Iowa Department of Transportation

MINUTES
OF
IOWA DOT SPECIFICATION COMMITTEE MEETING

January 9, 2014

Members Present:	Darwin Bishop	District 3 - Construction
	Mark Brandl	District 6 - Davenport RCE
	Donna Buchwald	Office of Local Systems
	Eric Johnsen, Secretary	Specifications Section
	Gary Novey	Office of Bridges & Structures
	Dan Redmond	District 4 - Materials
	Tom Reis, Chair	Specifications Section
	Brian Smith	Office of Design
	Willy Sorensen	Office of Traffic & Safety
Members Not Present:	Mitch Dillavou	Project Delivery Bureau
	Greg Mulder	Office of Construction & Materials
	Wes Musgrove	Office of Contracts
Advisory Members Present:	Lisa McDaniel	FHWA
Others Present:	Mark Bortle	Office of Construction & Materials
	Tom Jacobson	Office of Construction & Materials
	Wayne Sunday	Office of Construction & Materials

Tom Reis, Specifications Engineer, opened the meeting. The following items were discussed in accordance with the agenda dated January 2, 2014:

1. Article 2403.03, P, Surface Finish (Structural Concrete).

The Office of Construction and Materials requested to remove Class 3, Special Surface Finish, from the specifications.

2. Article 2412.01, Description (Concrete Bridge Decks).

The Office of Construction and Materials requested to add a reference to Section 2406 for concrete slab bridges.

3. Article 2412.03, C, 1, Concrete Bridge Decks.

The Office of Construction and Materials requested to specify a minimum age for prestressed concrete beams before deck placement.

4. Article 2413.03, G, Sealing For Deck Overlay.

The Office of Construction and Materials requested to clarify sealing procedures for bridge deck overlay projects.

5. **Article 2518.03, A, 1, Road Closures.**

Article 2518.03, A, 2, Hazard Closures.

The Office of Traffic and Safety requested to add an alternative to the existing road and hazard closure installations.

6. **Article 4154.01, Description (Fence Materials).**

The Office of Construction and Materials requested to add a Materials I.M. reference for fence materials.

7. **DS-12020, Structural Concrete (4500 psi (31 MPa) or Greater).**

DS-12033, High Performance Concrete for Structures.

The Office of Construction and Materials requested revisions to the Developmental Specifications for Structural Concrete (4500 psi (31 MPa) or Greater) and High Performance Concrete for Structures.

8. **Article 2528.05, C, Temporary Barrier Rail (Traffic Control).**

The Office of Construction and Materials requested revisions to provide payment by contract modification if the contractor is required to replace or repair TBR that is damaged by public traffic.

Additional Discussion.

The Specifications Section indicated that the following items will be discussed at the next Specification Committee meeting:

- Printing of the GS: The April 2014 GS may be the last that is printed in hardcopy.
- Next Standard Specification Release Date: Determine the date for the next Standard Specification release. Most likely we will not be printing a hardcopy of the Standard Specifications in the future.
- Mobile Accessibility of ERL: Discuss future ERL changes to provide better field access.
- County Engineers Specification Committee Members Participation: Discuss ways to get better participation from the County Engineers Specification Committee, such as teleconference or video conference.
- Industry Participation: Discuss ways to get more input into Specification Committee meetings from industry and public. Florida DOT posts agendas for review and input prior to their Specification Committee meetings.

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder / Wayne Sunday	**Office:** Construction & Materials	**Item 1**
Submittal Date: 2013.11.26	**Proposed Effective Date:** October 2014	
Article No.: 2403.03, P **Title:** Surface Finish (Structural Concrete)	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 1/9/2014	**Effective Date:** 10/21/2014

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Office of Local Systems asked if any Cities or Counties would still be using Class 3, Special Surface Finish. The Office of Construction and Materials indicated that they would not recommend that anyone use Class 3, Special Surface Finish, due to the performance issues. SUDAS indicated by email that they did not have any issues with the revision.

Specification Section Recommended Text:

2403.03, P, 2.

Delete the last sentence:

~~Provide a Class 3, finish to those areas designated in the contract documents.~~

2403.03, P, 2, c.

Delete the Article:

~~**c. Class 3, Special Surface Finish.**~~

~~This operation shall obtain a surface reasonably smooth and uniform in texture and appearance.~~

~~**1)** Apply a bonding agent mixed with standard or commercially packaged mortar. More than one application may be necessary. Use the same materials and methods for all surfaces to be given a Class 3 finish.~~

~~**2)** The Class 3 finish requirements do not relieve the Contractor of the responsibility for performing the Class 2 finish as specified prior to commencing Class 3 finish operations.~~

~~**3)** Do not commence application of the Class 3 finish until:~~

- ~~All other work which may mar the surface finish has been completed, or~~
- ~~Finishing operations can be carried on continuously from beginning to completion on any one bridge or structure.~~

Comments: The Materials I.M. reference was deleted as part of the April 2014 GS.

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

P. Surface Finish.

Finish and seal concrete surfaces exposed, or will likely be exposed, after the structure is completed as follows:

1. Finish concrete floors and concrete sidewalks as provided in Sections 2412, 2413, and 2511.
2. Provide a Class 1, finish to horizontal surfaces not cast against a form and not subject to wear (for example, bridge seats, tops of backwalls, piers, abutments, wingwalls, retaining walls, spandrel walls, struts between pedestal piers, and horizontal surfaces of curbs and sidewalks of the bridge). For all other surfaces required to be finished, provide a Class 2, finish to low water line or 1 foot (0.3 m) below the finished ground line. ~~Provide a Class 3, finish to those areas designated in the contract documents.~~

   a. Class 1, Floated Surface Finish.
   Overfill forms with concrete. Strike off concrete to the required elevation with a template and thoroughly work the surface with a wood float until the surface is uniformly smooth, dense, and true.

   b. Class 2, Strip Down Surface Finish.
   Immediately after removal of the forms, complete the following:

1) Remove rods and other devices used as form ties to the extent contemplated in their design.
2) Remove paper or fiber tubes used to facilitate removal of rod ties.
3) Except as designated below, cut off wires used as form ties flush with the surface of the concrete and drive them 1/4 inch (5 mm) below the surface.
4) Remove all fins and irregular projections from the concrete surfaces required to be finished.
5) On surfaces, thoroughly clean the cavities produced by form ties and all other holes, honeycomb spots, and broken corners and edges. After being saturated with water, carefully fill, point, and true with a mortar of cement and fine aggregate of the same kind as that which was used in the concrete being finished. Shallow voids, other than honeycomb, which appear on the formed surface after proper consolidation will not be considered as holes and need not be filled unless they appear in an abnormal concentration.
6) Clean the entire surface required to be finished of stains from form oil or other substances.
7) Ensure the resulting surfaces are true and uniform.
8) Clip off flush with the surface wire ties or reinforcing steel chairs protruding through culvert barrels or the bottom of bridge floors.
9) Leave construction and expansion joints in the completed work carefully tooled and free from mortar and concrete.
10) Leave expansion joint filler exposed for its full length and thickness and with clean true edges.

~~**c. Class 3, Special Surface Finish.**~~

~~This operation shall obtain a surface reasonably smooth and uniform in texture and appearance.~~

~~**1)** Apply a bonding agent mixed with standard or commercially packaged mortar. More than one application may be necessary. Products approved for this use are identified in Materials I.M. 491.10. Use the same materials and methods for all surfaces to be given a Class 3 finish.~~

~~**2)** The Class 3 finish requirements do not relieve the Contractor of the responsibility for performing the Class 2 finish as specified prior to commencing Class 3 finish operations.~~

~~**3)** Do not commence application of the Class 3 finish until:~~

- ~~All other work which may mar the surface finish has been completed, or~~
- ~~Finishing operations can be carried on continuously from beginning to completion on any one bridge or structure.~~

Reason for Revision: The use of Class 3, Special Surface Finish will no longer be utilized due to past performance issues. The I.M. 491.10 for Special Surface Finish Materials was eliminated in April 2013.

County or City Input Needed (X one)	**Yes**	**No**
Comments:		

Industry Input Needed (X one)			**Yes**	**No**	
Industry Notified:	**Yes**	**No**	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder / Wayne Sunday	**Office:** Construction & Materials	**Item 2**
Submittal Date: 2013.11.11	**Proposed Effective Date:** October 2014	
Article No.: 2412.01 **Title:** Description (Concrete Bridge Decks)	**Other:**	

Specification Committee Action: Approved as recommended.			
Deferred:	**Not Approved:**	**Approved Date:** 1/9/2014	**Effective Date:** 10/21/2014
Specification Committee Approved Text: See Specification Section Recommended Text.			
Comments: None.			

Specification Section Recommended Text:

2412.01, Description.

Add to the end of the Article:

For continuous concrete slab bridges apply Section 2406.

Comments:

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

2412.01 DESCRIPTION.

Construct concrete decks on timber stringers, concrete beams, or steel girders. Apply Sections 2403 and2404. For continuous concrete slab bridges apply 2406.

Reason for Revision: There has been confusion regarding the requirements for placing concrete slab bridges during cold weather. Since slab bridges are much thicker than beam or girder bridges, their placement during cold weather should be governed by cold weather placement of structural concrete including the allowance for the use of fly ash.

County or City Input Needed (X one)			**Yes**	**No**	
Comments:					
Industry Input Needed (X one)			**Yes**	**No**	
Industry Notified:	**Yes**	**No**	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder / Wayne A. Sunday	**Office:** Construction & Materials	**Item 3**
Submittal Date: 2013.11.26	**Proposed Effective Date:** October 21, 2014	
Article No.: 2412.03, C, 1 **Title:** Concrete Bridge Decks	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 1/9/2014	**Effective Date:** 10/21/2014

Specification Committee Approved Text:

2412.03, C, 1.

Add to the end of the Article:

For prestressed concrete beam bridges, beams shall be at least 28 days old before the concrete deck is placed, to allow time for beam creep and camber development to occur.

Comments: The Office of Specifications asked if the industry should be notified of this revision. The Office of Bridges and Structures indicated that beam details in the plan already have the 28 day waiting period as well as Materials I.M. 570. In cases of beam replacement on a damaged bridge, the notes could waive the 28 day period or specify a shorter period.

The Office of Traffic and Safety asked what "floor" meant in regards to the deck. The Committee decided to use "concrete deck" to be consistent with the previous sentence.

Specification Section Recommended Text:

2412.03, C, 1.

Add to the end of the Article:

For prestressed concrete beam bridges, the beams must be at least 28 days old before the floor is placed, to enable time for beam creep and camber development to occur.

Comments:

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

2412.03 Construction

C. Placing Concrete.

1. Place concrete deck sections according to the sequence shown in the contract documents or as modified by the Engineer. On prestressed concrete beam bridges the beams must be at least 28 days old before the floor is placed, to enable time for beam creep and camber development to occur.

Reason for Revision: This requirement is specified in I.M. 570, but is more pertinent to bridge contractors, as opposed to precasters. Placing this requirement in the specifications will ensure that bridge floors on prestressed concrete beam bridges are not placed before the beam creep and camber development has occurred.

County or City Input Needed (X one)			**Yes**	**No**	
Comments:					
Industry Input Needed (X one)			**Yes**	**No**	
Industry Notified:	**Yes**	**No**	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder / Wayne A. Sunday	**Office:** Construction & Materials	**Item 4**
Submittal Date: 2013.12.02	**Proposed Effective Date:** April 15, 2014	
Article No.: 2413.03, G **Title:** Sealing For Deck Overlay	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 1/9/2014	**Effective Date:** 10/21/2014

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Office of Local Systems asked if it was clear when the sealer was placed, in regards to the overlay. The order of operations is indicated by the order of the Articles in Section 2413, so the sealer is placed after the overlay.

Specification Section Recommended Text:

2413.03, G, Sealing for Deck Overlay.

