.

2. **Loading:** Ensure handhole, extensions, and cover comply as a complete unit with ANSI 77 with a minimum 20,000 pound load.

3. **Resin:** HDPE resin to comply with ASTM D 790 for minimum flexural modulus of 142,000 psi and ASTM D 638 for minimum yield strength of 3100 psi when using a type IV specimen, 2 inch per minute test speed, and 0.075 inch thick molded sample.

4. **Cover:** Ensure cover has skid resistant surface meeting PROWAG requirements with stainless steel bolts meeting manufacturer's requirements. Ensure cover fits handhole to meet PROWAG vertical surface discontinuity requirements when placed in pedestrian walkways.

4189.01, A, Handhole.

Add the Article:

4. HDPE Handhole and Cover.

a. Size: Provide handhole and cover with minimum inside diameter of 24 inches and minimum 24 inches in depth. Handhole to be conical in shape with taper from bottom to top.

b. Loading: Ensure handhole, extensions, and cover comply as a complete unit with ANSI 77 with a minimum 20,000 pound load.

c. Resin: HDPE resin to comply with ASTM D790 for minimum flexural modulus of

142,000 psi and ASTM D638 for minimum yield strength of 3100 psi when using a Type IV specimen, 2 inch per minute test speed, and 0.075 inch thick molded sample.

d. Cover: Ensure cover has skid resistant surface meeting PROWAG requirements with stainless steel bolts meeting manufacturer's requirements. Ensure cover fits handhole to meet PROWAG vertical surface discontinuity requirements when placed in pedestrian walkways.

Comments:

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

4185.08 HANDHOLES AND JUNCTION BOXES.

Provide four galvanized steel cable hooks with a minimum diameter of 3/8 inch and a minimum length of 5 inches.

A. Precast Concrete Handholes.

The contract documents will show locations and other details. Meet the following requirements:

1. Pipe.

Comply with ASTM C 76. Minimum 2000D (Class III), Wall B. Four 8 inch knockouts (conduit entrance points) equally spaced around the handhole.

2. Casting.

Gray cast iron and certified according to requirements of AASHTO M 306 for a 16,000 pound proof load (HS-20).

3. Cover.

Include "ELECTRIC" as a message on the cover unless specified otherwise in the contract documents.

B. Precast Concrete Composite Handholes and Junction Boxes.

The contract documents will show locations and other details. Meet the following requirements.

1. Handhole (or junction box) and cover fabricated using mortar consisting of sand, gravel, and polyester resin reinforced by a woven glass fiber mat or of resin mortar and fiberglass. Include "ROADWAY LIGHTING" as a message on the cover unless specified otherwise in the contract documents.

2. Fabricated to withstand a load of 20,000 pounds.

3. Provide two 3/8-16 UNC stainless steel hex head bolts with washers.

C. Cast Iron Junction Boxes.

The contract documents will show locations and other details. Meet the following requirements:

1. Cast iron boxes and covers galvanized according to ASTM A 153.

2. Boxes classified by the manufacturer as meeting the requirements for NEMA 4, Watertight.

3. UL approved boxes.

4. Apply applicable provisions of Article 314 of the current NEC.

5. Raised buttons (blind drilled, tapped, and fitted with screws as specified) of the specified size and location cast into the surface of the box floor and cover for grounding purposes.

6. Neoprene gaskets used.

D. HDPE Handhole and Cover

1. Size: Provide handhole and cover with a minimum inside diameter of 24 inches and a minimum of 24 inches in depth. Handhole to be conical in shape with the taper from top to bottom.

2. **Loading:** Ensure handhole, any extensions, and cover comply as a complete unit with ANSI 77 with a minimum 20,000 lb load.

3. **Resin:** HDPE resin to comply with ASTM D 790 for minimum flexural modulus of 142,000 psi and ASTM D 638 for minimum yield strength of 3100 psi when using a type IV specimen, 2 inch per minute test speed, and 0.075 inch thick molded sample.

4. **Cover:** Ensure cover has a skid resistant surface meeting PROWAG requirements with stainless steel bolts meeting manufacturer's requirements. Ensure cover fits handhole to meet PROWAG vertical surface discontinuity requirements when placed in pedestrian walkways.

