MINUTES
OF
IOWA DOT SPECIFICATION COMMITTEE MEETING

October 13, 2022

Members Present:	Darwin Bishop	District 3 – DCE
	Mark Dunn	Contracts & Specifications Bureau
	Daniel Harness	Design Bureau
	Eric Johnsen, Chair	Contracts & Specifications Bureau
	Wes Musgrove	Construction & Materials Bureau
	Scott Nixon	District 1 - Construction
	Donna Matulac	Contracts & Specifications Bureau
	Christy VanBuskirk	Local Systems Bureau
	Bob Welper	District 2 - DME
Members Not Present:	Charlie Purcell	Project Delivery Division
	Mike Nop	Bridges & Structures Bureau
	Willy Sorenson	Traffic & Safety Bureau
Advisory Members Present:	Andy Case	Dallas County
	Ben Daleske	Fayette County
	Jeff Devries	Construction & Materials Bureau
	DeWayne Heintz	Jefferson County
	Lisa McDaniel	FHWA
	Curtis Carter	Construction & Materials Bureau
	Melissa Serio	Construction & Materials Bureau
	Scott Sommers	Construction & Materials Bureau

The Specification Committee met on Thursday, October 13, 2022, at 9:00 a.m. Eric Johnsen, Specifications Engineer, opened the meeting. The items were discussed in accordance with the agenda dated October 3, 2022:

The minutes are as follows:

1. Article 1105.03, Working Drawings.

The Construction and Materials Bureau requests to provide clarity regarding responsibility/accountability for working drawings, and set clear workflow and review expectations for submittals, including incomplete, piecemeal, and/or revised submittals.

2. Article 1113.02, B, Contractor (Electronic Document Storage).

The Construction and Materials Bureau requests to remove requirement for daily/weekly rock summaries.

3. Article 2106.03, E, Monitoring (Settlement Plates).
Article 2106.05, Basis of Payment (Settlement Plates).

Article 2526.03, E, Survey (Construction Survey).

The Construction and Materials Bureau requests to change responsibility for determining settlement plate elevations from Engineer to Contractor when construction survey is included on the contract.

4. **Article 2301.02, B, 6, Use of Supplementary Cementitious Materials (PCC Pavement)**
Article 2433.02, B, 8, Concrete (Concrete Drilled Shaft).

The Construction and Materials Bureau requests to update the use of supplementary cementitious materials to add the new ASTM cement Types IT and IL.

5. **Article 2317.04, E, Corrective Actions (Primary and Interstate Pavement Smoothness).**

The Construction and Materials Bureau requests to clarify when corrective action is considered satisfactory.

6. **Article 2403.03, B, 4, Heating and Protection Equipment.**
Article 2403.03, F, Placing and Protection in Cold Weather.
Article 2403.05, A, Structural Concrete – Basis of Payment.

The Construction and Materials Bureau requests to clarify heating and cold weather protection of structural concrete.

7. **Article 2412.03, E, Curing Concrete Decks.**

The Construction and Materials Bureau requests to add impermeable covering as a deck curing option during the warmer months with additional requirements due to the higher rate of evaporation.

8. **Article 2433.03, J, Crosshole Sonic Log (CSL) Testing.**

The Construction and Materials Bureau requests to expand the options available for CSL tubes.

9. **Articles 2556.02 & 2556.03, Dowel Bar Retrofit.**

The Construction and Materials Bureau requests to require submittal of manufacturer's maximum water allowed and set a minimum cure time.

Reminder – The November 10, 2022 Specifications Committee meeting is the last opportunity to get items approved for submission into the April 2023 GS.

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Curtis Carter	**Office:** Construction & Materials	**Item 1**
Submittal Date: 9/26/2022	**Proposed Effective Date:** April 2023 GS	
Article No.: 1105.03 **Title:** Working Drawings	**Other:**	

Specification Committee Action: Approved as recommended

Deferred:	**Not Approved:**	**Approved Date:** 10/13/2022	**Effective Date:** April 2023 GS

Specification Committee Approved Text: See Specification Section Recommended Text

Comments: None

Specification Section Recommended Text:

1105.03, Working Drawings.

Replace Articles A through D and **renumber** Article E:

A. The plans will be supplemented by such working drawings as are necessary to adequately control the work. Working drawings shall be furnished by the Contractor, as required by the contract documents. When required, the working drawings shall be accompanied by engineering calculations furnished by the Contractor, that substantiate the details of the working drawings. When certification by a Professional Engineer licensed in the State of Iowa is required, the certification shall be in the appropriate branch of engineering, for the work specified in the contract documents. Working drawings may include shop drawings of fabricated materials, erection plans, falsework plans, cofferdam plans, or other supplemental plans or data. ~~Shop drawings for structures shall show fully detailed dimensions and sizes of all component parts of the structure. Prior to review of working drawings, any work done or material ordered shall be at the Contractor's risk.~~ The ~~Contractor shall understand that the~~ Contracting Authority's review of working drawings shall not constitute validation or endorsement of the Contractor's means or methods of construction. The Contracting Authority's review of shop drawings ~~submitted by the Contractor~~ covers only requirements for strength and arrangement of component parts as relevant to the permanent works. The Contracting Authority assumes no responsibility for errors ~~in dimensions~~ or omissions in the Contractor's working drawings and assumes the Contractor will use material complying with requirements of the contract documents or, where not specified, those of sound and reasonable quality, and will ~~erect~~ construct the subjects of such working drawings in accordance with recognized standards of first quality work or, when specified, in accordance with standards of the contract documents. If unanticipated and either unusual or complex construction procedures or site conditions occur, the Engineer may require the Contractor to submit such working drawings as, in the judgment of the Engineer, are necessary to satisfactorily control or complete the proposed construction. Prior to the Engineer's written acceptance of required working drawings, any work done or material ordered shall be at the Contractor's risk.

~~**B.** Unless specified otherwise in the contract documents, Contractor submittal time will be subject to the specified review time and the Contractor's need based on their schedule for the work.~~

~~**C**~~ **B.** Working drawings shall be submitted in their entirety and shall include complete information as necessary to detail the subject work and satisfy applicable contract requirements. ~~Submittals~~ Working drawings shall not be subdivided or made in a piecemeal fashion unless approved in writing by the Engineer in advance of the submittal. If subdivided submittals are approved by the Engineer, they shall be made in packages with logical break points (e.g. structural steel units) so the Engineer may make a ~~complete~~ comprehensive review of the subdivided submittal. For submittals which relate to or depend upon Contractor-generated information not self-contained within the submittal

(e.g. bridge girder shop drawings, as they relate to separate bridge bearing shop drawings), any acceptance by the Engineer shall be understood as conditional acceptance subject to change, until such time all relevant information is submitted by the Contractor and reviewed and accepted by the Engineer.

