MINUTES
OF
IOWA DOT SPECIFICATION COMMITTEE MEETING

May 10, 2018

Members Present:	Darwin Bishop	District 3 - Construction
	Mark Brandl	District 6 - Davenport RCE
	Jeff Devries	District 1 - Materials
	Daniel Harness	Office of Design
	Eric Johnsen, Secretary	Specifications Section
	Wes Musgrove	Office of Construction & Materials
	Tom Reis, Chair	Specifications Section
Members Not Present:	Donna Buchwald	Office of Local Systems
	Mark Dunn	Office of Contracts
	Gary Novey	Office of Bridges & Structures
	Charlie Purcell	Project Delivery Bureau
	Willy Sorensen	Office of Traffic & Safety
Advisory Members Present:	Paul Wiegand	SUDAS
Others Present:	John Dostart	Office of Local Systems
	Todd Hanson	Office of Construction & Materials
	Jeff Schmitt	Office of Construction & Materials

The Specification Committee met on Thursday, May 10, 2018, at 9:00 a.m. in the NW Wing, 1st Floor Conference Room. Tom Reis, Specifications Engineer, opened the meeting. The items were discussed in accordance with the agenda dated April 26, 2018:

The minutes are as follows:

1. Article 1102.17, D, 2, g, 1, Transportation or Hauling of Materials (by a DBE).

The Office of Construction and Materials requested to clarify DBE trucking submittal requirements.

2. Article 2303.02, E, 1, Tack Coat (Flexible Pavement).
Article 2306.02, Materials (Bituminous Fog Seal (Pavement)).

The Office of Construction and Materials requested to allow CQS emulsions to be used for tack coat.

3. Article 2318.03, Construction (Cold In-Place Recycled Asphalt Pavement).

The Office of Construction and Materials requested to lower temperature requirements for CIR and expand curing requirements.

4. Section 2506, Flowable Mortar.

The Office of Construction and Materials requested to allow foamed cellular concrete to be substituted for flowable mortar.

5. Article 2528.04. J, Flaggers (Traffic Control).

The Office of Construction and Materials requested to allow payment for an additional one-half flagger for shifts in excess of 12 hours.

6. Articles 2601.03, C, Types of Seeding (Erosion Control).

The Office of Design requested to rescind the revisions approved at the February 8, 2018 Specification Committee Meeting.

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Mark Brandl	**Office:** Construction & Materials	**Item 1**
Submittal Date: April 24, 2018	**Proposed Effective Date:** October 2018 GS	
Article No.: 1102.17 D 2 g 1 **Title:** Transportation or Hauling of Materials (by a DBE)	**Other:**	

Specification Committee Action: Deferred to the next Specification Committee meeting.

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

Specification Committee Approved Text:

Comments: This item was deferred until we can get more input from the FHWA and OES/Civil Rights Team. The Office of Construction and Materials will coordinate this discussion to see if there is benefit to continue tracking the use of DBE truckers once they have reached the DBE goal.

Specification Section Recommended Text:
1102.17, D, 2, g, 1.

Replace the Article:

The DBE shall be responsible for management and supervision of the entire trucking operation ~~that is to count toward the commitment~~. The DBE shall maintain strict records to verify the amount of hauling done by each trucker for the duration of the contract. These records shall be available to the Engineer, upon request.

Comments:

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

g. Transportation or Hauling of Materials - If a DBE trucking company picks up a product from a manufacturer or regular dealer and delivers the product to the Contractor, the commercially useful function performed is not that of a supplier, but that of a transporter of goods. Unless the DBE company is itself the manufacturer or a regular dealer in the product, credit only will be allowed for the cost of the transportation service. For transportation of materials by truck to be used toward meeting the DBE commitment, the following shall apply:

1) The DBE shall be responsible for management and supervision of the entire trucking operation ~~that is to count toward the commitment.~~ The DBE shall maintain strict records to verify the amount of hauling done by each trucker for the duration of the contract. These records shall be available to the Engineer, upon request.

2) OES-Civil Rights will maintain a truck roster for each DBE that performs trucking. Each truck on the truck roster shall be either owned by the DBE or controlled by the DBE under a lease. Trucks that are leased shall be from a firm that is in the commercial leasing business; the owner of the commercial leasing business cannot be a heavy-highway contractor. The DBE firm shall make available to the Department the lease agreement if requested.