4189.01, A, 4, HDPE Handhole and Cover.

Add a new article:

a. **Size:** Provide handhole and cover with a minimum inside diameter of 24 inches and a minimum of 24 inches in depth. Handhole to be conical in shape with the taper from bottom to top.

b. **Loading:** Ensure handhole, any extensions, and cover comply as a complete unit with ANSI 77 with a minimum 20,000 pound load.

c. **Resin:** HDPE resin to comply with ASTM D790 for minimum flexural modulus of 142,000 psi and ASTM D638 for maximum yield strength of 3300 psi when using a Type IV specimen, 2 inch per minute test speed, and 0.075 inch thick molded sample.

d. **Cover:** Ensure cover has a skid resistant surface meeting PROWAG requirements with stainless steel bolts meeting manufacturer's requirements. Ensure cover fits handhole to meet PROWAG vertical surface discontinuity requirements when placed in pedestrian walkways.

Reason for Revision: Current language does not allow HDPE for Handholes. Update to allow HDPE Handholes as an option for Highway Lighting Materials.

SUDAS has asked HDPE handholes and covers to be added to the specifications. The Design Bureau will prepare a change to LI-103 to accompany the spec change.

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

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / John Hart	**Office:** Construction & Materials	**Item 13**
Submittal Date: September 21, 2020	**Proposed Effective Date:** November 2020	
Article No.:	**Other:** DS-15038, Quality Management Concrete (QM-C)	

Specification Committee Action:			
Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**
Specification Committee Approved Text:			
Comments:			

Specification Section Recommended Text: See attached Draft Developmental Specifications for Quality Management Concrete (QM-C).

Comments:

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

Should conditions beyond the Contractor's control prevent completion of the work with the CDM, a Class C mix, or a mix based on Class C mix proportions using project materials, will be allowed, at no additional cost to the Contracting Authority. Mutual agreement between the Contractor and Engineer is required. When a Class C mix, or a mix based on Class C mix proportions using project materials is allowed it will not be considered in the coarseness and workability lot evaluation.

Table DS-15038.05-1: Quality Control Table

Air Content Plastic Concrete In Front of Paver	See Article 2301.02, B, 4	1/350 cubic yard ~~See below~~ 1/100 Cubic Yard Ready Mix	Materials I.M. 318

Reason for Revision: This construction season there were questions regarding the inclusion or exclusion of a Class C-mix when determining the coarseness and workability lot evaluation. This change ensures that there is clarity that Class C-mixes, or a mix based on Class C mix proportions using project materials is not included in the coarseness and workability lot evaluation.

Need to include ready mix operation. Is in IM 204 appendix E, but not in spec.

New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x

Comments:

County or City Comments:

Industry Comments: This has been shared with the ICPA/members.

DRAFT DS-15XXX
(Replace DS-15038)

DEVELOPMENTAL SPECIFICATIONS
FOR
QUALITY MANAGEMENT CONCRETE (QM-C)

Effective Date
December 15, 2020

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

15XXX.01 DESCRIPTION.

A. This specification identifies a concrete mixture design with an optimum combined aggregate gradation, and the Contractor's testing and quality control responsibilities. Optimization of the aggregates should produce concrete with low water requirement as well as improved workability and finishing characteristics. While concrete strength is important and is measured, it is not the basis for optimization of the concrete mixture design.

B. Testing and quality control apply to all Contractor produced concrete using the Concrete Design Mixture (CDM). The CDM applies to mainline slip form pavement. At the Contractor's option, the CDM may apply to any other slip form paving.

15XXX.02 MATERIALS.
For all materials, meet the quality requirements for the respective items in Division 41 of the Standard Specifications. Compatibility of all material combinations is the Contractor's responsibility based on acquired field experience with proposed materials.

15XXX.03 CONCRETE DESIGN MIXTURE.