~~D~~ **C.** ~~Submittals that are required to be revised and resubmitted~~ Revised submittals shall be made as a complete and updated replacement of the previous version. Abbreviated or piecemeal resubmissions are not acceptable unless approved in writing by the Engineer in advance of the submittal. Revised submittals shall have the revisions clouded or annotated by the Contractor to ~~designate revisions~~ provide clear identification of all changes. ~~Resubmittals made in accordance with this provision will have a review time in calendar days of half of the review time shown in Table 1105.03-1. Resubmittals that are not in accordance with this provision will be allowed the review time shown in Table 1105.03-1.~~

D. Unless specified otherwise in Table 1105.03-1 or elsewhere in the contract documents, the Contracting Authority shall be entitled to 30 calendar days for review of working drawing submittals, starting from the date the complete submittal is received from the Contractor. For submittals which are revised and resubmitted after the initial submittal date, the Contracting Authority shall be entitled to the full review duration starting from the date the last revision is received, except as otherwise specified in Article 1105.03, E. The Contractor shall account for the allowed review duration when scheduling the work.

E. Resubmittals which are submitted in accordance with Article 1105.03, C, with revisions limited to correction or clarification of details which were included in the previous version of the submittal, shall be allotted review time in calendar days equal to half the review time specified in Article 1105.03, D. Resubmittals which include new details, or revised details without proper annotation, shall be allotted the full review time specified in Article 1105.03, D. Combined review time for the original submittal and subsequent revisions shall not be less than the allotted review time for the original submittal.

~~E~~ **F. Submittals.**

Comments:

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

1105.03 WORKING DRAWINGS.

A. The plans will be supplemented by such working drawings as are necessary to adequately control the work. Working drawings shall be furnished by the Contractor, as required by the contract documents. When required, the working drawings shall be accompanied by engineering calculations furnished by the Contractor, that substantiate the details of the working drawings. When certification by a Professional Engineer licensed in the State of Iowa is required, the certification shall be in the appropriate branch of engineering, for the work specified in the contract documents. Working drawings may include shop drawings of fabricated materials, erection plans, falsework plans, cofferdam plans, or other supplemental plans or data. ~~Shop drawings for structures shall show fully detailed dimensions and sizes of all component parts of the structure. Prior to review of working drawings, any work done or material ordered shall be at the Contractor's risk.~~ The ~~Contractor shall understand that the~~ Contracting Authority's review of working drawings shall not constitute validation or endorsement of the Contractor's means or methods of construction. The Contracting Authority's review of shop drawings ~~submitted by the Contractor~~ covers only requirements for strength and arrangement of component parts as relevant to the permanent works. The Contracting Authority assumes no responsibility for errors ~~in dimensions~~or omissions in the Contractor's working drawings and assumes the Contractor will use material complying with requirements of the contract documents or, where not specified, those of sound and reasonable quality, and will ~~erect~~construct the subjects of such working drawings in accordance with recognized standards of first quality work or, when specified, in accordance with standards of the contract documents. If unanticipated and either unusual or complex construction procedures or site conditions occur, the Engineer may require the Contractor to submit such working drawings as, in the judgment of the Engineer, are necessary to satisfactorily control or complete the proposed construction. Prior to the Engineer's written acceptance of required working drawings, any work done or material ordered shall be at the Contractor's risk.

~~**B.** Unless specified otherwise in the contract documents, Contractor submittal time will be subject to the specified review time and the Contractor's need based on their schedule for the work.~~

B~~C~~. Working drawings shall be submitted in their entirety and shall include complete information as necessary to detail the subject work and satisfy applicable contract requirements. ~~Submittals~~Working drawings shall not be subdivided or made in a piecemeal fashion unless approved in writing by the Engineer in advance of the submittal. If subdivided submittals are approved by the Engineer, they shall be made in packages with logical break points (e.g. structural steel units) so the Engineer may make a ~~complete~~comprehensive review of the subdivided submittal. For submittals which relate to or depend upon Contractor-generated information not self-contained within the submittal (e.g. bridge girder shop drawings, as they relate to separate bridge bearing shop drawings), any acceptance by the Engineer shall be understood as conditional acceptance subject to change, until such time all relevant information is submitted by the Contractor and reviewed and accepted by the Engineer.

C~~D~~. ~~Submittals that are required to be revised and resubmitted~~Revised submittals shall be made as a complete and updated replacement of the previous version. Abbreviated or piecemeal resubmissions are not acceptable unless approved in writing by the Engineer in advance of the submittal. Revised submittals shall have the revisions clouded or annotated by the Contractor to ~~designate revisions~~provide clear identification of all changes. ~~Resubmittals made in accordance with this provision will have a review time in calendar days of half of the review time shown in Table 1105.03-1. Resubmittals that are not in accordance with this provision will be allowed the review time shown in Table 1105.03-1.~~

D. Unless specified otherwise in Table 1105.03-1 or elsewhere in the contract documents, the Contracting Authority shall be entitled to 30 calendar days for review of working drawing submittals, starting from the date the complete submittal is received from the Contractor. For submittals which are revised and resubmitted after the initial submittal date, the Contracting Authority shall be entitled to the full review duration starting from the date the last revision is received, except as otherwise specified in Article 1105.03, E. The Contractor shall account for the allowed review duration when scheduling the work.

E. Resubmittals which are submitted in accordance with Article 1105.03, C, with revisions limited to correction or clarification of details which were included in the previous version of the submittal, shall be allotted review time in calendar days equal to half the review time specified in Article 1105.03, D. Resubmittals which include new details, or revised details without proper annotation, shall be allotted the full review time specified in Article 1105.03, D. Combined review time for the original submittal and subsequent revisions shall not be less than the allotted review time for the original submittal.

F~~E~~. Submittals.

Reason for Revision: Proposed revisions are general updates intended to provide clarity regarding responsibility/accountability for working drawings, and set clear workflow and review expectations for submittals, including incomplete, piecemeal and/or revised submittals. The revisions are intended to provide needed clarification/elaboration regarding intent of the current specification language.