Replace the Article and title:

Sealing ~~for Deck Overlay~~ Existing Concrete.

Seal the tops and traffic sides of curbs, retrofit barrier rails, and concrete barrier rails according to Article 2403.03, P, 3. In addition, for Class O PCC overlay or Class HPC-O overlay, also apply the sealer along each gutter line, extending 1 foot (0.3 m) onto the roadway. The Engineer or the contract documents may designate other areas requiring concrete sealer.

Comments:

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

G. ~~Sealing for Deck Overlay.~~ Sealing Existing Concrete

Seal the tops and traffic sides of curbs, retrofit barrier rails, and concrete barrier rails according to Article 2403.03, P, 3. In addition, for Class O PCC overlay or Class HPC-O overlay, also apply the sealer along each gutter line, extending 1 foot (0.3 m) onto the roadway. The Engineer or the contract documents may designate other areas requiring concrete sealer.

Reason for Revision: On bridge deck overlay projects it is the intent that existing concrete curbs, retrofit barrier rails, and concrete barrier rails be sealed including 1 foot of the adjacent new overlay. It is not the intent to seal new concrete associated with this work other than the adjacent 1 foot of new deck overlay. Specification title was changed to clarify this and a clarification was included regarding sealing the 1 foot of adjacent new deck overlay.

County or City Input Needed (X one)	**Yes**	**No**
Comments:		

Industry Input Needed (X one)			**Yes**	**No**	
Industry Notified:	**Yes**	**No**	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Willy Sorenson / Dan Sprengeler	**Office:** Traffic and Safety	**Item 5**
Submittal Date: December 18, 2013	**Proposed Effective Date:** October 2014 GS	
Article No.: 2518.03, A, 1 **Title:** Road Closures **Article No.:** 2518.03, A, 2 **Title:** Hazard Closures	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 1/9/2014	**Effective Date:** 10/21/2014

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The FHWA asked if the FHWA had been involved with the Work Zone Traffic Safety Committee review of this revision. The Office of Traffic and Safety indicated that the FHWA is included on the Work Zone Traffic Safety Committee.

Specification Section Recommended Text:

2518.03, A, 1, Road Closures.

Renumber Articles c and d and **Add** the Article:

c. In lieu of Articles 2518.03, A, 1, a and b above, place a series of Type 3 barricades across the roadway from outside edge of shoulder to outside edge of shoulder. Ensure that gaps between Type 3 barricades are no greater than 6 inches (150 mm). Mount a ROAD CLOSED (R11-2) sign over the top two rails of the Type 3 barricade located closest to the approximate roadway centerline.

~~c~~ **d.** Erect road closures as specified in the contract documents. Erect them on the mainline of the roadway where public traffic is diverted onto an on-site detour and where public traffic is prohibited from entering the work area.

~~d~~ **e.** Erect road closures beginning with the start of the contract period as specified in the contract documents, or when the work commences.

2518.03, A, 2, Hazard Closures.

Renumber Articles c and d and **Add** the Article:

c. In lieu of Articles 2518.03, A, 2, a and b above, place a series of Type 3 barricades across the roadway from outside edge of shoulder to outside edge of shoulder. Ensure that gaps between Type 3 barricades are no greater than 6 inches (150 mm).

~~c~~ **d.** Erect hazard closures as specified in the contract documents. Erect them at locations within a work area when construction involves major hazards on existing or relocated roadways. Such hazards may be located at streams, gullies, railroads, bridge approaches, and driveway locations. Through public traffic should not normally encounter a hazard closure.

~~d~~ **e.** Erect hazard closures beginning with the start of the contract period as specified in the contract documents, or when the work commences.

Comments: The Specifications Section also proposes changing all references to “Type III barricades” in the specifications to “Type 3 barricades” to match the MUTCD.

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

Add a new paragraph (c) to sections (1) and (2).

2518.03 construction.

A. Erection.

1. Road Closures.

a. Place a fence meeting the requirements of Article 2518.02 across the roadway from outside edge of shoulder to outside edge of shoulder. Securely support the fence so it is in a vertical position without sagging.

b. Place a Type III barricade, described in Part 6 of the MUTCD, immediately in front of the fence at the approximate roadway centerline. Mount a ROAD CLOSED (RII-2) sign on the Type III barricade.

c. In lieu of (a) and (b) above, place a series of Type III barricades described in Part 6 of the MUTCD, across the roadway form outside edge of shoulder to outside edge of shoulder. Gaps between the Type III barricades shall be no greater than 6 inches (150 mm). Mount a ROAD CLOSED (R11-2) sign over the top two rails of the Type III barricade located closest to the approximate roadway centerline.

d~~c~~. Erect road closures as specified in the contract documents. Erect them on the mainline of the roadway where public traffic is diverted onto an on-site detour and where public traffic is prohibited from entering the work area.

e~~d~~. Erect road closures beginning with the start of the contract period as specified in the contract documents, or when the work commences.

2. Hazard Closure.

a. Place a fence meeting the requirements of Article 2518.02 across the roadway from outside edge of shoulder to outside edge of shoulder. Securely support the fence so it is in a vertical position without sagging.

b. Place a Type III barricade, described in Part 6 of the MUTCD, immediately in front of the fence at the approximate roadway centerline.

c. In lieu of (a) and (b) above, place a series of Type III barricades described in Part 6 of the MUTCD, across the roadway form outside edge of shoulder to outside edge of shoulder. Gaps between the Type III barricades shall be no greater than 6 inches (150 mm).

d~~c~~. Erect hazard closures as specified in the contract documents. Erect them at locations within a work area when construction involves major hazards on existing or relocated roadways. Such hazards may be located at streams, gullies, railroads, bridge approaches, and driveway locations. Through public traffic should not normally encounter a hazard closure.

e~~d~~. Erect hazard closures beginning with the start of the contract period as specified in the contract documents, or when the work commences.

Reason for Revision: Allow an alternate design for roadway closures. Industry encouraged us to allow this change as an option. The Work Zone Traffic Safety Committee believes that safety closures will be better maintained when this option is used.