A. An Iowa DOT PCC Level III Certified Technician is responsible for the development of the CDM. Develop a CDM based on a unit volume of 1.000 according to industry standard practice, and containing proportions of materials, including admixtures. Base the proportions upon saturated surface dry aggregates to produce a workable concrete mixture meeting the constraints of Table DS-15XXX.03-1:

Table DS-15XXX.03-1: Concrete Mixture Constraints

Nominal Maximum Coarse Aggregate Size	Greater than or equal to 1 inch
Gradation	Materials I.M. 532
Cementitious Content	Minimum, 560 pounds per cubic yard*
Fly Ash Substitution Rate	See Article 2301.02, B, 6
Water/Cementitious Ratio	Maximum, 0.42
Air Content	6% ± 1%, Design Absolute Volume = 0.060
28 Day Flexural Strength, Third Point	Minimum, 640 pounds per square inch

*	The minimum cement content assumes the use of Type I/II cement with a specific gravity of 3.14 for an absolute volume of 0.106. If cement other than Type I/II is used, use an absolute volume of 0.106 and determine the weight of cement from the specific gravity of the cement. Cement content may need to be increased to maintain the water to cementitious ratio during hot weather conditions.

B. Develop a target combined gradation in Zone II for each CDM based on normal production gradations and the relative percentages of each individual aggregate. Submit Form 955QMC to aggregate producer(s) to ensure individual gradations used are acceptable. Limit the percent passing the No. 200 sieve to no more than 1.5% for the combined aggregate gradation. When the coarse aggregate used meets the increase in percent passing the No. 200 sieve, according to Section 4109, Aggregate Gradation Table, Note 10 of the Standard Specifications, limit the percent passing the No. 200 sieve to no more than 2.0% for the combined aggregate gradation.

C. Contractor may use water reducing admixture, Type A, or water reducing and retarding admixture, Type D, in the CDM.

15XXX.04 MIX DESIGN DOCUMENTATION.
At least 7 calendar days prior to the start of paving, submit a CDM report to the District Materials Engineer for approval on Iowa DOT form. Contract extensions will not be allowed due to inadequate or additional CDMs.

15XXX.05 QUALITY CONTROL.

A. General.

1. The Contractor is responsible for quality control of the concrete. An Iowa DOT PCC Level II Certified Technician is required to oversee quality control operations. The individual conducting the testing on grade is required to be an Iowa DOT PCC Level I Certified Technician. Calibrate and correlate testing equipment prior to and during paving operations.

2. At least 7 calendar days prior to the preconstruction conference, submit to the Engineer a Quality Control Plan complying with Materials I.M. 530. Include the proposed mix design(s) with the Quality Control Plan. Do not begin paving until the plan is reviewed for compliance with the contract documents. Maintain equipment and qualified personnel to direct and perform all field quality control sampling and testing necessary to:

- Determine the various properties of the concrete governed by the contract documents, and
- Maintain the properties described in this specification.

B. Quality Control Testing.

1. Perform all quality control tests necessary to control the production and construction processes applicable to this specification and as set forth in the Quality Control Plan. Take samples for quality control testing in a random manner according to the prescribed sampling rate. Perform the tests listed in Table DS-15XXX.05-1:

Table DS-15XXX.05-1: Quality Control Table

	Limits	Testing Frequency	Test Methods
Unit Weight (Mass) of Plastic Concrete	Monitor for changes, ± 3%	Twice/day	AASHTO T 121
Gradation Combined % Passing	See Paragraph 2 below	1/1500 cubic yard	Materials I.M. 216, 301, 302, 531
Aggregate Moisture Contents	See Materials I.M. 527	1/1500 cubic yard	Materials I.M. 308
Air Content Plastic Concrete In Front of Paver	See Article 2301.02, B, 4	1/350 cubic yard ~~See below~~ 1/100 cubic yard (ready mix)	Materials I.M. 318

Air Content Plastic Concrete In Back of Paver	May be used by Project Engineer to adjust target air in front of paver	2/day for first 3 days and 1/week thereafter (for each paver used)	Materials I.M. 318
Water/Cementitious Ratio	0.42 maximum	Twice/day	Materials I.M. 527
Vibrator Frequency	See Article 2301.03, A, 3, a, 6, a	With Electronic Vibration Monitoring: Twice/day Without Electronic Vibration Monitoring: Twice/Vibrator/Day	Materials I.M. 384

