Iowa Department of Transportation

MINUTES
OF
IOWA D.O.T. SPECIFICATION COMMITTEE MEETING

May 12, 2011

Members Present:	Roger Bierbaum	Office of Contracts
	Eric Johnsen, Secretary	Specifications Section
	Bruce Kuehl	District 6 - Construction
	Deanna Maifield	Office of Design
	Doug McDonald	District 1 - Marshalltown RCE
	Gary Novey	Office of Bridges & Structures
	John Smythe	Office of Construction
	Willy Sorensen	Office of Traffic & Safety
Members Not Present:	Jim Berger	Office of Materials
	Donna Buchwald	Office of Local Systems
	Dan Redmond	District 4 - Materials
	Tom Reis, Chair	Specifications Section
	John Selmer	Statewide Operations Bureau
Advisory Members Present:	Kevin Jones	Office of Materials
	Lisa Rold	FHWA
	Paul Wiegand	SUDAS
Others Present:	Mark Bortle	Office of Construction
	Jeff DeVries	District 1 - Materials
	Max Grogg	FHWA
	Charlie Purcell	Office of Local Systems
	Emily Whaley	Specifications Section

Tom Reis, Specifications Engineer, opened the meeting. The following items were discussed in accordance with the agenda dated May 6, 2011 with the addition of Item 10:

1. Section 2407, Precast and Prestressed Concrete Bridge Units.
The Office of Materials requested changes to allow Section 2407 to apply to all precast and/or prestressed concrete units.

2. Section 2416, Rigid Pipe Culverts.
The Office of Design requested changes to add a bid item for removing and reinstalling concrete pipe aprons.

3. Article 2416.03, D, 2, Base Preparation (Rigid Pipe Culverts).
The Office of Design requested changes to make Class B bedding the default for rigid pipe culverts.

4. Article 2430.02, B, 1, Concrete Units (Modular Block Retaining Wall).
The Office of Materials requested changes to require the same testing for modular block retaining wall units as is required for segmental retaining wall units.

5. Article 2433.03, E, Grooving Sidewalls (Concrete Drilled Shaft).

The Office of Construction requested changes to require grooving of rock socket sidewalls unless otherwise specified.

6. Section 2511, Removal and Construction of Sidewalks and Recreational Trails.

The Office of Design requested changes to address ADA concerns and specify compaction that was eliminated from Section 2303.

7. Article 2528.03, C, 5, Channelizing Devices (Traffic Control).

The Office of Design requested changes to the barricades for pedestrian path closures.

8. Article 2529.03, D, 1, Restoring Subbase or Subgrade for Full Depth Finish Patches.

The Office of Design requested changes to comply with revised Road Standard, RR-1.

9. Article 4150.02, Pipe and Fittings (Water Main, Valve, Fire Hydrant, and Appurtenance Materials).

The Office of Design requested changes to align with SUDAS specifications.

10. Section 2552, Trench Excavation and Backfill.

The Specifications Section requested changes to match SUDAS and clarify the use of bedding, backfill, and topsoil material.

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Jim Berger / Mahbub Khoda	**Office:** Materials	**Item 1**
Submittal Date: 2011.04.06	**Proposed Effective Date:** 10/18/2011	
Section No.: 2407 **Title:** Precast and Prestressed Concrete Bridge Units	**Other:**	

Specification Committee Action: This item was deferred until a future meeting.

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

Specification Committee Approved Text:

Comments: The intent of this change is to make sure that precast unit plants are approved prior to the letting.

The Office of Bridges and Structures was concerned that there are parts of Section 2407 that shouldn't apply to all precast units (precast concrete boxes, MSE walls, modular block walls, concrete pipe, TBR). The Specification Committee was in agreement that each section that involves precast units should be reviewed to see if the plants need to be pre-approved and this language added to those sections accordingly.

Specification Section Recommended Text:

2407. Precast and Prestressed Concrete Bridge Units.

Retitle the Section:

Section 2407. Precast and Prestressed Concrete ~~Bridge~~ Units

2407.01, A.

Replace the Article:

A. Provide prestressed and precast concrete ~~bridge~~ units produced in a plant for which equipment, procedures, and quality of concrete have been approved by the Contracting Authority.

2407.01, D.

Replace the Article:

D. Unless modified elsewhere in the contract documents, all fabrication is required to be done only in precast fabrication plants that are approved prior to the letting ~~as per Materials I.M. 445~~.

Comments:

Member's Requested Change (Redline/Strikeout):

Section 2407. Precast and Prestressed Concrete ~~Bridge~~ Units

2407.01 DESCRIPTION.

A. Provide prestressed and precast concrete ~~bridge~~ units produced in a plant for which equipment, procedures, and quality of concrete have been approved by the Contracting Authority.

D. Unless modified elsewhere in the contract documents, all fabrication is required to be done only in precast fabrication plants that are approved prior to the letting ~~as per Materials I.M. 445~~.

Reason for Revision: To apply section 2407 for both Precast and Prestressed Concrete Units

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

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

Comments:

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Deanna Maifield	**Office:** Design	**Item 2**
Submittal Date: 4/29/2011	**Proposed Effective Date:** 10/18/2011	
Section No.: 2416 **Title:** Rigid Pipe Culverts	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 5/12/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text:

2416.03, Construction.

Add new Article:

F. Stockpile removed aprons that are to be reinstalled. Replace aprons damaged by Contractor's operations at no additional cost to Contracting Authority.

2416.05, I, 1.

Replace the Article:

Aprons: Per unit for each size class of apron removed and reinstalled. Payment is full compensation for ~~removal and reinstallation of apron~~ removing, stockpiling, and reinstalling aprons, as well as necessary excavation.

Comments: A bid item was already added for Remove and Reinstall Concrete Pipe Aprons.

The language was included to cover aprons damaged by the Contractor's operation and more fully define the basis of payment.

Specification Section Recommended Text:

2416.03, Construction.

Add new Article:

E. Stockpile removed aprons that are to be reinstalled. Replace aprons damaged by Contractor's operations at no additional cost to Contracting Authority.

2416.04, Method of Measurement.

Add new Article:

H. Remove and Reinstall Concrete Pipe Aprons: By count.

2416.05, Basis of Payment.

Add new Article:

H. Remove and Reinstall Concrete Pipe Aprons: Each. Payment is full compensation for removing, stockpiling, and reinstalling aprons, as well as necessary excavation.

Comments:

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

2416.03, E, Construction.

Add as a new article:

Stockpile aprons that are to be removed and reinstalled. Replace aprons damaged by the Contractor's operations at no additional cost to the Contracting Authority.

2416.04, H, Method of Measurement.