For safety and quality oversight reasons, it is important for the Contracting Authority, Contractor and relevant Subcontractors to have a complete and unambiguous paper trail, including proper accounting of all revisions, to ensure the version of the working drawings used for the work is the version that received Engineer's acceptance. It is important for all parties to commit to a standardized submittal protocol/review schedule, such that all parties can rely on the information being received, reviewed, and disposed within a predictable timeframe for purposes of scheduling the work. There must be clearly defined expectations for what constitutes a complete/compliant submittal, so there is no misunderstanding over who is accountable for time/delay associated with preparation/revision/review of a submittal. For all projects, but particularly projects which require extensive or complex working drawings, submittal expectations must be clearly defined to ensure proper, efficient and organized administration of the work.

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	**Office:** Construction & Materials	**Item 2**
Submittal Date: September 19, 2022	**Proposed Effective Date:** April 2023 GS	
Article No.: 1113.02, B **Title:** Electronic Document Storage – Responsibilities - Contractor	**Other:**	

Specification Committee Action: Approved as recommended

Deferred:	**Not Approved:**	**Approved Date:** 10/13/2022	**Effective Date:** April 2023 GS

Specification Committee Approved Text: See Specification Section Recommended Text

Comments: None

Specification Section Recommended Text:

1113.02, B. Contractor.

Delete the Article and **renumber** following Article:

~~**3.** Provide daily or weekly statements that show an itemized summary of the quantity of certified non-proportioned material delivered to the project site. The statement is to include a total for the day or week provided and a running total for the amount delivered to the project to date.~~

~~**4**~~ **3.**

Comments:

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

1113.02, B. Contractor.

Delete the Article and renumber following Article:

~~**3.** Provide daily or weekly statements that show an itemized summary of the quantity of certified non-proportioned material delivered to the project site. The statement is to include a total for the day or week provided and a running total for the amount delivered to the project to date.~~

~~**4.**~~ **3.**

Reason for Revision: Remove requirement for daily/weekly rock summaries since they end up creating a lot of work for inspection staff with little benefit. This item was brought up by field construction staff and discussed at the 5/17/22 District Construction Engineer meeting and 9/7/22 District Materials Engineer meeting.

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/Melissa Serio	**Office:** Construction & Materials	**Item 3**
Submittal Date: 9/22/22	**Proposed Effective Date:** April 2023 GS	
Article No.: 2106.03, E. **Title:** Monitoring (Settlement Plates) **Article No.:** 2106.05. **Title:** Basis of Payment (Settlement Plates) **Article No.:** 2526.03, E. **Title:** Survey (Construction Survey)	**Other:**	

Specification Committee Action: Approved as recommended

Deferred:	**Not Approved:**	**Approved Date:** 10/13/2022	**Effective Date:** April 2023 GS

Specification Committee Approved Text: See Specification Section Recommended Text

Comments: None

Specification Section Recommended Text:

2106.03, E, Monitoring.

Replace the Article:

~~The Engineer will~~ When Construction Survey is included with the Contract, determine elevations of settlement plates in accordance with Article 2526.03, E. When Construction Survey is not included with the Contract, the Engineer will determine elevations of settlement plates.

2106.05, Basis of Payment.

Replace the Article:

Furnishing, installing, and extending settlement plates is incidental to embankment or excavation. Monitoring of settlement plates by the Contractor is incidental to Construction Survey (when item is included with the Contract).

2526.03, E.

Replace the Article:

Establish benchmarks in the adjacent area before installing settlement plates in accordance with Article 2526.03, A, 2, c. ~~The Engineer will l~~Locate and determine elevations of settlement plates daily during construction and weekly during delays and following the completion of embankment construction, unless approved otherwise by the Engineer. Submit elevations to the Engineer on Settlement Plate Data Form (available at the Bureau of Construction and Materials website).

Comments:

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

2106.03, E.

Replace the Article:

E. Monitoring.
~~The Engineer will~~ When Construction Survey is included with the Contract, determine elevations of settlement plates in accordance with Article 2526.03, E. When Construction Survey is not included with the Contract, the Engineer will determine elevations of settlement plates.

2106.05.

Replace the Article:

2106.05 BASIS OF PAYMENT.
Furnishing, installing, and extending settlement plates is incidental to embankment or excavation. Monitoring of settlement plates by the Contractor is incidental to Construction Survey (when item is included with the Contract).

2526.03, E.

Replace the Article:

E. Establish benchmarks in the adjacent area before installing settlement plates in accordance with Article 2526.03, A, 2, c. ~~The Engineer will l~~Locate and determine elevations of settlement plates daily during construction and weekly during delays and following the completion of embankment construction, unless approved otherwise by the Engineer. Submit elevations to the Engineer on Settlement Plate Data Form (available at the Bureau of Construction and Materials website).

Reason for Revision: Request was made at July 2022 District Construction Engineer meeting to change responsibility for determining settlement plate elevations from Engineer to Contractor. This is due to many RCE offices no longer having survey capabilities and currently Districts are often requesting that this responsibility be performed by the Contractor.

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: Wes Musgrove	**Office:** Construction & Materials	**Item 4**
Submittal Date: August 2022	**Proposed Effective Date:** April 2023 GS	
Article No.: 2301.02 **Title:** Portland Cement Concrete Pavement **Article No.:** 2433.02 **Title:** Concrete Drilled Shaft	**Other:**	

Specification Committee Action: Approved as recommended

Deferred:	**Not Approved:**	**Approved Date:** 10/13/2022	**Effective Date:** April 2023 GS

Specification Committee Approved Text: See Specification Section Recommended Text

Comments: None

Specification Section Recommended Text:

2301.02, B, 6, Use of Supplementary Cementitious Materials.

Replace the last two sentences:

When Type IP, ~~or~~ IS, or IT cement is used in the concrete mixture, only fly ash substitution will be permitted. Between October 16 and March 15, substitution of Type I/II or IL cement with fly ash and GGBFS, or Type IP, ~~or~~ IS, or IT cement with fly ash will be allowed only when maturity method is used to determine time of opening.

2433.02, B, 8.

Replace the Article:

Limit total mineral admixture substitution rate to 40%. Between October 15 and March 15, do not substitute GGBFS with Type I, ~~or~~ Type II, or Type IL cement; or fly ash with Type IP, ~~or~~ IS, or IT cement.