2. Maintain the running average of three combined aggregate gradation tests within the limits established by the CDM target gradation and the working ranges of Table DS-15XXX.05-2:

Table DS-15XXX.05-2: CDM Target Gradations

Sieve Size	Working Range
No. 4 or greater	± 5%
No. 8 to No. 30	± 4%
No. 50	± 3%
No. 100	± 2%
minus No. 200	See Article DS-15XXX.03

C. Corrective Action.

For QM-C mixes only, plot all process control test results on control charts as described in Materials I.M. 530.

1. Aggregate Tests.

Take corrective action when the running average approaches the working range limits. When a combined gradation test result for a sieve exceeds the working range limits, adjust the target and notify the Engineer. If the verification test result for the minus No. 200 exceeds the limits in Article DS-15XXX.03 for the combined gradation, the material represented by that test for this sieve will be considered non-complying. Price adjustments will be assessed based on Coarseness/Workability Factors as described in Article DS-15XXX.07, E.

2. Concrete Tests.

Take corrective action when an individual test result approaches the control limits. Notify the Engineer whenever an individual test result exceeds the control limits.

D. Acceptable Field Adjustments.

1. All mix changes must be mutually agreed upon between the Contractor and Engineer. Document all mix changes on the QM-C Mix Adjustment form. Determine batch weights using a basic water cement ratio of 0.40. When the water cement ratio varies more than ±0.03 from the basic water cement ratio, adjust the mix design to unit volume of 1.000. A change in the source of materials or an addition of admixtures or additives requires a new CDM. The following are small adjustments that may be made without a new CDM being required:

- Increase cementitious content.
- Decrease fly ash substitution rate.
- Aggregate proportions may be adjusted from CDM proportions by a maximum of ± 4% for each aggregate.
- Change water reducer to water reducer retarder.
- Adjustment in water reducer or water reducer retarder admixture dosage.
- Change in source of fly ash.
- Change in source of sand, provided target gradation limits are met.

2. When circumstances arise, such as a cement plant breakdown, that create cement supply problems, a change in cement source may be allowed with the Engineer's approval. Consult the District Materials Engineer for approval of other changes to the mix design. A set of three beams for 28 day flexural strength testing may be required to document the changes.

3. Should conditions beyond the Contractor's control prevent completion of the work with the CDM, a Class C mix, or a mix based on Class C mix proportions using project materials, will be allowed, at no additional cost to the Contracting Authority. Mutual agreement between the Contractor and Engineer is required. When Class C mix, or mix based on Class C mix proportions using project materials is allowed it will not be considered in the coarseness and workability lot evaluation.

E. Hand Finished Pavement.
Use project materials based on Class C or Class M concrete mix proportions. With approval of the Engineer, the Contractor's CDM may be used for hand finished pavement. Quality control, as required in this specification, will not apply to hand finished pavement.

15XXX.06 METHOD OF MEASUREMENT.
Measurement will be as follows:

A. Standard or Slip-Form Portland Cement Concrete Pavement, QM-C.
Square yards shown in the contract documents.

B. Portland Cement Concrete Overlay, QM-C, Furnish Only.
Article 2310.04, A, of the Standard Specifications applies.

C. Portland Cement Concrete Overlay, QM-C, Placement Only.
Article 2310.04, B, of the Standard Specifications applies.

D. Hand Finished Pavement.
Square yards of Standard or Slip-Form Portland Cement Concrete Pavement, QM-C, constructed using Class C or Class M mixtures. For overlays, the Engineer will compute the number of:
- Square yards of Portland Cement Concrete Overlay, QM-C, Placement Only, constructed using Class C or Class M mixtures, and
- Cubic yards of Class C and Class M mixtures used.