Add as a new article:

Remove and Reinstall Concrete Pipe Aprons: By count.

2416.05, H, Basis of Payment:

Add as a new article:

Remove and Reinstall Concrete Pipe Aprons: Each. Payment is full compensation for removing, stockpiling, and reinstalling aprons, as well as necessary excavation.

Reason for Revision: Design squads have been including removal and reinstallation of concrete aprons as a plan note.

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

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Deanna Maifield	**Office:** Design	**Item 3**
Submittal Date: 4/29/2011	**Proposed Effective Date:** 10/18/2011	
Article No.: 2416.03, D, 2 **Title:** Base Preparation	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 5/12/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Office of Design noted that IDOT plans will still include the bedding class in the tabulation in the plan.

Specification Section Recommended Text:

2416.03, D, 2, a.

Replace the third and fourth sentences:

Use Class B bedding ~~when~~ unless specified otherwise. ~~Use Class C if not specified.~~

2416.03, D, 2, d.

Replace the first sentence:

Unless bedding is specifically designated in the contract documents, Class ~~C~~ B bedding will not be required for entrance pipe 24 inches (600 mm) or less in diameter.

Comments:

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

2416.03, D, 2, a.

Replace the third and fourth sentences:

~~Use Class B bedding when specified. Use Class C if not specified.~~ Use Class B bedding unless specified otherwise.

2416.03, D, 2, d.

Replace the first sentence:

Unless bedding is specifically designated in the contract documents, Class ~~C~~B bedding will not be required for entrance pipe 24 inches (600 mm) or less in diameter.

Reason for Revision: Fill height tables are based on Class B bedding, so this should be the default.

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

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

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Jim Berger / Mahbub Khoda	**Office:** Materials	**Item 4**
Submittal Date: 2011.04.25	**Proposed Effective Date:** 10/18/2011	
Article No.: 2430.02, B, 1 **Title:** Materials (Modular Block Retaining Wall)	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 5/12/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text:

2430.02, B, 1.

Add new Article:

e. Meet the requirements of Article 2431.02, B, 1.

Comments: The Office of Materials noted that the concrete units should meet the requirements of Article 2431.02, B, 1, not just be tested according to the article.

The Office of Materials requested that some of the ASTM references in Article 2431.02, B, 1 be changed as they are incorrect. Upon further examination, the GS already contains the correct ASTM references.

The Office of Local Systems asked whether we need to test modular block retaining wall units the same as we do for segmental retaining wall units. This does not change the requirements, it only makes it clear in the specifications. Currently the spec. book includes the same testing for modular block retaining wall units and segmental retaining wall units.

The Office of Construction asked if testing needs to be included in the basis of payment for modular block retaining walls. The units are not tested on a project basis, but are tested based on plant certification, so the specification is correct as it is.

Specification Section Recommended Text:

2430.02, B, 1.

Add new Article:

e. Test concrete units according to Article 2431.02, B, 1.

Comments:

Member's Requested Change (Redline/Strikeout):

Materials testing part 2431.B.1 shall apply.

Reason for Revision: Apply same test requirements for Modular and Segmental Retaining Walls.

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

Industry Notified:	**Yes**	**No** X	**Industry Concurrence:**	**Yes**	**No**
Comments:					

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: John Smythe / Kyle Frame	**Office:** Construction	**Item 5**
Submittal Date: 05/05/2011	**Proposed Effective Date:** 10/18/2011	
Article No.: 2433.03, E **Title:** Grooving Sidewalls(Concrete Drilled Shaft)	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 5/12/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text:

2433.03, E, Grooving Sidewalls.

Replace the Title and Article:

E. Grooving and Brushing Sidewalls.

1. ~~When identified in the contract documents, g~~Groove ~~the~~ sidewalls of ~~the~~ drilled shaft within the rock socket ~~so as~~ to produce channels with approximate dimensions of 2 inch (50 mm) ~~depth~~ deep by 3 inch (75 mm) ~~height~~ high at intervals of 1 foot (0.3 m).

2. ~~Prior to grooving, u~~Use a brushing method approved by the Engineer to remove excessive smearing of soft material that may occur~~red~~ on ~~the~~ rock socket wall.

3. Clean ~~the~~ base of ~~the~~ shaft by spin bucket and air lift. Perform grooving and/or brushing prior to final cleaning of ~~the~~ base of ~~the~~ shaft.

Comments: The Office of Bridges and Structures requested adding “brushing” to Article 2 and moving the cleaning to a third Article.

Specification Section Recommended Text:

2433.03, E, Grooving Sidewalls.

Replace the Title and Article:

E. Grooving and Brushing Sidewalls.

1. ~~When identified in the contract documents, g~~Groove ~~the~~ sidewalls of ~~the~~ drilled shaft within the rock socket ~~so as~~ to produce channels with approximate dimensions of 2 inch (50 mm) ~~depth~~ deep by 3 inch (75 mm) ~~height~~ high at intervals of 1 foot (0.3 m).

2. ~~Prior to grooving, u~~Use ~~a~~ methods approved by the Engineer to remove excessive smearing of soft material that may occur~~red~~ on ~~the~~ rock socket wall. Clean ~~the~~ base of ~~the~~ shaft by spin bucket and air lift. Perform grooving prior to final cleaning of ~~the~~ base of ~~the~~ shaft.

Comments:

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

Replace Article 2433.03 E:

~~E. Grooving Sidewalls.~~

~~When identified in the contract documents, groove the sidewalls of the drilled shaft within the rock socket so as to produce channels with approximate dimensions of 2 inch (50 mm) depth by 3 inch (75 mm) height at intervals of 1 foot (0.3 m). Prior to grooving, use a method approved by the Engineer to remove excessive smearing of soft material that occurred on the rock socket wall. Clean the base of the shaft by spin bucket and air lift. Perform grooving prior to final cleaning of the base of the shaft.~~

E. Grooving and Brushing Sidewalls.

1. Groove the sidewalls of the drilled shaft within the rock socket so as to produce channels with approximate dimensions of 2 inch (50 mm) depth by 3 inch (75 mm) height at intervals of 1 foot (0.3 m).

2. Use a method approved by the Engineer to remove excessive smearing of soft material that occurred on the rock socket wall. Clean the base of the shaft by spin bucket and air lift. Perform grooving prior to final cleaning of the base of the shaft.

Reason for Revision: To make sure all drilled shaft rock sockets are grooved unless otherwise specified in the contract documents. Soft rock will be grooved, hard rock will not. Bridge Design will consult with Soils Design to determine when it is not needed and add a plan note accordingly. All rock sockets, soft or hard shall be brushed.					
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: Deanna Maifield	**Office:** Design	**Item 6**
Submittal Date: 4/29/2011	**Proposed Effective Date:** 10/18/2011	
Section No.: 2511 **Title:** Removal and Construction of Sidewalks and Recreational Trails	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 5/12/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text:

2511.02, C, Subbase and Granular Surface.