Comments:

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

2301.02, B, 6

B. Portland Cement Concrete Pavement.

6. Use of Supplementary Cementitious Materials.
The maximum allowable fly ash substitution rate is 20%. The GGBFS substitution rate shall not be more than 35% by weight. The total mineral admixture substitution rate shall not exceed 40%. When Type IP, ~~or~~ IS, or IT cement is used in the concrete mixture, only fly ash substitution will be permitted. Between October 16 and March 15, substitution of Type I/II or IL cement with fly ash and GGBFS, or Type IP, ~~or~~ IS, or IT cement with fly ash will be allowed only when maturity method is used to determine time of opening.

2433.02, B, 8

B. Concrete.

Comply with the following:

8. Limit total mineral admixture substitution rate to 40%. Between October 15 and March 15, do not substitute GGBFS with Type I, ~~or~~ Type II, or Type IL cement; or fly ash with Type IP, ~~or~~ IS, or IT cement.

Reason for Revision: Update the use of supplementary cementitious materials to add the new ASTM cement Types IT and IL.

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: Sent to ICPA		

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove, Jeff De Vries	**Office:** Construction & Materials	**Item 5**
Submittal Date: September 2022	**Proposed Effective Date:** April 2023 GS	
Article No.: 2317.04, E **Title:** Primary and Interstate Pavement Smoothness	**Other:**	

Specification Committee Action: Approved as recommended

Deferred:	**Not Approved:**	**Approved Date:** 10/13/2022	**Effective Date:** April 2023 GS

Specification Committee Approved Text: See Specification Section Recommended Text

Comments: None

Specification Section Recommended Text:

2317.04, E, Corrective Work.

Add as the fourth sentence:

Corrected bumps will be considered satisfactory when measurement by the profilograph shows that the bumps are 0.3 inch or less in a 25 foot span. Corrected dips will be considered satisfactory when the profilogram shows the dips are less than 0.3 inch in a 25 foot span.

Comments:

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

2317.04 CORRECTIVE ACTIONS.

E. Corrective Work.

When the Contractor is not responsible for the adjoining surface, bumps and dips in the 16 feet at the end of a section will be reviewed by the Engineer. Correct bumps and dips determined to be under the control of the Contractor and resulting from the Contractor's operations. Correction of bumps and dips determined to be beyond the control of the Contractor will be paid according to Article 1109.03, B. Corrected bumps will be considered satisfactory when measurement by the profilograph shows that the bumps are 0.3 inch or less in a 25 foot span. Corrected dips will be considered satisfactory when the profilogram shows the dips are less than 0.3 inch in a 25 foot span. Complete the corrective work prior to determining pavement thickness. Do not use bush hammers or other impact devices.

Reason for Revision: Add clarification as to when corrected work is considered satisfactory. Note: The language matches the language for 2316.

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 / Curtis Carter	**Office:** Construction & Materials	**Item 6**
Submittal Date: 9/26/2022	**Proposed Effective Date:** April 2023 GS	
Article No.: 2403.03, B, 4 **Title:** Heating and Protection Equipment **Article No.:** 2403.03, F **Title:** Placing and Protection in Cold Weather **Article No.:** 2403.05, A **Title:** Structural Concrete – Basis of Payment	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 10/13/2022	**Effective Date:** April 2023 GS

Specification Committee Approved Text: See Specification Section Recommended Text with the following exception: 5e – 'determined' will be changed to 'approved'.

2403.03, F, 5, e.

Replace the Article:

e. Monitor concrete temperatures for the first 96 hours after placement. Furnish and install approved commercial temperature monitoring equipment configured to automatically record a minimum of one reading per hour for the 96 hour duration of temperature monitoring. The temperature monitoring equipment must be accurate within +/-2°F in the temperature range of 0°F to 180°F. The quantity and location of temperature sensors will be approved by the Engineer prior to concrete placement. Up to eight sensors per placement shall be situated to provide representative monitoring of concrete surface temperatures throughout the placement, with one sensor located in the area of minimum expected concrete temperature. Position the sensors with 2 inches clear cover to the surface of the concrete. Furnish temperature readings to the Engineer prior to discontinuation of cold weather protection.

Comments: Contracts/Specifications will be looking at pre-determined prices within the next couple of weeks and will review the price noted below ($8.50) to determine if this price needs to be adjusted for the April 2023 GS.

Specification Section Recommended Text:

2403.03, B, 4, Heating and Protection Equipment.

Replace Articles c and d.

c. Use of ~~a~~ salamander-type or other ~~type of~~ open flame heating units is prohibited.

d. Use heating equipment constructed with ~~a~~ sufficient heat shielding ~~so that metal in direct contact with the open flame is not exposed~~ to protect against direct contact with the heating element.

2403.03, F Placing and Protection in Cold Weather.

Replace Articles 3 through 5:

3. Do not place concrete against ~~frozen~~ forms, earth, ~~or~~ rock, steel or ~~against~~ other concrete having a temperature below 40°F.

4. ~~In addition to protecting the concrete against chilling or freezing, h~~Heat the mix water or aggregates, or both, so that ~~when placed~~ the concrete will have a temperature appropriate for the mass and dimensions of the portion of the structure being placed, but ~~from 45°F~~ not less than 50°F or ~~to~~ greater than 80°F at time of placement.

5. Before concrete is placed at ambient air temperatures below 40°F or when these temperatures might occur ~~during the protection period~~ within the first 96 hours after placement, provide ~~heating or protecting facilities, or both, meeting requirements of~~ Article 2403.03, B, 4~~, adequate to protect the work~~ cold weather protection and concrete temperature monitoring as follows:

a. ~~Maintain the concrete temperature at no less than 50°F for the first 48 hours after placing. Then gradually reduce the concrete temperature at a rate not exceeding 25°F in 24 hours. When heating and housing is used, locate temperature monitors in the concrete at the furthest and closest point from the heat source. Do not allow the maximum temperature of the monitor point closest to the heat source to exceed 150°F.~~ Cold weather protection shall consist of heated housing, insulation, or combination thereof. Provide each formed or exposed concrete face with complete and uniform cold weather protection for the entirety of that face, unless otherwise approved by the Engineer.