15XXX.07 BASIS OF PAYMENT.
The cost for furnishing labor, equipment, and materials for the work required by the Contractor to design, test, and provide process control for production of QM-C shall be included in the contract unit price for QM-C bid items. Payment will be the contract unit prices as follows:

A. Standard or Slip Form Portland Cement Concrete Pavement, QM-C.
Contract unit price for Standard or Slip-Form Portland Cement Concrete Pavement, QM-C, per square yard.

B. Portland Cement Concrete Overlay, QM-C, Furnish Only.
Article 2310.05, A, of the Standard Specifications applies. Average coarseness and workability factor for each lot will be determined according to Materials I.M. 530.

C. Portland Cement Concrete Overlay, QM-C, Placement Only.
Article 2310.05, B, of the Standard Specifications applies. Average coarseness and workability factor for each lot will be determined according to Materials I.M. 530.

D. Hand Finished Pavement.

1. Standard or Slip-Form Portland Cement Concrete Pavement, QM-C: per square yard.

2. Portland Cement Concrete Overlay, QM-C, Placement Only: per square yard.

3. Portland Cement Concrete Overlay, QM-C, Furnish Only: per cubic yard.

E. Price Adjustment

Failure to provide an optimized gradation within Zone II, when required, will result in the following price adjustments.

Table DS-15XXX.07-1: Price Adjustments

Gradation Zone (Materials I.M. 532)	Price Adjustment Per Lot
IV	2%
I	5%

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Melissa Serio	**Office:** Construction & Materials	**Item 14**
Submittal Date: 9/21/20	**Proposed Effective Date:** December 15, 2020	
Article No.: **Title:**	**Other:** DS-15068, Sliplining Existing Pipe Culverts	

Specification Committee Action:			
Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**
Specification Committee Approved Text:			
Comments:			
Specification Section Recommended Text: See attached Draft Developmental Specifications for Sliplining Existing Pipe Culverts.			
Comments:			

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

Revise 15068.02, C. Pipe Dimension Table.

Table 1

Existing Pipe, Nominal Size, Inches	Liner Pipe, Nominal Size, Inches						
	Profile Wall HDPE (a)	Solid Wall HDPE (b)	Profile Spiral Wound PVC (a)	Profile Wall PVC (a)	CSP (a)	PP (a)	SRPE (a)
24	18	22	19	18	21	18	-
30	24	28	25	24	27	24	-
36	30	32	30	30	30	30	30
42	36	36	36	36	36	36	36
48	40	42	42	42	42	42	42
54	42	48	48	48	48	--	48
60	48	54	54	54	54	48	54
66	54	--	60	--	60	--	60
72	60	63	66	60	66	60	66
78	66	--	69	--	72	--	72
84	72	--	--	--	78	--	72
90	--	--	--	--	84	--	84
96	--	--	--	--	90	--	-

(a) ASTM or AASHTO standard nominal size is based on inside diameter.
(b) ASTM standard nominal size is based on outside diameter.

Revise 15068.02, D. Annular Space Grouting.

D. Use materials ~~foamed cellular concrete~~ meeting the requirements of Section 2506 of the Standard Specifications.

Reason for Revision: Based on discussion at June 2020 DME meeting, revise DS so it does not restrict annular space grouting material to just foamed cellular concrete. This will allow for foamed cellular concrete and flowable mortar to be used that are currently included in 2506 and for other products that

might be added (if needed) to 2506 due to shortages of fly ash. Add notes to Pipe Dimension Table to show which type of diameter (inside or outside) the ASTM/AASHTO standard nominal pipe sizes are based on.		
New Bid Item Required (X one)	**Yes**	**No** x
Bid Item Modification Required (X one)	**Yes**	**No** x
Bid Item Obsoletion Required (X one)	**Yes**	**No** x
Comments: None		
County or City Comments:		
Industry Comments:		

DRAFT DS-15XXX
(Replaces DS-15068)

DEVELOPMENTAL SPECIFICATIONS
FOR
SLIPLINING EXISTING PIPE CULVERTS

Effective Date
December 15, 2020

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

15XXX.01 DESCRIPTION.
Furnish and install liner pipe at locations specified in the contract documents.

15XXX.02 MATERIALS.