Replace the title and Article:

Subbase ~~and Granular Surface~~.
Use the subbase ~~and granular surface~~ specified in the contract documents.

2511.02, D, Detectable Warnings.

Replace the Article:

Furnish detectable warnings that contrast visibly with adjoining surfaces, either light-on-dark or dark-on-light. ~~Install detectable warnings that c~~Comply with Materials I.M. 411.

2511.03, Construction.

Replace Articles B through G:

B. Construction of Sidewalks and Recreational Trails.

1. General.
The contract documents will contain staking diagram sheets for construction of pedestrian ramps, landings, sidewalk, and transitions. If field adjustments are necessary, notify the Engineer prior to construction. Field adjustments shall comply with the following requirements.

a. Construct sidewalks and recreational trails to a longitudinal slope not to exceed 5.0% and a cross slope not less than 1.5% or greater than 2.0%. A cross slope less than 1.5% will be allowed in tie-in areas.

b. Construct ramps as follows:
- 5.0 feet (1.5 m) minimum width, exclusive of curbs or flares.
- Longitudinal slope not to exceed 8.0%.
- Cross slope not to exceed 2.0%.

c. Construct landings as follows:
- 5.0 foot (1.5 m) minimum width by 5.0 foot (1.5 m) minimum length.
- Longitudinal slope not to exceed 2.0%.
- Cross slope not to exceed 2.0%.

d. Install detectable warnings according to manufacturer's recommendations.

~~B~~2. Preparation of Subgrade.

~~1~~a. Sidewalks.
Prepare the subgrade by excavating or filling with suitable earth to a depth below the finished grade line so that, when tamped or rolled until smooth, firm, and hard, the subgrade will be uniform and at the required depth below the finished grade line.

~~2~~b. Recreational Trails.

~~a.~~1) When the recreational trail is to be constructed on natural subgrade, special compaction of subgrade for the recreational trail will be required.~~:~~ Prepare subgrade according to Article 2109.03, C.

- ~~Disk, scarify, mix, and recompact the top 12 inches (300 mm) of subgrade with moisture and density control.~~
- ~~Compact to no less than 95% maximum density as determined by Iowa DOT Materials Laboratory Test Method 103, with moisture content no less than optimum~~

~~or more than 4% above optimum moisture content.~~

~~b.~~**2)** When the recreational trail surface is to be constructed on an existing granular surface, prepare the subbase (existing granular surface) according to the contract documents.

~~C~~**3. Portland Cement Concrete.**

~~1a~~**. Placing.**

~~a.~~**1) Hand Finished Sidewalks and Recreational Trails.**

~~1a~~**)** Use wood or steel forms complying with Article 2301.03, A, 3, a, 1, c.

~~2b~~**)** Thoroughly moisten the subgrade.

~~3c~~**)** Deposit the concrete for the full depth of slab in one operation. Consolidate it by tamping or vibration.

~~4d~~**)** Screed the excess concrete off flush with the forms.

~~5e~~**)** Thoroughly consolidate edges adjacent to all forms, expansion joints, curbs, or fixtures in the surface.

~~b.~~**2) Slip Form Sidewalks and Recreational Trails.**

~~1a~~**)** Use self propelled slip form pavers that meet the requirements of Section 2301.

~~2b~~**)** Other slip form paving machines require the Engineer's approval. Use machines designed for the specific purpose of placing, consolidating, and finishing concrete sidewalk and recreational trail slabs without use of fixed side forms,

~~**2. Curb Ramps.**~~

~~**a.** Install detectable warnings when constructing curb ramps. Install them according to the manufacturer's recommendations. Use detectable warnings that contrast visibly with the adjoining surfaces, either light-on-dark or dark-on-light. Refer to Americans with Disabilities Act Accessibility Guidelines (ADAAG) for contrast requirements at http://www.access-board.gov/adaag/html/adaag.htm#4.29.2.~~

~~**b.** If crossings are marked, locate the ramp, exclusive of flares, entirely within the crosswalk markings.~~

~~3b~~**. Finishing.**

After consolidating the concrete, finish the surface to a uniform, slip resistant, wet burlap drag or broom finish texture true to the line and grade specified in the contract documents. If a broom is to be used, drag a suitable broom transversely across the surface of the plastic concrete.

~~a.~~**1) Sidewalks.**

~~1a~~**)** After floating the surface, finish the edges of the slabs using a suitable edging tool. ~~Ensure the finished surface has a cross slope between 1% and 2% for drainage, unless shown otherwise.~~

~~2b~~**)** For PCC sidewalks set transverse joint spacing to be equal to the sidewalk width. Cut the concrete through for no less than 25% of the depth with a pointed trowel or suitable spading tool. Then edge the concrete on both sides. In place of using a pointed trowel or suitable spading tool, the Contractor may cut these lines within 12 hours after concrete placement using a 1/8 inch (3 mm) blade saw approved by the Engineer. ~~Metal dividers will be considered for approval, in place of cutting.~~

~~b.~~**2) Recreational Trails.**

~~1a~~**)** For PCC recreational trails set transverse joint spacing to be equal to the pavement width. Saw all transverse joints (tooling will not be allowed). Cut transverse joints 1/8 inch (3 mm) wide and no less than 1 inch (25 mm) in depth. No sealant will be required.

~~2b~~**)** Place a longitudinal joint in recreational trails more than 12 feet (3.6 m) wide.

~~4c~~**. Protection and Curing.**

After finishing, cure and protect the concrete using one of the methods described in Article 2301.03, K.

~~5d~~**. Isolation Joints.**

Construct isolation joints at all points where sidewalks or recreational trails meet other walks, curbs, or fixtures in the surface. Construct them by installing a 1/2 inch (13 mm), full depth strip of approved premolded joint material.

~~6e~~**. Time for Opening Pavement for Use.**

Open PCC sidewalks and recreational trails a minimum of 7 calendar days after placement or when flexural strength reaches 400 psi (2.75 MPa) as determined by Materials I.M. 383.

~~D~~**4. Hot Mix Asphalt.**

Construct HMA sidewalks and recreational trails according to Article 2303.03 using Class ~~1C~~ 2

compaction.

~~E~~**5. Smoothness.**

~~1a~~**.** Ensure sidewalk and recreational trail smoothness comply with Article 2301.03, H, 4, except for the requirements for pavement and bridge approach sections for Primary projects.