I also noted that this article makes reference to "Type III barricades." The MUTCD now refers to them as Type 3 barricades. I left the Roman numerals in place, since we use the same reference in other parts of the specs. Perhaps some sort of global revision is needed.

County or City Input Needed (X one)			**Yes**	**No** X	
Comments:					
Industry Input Needed (X one)			**Yes**	**No** X	
Industry Notified:	**Yes** X	**No**	**Industry Concurrence:**	**Yes** X	**No**
Comments: Specification change requested by Iowa ATSSA. The Work Zone Traffic Safety Committee supported this revision at their December 5, 2013 meeting.					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder / Kevin Jones	**Office:** Construction & Materials	**Item 6**
Submittal Date: December 5, 2013	**Proposed Effective Date:** October, 2014	
Article: 4154.01 **Title:** Description (Fence Materials)	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 1/9/2014	**Effective Date:** 10/21/2014

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: None.

Specification Section Recommended Text:

4154.01, Description.

Add the Article:

C. Inspection and acceptance of fence materials will be according to Materials I.M. 454.10.

Comments:

Member's Requested Change (Redline/Strikeout):

Section 4154. Fence Materials

4154.01 DESCRIPTION.

A. Materials covered by this section include woven wire farm field fabric, chain link fabric, barbed wire, steel fence posts, wood fence posts, tie and brace wire, gates, and special fittings.

B. Use material of the size and type designated in the contract documents. Use new material meeting the requirements of the following provisions.

C. Inspection and acceptance of fence materials will be according to Materials I.M. 454.10.

Reason for Revision: Having a reference to the IM in the specification will help those that are less familiar with the acceptance process to find the needed information easily. This language is consisitant with other specifications where approve sources are required.

County or City Input Needed (X one)	**Yes**	**No** x
Comments:		

Industry Input Needed (X one)			**Yes**	**No** x	
Industry Notified:	**Yes**	**No**	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder / Wayne A. Sunday	**Office:** Construction & Materials	**Item 7**
Submittal Date: December 12, 2013	**Proposed Effective Date:** March 18, 2014	
Article No.: **Title:**	**Other:** DS-12020, Developmental Specifications for Structural Concrete (4500 psi (31 MPa) or Greater) DS-12033, Developmental Specifications for High Performance Concrete for Structures	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 1/9/2014	**Effective Date:** Multiple

Specification Committee Approved Text: See attached Developmental Specifications.

Comments: The Office of Construction and Materials indicated that the DS for High Performance Concrete for Structures will be revised in the future to indicate that it is low permeability concrete and not necessarily high performance. FHWA defines high performance concrete as having a compressive strength of 6000 psi or greater.

Wayne Sunday will remain the controller for the DS for High Performance Concrete for Structures and Ahmad Abu-Hawash will remain the controller for the DS for Structural Concrete (4500 psi (31 MPa) or Greater).

The Office of Bridges and Structures asked to delay the DS for High Performance Structures to the April 15 letting to verify that designers did not use 5000 psi strength for their designs.

Specification Section Recommended Text: See attached Draft Developmental Specifications.

Comments:

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

Reason for Revision: DS-12020 changes include 1) if HPC concrete is specified and the design requires concrete design strength greater than 4000 psi, this DS will be specified, 2) added than concrete strengths will be determined based on maturity curves developed from compressive cylinders, and 3) reduced and clarified the compressive strength samples that are required to be cast and tested.

DS- 12033 changes include 1) removing the minimum strength language since this DS will be for standard 4000 psi design strength concrete, 2) added permeability testing by Wenner probe, 3) deleted trial batch concrete since most all contractors use the listed concrete mix, 4) eliminated testing production concrete for strength, and 5) deleted paragraph on Non-Complying Strength since the mix is specified.

County or City Input Needed (X one)			**Yes**	**No**	
Comments:					
Industry Input Needed (X one)			**Yes**	**No**	
Industry Notified:	**Yes**	**No**	**Industry Concurrence:**	**Yes**	**No**
Comments:					

DS-12XXX
(Replaces DS-12020)

Iowa Department of Transportation

DEVELOPMENTAL SPECIFICATIONS
FOR
STRUCTURAL CONCRETE (4500 PSI (31 MPa) OR GREATER)

Effective Date
March 18, 2014

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY SHALL PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

12XXX.01 DESCRIPTION.
Provide a concrete mix design for structural elements designed with a minimum compressive strength of 4500 psi (31.03 MPa) or greater as shown in contract documents. Submit documentation for Class C or HPC mixes meeting strength criteria or submit a new mix design.

Sections 2403 and 2412, and Division 41 of the Standard Specifications shall apply with the following modifications.

12XXX.02 MATERIALS.
All material shall meet the quality requirements for the respective items in Division 41 of the Standard Specifications.

Submit a mix design meeting the minimum 28 day strength requirements noted in the contract documents. Mix design requirements and submittal are as follows:

A. New Mix Design.
If the Class C or HPC mix design from a concrete production facility cannot meet the strength requirements, a new mix design shall be submitted. Proportions for a new mix design shall be based upon saturated surface dry aggregates and shall produce a workable concrete mixture meeting the following constraints:

Cementitious Content, minimum	560 pounds per cubic yard (332 kg/m^3), (absolute volume 0.106)
Cementitious Content, maximum	650 pounds per cubic yard (385 kg/m^3), (absolute volume 0.123)
Water/Cementitious Ratio	Maximum, 0.45
Target Air Content	6% (absolute volume 0.06)

Submit mix design to the District Materials Engineer for approval at least 60 calendar days prior to placement. Base mix design on a trial batch and mix in the equipment used to batch production concrete.

For a new mix design without previous experience and for which the concrete production facility does not have field data for calculation of the standard deviation, the strength shall be an average of three cylinders and shall meet the following strength requirement at 28 days as shown below.