A. Furnish liner pipe meeting the material requirements for the type of pipe specified.

1. **Solid Wall HDPE Pipe with Integral Joint.**
   Comply with requirements of ASTM F 714 (SDR 32.5) and ASTM D 3350 (cell classification 334433C or higher).

2. **Profile Wall HDPE Pipe with Integral Joint.**
   Comply with requirements of ASTM F 894, ASTM D 2412 (minimum RSC of 160 at 3% deflection), and ASTM D 3350 (cell classification 334433C or higher).

3. **Profile Machine Spiral Wound PVC Pipe with Integral Joint.**
   Comply with requirements of ASTM F 1697 and provide a pipe stiffness as defined in ASTM F 1741 using a safety factor of 2.0.

4. **Profile Wall PVC Pipe with Integral Joint.**
   Comply with requirements of ASTM F 949 or F 1803.

5. **Corrugated Steel Pipe (CSP).**
   Comply with requirements of Article 4141.02 of the Standard Specifications and Standard Road Plan DR-104.

6. **Polypropylene Pipe (PP).**
   Comply with requirements of ASTM F 2764 or F 2736.

7. **Steel Reinforced Polyethylene (SRPE)**
   Comply with requirements of ASTM F 2562, Class 1.

B. Pipe Connections.
Use liner pipe capable of being joined into a continuous length. Ensure joints are adequate for pushing or pulling the liner pipe through the existing pipe.

C. Pipe Dimension Table.
Use liner pipe meeting dimensions as shown in Table DS-15XXX.02-1. Verify there is enough clearance in existing pipe to ensure adequate room for liner pipe installation (based on manufacturer's dimensions) and grouting.

Table DS-15XXX.02-1: Liner Pipe Size

Existing Pipe, Nominal Size, Inches	Liner Pipe, Nominal Size, Inches						
	Profile Wall HDPE[a]	Solid Wall HDPE[b]	Profile Spiral Wound PVC[a]	Profile Wall PVC[a]	CSP[a]	PP[a]	SRPE[a]
24	18	22	19	18	21	18	-
30	24	28	25	24	27	24	-
36	30	32	30	30	30	30	30
42	36	36	36	36	36	36	36
48	40	42	42	42	42	42	42
54	42	48	48	48	48	--	48
60	48	54	54	54	54	48	54
66	54	--	60	--	60	--	60
72	60	63	66	60	66	60	66
78	66	--	69	--	72	--	72
84	72	--	--	--	78	--	72
90	--	--	--	--	84	--	84
96	--	--	--	--	90	--	-

(a) ASTM or AASHTO standard nominal size is based on inside diameter.
(b) ASTM standard nominal size is based on outside diameter.

D. Annular Space Grouting
Use ~~foamed cellular concrete~~ materials meeting the requirements of Section 2506 of the Standard Specifications.

15XXX.03 CONSTRUCTION.

A. Prior to sliplining, clean the existing pipe of obstructions or debris that will prevent the insertion of the liner.

B. Secure the liner pipe to prevent floating during grouting and ensure minimum change in flowline, especially on the inlet end.

C. Annular Space Grouting.
Comply with construction requirements in Section 2506 of the Standard Specifications.

15XXX.04 METHOD OF MEASUREMENT.
Measurement for Sliplining Existing Culverts will be the linear feet shown in the contract documents for each culvert.

15XXX.05 BASIS OF PAYMENT.
Payment per linear foot includes all costs to inspect and clean the existing culvert and all labor, equipment, and materials for sliplining, securing the liner pipe in the existing culvert, and annular space

grouting. If Contractor demonstrates the grouting is greater than 120% of the estimated amount to fill the annular space, the grouting volume greater than 120% of the estimate will be paid for as extra work as provided in Article 1109.03, B of the Standard Specifications.