b. ~~In lieu of protection involving housing and heating, the Contractor may protect concrete by the use of forms insulated with a commercial insulating material adequate to maintain the concrete temperature at no less than 50°F for the first 48 hours after placing. Leave these insulated forms undisturbed for the next 48 hours, after which they may be removed. When forms are insulated, protect exposed horizontal surfaces with a similar layer of the insulating material or an adequate layer of hay or straw, properly secured.~~ When heated housing is used, use heating equipment that complies with the requirements of Article 2403.03, B, 4. Firmly secure combustible material to prevent contact with any source of heat and take adequate precautions to prevent fires. Construct the housing enclosure with sufficient weather resistance to maintain heat at the concrete surface as needed to comply with the temperature requirements of Article 2403.03, F, 5, d. Apply heat uniformly within the housing enclosure. Do not allow the ambient temperature in the enclosure to exceed the heat of the concrete surface by more than 35°F. Unless approved otherwise by the Engineer, suspend application of heat if the temperature of any portion of the concrete element exceeds 150°F. Do not allow the heating system to cause drying of exposed concrete surfaces or compromise the effectiveness of the curing protection required by Article 2403.03, E.

c. ~~Make suitable provision, including cast-in-wells for thermometers, to provide a means for determining the temperature of the concrete.~~ When insulation is used, apply an adequate amount of approved insulating material to formwork and exposed concrete surfaces to maintain concrete temperature in compliance with the requirements of Article 2403.03, F, 5, d. Install and secure insulation in a manner which provides uniform and consistent protection across the entirety of each insulated face of the concrete element. Individually insulate metal which protrudes or projects from the formwork or finished concrete surface (e.g., metal formwork bracing, reinforcing steel projections), as needed to manage heat loss. Do not allow water or wind to compromise the effectiveness of the insulation. When blanket insulation is used, ensure edges and seams are overlapped, sealed and secured from disturbance. After placement, leave insulation undisturbed until the concrete attains a minimum age of 96 hours.

d. ~~Whenever heating is done, firmly secure combustible material to prevent contact with any source of heat, and take adequate precautions to prevent fires.~~ Maintain the concrete temperature at no less than 50°F for the first 48 hours after placing. After the first 48 hours, the concrete temperature may be allowed to gradually reduce for the next 48 hours at a rate not exceeding 25°F in 24 hours.

e. Monitor concrete temperatures for the first 96 hours after placement. Furnish and install approved commercial temperature monitoring equipment configured to automatically record a minimum of one reading per hour for the 96 hour duration of temperature monitoring. The temperature monitoring equipment must be accurate within +/-2°F in the temperature range of 0°F to 180°F. The quantity and location of temperature sensors will be determined by the Engineer prior to concrete placement. Up to eight sensors per placement shall be situated to provide representative monitoring of concrete surface temperatures throughout the placement, with one sensor located in the area of minimum expected concrete temperature. Position the sensors with 2 inches clear cover to the surface of the concrete. Furnish temperature readings to the Engineer prior to discontinuation of cold weather protection.

~~e~~ f. If all ~~the~~ concrete for a given placement is at least 1 foot below ground water level, it may be placed at a temperature no less than 40°F and flooded to a minimum depth of 1 foot in lieu of other methods of protection and curing provided the water temperature is 50°F or greater. Ensure that concrete cured in this manner remains completely submerged for the first 96 hours after placement and is not subjected to freezing temperatures ~~within~~ for the first 10 calendar days after ~~it is placed~~ placement. ~~In lieu of flooding, culvert footings may be protected from freezing by an adequate layer of straw or hay for at least 5 calendar days.~~

2403.05, A.

Replace Articles 2 through 4:

2. For concrete placed within the contract period, additional payment will be made for heating ~~or protecting~~ of concrete mix ingredients, cold weather protection of placed concrete, or both.

3. Payment for heating of mix ingredients will be made when materials which are proportioned and mixed at the site are heated to meet requirements of Article 2403.03, F, or when heating is charged by the supplier of ready mixed concrete. For concrete proportioned and mixed at the site, the additional payment for heating will be $5.00 per cubic yard. For ready mixed concrete, the additional payment for heating will be the customary amount charged for heating, and separately identified on the invoice, with a maximum of $5.00 per cubic yard.

4. Payment for cold weather protection will be made when heated housing or ~~insulated forms are~~ insulation is used to meet requirements of Article 2403.03, F. The additional payment for cold weather protection will be ~~$7.00~~ 8.50 per cubic yard. If a ~~footing~~ concrete placement is protected by flooding with water in accordance with Article 2403.03, F, 5, f, no payment will be made. ~~If footings are protected with coverings of burlap, hay, straw, plastic, insulation, and/or other materials sufficient to meet the temperatures and time specified in Article 2403.03, F, payment for protection will be made.~~ Payment for cold weather protection includes all costs of heated housing, insulation, concrete temperature sensors, concrete temperature monitoring and reporting.

Comments:

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

2403.03, B

4. Heating and Protection Equipment.
Meet the following requirements whenever heating is done:

a. Equip the attendant with no less than one non-freezing fire extinguisher of adequate capacity.

b. To prevent movement or overturning, adequately support, anchor, and guy any heating equipment involving combustion in or near the space to be heated.

c. Use of ~~a~~ salamander-type or other ~~type of~~ open flame heating units is prohibited.

d. Use heating equipment constructed with ~~a~~ sufficient heat shielding ~~so that metal in direct contact with the open flame is not exposed~~ to protect against direct contact with the heating element.

2403.03

F. Placing and Protection in Cold Weather.

1. Do not place concrete, without permission from the Engineer, when the air temperature is 40°F or less.

2. Do not use frozen materials in the concrete.

3. Do not place concrete against ~~frozen~~ forms, earth, ~~or~~ rock, steel or ~~against~~ other concrete having a temperature below 40°F.

4. ~~In addition to protecting the concrete against chilling or freezing, heat~~Heat the mix water or aggregates, or both, so that ~~when placed~~ the concrete will have a temperature appropriate for the mass and dimensions of the portion of the structure being placed, but ~~from~~not less than ~~45~~50°F or ~~to~~greater than 80°F at time of placement.