~~2b~~**.** Areas may be checked by the Engineer with a surface checker and are not to exceed 1/4 inch in 10 feet (6 mm in 3 m). For each bump exceeding these requirements, the Contractor will be assessed $50 or the bump corrected as agreed upon by the Engineer and Contractor.

~~F~~**6. Weight Limits.**

Limit construction equipment on both PCC and HMA sidewalks and recreational trails to a maximum of 5 ton (5 Mg).

~~G~~**7. Pavement Markings.**

Place pavement markings according to Section 2527.

2511.04, D, Detectable Warnings for Curb Ramps.

Replace the title and Article:

Detectable Warnings ~~for Curb Ramps~~.

The Engineer will measure in square feet, to the nearest square foot (square meters to the nearest 0.1 square meter), the surface area of Detectable Warnings ~~for Curb Ramps~~.

2511.05, D, Detectable Warnings for Curb Ramps.

Replace the title and Article:

Detectable Warnings ~~for Curb Ramps~~.

1. Per square foot (square meter).

2. Payment is full compensation for furnishing all material, equipment, and labor to construct the detectable warnings ~~for curb ramps~~ according to the contract documents.

Comments: The Office of Design explained that the spec. book will include design information so that if adjustments are necessary in the field, the contractor and inspector will know what changes are allowed.

The Office of Contracts was concerned with who will be held responsible for correcting a non-conforming sidewalk ramp. If a subcontractor constructs the sidewalk according to the field dimensions, but the slopes do not meet ADA requirements, will the subcontractor be responsible for replacing the sidewalk ramp even though the roadway return was not at the correct elevation. The Office of Design explained that plans for the sidewalk will not include elevations, only slopes and dimensions. That way, the elevations can be adjusted to wherever the roadway return was constructed. The Office of Construction suggested that we include language requiring the contractor to contact the Engineer if field adjustments are necessary.

The Office of Local Systems asked how we can include staking diagrams without including elevations. The Office of Design explained that the staking diagram will only include slopes and dimensions.

The Office of Design is providing training this fall for contractors, designers, inspectors, etc. This training should help everyone understand the changes to the specifications.

The Office of Local Systems asked if ramp cross slopes would be allowed less than 1.5%. The cross slope for ramps was changed to match the cross slope for landings. The Office of Contracts asked about the cross slope for sidewalks and recreational trails. This language was changed so that 2.0% will be acceptable.

The Office of Materials suggested that the HMA compaction be changed to Class 2, instead of spelling out a compaction requirement.

The Office of Traffic and Safety asked about including the website for ADAAG in the specifications. This link could be changed tomorrow and no longer be good. The Spec. Committee decided to delete this reference along with the entire sentence.

Specification Section Recommended Text:

2511.02, C, Subbase and Granular Surface.

Replace the title and Article:

Subbase ~~and Granular Surface~~.

Use the subbase ~~and granular surface~~ specified in the contract documents.

2511.02, D, Detectable Warnings.

Replace the Article:

Furnish detectable warnings that contrast visibly with adjoining surfaces, either light-on-dark or dark-on-light. Refer to Americans with Disabilities Act Accessibility Guidelines (ADAAG) for contrast requirements at http://www.access-board.gov/adaag/html/adaag.htm#4.29.2. ~~Install detectable warnings that c~~Comply with Materials I.M. 411.

2511.03, Construction.

Replace Articles B through G:

B. Construction of Sidewalks and Recreational Trails.

1. General.

The contract documents will contain staking diagram sheets for construction of pedestrian ramps, landings, sidewalk, and transitions.

a. Construct sidewalks and recreational trails to a longitudinal slope not to exceed 5.0% and a cross slope between 1.5% and 2.0%. A cross slope less than 1.5% will be allowed in tie-in areas.

b. Construct ramps as follows:

- Longitudinal slope not to exceed 8.0%.
- Cross slope between 1.5% and 2.0%.
- Minimum width of 5.0 feet (1.5 m) exclusive of curbs or flares.

c. Construct landings as follows:

- 5.0 foot (1.5 m) minimum width by 5.0 foot (1.5 m) minimum length.
- Longitudinal slope not to exceed 2.0%.
- Cross slope not to exceed 2.0%.

d. Install detectable warnings according to manufacturer's recommendations.

~~B~~2. Preparation of Subgrade.

~~1~~a. Sidewalks.

Prepare the subgrade by excavating or filling with suitable earth to a depth below the finished grade line so that, when tamped or rolled until smooth, firm, and hard, the subgrade will be uniform and at the required depth below the finished grade line.

~~2~~b. Recreational Trails.

~~a.~~1) When the recreational trail is to be constructed on natural subgrade, special compaction of subgrade for the recreational trail will be required.~~:~~ Prepare subgrade according to Article 2109.03, C.

- ~~Disk, scarify, mix, and recompact the top 12 inches (300 mm) of subgrade with moisture and density control.~~
- ~~Compact to no less than 95% maximum density as determined by Iowa DOT Materials Laboratory Test Method 103, with moisture content no less than optimum or more than 4% above optimum moisture content.~~

~~b.~~2) When the recreational trail surface is to be constructed on an existing granular surface, prepare the subbase (existing granular surface) according to the contract documents.

~~C~~3. Portland Cement Concrete.

~~1~~a. Placing.

~~a.~~1) Hand Finished Sidewalks and Recreational Trails.

~~1~~a) Use wood or steel forms complying with Article 2301.03, A, 3, a, 1, c.

~~2~~b) Thoroughly moisten the subgrade.

~~3~~c) Deposit the concrete for the full depth of slab in one operation. Consolidate it by

tamping or vibration.

~~4~~**d)** Screed the excess concrete off flush with the forms.

~~5~~**e)** Thoroughly consolidate edges adjacent to all forms, expansion joints, curbs, or fixtures in the surface.

~~b.~~**2) Slip Form Sidewalks and Recreational Trails.**

~~1~~**a)** Use self propelled slip form pavers that meet the requirements of Section 2301.

~~2~~**b)** Other slip form paving machines require the Engineer's approval. Use machines designed for the specific purpose of placing, consolidating, and finishing concrete sidewalk and recreational trail slabs without use of fixed side forms,

~~**2. Curb Ramps.**~~

~~**a.** Install detectable warnings when constructing curb ramps. Install them according to the manufacturer's recommendations. Use detectable warnings that contrast visibly with the adjoining surfaces, either light-on-dark or dark-on-light. Refer to Americans with Disabilities Act Accessibility Guidelines (ADAAG) for contrast requirements at http://www.access-board.gov/adaag/html/adaag.htm#4.29.2.~~

~~**b.** If crossings are marked, locate the ramp, exclusive of flares, entirely within the crosswalk markings.~~

~~3~~**b. Finishing.**

After consolidating the concrete, finish the surface to a uniform, slip resistant, wet burlap drag or broom finish texture true to the line and grade specified in the contract documents. If a broom is to be used, drag a suitable broom transversely across the surface of the plastic concrete.