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Jeff Schmitt	**Office:** Construction & Materials	**Item 15**
Submittal Date: 09-21-2022	**Proposed Effective Date:** December 15, 2020	
Article No.: **Title:**	**Other:** DS-15083, High Performance Thin Lift Overlay	

Specification Committee Action:			
Deferred:	**Not Approved:**	**Approved Date:**	**Effective Date:**
Specification Committee Approved Text:			
Comments:			
Specification Section Recommended Text: See attached Draft Developmental Specifications for High Performance Thin Lift Overlay.			
Comments:			

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

15083.03 CONSTRUCTION.

A. Apply tack coat prior to placement of thin lift overlay according to Section 2303 of the Standard Specifications.

~~**B.** Pave when ambient temperatures are at least 60ºF and rising.~~

B~~C~~. Compact with static steel wheeled roller.

C~~D~~. Do not open to traffic until the entire mat has cooled below 150°F.

Reason for Revision: High Performance Thin Lift Overlay Mixes can be treated in the same manner (regarding mix temperature) as conventional hot mix asphalt. Delete the current temperature requirement and let Section 2303 apply.

New Bid Item Required (X one)	**Yes**	**No** X
Bid Item Modification Required (X one)	**Yes**	**No** X
Bid Item Obsoletion Required (X one)	**Yes**	**No** X

Comments: Proposed specification change was discussed with Industry at the Strategic Asphalt Committee (SAC) meeting on 09-22-2020.

County or City Comments:

Industry Comments: Industry agrees with the proposed change.

DRAFT DS-15XXX
(Replaces DS-15083)

DEVELOPMENTAL SPECIFICATIONS
FOR
HIGH PERFORMANCE THIN LIFT OVERLAY

Effective Date
December 15, 2020

THE STANDARD SPECIFICATIONS, SERIES 2015, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

15XXX.01 DESCRIPTION.
These specifications describe requirements for a highly polymer modified asphalt thin lift surface course. Apply Section 2303 of the Standard Specifications unless otherwise directed in these specifications.

15XXX.02 MATERIALS.

A. Asphalt Binder.
Use PG 64-34E+ with a minimum percent recovery of 90% when tested at 64°C per AASHTO T 350 at 3.2 kPa.

B. Mix Design.

1.

Design Gyrations	50
Design Voids Target (Based on %Gmm)	≤ 2.0
Film Thickness	8.0 – 15.0
Aggregate Quality	A
Crushed Content (minimum)	50%
FAA (minimum)	40
Sand Equivalency (minimum)	50

2. Friction Aggregate.
- Interstates: minimum 30% of Total Aggregate shall be Type 2 or better
- Non-Interstates: minimum 50% of Total Aggregate shall be Type 4 or better

3. Hamburg Testing (AASHTO T324).
Required only for Interstate paving mixes. Compact to 3.5% air voids. No more than 4 mm rutting in the first 8000 passes.

4. Do not use more than 15.0% binder replacement. Do not use RAS.

5. Gradation.

Table DS-15XXX: Thin Lift Overlay Gradation

Sieve Size	Min % Passing	Max % Passing
1½ inch		
1 inch		
3/8 inch	91	100
#4		90
#8	27	63
#16		
#30		
#50		
#100		
#200	2	10

15XXX.03 CONSTRUCTION.

A. Apply tack coat prior to placement of thin lift overlay according to Section 2303 of the Standard Specifications.

~~**B.** Pave when ambient temperatures are at least 60ºF and rising.~~

~~**C**~~ **B.** Compact with static steel wheeled roller.

~~**D**~~ **C.** Do not open to traffic until the entire mat has cooled below 150°F.

~~**E**~~ **D. Quality Assurance/Quality Control.**

1. Field Voids Acceptance.
Acceptance for field voids shall be Class II compaction defined in Section 2303 of the Standard Specifications.

2. Lab Voids Acceptance.
Sample from windrow or hopper. Apply Article 2303.05, A, 3, a, 2, of the Standard Specifications for AAD acceptance. Air void target is based on approved JMF.

3. Take at least one cold feed for gradation control each day of production.

15XXX.04 METHOD OF MEASUREMENT.
Hot Mix Asphalt Thin Lift Overlay will be measured according to Article 2303.04 of the Standard Specifications.

15XXX.05 BASIS OF PAYMENT.
Hot Mix Asphalt Thin Lift Overlay will be paid for according to Article 2303.05 of the Standard Specifications.