5. Before concrete is placed at ambient air temperatures below 40°F or when these temperatures might occur ~~during the protection period~~within the first 96 hours after placement, provide ~~heating or protecting facilities, or both, meeting requirements of Article 2403.03, B, 4, adequate to protect the work~~cold weather protection and concrete temperature monitoring as follows:

a. ~~Maintain the concrete temperature at no less than 50°F for the first 48 hours after placing. Then gradually reduce the concrete temperature at a rate not exceeding 25°F in 24 hours. When heating and housing is used, locate temperature monitors in the concrete at the furthest and closest point from the heat source. Do not allow the maximum temperature of the monitor point closest to the heat source to exceed 150°F.~~Cold weather protection shall consist of heated housing, insulation, or combination thereof. Provide each formed or exposed concrete face with complete and uniform cold weather protection for the entirety of that face, unless otherwise approved by the Engineer.

b. ~~In lieu of protection involving housing and heating, the Contractor may protect concrete by the use of forms insulated with a commercial insulating material adequate to maintain the concrete temperature at no less than 50°F for the first 48 hours after placing. Leave these insulated forms undisturbed for the next 48 hours, after which they may be removed. When forms are insulated, protect exposed horizontal surfaces with a similar layer of the insulating material or an adequate layer of hay or straw, properly secured.~~When heated housing is used, use heating equipment that complies with the requirements of Article 2403.03, B, 4. Firmly secure combustible material to prevent contact with any source of heat and take adequate precautions to prevent fires. Construct the housing enclosure with sufficient weather resistance to maintain heat at the concrete surface as needed to comply with the temperature requirements of Article 2403.03, F, 5, d. Apply heat uniformly within the housing enclosure. Do not allow the ambient temperature in the enclosure to exceed the heat of the concrete surface by more than 35°F. Unless approved otherwise by the Engineer, suspend application of heat if the temperature of any portion of the concrete element exceeds 150°F. Do not allow the heating system to cause drying of exposed concrete surfaces or compromise the effectiveness of the curing protection required by Article 2403.03, E.

c. ~~Make suitable provision, including cast-in-wells for thermometers, to provide a means for determining the temperature of the concrete.~~When insulation is used, apply an adequate amount of approved insulating material to formwork and exposed concrete surfaces to maintain concrete temperature in compliance with the requirements of Article 2403.03, F, 5, d. Install and secure insulation in a manner which provides uniform and consistent protection across the entirety of each insulated face of the concrete element. Individually insulate metal which protrudes or projects from the formwork or finished concrete surface (e.g., metal formwork bracing,

reinforcing steel projections), as needed to manage heat loss. Do not allow water or wind to compromise the effectiveness of the insulation. When blanket insulation is used, ensure edges and seams are overlapped, sealed and secured from disturbance. After placement, leave insulation undisturbed until the concrete attains a minimum age of 96 hours.

d. ~~Whenever heating is done, firmly secure combustible material to prevent contact with any source of heat, and take adequate precautions to prevent fires.~~Maintain the concrete temperature at no less than 50°F for the first 48 hours after placing. After the first 48 hours, the concrete temperature may be allowed to gradually reduce for the next 48 hours at a rate not exceeding 25°F in 24 hours.

e. Monitor concrete temperatures for the first 96 hours after placement. Furnish and install approved commercial temperature monitoring equipment configured to automatically record a minimum of one reading per hour for the 96 hour duration of temperature monitoring. The temperature monitoring equipment must be accurate within +/-2°F in the temperature range of 0°F to 180°F. The quantity and location of temperature sensors will be determined by the Engineer prior to concrete placement. Up to 8 sensors per placement shall be situated to provide representative monitoring of concrete surface temperatures throughout the placement, with one sensor located in the area of minimum expected concrete temperature. Position the sensors with 2 inches clear cover to the surface of the concrete. Furnish temperature readings to the Engineer prior to discontinuation of cold weather protection.

~~e~~f. If all ~~the~~ concrete for a given placement is at least 1 foot below ground water level, it may be placed at a temperature no less than 40°F and flooded to a minimum depth of 1 foot in lieu of other methods of protection and curing provided the water temperature is 50°F or greater. Ensure that concrete cured in this manner remains completely submerged for the first 96 hours after placement and is not subjected to freezing temperatures ~~within~~for the first 10 calendar days after ~~it is placed. In lieu of flooding, culvert footings may be protected from freezing by an adequate layer of straw or hay for at least 5 calendar days~~placement.

2403.05 BASIS OF PAYMENT.
Payment will be as follows:

A. Net volume of Structural Concrete as specified above:

1. Contract unit price per cubic yard.

2. For concrete placed within the contract period, additional payment will be made for heating of concrete mix ingredients, cold weather protection of placed concrete, ~~or protecting~~ or both.

3. Payment for heating of mix ingredients will be made when materials which are proportioned and mixed at the site are heated to meet requirements of Article 2403.03, F, or when heating is charged by the supplier of ready mixed concrete. For concrete proportioned and mixed at the site, the additional payment for heating will be $5.00 per cubic yard. For ready mixed concrete, the additional payment for heating will be the customary amount charged for heating, and separately identified on the invoice, with a maximum of $5.00 per cubic yard.

4. Payment for cold weather protection will be made when heated housing or ~~insulated forms are~~insulation is used to meet requirements of Article 2403.03, F. The additional payment for cold weather protection will be $~~7.00~~8.50 per cubic yard. If a ~~footing~~concrete placement is protected by flooding with water in accordance with Article 2403.03, F, 5, f, no payment will be made. ~~If footings are protected with coverings of burlap, hay, straw, plastic, insulation, and/or other materials sufficient to meet the temperatures and time specified in Article 2403.03, F, payment for protection will be made.~~Payment for cold weather protection includes all costs of heated housing, insulation, concrete temperature sensors, concrete temperature monitoring and reporting.

Reason for Revision: Minor clarifying edits to coincide with proposed updates to 2403.03, F, Placing and Protection in Cold Weather. Intent of this specification passage remains unchanged.

General rewrite primarily intended to clarify the following:

- Minimum concrete temperature at time of placement revised to 50°F to match existing requirement that concrete be maintained above 50°F for the first 48 hours after placement.

Concrete may be batched slightly below 50°F provided it warms to 50°F by time of placement.

- Reworded section to eliminate implication that heated housing is the default/preferred method of cold weather protection.
- Add additional criteria for heated housing and insulation methods to help achieve consistent and satisfactory results.
- Clarified that temperature requirements during the protection period are the same regardless of the methods of cold weather protection used. Proposed language (50°F for first 48 hours, allowable cool rate of 25°F/day after that) matches historic requirement for heated housing.
- Temperature monitoring is required for the full duration of the protection period (96 hours).
- Update temperature monitoring provisions to match modern temperature monitoring equipment (automatic digital sensors).
- Specify maximum number of temperature sensors per placement, and general intent on sensor location.
- Additional minor clarifying and grammatical edits.
- Note these revisions are proposed in conjunction with revisions to 2403.05.A, which proposes increase in cold weather protection payment to Contractor as partial offset for more widespread use of digital temperature sensors.