3) To meet the DBE commitment, the following conditions shall be used:

a) At least one fully licensed, insured, and operational truck, listed on the truck roster under the DBE trucking company shown on the Form 102115, shall be hauling on the project at all times. The Contractor will receive credit for the fee

paid to the DBE for these trucks.

b) Any truck on the truck roster of another DBE may be used. There is no limitation to the number of these trucks that can be used. The Contractor will receive credit for the fee paid to the DBE for these trucks.

c) A DBE trucker may also use trucks from a non-DBE firm, including an owner operator. The Contractor will receive credit toward the DBE commitment only for the fee or commission retained by the DBE trucker. The Contractor will not receive credit for the total amount paid for the truck because the DBE was a lessee rather than the actual provider of transportation services.

Reason for Revision: To specifically require a prime contractor to submit records for hauling done by a DBE trucking firm(s) in excess of the 115 commitment. By Standard Specification 1102.17 D 2 g 1, the contract documents are lacking for us to be able to contractually require them beyond the DBE 115 commitment amount. This revision is in response to a DBE trucking firm that recently refused to submit their hauling records once the commitment was reached.

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 / Jeff Schmitt	**Office:** Construction & Materials	**Item 2**
Submittal Date: April 20, 2018	**Proposed Effective Date:** October 2018 GS	
Article No.: 2303.02, E, 1 **Title:** Flexible Pavement – Materials (Other Materials – Tack Coat) **Article No.:** 2306.02 **Title:** Bituminous Fog Seal (Pavement) (Materials)	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 5/10/2018	**Effective Date:** 10/16/2018

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: None.

Specification Section Recommended Text:

2303.02, E, 1, Tack Coat.

Replace the Article:

Tack coat may be SS-1, SS-1H, CSS-1, ~~or~~ CSS-1H, CQS-1, or CQS-1H. Do not mix CQS, CSS, and SS grades. RC-70 and MC-70 may also be used prior to May 1 and after October 1, at the Contractor's option.

2306.02, Materials.

Replace the Article:

Unless the Engineer directs otherwise, use asphalt emulsion grade CQS-1, CQS-1H, CSS-1, or SS-1.

Comments:

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

2303.02 MATERIALS.

E. Other Materials.

1. Tack Coat.

Tack coat may be SS-1, SS-1H, CSS-1, ~~or~~ CSS-1H, CQS-1, or CQS-1H. Do not mix CQS, CSS, and SS grades. RC-70 and MC-70 may also be used prior to May 1 and after October 1, at the Contractor's option.

2306.02 MATERIALS.

Unless the Engineer directs otherwise, use asphalt emulsion grade CQS-1, CQS-1H, CSS-1 or SS-1.

Reason for Revision: To include CQS-1 and CQS-1H emulsions as approved options for tack coat. These "quick set" emulsions minimize paving delays and potential tracking / pick-up by construction

equipment and other vehicles, by reducing the tack coat's curing time. They provide effective options to SS and CSS "slow set" emulsions, especially when placing tack coat under relatively poor curing conditions.		
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: CQS emulsions meet the same testing requirements as CSS. Proposed revisions were approved by Strategic Asphalt Committee on 4-11-18.		
County or City Comments:		
Industry Comments: Specification changes were recommended by Industry.		

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Jeff Schmitt	**Office:** Construction & Materials	**Item 3**
Submittal Date: April 20, 2018	**Proposed Effective Date:** October 2018 GS	
Article No.: 2318.03 **Title:** Cold In-Place Recycled Asphalt Pavement (Construction)	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 5/10/2018	**Effective Date:** 10/16/2018

Specification Committee Approved Text:

2318.03, Construction.

Replace the first paragraph:

Except in specific cases when permitted by the Engineer, CIR will only be allowed between May 1 and October 1. CIR may be started when air temperature is 55°F and rising. Do not perform recycling operations when:

- ~~The ambient daytime temperature is below 60°F,~~ Air temperature is less than 55°F,
- ~~For night work, the following day's forecasted high is below 60°F,~~ National Weather Service forecasts a temperature of 35°F or less in the next 24 hours,
- The weather is foggy or rainy, or
- Weather conditions are such that proper mixing, placing, and compacting of the recycled material cannot be accomplished.

2318.03, H, Placement of Surface Course.

Replace the Article:

Subsequent HMA overlay or surface treatment will not be allowed until ~~moisture content of the CIR layer is no more than 0.3% above the residual moisture content or 2.5%, whichever is greater.~~ one of the following requirements has been met:

1. Average moisture content of the CIR layer is no more than 0.3% above the residual moisture content (according to Materials I.M. 504) or 3.5%, whichever is greater.

2. The moisture content of the CIR layer has reached a plateau of less than 5.0% and has remained constant (within +/- 0.3%) for a minimum of 3 calendar days.

3. The CIR layer has been completed for 21 calendar days.

The Engineer may adjust this drying period depending on field conditions. The completed CIR layer shall be retested until ~~the moisture content is at or below the limits stated above~~ one of the requirements listed above has been met.