~~a.~~**1) Sidewalks.**

~~1~~**a)** After floating the surface, finish the edges of the slabs using a suitable edging tool. ~~Ensure the finished surface has a cross slope between 1% and 2% for drainage, unless shown otherwise.~~

~~2~~**b)** For PCC sidewalks set transverse joint spacing to be equal to the sidewalk width. Cut the concrete through for no less than 25% of the depth with a pointed trowel or suitable spading tool. Then edge the concrete on both sides. In place of using a pointed trowel or suitable spading tool, the Contractor may cut these lines within 12 hours after concrete placement using a 1/8 inch (3 mm) blade saw approved by the Engineer. ~~Metal dividers will be considered for approval, in place of cutting.~~

~~b.~~**2) Recreational Trails.**

~~1~~**a)** For PCC recreational trails set transverse joint spacing to be equal to the pavement width. Saw all transverse joints (tooling will not be allowed). Cut transverse joints 1/8 inch (3 mm) wide and no less than 1 inch (25 mm) in depth. No sealant will be required.

~~2~~**b)** Place a longitudinal joint in recreational trails more than 12 feet (3.6 m) wide.

4c. Protection and Curing.

After finishing, cure and protect the concrete using one of the methods described in Article 2301.03, K.

~~5~~**d. Isolation Joints.**

Construct isolation joints at all points where sidewalks or recreational trails meet other walks, curbs, or fixtures in the surface. Construct them by installing a 1/2 inch (13 mm), full depth strip of approved premolded joint material.

~~6~~**e. Time for Opening Pavement for Use.**

Open PCC sidewalks and recreational trails a minimum of 7 calendar days after placement or when flexural strength reaches 400 psi (2.75 MPa) as determined by Materials I.M. 383.

~~D~~**4. Hot Mix Asphalt.**

Construct HMA sidewalks and recreational trails according to Article 2303.03 ~~using Class 1C compaction~~. Compact to a minimum of 94% of laboratory density. Do not exceed 8% average air void level for density specimens.

~~E~~**5. Smoothness.**

~~1~~**a.** Ensure sidewalk and recreational trail smoothness comply with Article 2301.03, H, 4, except for the requirements for pavement and bridge approach sections for Primary projects.

~~2~~**b.** Areas may be checked by the Engineer with a surface checker and are not to exceed 1/4 inch in 10 feet (6 mm in 3 m). For each bump exceeding these requirements, the Contractor will be assessed $50 or the bump corrected as agreed upon by the Engineer and Contractor.

~~F6~~. **Weight Limits.**
Limit construction equipment on both PCC and HMA sidewalks and recreational trails to a maximum of 5 ton (5 Mg).

~~G7~~. **Pavement Markings.**
Place pavement markings according to Section 2527.

2511.04, D, Detectable Warnings for Curb Ramps.

Replace the title and Article:

Detectable Warnings ~~for Curb Ramps~~.
The Engineer will measure in square feet, to the nearest square foot (square meters to the nearest 0.1 square meter), the surface area of Detectable Warnings ~~for Curb Ramps~~.

2511.05, D, Detectable Warnings for Curb Ramps.

Replace the title and Article:

Detectable Warnings ~~for Curb Ramps~~.

1. Per square foot (square meter).

2. Payment is full compensation for furnishing all material, equipment, and labor to construct the detectable warnings ~~for curb ramps~~ according to the contract documents.

Comments:

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

See attached changes. Changes in 2511.01 and 2511.03, A were approved at the February meeting. Since field adjustments may be necessary, the Office of Design would like the changes proposed in Article 2511.03, B, 1 to be included in the specifications even though this is design information.

Reason for Revision: To address ADA concerns. In addition, Class 1C compaction for HMA was discontinued with the 2009 book, so that information has been inserted into this specification.

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

Section 2511. Removal and Construction of Sidewalks and Recreational Trails

2511.01 DESCRIPTION.
Remove sidewalks and recreational trails or portions of them and/or construct new sidewalks and recreational trails according to the contract documents. For construction of sidewalk with retaining wall, refer to Section 2516.

2511.02 MATERIALS.

A. Portland Cement Concrete.

1. Use Class B Portland cement concrete for sidewalks and recreational trails. Place according to Section 2301.

2. For sidewalk and recreational trail construction included in PCC paving projects, the Contractor may use the approved paving mixture for the project. A Class 2 durability or better aggregate, according to Article 4115.04, will be required.

3. When sidewalk or recreational trail construction is associated with a bridge project, the Contractor may use the concrete approved for the bridge structure with Class C as the minimum.

B. Hot Mix Asphalt.

1. For sidewalks and recreational trails not adjacent to pavement, use 100,000 ESAL, 3/8 inch (9.5 mm) HMA, according to Section 2303.

2. When the recreational trail or sidewalk is adjacent to the pavement and also functions as the pavement shoulder, use 1,000,000 ESAL, 1/2 inch (12.5 mm) base mixture.

3. Use PG 58-28 or PG 52-34 Performance Grade binder as specified in the plans.

C. Subbase ~~and Granular Surface~~.
Use the subbase ~~and granular surface~~ specified in the contract documents.

D. Detectable Warnings.
Furnish detectable warnings that contrast visibly with adjoining surfaces, either light-on-dark or dark-on-light. Refer to Americans with Disabilities Act Accessibility Guidelines (ADAAG) for contrast requirements at http://www.access-board.gov/adaag/html/adaag.htm#4.29.2. ~~Install detectable warnings that c~~Comply with Materials I.M. 411.

2511.03 CONSTRUCTION.

A. Removal of Sidewalks and Recreational Trails.

1. Remove ~~the~~ areas of sidewalks and recreational trails ~~as~~ shown in the contract documents according to Article 2510.03. If only portions of the sidewalks or recreational trails are to be removed, form removal boundaries with a full depth vertical saw cut before breaking the removal.

2. Remove and replace (at no additional cost to the Contracting Authorities) any areas of the sidewalk or recreational trail not designated for removal but which are removed, broken, or damaged by removal operations. ~~Remove sidewalks and recreational trails~~ Perform removal according to Article 2510.03, A.