Specified minimum compressive strength, f'_c psi (MPa)	Required average compressive strength, f'_c
4500 to 5000 (31.03 to 34.47)	f'_c + 1200 psi (8.27 MPa)
Greater than 5000 (34.47)	f'_c + 1400 psi (9.65 MPa)

where, f'_c = specified compressive strength in contract documents

If the concrete production facility has test records for calculation of the standard deviation, the required 28 day compressive strength shall be as shown in Article 12XXX.02, B. Concrete shall represent materials, quality control procedures, conditions, materials and proportions within test records, and the mix design represented shall not have been more restricted than the proposed mix. Strength represented by test records shall be within 1000 psi (6.89 MPa) of the required compressive strength.

B. Mix Design with History of Strength.

A Class C mix, or other mixes with satisfactory record of strength, may be submitted in lieu of a new mix design. In accordance with ACI 301, a minimum of thirty tests for 28 day compressive strength shall be required as supporting documentation. The concrete produced for this specification shall be produced in accordance with Section 2403 of the Standard Specifications, representing material sources (fly ash source changes may be included), and shall be batched and mixed in the same equipment used to produce the concrete represented by the performance strength documentation. The standard deviation shall be calculated from the thirty strength tests, except as provided below. The required 28 day compressive strength, f'_c, shall be the greater of the following

f'_c + 1.34 s or
f'_c + 2.33 s – 500 psi (3.45 MPa)

where: f'_c = specified compressive strength in contract documents
s = standard deviation.

When the concrete production facility has less than thirty tests (fifteen to twenty-nine), the standard deviation shall be increased by the factor included in the following table:

Number of tests*	Factors for increasing the Standard Deviation
15 to 19	1.16
20 to 24	1.08
25 to 29	1.03

*Less than fifteen tests shall require a new mix design.

Submit modifications to an accepted concrete mix design to the Engineer for review and approval prior to use.

12XXX.03 CONSTRUCTION.

A. Trial Batch Concrete.

A trial batch will be required for any new mix design or any mix design with a history of strength without past experience on Interstate and primary projects. Approval will be based on trial batch mix properties and submittal of a trial batch report. The District Materials Engineer may waive the trial batch testing and perform testing on initial production placements where lower strengths are required, provided the concrete production facility produces acceptable test records for proposed mix demonstrating mix properties have been achieved through previous trial batches.

The District Materials Engineer shall be afforded ample opportunity to witness the trial batching. The District Materials Engineer shall be given notice and mix proportions 7 calendar days prior to this event. The trial batch shall be made at least 30 calendar days prior to planned placement and shall be a minimum of 3 cubic yards (cubic meters) in size. Establish batching sequence during trial batch. Transport the concrete a distance comparable to the distance from the ready mix plant to the placement site. Use concrete for testing representative of the entire batch while having a slump within 1 inch (25 mm) of the maximum slump allowed, an intended in place air content of 6% ± 1%, and a w/c ratio that will be typical in the placement. Perform the following tests for each trial batch:

Specific Gravity of Each Individual Aggregate	Materials I.M. 307
Gradation of Each Individual Aggregate	Materials I.M. 302
Unit Weight of Plastic Concrete	Materials I.M. 340
Slump of Plastic Concrete	Materials I.M. 317
Air Content of Plastic Concrete	Materials I.M. 318

Submit a trial batch mix design report and include the following:

Cover Page	Contractor and Producer Name Project Number Date and Location of Trial Batch Date Submitted Signature of Contractor/Producer Representative
Material Source Information	Brand, Type, and Source
Proportion Information	Specific Gravity Relative % of Each Individual Aggregate Design and As Mixed Batch Weights (SSD) Design and As Mixed w/c Ratios
Mix Properties	Unit Weight of Plastic Concrete Air Content of Plastic Concrete Slump Individual Compressive Strength results at 7 and 28 days

B. Production Concrete.

Prior to placing production concrete, develop a strength maturity curve in accordance with Material I.M. 383 based on compressive strength. Monitor unit being placed with a minimum of two probes. Forms may be removed and concrete may be subjected to exterior loads once the maturity meets the required design strength for the unit being placed. The Engineer remains responsible for determining if sufficient strength has been achieved. Submit documentation to the Engineer prior to form removal or loading.

Perform quality control testing of production concrete for strength to determine if production concrete meets the minimum required design strength. Cast, cure, and handle strength samples according to Materials I.M. 315 using a PCC Level I Concrete Field Testing Technician. At the site ensure cylinders are cured properly with wet burlap and plastic. Do not move cylinders for 16 hours and ensure they remain at the site for a maximum of 1 calendar day before being transported to a certified laboratory for final curing and testing. Cast ~~six~~ one random set of three strength samples in 4 inch by 8 inch (100 mm by 200 mm) cylinder molds ~~for each lot~~ for each pier, abutment, and deck with required design strength of 4500 psi or higher. ~~A lot shall be one week of concrete production. For production less than 50 cubic yards (38 cubic meters) per week, obtaining samples for strength will be grouped with a previous or subsequent week.~~ Document slump, air content, and w/c ratio (adjusted for all water) of the concrete for the cylinders cast.

Test strength samples by a ~~certified~~ qualified lab in accordance with AASHTO T 22. Test three cylinders for strength at ~~each age of~~ 28 ~~and 56~~ days.

Submit test results to the Engineer and the District Materials Engineer no later than 1 working day after testing is completed. Submittal shall clearly indicate the project number, location, Contractor, producer, structural element constructed, slump, air content, w/c ratio (adjusted for all water), date sampled, date tested, break age, individual compressive strengths, and average compressive strengths. Attach plant report for the placement to the submittal.