Comments: The temperature requirement language was clarified to remove "ambient", as this was being interpreted in different ways. The night work requirements were removed as this will be handled by the designer/Engineer. Language was changed to be similar to the requirements for PCC, where the

temperature must be rising to start CIR operations. A minimum temperature was set as well as a minimum forecasted temperature.

The District 6 Office asked if the work "residual" was correct as it was causing confusion with inspectors and contractors. Material I.M. 504 will be revised to require moisture content of the original asphalt mat for comparison to the CIR layer. It is currently an option.

Specification Section Recommended Text:

2318.03, Construction.

Replace the first and second bullet of the first paragraph:

- The ambient daytime temperature is below ~~60~~ 55°F,
- For night work, the following day's forecasted high is below ~~60~~ 55°F,

2318.03, H, Placement of Surface Course.

Replace the Article:

Subsequent HMA overlay or surface treatment will not be allowed until ~~moisture content of the CIR layer is no more than 0.3% above the residual moisture content or 2.5%, whichever is greater.~~ one of the following requirements has been met:

1. Average moisture content of the CIR layer is no more than 0.3% above the residual moisture content or 3.5%, whichever is greater.

2. The moisture content of the CIR layer has reached a plateau of less than 5.0% and has remained constant (within +/- 0.3%) for a minimum of 3 calendar days.

4. The CIR layer has been completed for 21 calendar days.

The Engineer may adjust this drying period depending on field conditions. The completed CIR shall be retested until the moisture content meets one of the requirements listed above.

Comments:

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

2318.03 CONSTRUCTION.

Except in specific cases when permitted by the Engineer, CIR will only be allowed between May 1 and October 1. Do not perform recycling operations when:

- The ambient daytime temperature is below ~~60~~ 55°F,
- For night work, the following day's forecasted high is below ~~60~~ 55°F,
- The weather is foggy or rainy, or
- Weather conditions are such that proper mixing, placing, and compacting of the recycled material cannot be accomplished.

H. Placement of Surface Course.

Subsequent HMA overlay or surface treatment will not be allowed until one of the following requirements has been met: ~~moisture content of the CIR layer is no more than 0.3% above the residual moisture content or 2.5%, whichever is greater. The Engineer may adjust this drying period depending on field conditions. The CIR shall be retested until the moisture content is at or below the limits stated above.~~

1. Average moisture content of the CIR layer is no more than 0.3% above the residual moisture content or 3.5%, whichever is greater.
2. The moisture content of the CIR layer has reached a plateau of less than 5.0% and has remained constant (within +/- 0.3%) for a minimum of three days.
5. The CIR layer has been completed for 21 calendar days.

The Engineer may adjust this drying period depending on field conditions. The CIR shall be retested until the moisture content meets one of the requirements listed above.

Reason for Revision: Lowering the ambient temperature requirement to 55°F to start CIR operation would allow production to get underway earlier in day during cooler weather, while having little or no effect on quality.

In many situations, the curing CIR layer never achieves the required 2.5% moisture content. It then becomes a field decision when to allow contractor to proceed with the overlay, considering relative moisture content and whether CIR is fully cured. Based on previous DOT field experience, the decision was made to raise the allowable moisture content to 3.5%. The second and third criteria are included to address practical limits on length of time needed for CIR layer to fully cure, as well as subsequent exposure of CIR layer to weather and 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: CIR moisture content revision (3.5%) based on consensus of District Materials Engineers. Other states utilize similar specification language to limit the length of time for CIR curing / exposure.

County or City Comments:

Industry Comments: Agency/Industry CIR Task Group recommended changes to CIR specification. Proposed revisions were approved by Strategic Asphalt Committee on 4-11-18.

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove / Todd Hanson	**Office:** Construction & Materials	**Item 4**
Submittal Date: March 26, 2018	**Proposed Effective Date:** October 2018	
Section No.: 2506 **Title:** Flowable Mortar	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 5/10/2018	**Effective Date:** 10/16/2018

Specification Committee Approved Text: See attached.

Comments: The Office of Construction and Materials explained that the preformed and foam producing equipment language are both correct.

Specification Section Recommended Text:

2506, Flowable Mortar.

Replace the title and Article:

See attached.

Comments: These comments are from the April Specification Committee Meeting:

There was some question whether the use of foamed cellular concrete was completely at the option of the Contractor or needed approval of the Engineer. The revisions will be reviewed for next meeting.

The District 1 Materials Office asked if the foam for the foamed cellular concrete is preformed or created on site. The revisions seem to indicate both. This will be reviewed for next meeting.