Revisions to coincide with proposed updates to Article 2403.03,F. These proposed edits make clear distinction that payment for “heating” applies to heating of mix ingredients only. Payment for “cold weather protection” includes payment for heated housing and/or insulation of placed concrete. Payment includes cost of temperature sensors/monitoring/reporting. The proposed specification revisions to 2403.03,F are expected to help standardize and achieve consistency regarding use of temperature sensors/monitoring during cold weather, for purposes of quality assurance and safety (confirm placement kept warm enough for strength gain prior to structural loading). Propose increase to payment per cubic yard as partial offset to more widespread use of temperature monitoring equipment.

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 / Curtis Carter	**Office:** Construction & Materials	**Item 7**
Submittal Date: 08/22/22	**Proposed Effective Date:** April 2023 GS	
Article No.: 2412.03, E **Title:** Curing Concrete Decks	**Other:**	

Specification Committee Action: Approved as recommended

Deferred:	**Not Approved:**	**Approved Date:** 10/13/2022	**Effective Date:** April 2023 GS

Specification Committee Approved Text: See Specification Section Recommended Text

Comments: None

Specification Section Recommended Text:

2412.03,E, Curing Concrete Decks

Replace Articles 3 through 5

3. ~~Apply water to the burlap covering for a period of 4 calendar days for continuous concrete slab bridge decks and 7 calendar days for all other concrete bridge decks. Use a pressure sprinkling system that is effective in keeping the burlap wet during the moist curing period. The system may be interrupted only to replenish the water supply, during periods of natural moisture, or during construction contiguous to the concrete being cured. The Engineer may approve interruptions for periods longer than 4 hours on the basis of the method for keeping the concrete moist.~~ Maintain the burlap covering in saturated condition for a period of 4 calendar days for continuous concrete slab bridge decks and 7 calendar days for all other concrete bridge decks. Maintain continuous contact between all parts of the concrete deck and the burlap during the moist curing period.

4. ~~Maintain continuous contact, except as noted above, between all parts of the concrete deck and the burlap during the moist curing period.~~ Use a pressurized sprinkling or soaking system that is effective in keeping the burlap saturated during the moist curing period. Operate the water application system continuously for the full duration of the moist curing period, except as permitted under Article 2412.03, E, 5. Continuous water application may be interrupted only during replenishment of the water supply, during periods of natural moisture, or during work contiguous to the concrete being cured. Interruptions for periods longer than 4 hours must be approved in advance by the Engineer.

5. ~~On concrete decks placed after October 1 and prior to April 1, after 20 hours of the application of water, the Contractor may substitute the application of a moisture proof plastic film no less than 3.4 mils thick over the wet burlap in lieu of applying water. Maintain intimate contact between the surface of the concrete, the burlap, and the plastic film.~~ Continuous water application may be suspended before the completion of the moist curing period, when the following conditions are satisfied:

a. Subject the concrete bridge deck to a minimum 20 hours of continuous water application prior to suspension of continuous water application.

b. Promptly upon suspension of water application, apply impermeable covering consisting of moisture proof plastic film or approved equivalent, over the saturated burlap. Minimum thickness of the impermeable covering shall be 3.4 mils. Place the impermeable covering in direct contact with the burlap, provide complete and continuous coverage with sufficient overlap at the seams, and weigh down or secure the impermeable covering to prevent displacement.

c. Monitor and log the condition of the impermeable covering and the saturation of the burlap at intervals preapproved by the Engineer. Take actions, including intermittent application of water, as necessary to maintain burlap saturation for the full moist curing period. If any portion of the impermeable covering is removed prior to completion of the moist curing period, resume continuous application of water in that area in accordance with Article 2412.03, E, 4.

d. For concrete decks placed from April 1 through October 1:

1) The Engineer's approval is required prior to suspension of continuous water application, on the basis of forecast weather conditions. Approval may be withheld when forecast weather conditions have high potential for disturbing or drying the curing protection, including forecast peak temperatures exceeding 90°F, peak wind speeds exceeding 25 mph, or sustained temperatures exceeding 85°F in combination with sustained winds exceeding 10 mph.

2) Install a water application system consisting of soaker hoses or other approved means between the burlap and the impermeable covering. The system must be capable of supplying sufficient water to saturate the burlap over all areas of the bridge placement. Plumb the water application system to operate without removal of the impermeable covering. Application of the impermeable covering will not be permitted until the functionality of the water application system is demonstrated to the Engineer's satisfaction.

Comments:

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

2412.03,E, Curing Concrete Decks

Replace Articles 3 through 5

3. ~~Apply water to the burlap covering for a period of 4 calendar days for continuous concrete slab bridge decks and 7 calendar days for all other concrete bridge decks. Use a pressure sprinkling system that is effective in keeping the burlap wet during the moist curing period. The system may be interrupted only to replenish the water supply, during periods of natural moisture, or during construction contiguous to the concrete being cured. The Engineer may approve interruptions for periods longer than 4 hours on the basis of the method for keeping the concrete moist.~~ Maintain the burlap covering in saturated condition for a period of 4 calendar days for continuous concrete slab bridge decks and 7 calendar days for all other concrete bridge decks. Maintain continuous contact between all parts of the concrete deck and the burlap during the moist curing period.

4. ~~Maintain continuous contact, except as noted above, between all parts of the concrete deck and the burlap during the moist curing period.~~ Use a pressurized sprinkling or soaking system that is effective in keeping the burlap saturated during the moist curing period. Operate the water application system continuously for the full duration of the moist curing period, except as permitted under Article 2412.03, E, 5. Continuous water application may be interrupted only during replenishment of the water supply, during periods of natural moisture, or during work contiguous to the concrete being cured. Interruptions for periods longer than 4 hours must be approved in advance by the Engineer.