B. Construction of Sidewalks and Recreational Trails.

1. General.
The contract documents will contain staking diagram sheets for construction of pedestrian ramps, landings, sidewalk, and transitions.

a. Construct sidewalks and recreational trails to a longitudinal slope not to exceed 5.0% and a cross slope between 1.5% and 2.0%. A cross slope less than 1.5% will be allowed in tie-in areas.

b. Construct ramps as follows:

- Longitudinal slope not to exceed 8.0%.
- Cross slope between 1.5% and 2.0%.
- Minimum width of 5.0 feet (1.5 m) exclusive of curbs or flares.

c. Construct landings as follows:

- 5.0 foot (1.5 m) minimum width by 5.0 foot (1.5 m) minimum length.

- Longitudinal slope not to exceed 2.0%.
- Cross slope not to exceed 2.0%.

d. Install detectable warnings according to the manufacturer's recommendations.

~~B~~2. Preparation of Subgrade.

~~1~~a. Sidewalks.
Prepare the subgrade by excavating or filling with suitable earth to a depth below the finished grade line so that, when tamped or rolled until smooth, firm, and hard, the subgrade will be uniform and at the required depth below the finished grade line.

~~2~~b. Recreational Trails.

~~a.~~1) When the recreational trail is to be constructed on natural subgrade, special compaction of subgrade for the recreational trail will be required.~~:~~ Prepare subgrade according to Article 2109.03, C.

- ~~Disk, scarify, mix, and recompact the top 12 inches (300 mm) of subgrade with moisture and density control.~~
- ~~Compact to no less than 95% maximum density as determined by Iowa DOT Materials Laboratory Test Method 103, with moisture content no less than optimum or more than 4% above optimum moisture content.~~

~~b.~~2) When the recreational trail surface is to be constructed on an existing granular surface, prepare the subbase (existing granular surface) according to the contract documents.

~~C~~3. Portland Cement Concrete.

~~1~~a. Placing.

~~a.~~1) Hand Finished Sidewalks and Recreational Trails.

~~1~~a) Use wood or steel forms complying with Article 2301.03, A, 3, a, 1, c.
~~2~~b) Thoroughly moisten the subgrade.
~~3~~c) Deposit the concrete for the full depth of slab in one operation. Consolidate it by tamping or vibration.
~~4~~d) Screed the excess concrete off flush with the forms.
~~5~~e) Thoroughly consolidate edges adjacent to all forms, expansion joints, curbs, or fixtures in the surface.

~~b.~~2) Slip Form Sidewalks and Recreational Trails.

~~1~~a) Use self propelled slip form pavers that meet the requirements of Section 2301.
~~2~~b) Other slip form paving machines require the Engineer's approval. Use machines designed for the specific purpose of placing, consolidating, and finishing concrete sidewalk and recreational trail slabs without use of fixed side forms,

~~**2. Curb Ramps.**~~

~~**a.** Install detectable warnings when constructing curb ramps. Install them according to the manufacturer's recommendations. Use detectable warnings that contrast visibly with the adjoining surfaces, either light-on-dark or dark-on-light. Refer to Americans with Disabilities Act Accessibility Guidelines (ADAAG) for contrast requirements at http://www.access-board.gov/adaag/html/adaag.htm#4.29.2.~~

~~**b.** If crossings are marked, locate the ramp, exclusive of flares, entirely within the crosswalk markings.~~

~~3~~b. Finishing.
After consolidating the concrete, finish the surface to a uniform, slip resistant, wet burlap drag or broom finish texture true to the line and grade specified in the contract documents. If a broom is to be used, drag a suitable broom transversely across the surface of the plastic concrete.

~~a.~~1) Sidewalks.

~~1~~a) After floating the surface, finish the edges of the slabs using a suitable edging tool. ~~Ensure the finished surface has a cross slope between 1% and 2% for drainage, unless shown otherwise.~~
~~2~~b) For PCC sidewalks set transverse joint spacing to be equal to the sidewalk width. Cut the concrete through for no less than 25% of the depth with a pointed trowel or suitable spading tool. Then edge the concrete on both sides. In place of using a pointed trowel or suitable spading tool, the Contractor may cut these lines within 12 hours after concrete placement using a 1/8 inch (3 mm) blade saw approved by the Engineer. ~~Metal dividers will be considered for approval, in place of cutting.~~

~~b.~~2) **Recreational Trails.**

~~1a~~) For PCC recreational trails set transverse joint spacing to be equal to the pavement width. Saw all transverse joints (tooling will not be allowed). Cut transverse joints 1/8 inch (3 mm) wide and no less than 1 inch (25 mm) in depth. No sealant will be required.

~~2b~~) Place a longitudinal joint in recreational trails more than 12 feet (3.6 m) wide.

~~4c~~. **Protection and Curing.**
After finishing, cure and protect the concrete using one of the methods described in Article 2301.03, K.

~~5d~~. **Isolation Joints.**
Construct isolation joints at all points where sidewalks or recreational trails meet other walks, curbs, or fixtures in the surface. Construct them by installing a 1/2 inch (13 mm), full depth strip of approved premolded joint material.

~~6e~~. **Time for Opening Pavement for Use.**
Open PCC sidewalks and recreational trails a minimum of 7 calendar days after placement or when flexural strength reaches 400 psi (2.75 MPa) as determined by Materials I.M. 383.

~~D~~4. **Hot Mix Asphalt.**
Construct HMA sidewalks and recreational trails according to Article 2303.03 ~~using Class 1C compaction~~. Compact to a minimum of 94% of laboratory density. Do not exceed 8% average air void level for density specimens.

~~E~~5. **Smoothness.**

~~1a~~. Ensure sidewalk and recreational trail smoothness comply with Article 2301.03, H, 4, except for the requirements for pavement and bridge approach sections for Primary projects.

~~2b~~. Areas may be checked by the Engineer with a surface checker and are not to exceed 1/4 inch in 10 feet (6 mm in 3 m). For each bump exceeding these requirements, the Contractor will be assessed $50 or the bump corrected as agreed upon by the Engineer and Contractor.

~~F~~6. **Weight Limits.**
Limit construction equipment on both PCC and HMA sidewalks and recreational trails to a maximum of 5 ton (5 Mg).

~~G~~7. **Pavement Markings.**
Place pavement markings according to Section 2527.

2511.04 METHOD OF MEASUREMENT.
Measurement will be as follows:

A. Removal of Sidewalk or Removal of Recreational Trail.
Square yards (square meters) shown in the contract documents.

B. Sidewalk or Recreational Trail.
Square yards (square meters) shown in the contract documents. Deductions will not be made for fixtures having an area of 1 square yard (1 m^2) or less.