The Committee discussed whether the bid item should remain the same or be renamed to include both products. The feeling was that the bid item should remain the same, but it should be clear that use of foamed cellular concrete is completely the Contractor's option, with no prior approval needed.

The Office of Construction and Materials requested to remove the 60 inch pipe limitation from Article 2506.03, E, 2, b. Multiple lifts will be per the pipe manufacturer's recommendations, no matter the size of the pipe.

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

See attached Section 2506

Reason for Revision: Foamed cellular concrete has been requested as an alternative to flowable mortar. Last year fly ash was in short supply and some ready mix producers were unable to supply flowable mortar. Foamed cellular concrete can be produced with 100% Portland cement. Foamed cellular concrete fill can be pumped and does not need to drain like flowable mortar. Placement can be done in one application, where many times flowable needs to be placed in multiple applications after it has drained.

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:

Section 2506. Flowable Mortar and Foamed Cellular Concrete

2506.01 DESCRIPTION.

Place a flowable mortar fill material~~. Uses include, but are not limited to, placement under existing bridges, around or within box culverts or culvert pipes, in open trenches, or at other locations~~ as shown in the contract documents. Foamed cellular concrete may be used at the Contractor's option.

2506.02 MATERIALS.

Meet the requirements for the respective items in Division 41 with the following exceptions:

A. Cement.

Meet the requirements of Section 4101.

B. Fly Ash.

Meet the requirements of Section 4108. Use fly ash from a source approved by the Engineer.

C. Fine Aggregate.

1. Use natural sand consisting of mineral aggregate particles or foundry sand from the castings of ferrous material. Use the gradation shown in Table 2506.02-1:

Table 2506.02-1: Fine Aggregate Gradation

Sieve Size	Percent Passing
3/8 inch No. 200	100 0-10

2. It is intended that the sand be a fine sand that will stay in suspension in the mortar to the extent required for proper flow. For the Contractor's information, a well graded sand in the gradation range shown in Table 2506.02-2 has generally shown good flow characteristics when using the normal amount of fly ash (300 pounds per cubic yard). Concrete sand may require a higher amount of fly ash (400 pounds per cubic yard) and air entrainment to produce the desired flowability.

Table 2506.02-2: Informational Gradation Limits

Sieve Size	Percent Passing
3/8 inch No. 8 No. 16 No. 30 No. 50 No. 100 No. 200	100 80-100 60-100 45-80 12-40 1.5-25 0-5

3. If foundry sand is used, ensure it meets the requirements of IAC 567 Section 108. Ensure suppliers of foundry sand submit a processing plan to the District Materials Engineer for review and approval.

D. Admixtures.

1. Air entraining and water reducing admixtures may be added to increase the fluidity of flowable mortar.

2. Use preformed foam meeting the requirements of ASTM C 869 for foamed cellular concrete when tested in accordance with ASTM C 796.

E. Mix Design.

1. Flowable Mortar.

~~1~~ a. For non critical fluidity, use the basic proportioning for flowable mortar shown in Table 2506.02-3:

Table 2506.02-3: Quantities of Dry Materials Per Cubic Yard for Non-Critical Fluidity

Cement	100 pounds
Fly Ash	300 pounds
Fine Aggregate	2600 pounds

Previous or alternate mix designs may be approved by the District Materials Engineer.

~~2~~ b. For critical fluidity, use the basic proportioning as shown in Table 2506.02-4.

Table 2506.02-4: Quantities of Dry Materials Per Cubic Yard for Critical Fluidity

Cement	100 pounds
Fly Ash	400 pounds
Fine Aggregate	2600 pounds

~~a.~~1) Provide Engineer with mix proportions meeting requirements in Article 2506.02, F. Do not exceed 100 pounds of cement per cubic yard and a total amount of cementitious material of 500 pounds per cubic yard.

~~b.~~2) When the design includes air entraining and water reducing admixtures, Engineer may approve the design without laboratory testing. Engineer may require representative materials for evaluation before approval. When required, one week before work begins, submit samples of fine aggregate, cement, and fly ash intended for use to the Engineer.

~~c.~~3) Previous mix designs for critical flow may be approved by the District Materials Engineer. These mixes may also be used for non critical flow.

~~3~~ c. These quantities of dry materials, with approximately 70 gallons of water (mixes utilizing foundry sand may require more water), will yield approximately 1 cubic yard of flowable mortar of the proper consistency. The quantity of water used for the trial mix or at the project may require adjustment to achieve proper solids suspension and optimum flowability.

~~4~~ d. For information, volume loss during the cure period resulting from surface evaporation, moisture migration away from the flowable mortar unit, and hydration have been observed to be less than 4% of the original volume determined in the fluid condition. In mixes utilizing foundry sand, additional fly ash may be required and the limit of total cementitious material will not apply.