~~The District Materials Engineer will obtain random verification strength samples at a minimum rate of a set for at least one substructure placement and a set for at least one deck placement. A set of six 4 inch by 8 inch (100 mm by 200 mm) cylinders will be cast, cured, and handled in accordance with Materials I.M. 315. Three cylinders will be tested for strength at 28 days and three cylinders will be held for further testing, if needed. Strength samples will be tested at the District Materials Laboratory in accordance with AASHTO T 22.~~

C. Failure to Comply.

According to ACI 318, strength is acceptable if the average compressive strength of three cylinders meets the required compressive strength and no individual test falls below the required compressive strength by more than 500 psi (3.45 MPa). When the average 28 day compressive strength does not meet or exceed the specified strength, propose evaluation methods to determine the in-place concrete strength. Submit the proposal to the Engineer for approval. Notify the Engineer 48 hours in advance of any sampling and testing and will witness the sampling and testing of the in-place concrete. The Engineer will review the results with the Office of Bridges and Structure and determine corrective action required. The Contractor shall be responsible for the cost of evaluation and any corrective action required.

12XXX.04 METHOD OF MEASUREMENT.

The quantity of Structural Concrete 4500 psi (31 MPa) or Greater, in cubic yards (m3), will be the quantity shown in the contract documents.

12XXX.05 BASIS OF PAYMENT.

The Contractor will be paid the contract unit price for Structural Concrete 4500 psi (31 MPa) or Greater per cubic yard (m3). The cost for testing the production concrete shall be included in the contract unit price for Structural Concrete 4500 psi (31 MPa) or Greater.

DS-12XXX
(Replaces DS-12033)

Iowa Department of Transportation

DEVELOPMENTAL SPECIFICATION
FOR
HIGH PERFORMANCE CONCRETE FOR STRUCTURES

Effective Date
April 15, 2014

THE STANDARD SPECIFICATIONS, SERIES 2012, ARE AMENDED BY THE FOLLOWING MODIFICATIONS AND ADDITIONS. THESE ARE DEVELOPMENTAL SPECIFICATIONS AND THEY PREVAIL OVER THOSE PUBLISHED IN THE STANDARD SPECIFICATIONS.

12XXX.01 DESCRIPTION.

A. Develop and provide high performance concrete (HPC) for bridge substructures and decks when called for in the contract documents. HPC is defined as a concrete mix providing the following:
- Desired workability.
- ~~Minimum average 28 day compressive strength of 5000 pounds per square inch (34.5 MPa), unless specified otherwise in the contract documents.~~
- Maximum 28 day permeability of 2000 coulombs for the substructure (or greater than 20 K ohm-cm surface resistivity by Wenner probe) and 1500 coulombs for the deck (or greater than 30 K ohm-cm surface resistivity by Wenner probe).

B. Apply Sections 2403, 2412, and Division 41 of the Standard Specifications with the following modifications.

12XXX.02 MATERIALS.
Contractor may use other mixes than those described below provided they meet the requirements of this specification and are approved by the District Materials Engineer.

A. Substructure:

1. Apply the following conditions for substructure HPC mixes:
- Coarse aggregate meeting Class 3i durability.
- Basic water to cementitious material (w/c) ratio of 0.42, with a maximum w/c ratio of 0.45.

2. HPC mix for substructure may be a HPC-S or CV-HPC-S. Apply the following conditions:
a. Use one of the following cement combinations:
- Type IS.
- Type I/II with a minimum of 30% weight (mass) substitution with GGBFS.
- Type IP, except with an absolute volume of 0.126 for HPC-S mix.

b. Fly ash substitution not to exceed 20% by weight (mass) of the cement.
c. Maximum total substitution of 50%
d. A high range water reducer may be used with a maximum allowable slump of 8 inches (200 mm) and target air content of 7.5% ± 2.0%.

B. Deck.

1. Apply the following conditions for deck HPC mixes:
- Use coarse aggregate meeting Class 3i durability.
- Basic w/c ratio of 0.40, with a maximum w/c ratio of 0.42.

2. The HPC mix for the deck may be a HPC-D or a CV-HPC-D. Apply the following conditions:
- **a.** Use one of the following cement combinations:
  - Type IS.
  - Type I/II with a minimum of 30% weight (mass) substitution with GGBFS.
  - Type IP, except use an absolute volume of 0.126 for the HPC-D mix.
- **b.** Fly ash substitution not to exceed 20% by weight (mass) of the cement.
- **c.** Maximum total substitution of 50%.
- **d.** Combined aggregate gradation optimized according to Materials I.M. 532 and meeting the limits in Article 2513.03, A, 2, b, 3, of the Standard Specifications.

C. Contractor Designed HPC.

Other mixes meeting the above requirements may be approved by the District Materials Engineer.

~~Apply the following conditions for Contractor designed HPC:~~
- ~~Type IP or IS cement.~~
- ~~Type I/II cement with a minimum of 25% weight (mass) substitution with GGBFS.~~
- ~~Minimum cementitious content of 624 pounds per cubic yard (370 kg/m^3).~~
- ~~Maximum fly ash substitution not to exceed 20% by weight (mass) of the cement.~~
- ~~Maximum total substitution of 50% by weight (mass) of the cement.~~
- ~~Maximum water to cementitious ratio of 0.45 for substructure and 0.42 for deck.~~
- ~~Coarse aggregate meeting Class 3I durability.~~
- ~~For deck concrete, provide a combined aggregate gradation optimized according to Materials I.M. 532 and meeting the limits in Article 2513.03, A, 2, b, 3, of the Standard Specifications.~~
- ~~For substructure, a high range water reducer may be used with a maximum allowable slump of 8 inches (200 mm) and a target air content of 7.5% ± 2.0%.~~

12XXX.03 CONSTRUCTION.