5. ~~On concrete decks placed after October 1 and prior to April 1, after 20 hours of the application of water, the Contractor may substitute the application of a moisture proof plastic film no less than 3.4 mils thick over the wet burlap in lieu of applying water. Maintain intimate contact between the surface of the concrete, the burlap, and the plastic film.~~ Continuous water application may be suspended before the completion of the moist curing period, when the following conditions are satisfied:

a. Subject the concrete bridge deck to a minimum 20 hours of continuous water application prior to suspension of continuous water application.

b. Promptly upon suspension of water application, apply impermeable covering consisting of moisture proof plastic film or approved equivalent, over the saturated burlap. Minimum thickness of the impermeable covering shall be 3.4 mils. Place the impermeable covering in direct contact with the burlap, provide complete and continuous coverage with sufficient overlap at the seams, and weigh down or secure the impermeable covering to prevent displacement.

c. Monitor and log the condition of the impermeable covering and the saturation of the burlap at intervals preapproved by the Engineer. Take actions, including intermittent application of water, as necessary to maintain burlap saturation for the full moist curing period. If any portion of the impermeable covering is removed prior to completion of the moist curing period, resume continuous application of water in that area in accordance with Article 2412.03, E, 4.

d. For concrete decks placed from April 1 through October 1:

1) The Engineer's approval is required prior to suspension of continuous water application, on the basis of forecast weather conditions. Approval may be withheld when forecast

weather conditions have high potential for disturbing or drying the curing protection, including forecast peak temperatures exceeding 90°F, peak wind speeds exceeding 25 mph, or sustained temperatures exceeding 85°F in combination with sustained winds exceeding 10 mph.

2) Install a water application system consisting of soaker hoses or other approved means between the burlap and the impermeable covering. The system must be capable of supplying sufficient water to saturate the burlap over all areas of the bridge placement. Plumb the water application system to operate without removal of the impermeable covering. Application of the impermeable covering will not be permitted until the functionality of the water application system is demonstrated to the Engineer's satisfaction.

Reason for Revision: Adding an additional option for deck curing (impermeable covering) for bridge decks cast between April 1 and October 1. This option has historically been allowed for bridge decks cast in cooler months, and this proposed revision would allow this practice year-round when certain conditions are met. The proposed requirements for use of this method in the warmer months are more stringent than the current requirements for use of this method in the cooler months, due to increased risk of bridge deck curing issues in the warmer months (higher evaporation rate). When implemented properly, there can be several advantages to allowing this deck curing method in the warmer months, including improved safety for bridge decks spanning traffic (less cure water falling into traffic), and improved construction economy/efficiency. This additional deck curing option was requested by Iowa AGC and was agreed as a viable option during an April, 2022 meeting between DOT and Iowa AGC, and at a May, 2022 DOT DCE meeting. Additional minor text edits are also proposed.

Update following the August Spec Committee Meeting – Added text clarifying the intended criteria the Engineer will use for determining when this method is acceptable for use in the warmer months. Added text clarifying that intermittent water application may be needed when impermeable covering method is used, and continuous water application will be required if impermeable covering is removed prior to end of cure duration.

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/ Desiree McClain	**Office:** Construction & Materials	**Item 8**
Submittal Date: September 21st, 2022	**Proposed Effective Date:** April 2023 GS	
Article No.: 2433.03, J **Title:** Crosshole Sonic Log (CSL) Testing.	**Other:**	

Specification Committee Action: Deferred to the November 2022 meeting

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

Specification Committee Approved Text:

Comments: The Construction and Materials Bureau requested that the added language be moved to the end of the sentence to show that the alternative pipe does not need to meet ASTM A 53.

This item has been deferred to the November Specification Committee meeting to allow for additional details to be added to the list of bullets. This should give the Engineer more criteria to evaluate for approval of alternative pipes.

Specification Section Recommended Text:

2433.03, J, 3.

Replace the first bullet:

1.5 to 2 inch diameter, Schedule 40 or other approved steel pipe conforming to ASTM A 53, Grade A or B, Type E, F, or S.

Comments:

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

2433.03 CONSTRUCTION.

J. Crosshole Sonic Log (CSL) Testing.

3. Furnish and install one access pipe per 1 foot of shaft diameter, ~~but no less than four per shaft, except for three tubes if the reinforcing cage is 2.5 feet in diameter or less~~ while following minimum and maximum numbers of access pipes stated in ASTM D 6760 and exceptions stated in Article 2433.03, J, 2, b. Furnish access pipes complying with the following:

- 1.5 to 2 inch diameter, Schedule 40 or other approved steel pipe conforming to ASTM A 53, Grade A or B, Type E, F, or S.
- Round, regular inside diameter free of defects and obstructions, including all pipe joints, in order to permit the unobstructed passage of 1 3/8 inch maximum diameter source and receiver probes used for the CSL tests.
- Watertight and free from corrosion with clean internal and external faces to ensure a good bond between the concrete and the access pipes.
- Fitted with a watertight cap on the bottom and a removable, watertight cap on the top to prevent debris from entering the pipes.
- Watertight joints to achieve the specified length.
- Use external couplings for CSL testing tubes

Reason for Revision: Have tested some new CSL tubes recently with success and are trying to expand the options available for CSL tubes.

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: The grey highlighted section has been approved at a previous spec meeting for April 2023. The only new unapproved change is highlighted in yellow, at the first bullet point.		
County or City Comments:		
Industry Comments:		

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove	**Office:** Construction & Materials	**Item 9**
Submittal Date: September 23, 2022	**Proposed Effective Date:** April 2023 GS	
Article No.: 2556.02 & 2556.03 **Title:** Dowel Bar Retrofit	**Other:**	

Specification Committee Action: Approved as recommended

Deferred:	**Not Approved:**	**Approved Date:** 10/13/2022	**Effective Date:** April 2023 GS

Specification Committee Approved Text: See Specification Section Recommended Text

Comments: None

Specification Section Recommended Text:

2556.02, D, 6.

Replace the first sentence:

Furnish a list of materials for use in making the grout, and the mix design, including maximum water allowed, to the Engineer at least 30 calendar days prior to installation.

2556.03, D, Grouting Dowel Bars.

Add the Article:

5. Cure a minimum of 3 hours, prior to opening to traffic.

Comments:

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

2556.02

D. Grout.

6. Furnish a list of materials for use in making the grout, and the mix design, including maximum water allowed, to the Engineer at least 30 calendar days prior to installation. The District Materials Engineer may waive mix design testing based on previous testing with the patching materials. Grout shall meet the following strength requirements:

- Three hour minimum compressive strength of 3000 psi, ASTM C 39.
- 24 hour minimum compressive strength of 5000 psi, ASTM C 39.

2556.03

D. Grouting Dowel Bars.

Add the following paragraph:

5. Cure a minimum of 3 hours, prior to opening to traffic.

Reason for Revision: Have had few projects that cylinder strengths were low, due to excess water used. Knowing the maximum water allowed by the manufacturer will give a limit to be used in the field. Need something in the spec to determine when dowel bar slots may be opened to traffic.

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: Sent to ICPA		