2. Foamed Cellular Concrete.

a. Use foamed cellular concrete with a minimum compressive strength of 100 psi.

b. Use high density cellular concrete with a minimum of 70 pounds per cubic foot for placement under existing bridges, applications placed below water table, or in annular pipe space that cannot be dewatered. Fine aggregate may be included.

c. Use low density cellular concrete with a minimum of 30 pounds per cubic foot for applications above water table or if no water is present in annular pipe space.

d. Submit mix design to the DME. Include base cement slurry mix per cubic yard, expansion factor from the foaming agent, and wet density.

F. Fluidity.

1. Measure the fluidity of the flowable mortar using the method described by Materials I.M. 375. Prior to filling the flow cone with flowable mortar, pass the mixture through a 1/4 inch screen.

2. In locations where fluidity is critical, such as inside existing culverts and between the beams under existing bridges, use an efflux time of 10 seconds to 16 seconds. The Engineer will measure prior to placement and at least once every 4 working hours until work is complete.

3. In locations where fluidity is not critical, such as for placement below the beams under existing bridges or for use as backfill material in open trenches, the Engineer will visually monitor. Provide sufficient fluidity to completely fill the space and produce a level surface without manipulation after discharge.

4. Fluidity measurement is not required for foamed cellular concrete.

G. Granular Backfill Material.
For granular backfill material used under flowable mortar, meet the requirements of Section 4133. Granular backfill is not required for foamed cellular concrete.

2506.03 CONSTRUCTION.

A. Proportioning and Mixing Equipment.

1. Use equipment meeting the requirements of Articles 2001.20 and 2001.21. Provide mixers with sufficient mixing capacity to permit the intended placement without interruption.

2. For foamed cellular concrete, use foam generating equipment capable of producing proper volume of foam and injecting foam into truck mixer drum. Alternatively, a mobile batch plant capable of mixing and pumping foamed cellular concrete to within 10% of the design density and a minimum capacity of 1 cubic yard.

B. Flange Filler Material.
When the flowable mortar is to be placed under a bridge, cover the bridge beams with a filler material, as shown in the contract documents, to fill the flange areas in a manner that will minimize intrusion of the mortar into the flange area of the beams. Construction insulation board or any other suitable material may be used.

C. Placement of Mortar under Existing Bridges.

1. First construct the shoulder area as shown in the contract documents, with the drainage system shown. Complete this work in conjunction with pipe placement, if a pipe culvert is required.

2. If a culvert is required, place engineering fabric meeting requirements of Article 4196.01, B, 2 over all joints in the culvert, within the area where flowable mortar is to be placed as backfill material. Place the fabric from the underlying ground line around the culvert, 1 foot on each side of the joint.

3. Discharge flowable mortar from the mixer by any reasonable means into the area to be filled.

4. Bring the mortar fill up uniformly to the elevation of the first stage fill line, if specified. Cease

mortar placement for a period of 72 hours.

5. If there is only one stage of flowable mortar, place granular backfill material in the lower part of the fill and around the pipe as specified. Compact the granular backfill material according to Article 2402.03, H, or thoroughly and uniformly wet with water in a quantity of approximately 10% of the granular backfill material. Complete flooding may be required. Regardless of the method of consolidation, wait 72 hours to commence flowable mortar placement.

6. Place the flowable mortar in a sequential operation from side to side and longitudinally. Begin with fill in one shoulder area, then proceed through each hole in the deck adjacent to the shoulder until mortar is expelled from the adjacent longitudinal hole. Place the last fill on the opposite shoulder. Place mortar through holes in the deck using a suitable funnel which can create a 3 foot head during filling.

7. The locations for holes in the deck will normally be shown in the contract documents. When not shown, drill a hole approximately 5 feet from each end of the bridge in each area between bridge beams. Drill additional holes as necessary so the longitudinal spacing does not exceed 20 feet. Limit the size of the holes to that necessary to accommodate filling equipment.

8. When placement of flowable mortar is completed and set, remove the mortar in the holes in the deck and replace with a suitable PCC mixture.

D. Placement of Mortar as Culvert Backfill Material.

1. First construct the shoulder area with suitable soil as shown in the contract documents, with the drainage system shown. Complete this work in conjunction with the pipe placement, if the culvert is a pipe.

2. Place engineering fabric meeting requirements of Article 4196.01, B, 2 over all joints in the culvert, within the area where flowable mortar is to be placed as backfill material. Place the fabric from the underlying ground line around the culvert, 1 foot on each side of the joint.