~~**A. Trial Batch Concrete.**~~

~~**1.** Trial batch is required only when Contractor proposes HPC mixes other than mixes described in Article DS-12033.02, A and B. When a trial batch is required, make one or more trial batches. An Iowa DOT PCC Level III Certified Technician shall develop HPC mix design.~~

~~**2.** Allow District Materials Engineer ample opportunity to witness trial batching. Provide District Materials Engineer notice and mix proportions seven calendar days prior to this event.~~

~~**3.** Mix trial batch (a minimum of 3 cubic yards (3 m^3) in size) at least 30 calendar days prior to planned placement. Establish batching sequence of materials during trial batch.~~

~~**4.** Transport concrete a distance comparable to distance from ready mix plant to placement site.~~

~~**5.** Use concrete for testing purposes representative of entire batch having a slump within 1 inch (25 mm) of the maximum slump allowed, an intended in-place air content of 6% ± 1%, and a w/c ratio that will be typical in substructure and deck placement. Perform the following tests for each trial batch:~~
- ~~Specific Gravity of Each Individual Aggregate Materials I.M. 307~~
- ~~Gradation of Each Individual Aggregate Materials I.M. 302~~
- ~~Unit Weight of Plastic Concrete Materials I.M. 340~~

- Slump of Plastic Concrete Materials I.M. 317
- Air Content of Plastic Concrete Materials I.M. 318
- **Substructure:** Evaluate mix workability for intended application and method of placement.
- **Deck:** Cast at least one test slab 8 feet by 4 feet (2.4 m by 1.2 m) in area and 4 inches (100 mm) thick. Place and consolidate using methods typical for bridge deck pours. Finish concrete by hand and evaluate mix workability and finishability for intended application and method of placement.

6. Submit trial batch report to District Materials Engineer no later than seven calendar days after trial batching. Include the following in the report:

Cover Page	Contractor and Producer Name Project Number Date and Location of HPC Trial Batch Date Submitted Signature of Contractor/Producer Representative
Material Source Information	Brand, Type, and Source
Material Proportion Information	Specific Gravity Relative % of Each Individual Aggregate Target Combined Gradation %Passing (Materials I.M. 531) Target Combined Gradation Charts (Materials I.M. 532) Design and As Mixed Batch Weights (Mass) (SSD) Design and As Mixed w/c Ratios
Mix Properties	Unit Weight (Mass) of Plastic Concrete Air Content of Plastic Concrete Slump

7. District Materials Engineer will cast samples and transport them to Central Materials Laboratory for testing. Trial batch concrete will be tested for permeability and strength. All samples will be cast, cured, and handled according to Materials I.M. 315. One permeability and six strength samples will be cast in 4 inch by 8 inch (100 mm by 200 mm) cylinder molds.

8. One cylinder will be sent to Central Materials Laboratory for rapid chloride permeability testing in accordance with Iowa Materials Test Method 412-A. Samples for permeability will be delivered within seven days of casting, left in molds, and sealed in a plastic bag or placed in container with water. Two samples will be obtained from the cylinder. Target value of permeability is 2000 coulombs for substructure and 1500 coulombs for deck, or less based on average of two tests.

9. Strength samples will be stripped of their molds and wet cured until their break age. Strength samples will be tested according to AASHTO T 22. Three cylinders will be tested for strength at each age of 28, and 56 days. For a mix design without previous experience, average 28 day compressive strength shall be equal to or greater than 5000 plus 1400 pounds per square inch (34.5 + 9.5 MPa).

10. Approval will be based on trial batch mix properties and submittal of trial batch report. District Materials Engineer may waive trial batch testing provided satisfactory mix properties have been achieved through testing of previous trial batches or production placements.

B A. Production Concrete.

1. Notify District Materials the Engineer at least 48 hours prior to placement of production concrete. Use only approved HPC mixes for production concrete. If a mix other than mix

described in Article DS-12XXX.02, A or B is to be used, ensure it has same materials, proportions, and properties (including slump, air content, and w/c ratio) as ~~established in trial batch~~ approved by the District Materials Engineer.

~~**2.** Test production concrete for strength. These test results will be used for acceptance. An Iowa DOT certified PCC Level I Concrete Field Testing Technician shall cast, cure, and handle strength samples according to Materials I.M. 315. Properly cure cylinders at the site with wet burlap and plastic. Do not move cylinders for 16 hours and leave them at the site for a maximum of one calendar day before transporting to a certified laboratory for final curing and testing. Cast six strength samples in 4 inch by 8 inch (100 mm by 200 mm) cylinder molds for each day of placement greater than 100 cubic yards (75 m^3). Document slump, air content, and w/c ratio (adjusted for all water) of the concrete for the cylinders cast.~~

~~**3.** Strength samples shall be tested by a certified lab according to AASHTO T 22. Test three cylinders for strength at each age of 28 and 56 days. After 15 or more sets of samples have been tested, testing of the cylinder at 56 days may be waived by the Engineer, if average 28 day strength exceeds required strength.~~

~~**4.** Submit test results to Engineer and District Materials Engineer no later than one working day after testing is completed. Clearly indicate in the submittal (as a minimum): the project number, location, Contractor, producer, structural element constructed, slump, air content, w/c ratio (adjusted for all water), date sampled, date tested, break age, individual compressive strengths, and average compressive strengths. In addition, attach the plant report for the pour to the submittal.~~

~~**5**~~ **2.** District Materials Engineer will obtain random verification strength samples on a minimum of ~~one substructure placement and~~ one deck placement. Strength samples will be tested at District Materials Laboratory according to AASHTO T 22. A set of four cylinders will be cast, cured, and handled according to Materials I.M. 315. Three cylinders will be tested for strength at 28 days. One cylinder will be tested for permeability on a random basis by Central Materials Laboratory or Wenner probe resistivity testing by the District Materials Engineer. Permeability testing will not be evaluated on footings or drilled shafts.

~~**C. Non Complying Strength.**~~

~~When average 28 day compressive strength does not meet or exceed specified strength, propose evaluation methods to determine in place concrete strength. Submit proposal to Engineer. Notify Engineer 48 hours in advance of sampling and testing. Engineer will witness sampling and testing of in-place concrete. Engineer will review results and determine corrective action required. Contractor is responsible for cost of evaluation and any corrective action required.~~

~~**D**~~ **B. Placing Concrete.**

1. If concrete is to be placed by pumping, use a pump line with a section reduction to reduce exit velocity of pumped concrete and minimize damage to epoxy coated reinforcement. Submit measures for reducing exit velocity of concrete to Engineer for approval prior to placement by pumping.