C. Special Compaction of Subgrade for Recreational Trail.
Stations (meters) shown in the contract documents.

D. Detectable Warnings ~~for Curb Ramps~~.
The Engineer will measure in square feet, to the nearest square foot (square meters to the nearest 0.1 square meter), the surface area of Detectable Warnings ~~for Curb Ramps~~.

2511.05 BASIS OF PAYMENT.
Payment will be the contract unit price as follows:

A. Removal of Sidewalk or Removal of Recreational Trail.

1. Per square yard (square meters).

2. Payment is full compensation for all equipment, labor, and disposal for removal of the sidewalk or recreational trail as specified in the contract documents.

B. Sidewalk or Recreational Trail.

1. Per square yard (square meter).

2. Payment is full compensation for furnishing all material, equipment, and labor to construct the sidewalk or recreational trail according to the contract documents.

C. Special Compaction of Subgrade for Recreational Trail.

1. Per station (meter).

2. Payment is full compensation for furnishing all material, equipment, and labor to construct the special compaction of subgrade for recreational trail according to the contract documents.

D. Detectable Warnings ~~for Curb Ramps~~.

1. Per square foot (square meter).

2. Payment is full compensation for furnishing all material, equipment, and labor to construct the detectable warnings ~~for curb ramps~~ according to the contract documents.

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Deanna Maifield	**Office:** Design	**Item 7**
Submittal Date: 4/29/2011	**Proposed Effective Date:** 10/18/2011	
Article No.: 2528.03, C, 5 **Title:** Channelizing Devices	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 5/12/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Office of Design indicated that they had gotten requests to keep using the Type II Barricades meeting the old specification. Some contractors and local entities had purchased the Type II Barricades and wanted to keep using them. The Office of Construction noted that the 2009 MUTCD only notes Type III Barricades for pedestrian path closures. The Office of Construction also requested that the Type II Barricade be shown on the road standard if it is going to be allowed. The Office of Design did not want to put the Type II Barricade on the standard since we want them to use the Type III Barricade unless they already have the Type II. The Office of Design suggested that if we want to allow Type II Barricades, the language describing them could be placed in the specifications. The Office of Local Systems noted that the Type II Barricades can continue to be used for channelizing pedestrians. The Specification Committee decided to not allow the use of Type II Barricades meeting the old specification.

The Office of Construction requested that pedestrian path closures be paid for as a Safety Closure. The Office of Design noted that the pedestrian path closures will be tabulated on the 'J' sheets with traffic control. The Office of Design was concerned with how the closures would be counted, i.e. the contractor requesting to be paid for another Safety Closure if the Type III Barricade was taken down for one night and then placed in the same location. Also, Safety Closures include orange safety fence, which the pedestrian path closure would not, so there would need to be some revisions to the Safety Closure specification or a new bid item added. The Specification Committee decided that the pedestrian path closures will be incidental to Traffic Control for now, so long as the closures are tabulated on the plan so that the contractor knows what they are bidding.

Specification Section Recommended Text:

Section 2528.03, C, 5.

Replace the article:

For pedestrian path closures, use Type ~~II~~ III Barricades ~~meeting the requirements of the MUTCD for channelizing devices used to channelize pedestrians~~ to block the full width of the pedestrian path. Mount a SIDEWALK CLOSED (R9-9) sign to at least one of the Type III barricades at each closure.

Comments:

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

Section 2528.03, C, 5, Channelizing Devices.

Replace the article:

For pedestrian path closures, use Type ~~II~~ III Barricades ~~meeting the requirements of the MUTCD for channelizing devices used to channelize pedestrians~~ to block the full width of the pedestrian path. Mount a SIDEWALK CLOSED (R9-9) sign to at least one of the Type III barricades at each closure.

Reason for Revision:

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

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

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Deanna Maifield	**Office:** Design	**Item 8**
Submittal Date: 4-29-2011	**Proposed Effective Date:** 10/18/2011	
Article No.: 2529.03, D, 1 **Title:** Restoring Subbase or Subgrade for Full Depth Finish Patches	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 5/12/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Office of Design explained that EF joint replacements receive a 12 inch subbase patch. Some confusion was caused because the standard subbase patch is 6 inches and overexcavation required is paid for as extra work.

Specification Section Recommended Text:

2529.03, D, 1.

Replace the first sentence:

When subbase is required by the contract documents or by the Engineer, remove the exposed subbase or subgrade, or both, to a depth of 6 inches (150 mm), or as specified in the contract documents, below the bottom of the new patch.

Comments:

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

2529.03, D, 1, Restoring Subbase of Subgrade for Full Depth Finish Patches.

Replace the first sentence:

1. When subbase is required by the contract documents or by the Engineer, remove the exposed subbase or subgrade, or both, to a depth of 6 inches (150 mm), or as specified in the contract documents, below the bottom of the new patch.

Reason for Revision: Effective October 2011, Standard Road Plan RR-1 will specify 12 inches of subbase.

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

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Deanna Maifield	**Office:** Design	**Item 9**
Submittal Date: 4/29/2011	**Proposed Effective Date:** 10/18/2011	
Article No.: 4150.02 **Title:** Pipe and Fittings	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 5/12/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: None.

Specification Section Recommended Text:

4150.02, E, 2, e.

Replace the article:

Tracer Wire Station: ~~Contact the Engineer for requirements~~ Comply with the contract documents.

4150.02, G, 3. Corporations and Stop Boxes.

Replace the title:

Corporations, Stops, and Stop Boxes.

Comments:

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

4150.02, E, 2, e, Tracer System.

Replace the article:

Tracer Wire Station: ~~Contact the Engineer for requirements~~ Comply with the contract documents.

4150.02, G, 3. Corporations and Stop Boxes.

Replace the title:

Corporations, Stops, and Stop Boxes.

Reason for Revision: To match changes to SUDAS specifications.

County or City Input Needed (X one)	**Yes** X	**No**
Comments: SUDAS Board of Directors agreed to change.		

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

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Eric Johnsen	**Office:** Specifications	**Item 10**
Submittal Date: May 10, 2011	**Proposed Effective Date:** 10/18/2011	
Article No.: 2552 **Title:** Trench Excavation and Backfill	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 5/12/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text:

2552.02, Materials.

Renumber Articles D and E:

~~**D**~~ **E. Stabilization (Foundation) Materials.**

~~**E**~~ **F. Special Pipe Embedment and Encasement Material.**

Replace Articles B and C:

B. Bedding ~~and Backfill~~ Material.

1. Class I Material.

a. Crushed stone complying with the following gradation:

Sieve	Percent Passing
1 1/2 inch (37.5 mm)	100
1 inch (25 mm)	95 to 100
1/2 inch (12.5 mm)	25 to 60
No. 4 (4.75 mm)	0 to 10
No. 8 (2.36 mm)	0 to 5

b. The Engineer may allow the use of gravel or authorize a change in gradation subject to materials available locally at the time of construction

c. The Engineer may authorize the use of crushed PCC for pipe sizes up to 12 inches (300 mm).

d. Use aggregates having a percentage of wear, Grading A or B, not exceeding 50%, determined according to AASHTO T 96.

C. Backfill Material.

~~**2**~~ **1. Class II Material.**

Manufactured and non-manufactured open graded (clean) or dense graded (clean) processed aggregate, clean sand, or coarse grained natural soils (clean) with little or no fines. ~~Comply with~~ Class II materials are further described in Table 2552.02-1 in the Appendix.

~~**3**~~ **2. Class III Material.**

a. Natural coarse-grained soils with fines. ~~Comply with~~ Class III materials are further described in Table 2552.02-2 in the Appendix.

b. Do not use where water conditions in trench may cause instability.

~~**4**~~ **3. Class IVA Material.**

a. Natural fine grained inorganic soils. ~~Comply with~~ Class IVA materials are further described in Table 2552.02-3 in the Appendix.

b. The Engineer will determine if material is not suitable for use as backfill material under deep fills, surface applied wheel loads, heavy vibratory compactors, tampers, or other conditions.

c. Do not use where water conditions in trench may cause instability.

d. Material is suitable for use in dry trench conditions only.

~~**5**~~ **4. Class IVB Material.**

a. Natural fine grained inorganic (high elastic silts and plastic clays - fat clay) with a liquid limit greater than 50%. ~~Comply with~~ Class IVB materials are further described in Table 2552.02-4, in the Appendix.
b. When approved by the Engineer, material may be used as final trench backfill in a dry trench.
c. Do not use in the pipe embedment zone.

~~C~~ D. Topsoil (Class V Material) ~~(Topsoil)~~.
1. Organic soils. ~~Comply with~~ Class V materials are further described in Table 2552.02-5, in the Appendix.
2. Use only as topsoil outside of the pavement, unless specified otherwise or allowed by the Engineer.
3. Do not use in the pipe embedment zone.

2552.05, A, General.

Add new Article:

9. Temporary support for existing water, sewer, gas, telephone, electrical, and other utilities or services that cross the trench.

Appendix.

Table 2552.02-1; Class II Material
Delete the columns for Atterberg Limits and Coefficients.

Table 2552.02-2; Class III Material
Delete the columns for Percentage Passing Sieve Sizes, Atterberg Limits and Coefficients.

Table 2552.02-3; Class IVA Material
Delete the columns for Percentage Passing Sieve Sizes, Atterberg Limits and Coefficients.

Table 2552.02-4; Class IVBMaterial
Delete the columns for Percentage Passing Sieve Sizes, Atterberg Limits and Coefficients.

Table 2552.02-5; Class V Material
Delete the columns for Percentage Passing Sieve Sizes, Atterberg Limits and Coefficients.

Comments: The Percent Passing Sieve Sizes columns are also being deleted from Tables 2552.02-2 through 2552.02-5. These gradations are not something that is tested, they just help define the soil type.

The Office of Traffic and Safety requested to change the word “power” in Article 2552.02, A, 9 to “electrical”.

Specification Section Recommended Text:

2552.02

Renumber Articles D and E:

~~D~~ E. Stabilization (Foundation) Materials.

~~E~~ F. Special Pipe Embedment and Encasement Material.

Replace Articles B and C:

B. Bedding ~~and Backfill~~ Material.

1. Class I Material.
a. Crushed stone complying with the following gradation:

Sieve	Percent Passing
1 1/2 inch (37.5 mm)	100
1 inch (25 mm)	95 to 100
1/2 inch (12.5 mm)	25 to 60

No. 4 (4.75 mm)	0 to 10
No. 8 (2.36 mm)	0 to 5

b. The Engineer may allow the use of gravel or authorize a change in gradation subject to materials available locally at the time of construction
c. The Engineer may authorize the use of crushed PCC for pipe sizes up to 12 inches (300 mm).
d. Use aggregates having a percentage of wear, Grading A or B, not exceeding 50%, determined according to AASHTO T 96.

C. Backfill Material.

~~2~~ 1. Class II Material.
Manufactured and non-manufactured open graded (clean) or dense graded (clean) processed aggregate, clean sand, or coarse grained natural soils (clean) with little or no fines. ~~Comply with~~ Class II materials are further described in Table 2552.02-1 in the Appendix.

~~3~~ 2. Class III Material.
a. Natural coarse-grained soils with fines. ~~Comply with~~ Class III materials are further described in Table 2552.02-2 in the Appendix.
b. Do not use where water conditions in trench may cause instability.

~~4~~ 3. Class IVA Material.
a. Natural fine grained inorganic soils. ~~Comply with~~ Class IVA materials are further described in Table 2552.02-3 in the Appendix.
b. The Engineer will determine if material is not suitable for use as backfill material under deep fills, surface applied wheel loads, heavy vibratory compactors, tampers, or other conditions.
c. Do not use where water conditions in trench may cause instability.
d. Material is suitable for use in dry trench conditions only.

~~5~~ 4. Class IVB Material.
a. Natural fine grained inorganic (high elastic silts and plastic clays - fat clay) with a liquid limit greater than 50%. ~~Comply with~~ Class IVB materials are further described in Table 2552.02-4, in the Appendix.
b. When approved by the Engineer, material may be used as final trench backfill in a dry trench.
c. Do not use in the pipe embedment zone.

~~C~~ D. Topsoil (Class V Material) ~~(Topsoil)~~.
1. Organic soils. ~~Comply with~~ Class V materials are further described in Table 2552.02-5, in the Appendix.
2. Use only as topsoil outside of the pavement, unless specified otherwise or allowed by the Engineer.
3. Do not use in the pipe embedment zone.

2552.05, A, General.

Add new Article:

9. Temporary support for existing water, sewer, gas, telephone, power, and other utilities or services that cross the trench.

Appendix.

Table 2552.02-1; Class II Material
Delete the columns for Atterberg Limits and Coefficients.

Table 2552.02-2; Class III Material
Delete the columns for Atterberg Limits and Coefficients.

Table 2552.02-3; Class IVA Material
Delete the columns for Atterberg Limits and Coefficients.

Table 2552.02-4; Class IVBMaterial

Delete the columns for Atterberg Limits and Coefficients.

Table 2552.02-5; Class V Material
Delete the columns for Atterberg Limits and Coefficients.

Comments:

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

Reason for Revision: To match SUDAS and clarify the use of bedding, backfill and topsoil material.

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