3. Place granular backfill material meeting requirements of Section 4133 to approximately mid-height of the culvert. Place the backfill simultaneously on both sides of the culvert so that the two fills are kept at approximately the same elevation at all times. Granular backfill material compaction is not necessary.

4. Discharge flowable mortar from the mixer into the remaining area to be filled. Fill simultaneously on both sides of the structure so that the two fills are kept at approximately the same elevation at all times.

5. If the culvert starts to float, cease the filling operation. Apply an external load to the culvert, sufficient to hold it in place, before the filling is continued. As an alternate, the filling may be suspended until the buoyancy effect of the mortar has ceased.

6. Place the flowable mortar to the elevation shown in the contract documents. When not shown, place the mortar as follows:
   - **a.** If the subgrade elevation is not more than 5 feet over the top of the culvert, place mortar to 1 foot below subgrade elevation.
   - **b.** If the subgrade is more than 5 feet over the top of the culvert, place the mortar to an elevation 2 feet over the top of the culvert. Complete the remainder of the backfill operation using soil designated by the Engineer.

E. Annular Space Grouting

1. Flowable Mortar.
Fill all voids between the liner pipe and the host culvert with flowable mortar. Staged grouting is recommended. Ensure that all voids between the liner pipe and host pipe have been filled with flowable mortar by providing 2 feet of head when filling.

2. Foamed Cellular Concrete

a. Construct bulkheads at each end of the pipe. Ensure bulkhead is constructed to withstand pressure of grouting operation.

b. Use grouting pressures to ensure all voids between the liner pipe and host pipe have been filled, but do not collapse or deform the liner pipe by more than 5% of the diameter. Multiple grout lifts may be necessary in accordance with pipe manufacturer's recommendations.

c. Contractor shall check wet density at the beginning of the placement and a minimum of once every 2 hours and results will be documented by the Engineer.

d. If grout holes are utilized, insert cylindrical wood plugs, or other approved plugs, until the grout has set. Fill holes with concrete after plugs have been removed.

~~E~~ F. Limitation of Operations.

1. Do not place ~~flowable mortar~~ on frozen ground.

2. ~~Flowable mortar~~ ~~b~~Batching, mixing, and placing may be started when the temperature is at least 34°F and rising, if weather conditions are favorable. At time of placement, mortar shall have a temperature of at least 40°F. Cease mixing and placing when the temperature is 38°F or less and falling.

3. Complete each filling stage in as continuous an operation as practical.

4. Do not allow flowable mortar or foamed cellular concrete into streams and waterways.

2506.04 METHOD OF MEASUREMENT.

A. The Engineer will compute the volume of Flowable Mortar furnished and placed, from the nominal volume of each batch and a count of batches. The Engineer will estimate and deduct unused mortar; however, deduction will not be made for a partial batch remaining at the completion of the operation. Foamed cellular concrete may be substituted at the Contractor's option at no additional cost to the Contracting Authority.

B. Granular backfill material used in the lower part of the fill area for projects utilizing flowable mortar will be based on the contract document quantity.

C. When the flowable mortar elevation for placing backfill around culverts is shown in the contract documents, payment for Flowable Mortar will be based on the quantity shown in the contract documents.

2506.05 BASIS OF PAYMENT.

A. Payment for Flowable Mortar will be the contract unit price per cubic yard. Foamed cellular concrete may be substituted at the Contractor's option at no additional cost to the Contracting Authority.

B. Payment is full compensation for:

- Placing the flowable mortar or foamed cellular concrete,
- Flange filler material,
- Engineering fabric as required,
- Drilling and filling the bridge deck holes, and
- Furnishing all materials, equipment, and labor necessary to complete the work.

C. Payment for granular backfill material ~~used in the lower part of the fill area~~ will be ~~based on the quantity shown in the contract documents, and this will normally be included in the quantity of other granular backfill material on the project~~ per Article 2402.05, G.

D. Excavation, placing backfill material for construction of the shoulder area, and moisture control if designated necessary for this work, will be paid for separately. These items will be included in the quantities of other similar work on the project. Furnishing and placing the drainage system in the shoulder area will be considered incidental to the payment for Flowable Mortar.

Form 510130 (08-15)

IOWA DOT

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Wes Musgrove	**Office:** Construction & Materials	**Item 5**
Submittal Date: April 24, 2018	**Proposed Effective Date:** October 2018 GS	
Article No.: 2528.04. J **Title:** Flaggers	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 5/10/2018	**Effective Date:** 10/16/2018

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Office of Construction and Materials explained that the method of measurement for pilot cars, which is much the same as flaggers, should not be revised.

Specification Section Recommended Text:

2528.04, J, 2, a.

Add to the end of the Article:

If used at least 4 hours, but less than 12 hours, a total of one flagger will be counted. If used more than 12 hours, an additional one-half flagger will be counted for a total of 1.5 flaggers for the shift.

2528.04, J, 3.

Delete the Article:

~~**3.** Short time, emergency, or relief assignment of employees to flagging operations will not be counted separately~~.

Comments:

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

J. Flaggers.

1. By count for the number of flaggers used during each work shift. A shift is a scheduled period of work for the Contractor's operations.

2. For flaggers to be counted:

a. Use of the flaggers is necessary and they are used as part of preplanned work that is started that shift and is intended to proceed for a major part of the shift. If used less than 4 hours during a shift, one-half flagger will be counted. If used at least 4 hours but less than 12 hours, a total of one flagger will be counted. If used more than 12 hours, an additional one-half flagger will be counted for a total of 1.5 flaggers for the shift.

b. Use of other flaggers is necessary and they are used for at least 1 hour during the shift, perhaps intermittently, and this shall be the primary duty of the employee. If used less than 4 hours in a shift, one-half flagger will be counted.

~~**3.** Short time, emergency, or relief assignment of employees to flagging operations will not be counted separately~~.

Reason for Revision: To eliminate the inherent conflict with the language in 2 b, and allow payment for an additional one-half flagger for shifts in excess of 12 hours as per discussion and agreement with the industry.

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: Mike Kennerly / Seana Godbold	**Office:** Design	**Item 6**
Submittal Date: 2018.01.29	**Proposed Effective Date:** October 2018 GS	
Article No.: 2601.03, C **Title:** Types of Seeding	**Other:**	

Specification Committee Action: The previously approved specification revision was rescinded for further consideration.

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

Specification Committee Approved Text: The Office of Design has requested to rescind the revisions approved at the February 8, 2018 Specification Committee Meeting. The revisions will be reviewed by the Roadside Development Section before being resubmitted at a future date.

Comments: The revisions included in this item are for informational purposes only.

Specification Section Recommended Text:

2601.03, C, 2, b, Seed Mixture.

Replace the Article:

Unless specified otherwise in the contract documents, use seeding rates shown in Table 2601.03-2 for urban areas that will be maintained as a lawn.

Table 2601.03-2: ~~Urban~~ Stabilizing Crop Seeding Mixture and Rates for Urban Areas

Common Name	Scientific Name	Application Rate (lbs/acre)
Bluegrass, Kentucky[1]	*Poa pratensis*	~~126 lbs. per acre~~ 150
Ryegrass, Perennial (turf-type variety)[2]	*Lolium perenne*	~~40 lbs. per acre~~ 30
Fescue, Creeping Red	*Festuca rubra*	~~18 lbs. per acre~~ 20

1. Choose three different cultivars of Kentucky bluegrass listed in Table 4169.02-1, at ~~42~~ 50 lbs. per acre each.
2. Choose two different cultivars of turf-type perennial ryegrass listed in Table 4169.02-1, at ~~20~~ 15 lbs. per acre each.
3. A commercial mixture may be used if it contains at least 75% Kentucky bluegrasses: the greater amount of Kentucky bluegrass may replace creeping red fescue or perennial ryegrass.
4. Seed shall be certified Tested Class Seed “light blue tag” of Oregon, Washington, or Idaho origin, and free of weeds listed on the all-state noxious weed seed list, annual bluegrass (*Poa annua,*), or bentgrass (*Agrostis spp.)*
5. Do not use this mix when it is deemed inappropriate by the Engineer because of hot or dry weather conditions.

2601.03, C, 4, b, Seed Mixture.

Replace the Article:

Unless specified otherwise in the contract documents, use seeding rates shown in Table 2601.03-4 for urban areas~~, including areas previously~~ that will be maintained as a lawn.

Table 2601.03-4: Permanent Seed Mixture and Rates~~,~~ for Urban Areas

Common Name	Scientific Name	Application Rate (lbs/acre)
Bluegrass, Kentucky[1]	*Poa pratensis*	~~126 lbs. per acre~~ 150
Ryegrass, Perennial (turf-type variety)[2]	*Lolium perenne*	~~40 lbs. per acre~~ 30
Fescue, Creeping Red	*Festuca rubra*	~~18 lbs. per acre~~ 20

1. Choose three different cultivars of Kentucky bluegrass listed in Table 4169.02-1, at ~~42~~ 50 lbs. per acre each.
2. Choose two different cultivars of turf-type perennial ryegrass listed in Table 4169.02-1, at ~~20~~ 15 lbs. per acre each.
3. A commercial mixture may be used if it contains at least 75% Kentucky bluegrasses: the greater amount of Kentucky bluegrass may replace creeping red fescue or perennial ryegrass.
4. Seed shall be certified Tested Class Seed "light blue tag" of Oregon, Washington, or Idaho origin, and be free of weeds listed on the all-state noxious weed seed list, annual bluegrass (*Poa annua,*), or bentgrass (*Agrostis spp.)*

Comments: These approved revisions are being reviewed due to concerns about some of the revisions, including the requirement for "light blue tag" seed of Oregon, Washington, or Idaho origin.

Some more clarification will be submitted for a future meeting on when stabilizing crop for urban areas should be applied and when it is inappropriate due to hot or dry weather conditions.

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

b. Seed Mixture.
Unless specified otherwise in the contract documents, use seeding rates shown in Table 2601.03-2 for urban areas that will be maintained as a lawn.

Table 2601.03-2: ~~Urban~~ Stabilizing Crop Seeding Mixture and Rates for Urban Areas that will be maintained as a lawn

,Common Name	Latin Name	Application Rate lbs/acre	Percentage of Mix
Bluegrass, Kentucky[1]	*Poa pratensis*	150 ~~126 lbs. per acre~~	75
Ryegrass, Perennial (turf-type variety)[2]	*Lolium perenne*	30 ~~40 lbs. per acre~~	15
Fescue, Creeping Red	*Festuca rubra*	20 ~~18 lbs. per acre~~	10

1. Choose three different cultivars of Kentucky bluegrass listed in 4168.02, A, Table 4168.02-1 or corresponding Supplemental Specifications, at ~~42~~ 50 lbs. per acre each.
2. Choose two different cultivars of turf-type perennial ryegrass listed in 4168.02, A, Table 4168.02-1 or corresponding Supplemental Specifications,, at ~~20~~ 15 lbs. per acre each.
3. A commercial mixture may be used if it contains an equivalent or greater amount of Kentucky bluegrasses: the greater amount of Kentucky bluegrass may replace the creeping red fescue or perennial ryegrass.
4. 4. All seed must be certified Tested Class Seed "light blue tag" from Oregon, Washington or Idaho origin, and be free of weeds on the all-state noxious weed seed list and annual bluegrass (*Poa annua,*) bentgrass (*Agrostis spp.)*
5. Seed must be fresh, clean new crop, complying with tolerance for germination and purity per 4168.02, A, Table 4168.02-1
6. This mix shall not be used as Urban Stabilizing Crop when it is deemed inappropriate by the Engineer because of hot or dry weather conditions.

b. Seed Mixture.
Unless specified otherwise in the contract documents, use seeding rates shown in Table 2601.03-4 for urban areas, that will be maintained as a lawn, including areas previously maintained as a lawn.

Table 2601.03-4: Permanent Seed Mixture and Rates for Urban Areas Maintained as a Lawn

,Common Name	Latin Name	Application Rate lbs/acre	Percentage of Mix
Bluegrass, Kentucky[1]	*Poa pratensis*	150 ~~126 lbs. per acre~~	75
Ryegrass, Perennial (turf-type variety)[2]	*Lolium perenne*	30 ~~40 lbs. per acre~~	15
Fescue, Creeping Red	*Festuca rubra*	20 ~~18 lbs. per acre~~	10

1. Choose three different cultivars of Kentucky bluegrass listed in 4168.02, A, Table 4168.02-1 or corresponding Supplemental Specifications, at ~~42~~ 50 lbs. per acre each.
2. Choose two different cultivars of turf-type perennial ryegrass listed in 4168.02, A, Table 4168.02-1 or corresponding Supplemental Specifications,, at ~~20~~ 15 lbs. per acre each.
3. A commercial mixture may be used if it contains an equivalent or greater amount of Kentucky bluegrasses: the greater amount of Kentucky bluegrass may replace the creeping red fescue or perennial ryegrass.
4. All seed must be certified Tested Class Seed "light blue tag" from Oregon, Washington or Idaho origin, and be free of weeds on the all-state noxious weed seed list and annual bluegrass (*Poa annua,*) bentgrass (*Agrostis spp.)*
5. Seed must be fresh, clean new crop, complying with tolerance for germination and purity per 4168.02, A, Table 4168.02-1

Reason for Revision: Correct the seed mix slightly to match the ratios used in the SUDAS Type 1 (Permanent lawn) specifications This will simplify seed mixing for the entire erosion control industry, which works with both city, county and state projects. Also, the SUDAS specification ratios are much more appropriate to adjust for the increased size of Kentucky blue grass seed with newer varieties (less seeds per pound).

Also, add requirements to ensure certified seed that is weed-free, and with materials specifications references.

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:		