2. Protect epoxy coated reinforcement from damage caused by placing and handling equipment.

3. For the deck, placing of concrete floors shall not begin if the theoretical rate of evaporation exceeds 0.1 pounds per square foot per hour (0.5 kg/m^2 per hour). Monitor theoretical evaporation rate at a maximum interval of every three hours during placement at a location as near the deck as possible. If the rate exceeds 0.15 pounds per square foot per hour (0.75 kg/m^2 per hour) cease placement at next location acceptable to Engineer.

~~E~~ C. Curing.

1. **Substructure.**
   - **a.** Leave forms in place for 96 hours of curing.
   - **b.** Leave wet burlap covering in place for 96 hours.

2. **Deck.**
   - **a.** Leave forms in place for 168 hours of curing.
   - **b.** Apply water to the burlap covering for 168 hours of continuous wet sprinkling system curing.
   - **c.** Do not place curing compound on floor.
   - **d.** Prewet burlap with sufficient water, prior to placement, to prevent absorption of moisture from concrete surface. Place two layers of pre-wetted burlap on floor immediately after artificial turf drag or broom finish with a maximum time limit of 10 minutes after final finishing. Apply water to burlap covering for entire curing period by means of a continuous wet sprinkling system that is effective in keeping burlap wet during moist curing period.
   - **e.** Use evaporation retardant only in situations where equipment and/or labor delays, or environmental conditions, prevent adequate protection of concrete until prewetted burlap is in place. Have an evaporation retardant, including Confilm, Conspec Acquafilm, Evapre, or Sure Film, readily available during placement for application as directed by the Engineer. Do not work evaporation retardant into concrete surface or use as a finishing aid.

~~F~~ D. Cold Weather Protection.

1. Monitor surface temperature of concrete continuously during curing period using electronic recording type thermometers capable of recording a minimum of one reading per hour. Furnish results to Engineer in electronic format as required.

2. If supplemental housing and heating is used, locate temperature monitors in the concrete at the furthest and closest point from heat source. Verify maximum temperature at monitor point closest to heat source does not exceed 150ºF (65ºC).

3. After required curing period, gradually reduce temperature of air surrounding concrete to outside air temperature according to Article 2403.03, I, of the Standard Specifications.
   - **a. Substructure.**
     Ensure concrete and its surface temperature are maintained at a temperature of no less than 50ºF (10ºC) for the first 120 hours after placing. Curing time will not be counted if concrete temperature falls below 50ºF (10ºC).
   - **b. Deck.**
     - **1)** Covering with plastic will not be allowed as a substitute for continuous wet sprinkling system curing.
     - **2)** Ensure concrete and its surface temperature are maintained at a temperature of no less than 50ºF (10ºC) for 168 hours of continuous wet sprinkling system curing. Curing time will not be counted if the concrete temperature falls below 50ºF (10ºC).

12XXX.04 METHOD OF MEASUREMENT.

Measurement for High Performance Concrete will be ~~as follows:~~ the

~~A. High Performance Concrete.~~

Cubic yards (cubic meters) shown in the contract documents.

~~B. Trial Batch Concrete.~~

~~None.~~

12XXX.05 BASIS OF PAYMENT.

Payment for High Performance Concrete will be at the contract unit price ~~as follows:~~

~~**A. High Performance Concrete.**~~

~~**1.** P~~per cubic yard (cubic meter).

~~**2.**~~ Payment ~~i~~includes cost for testing production concrete ~~in the contract unit price for High Performance Concrete~~.

~~**B. Trial Batch Concrete.**~~

~~**1. Lump sum.**~~

~~**2. Payment is full compensation for furnishing materials, tools, and labor for performance of work necessary to design, cast, finish, and dispose of test slabs as indicated.**~~

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Greg Mulder/Wayne Sunday	**Office:** Construction & Materials	**Item 8**
Submittal Date: 2013.09.26	**Proposed Effective Date:** October 21, 2014	
Article No.: 2528.05, C **Title:** Temporary Barrier Rail (Traffic Control)	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 1/9/2014	**Effective Date:** 10/21/2014

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: This item was discussed at the December 3, 2013 Joint Specification Meeting with the AGCI. The AGCI felt that each situation will be different and a set rate or multiple of the bid price would not be fair to the Contractor or Iowa DOT. The price could vary within the same project depending on what the Contractor has on hand or where they have to go to get it.

The District 6 - Davenport RCE Office requested that the specifications define the payment instead of requiring an extra work order. The Committee discussed paying the contract rate for TBR or paying some increase on this rate, such as double to account for the small quantity. The Committee decided there should be some basis for this rate, so they will get input from the AGC.

The Office of Construction and Materials indicated that they did not believe this is a large problem and only know of one specific time this was an issue.

Specification Section Recommended Text:

2528.05, C, Temporary Barrier Rail.

Add the Article:

3. Payment for repair or replacement of temporary barrier rail damaged by public traffic will be paid according to Article 1109.03, B.

Comments:

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

C. Temporary Barrier Rail.

1. Linear feet (meters) of Temporary Barrier Rail measured.

2. Maintenance of temporary barrier rail is incidental to Temporary Barrier Rail.

3. Repaired or replaced due to damage by public traffic: extra work according to Article 1109.03, B.

Reason for Revision: Maintenance of TBR is reasonable to expect a contractor to bid costs for, but anticipating TBR being damaged requiring repair or total replacement is more difficult/costly to anticipate. Like crash cushions, these are safety devices are for the protection of both the public and workers and require timely action to address deficiencies. Providing payment for TBR that is damaged/destroyed will ensure that correction to the devices is expedited and reduces the overall risks.

This proposed change clarifies contractors' responsibility for damaged temporary barrier rail.

Similar to current specifications for crash cushions, this change will provide payment by contract modification if the contractor is required to replace or repair TBR that is damaged by public traffic.

County or City Input Needed (X one)	**Yes**	**No**
Comments:		

Industry Input Needed (X one)			**Yes**	**No**	
Industry Notified:	**Yes**	**No**	**Industry Concurrence:**	**Yes**	**No**

Comments: