Iowa Department of Transportation

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

March 10, 2011

Members Present:	Eric Johnsen, Secretary	Specifications Section
	Bruce Kuehl	District 6 - Construction
	Doug McDonald	District 1 - Marshalltown RCE
	Gary Novey	Office of Bridges & Structures
	Dan Redmond	District 4 - Materials
	Tom Reis, Chair	Specifications Section
	John Selmer	Statewide Operations Bureau
	John Smythe	Office of Construction
	Willie Sorensen	Office of Traffic & Safety
Members Not Present:	Jim Berger	Office of Materials
	Roger Bierbaum	Office of Contracts
	Donna Buchwald	Office of Local Systems
	Deanna Maifield	Office of Design
Advisory Members Present:	Lisa Rold	FHWA
Others Present:	Daniel Harness	Office of Design
	Kevin Jones	Office of Materials
	Ed Kasper	Office of Contracts

Item 3 has been revised.

Tom Reis, Specifications Engineer, opened the meeting. The following items were discussed in accordance with the agenda dated March 3, 2011:

1. Article 1102.19, E, 5, a, 6, Placement of EEO/AA Notices and Posters.

The Office of Local Systems requested changes to correct a form reference.

2. Article 1104.11, Filling Holes Resulting from Contractor Operations.

The Office of Design requested changes to incorporate a standard plan note into the Standard Specifications.

3. Article 1105.14, C, 5, Disposal and Handling.

The Office of Design requested changes to incorporate a standard plan note into the Standard Specifications.

4. Article 1106.06, Reusing HMA and other Bituminous Materials.

The Office of Design requested changes to incorporate a standard plan note into the Standard Specifications.

5. Article 1104.09, Right-of-Way.
Section 1107, Legal Relations and Responsibility to the Public.

The Office of Design requested changes to incorporate some standard plan notes into the Standard

Specifications.

6. Article 2303.03, C, 7, c, Fixtures in Pavement Surface.

The Office of Design requested changes to incorporate a standard plan note into the Standard Specifications.

7. Section 2435, Sanitary and Storm Sewer Structures.

The Office of Design requested changes to match SUDAS specifications.

8. Article 2511.03, B, 2, a, Recreational Trails.

The Office of Materials requested changes to clarify a testing reference.

9. Section 2516, Removal and Construction of Retaining Wall and Steps.

The Office of Design requested changes to match SUDAS specifications.

10. Section 2519, Fencing.

Section 4154, Fence Materials.

The Office of Design requested changes to move appropriate specification language from the Standard Road Plans to the Standard Specifications and delete other language that is more appropriate for the road standards.

11. Article 2528.01, A, General (Traffic Control).

The Office of Design requested changes to incorporate a standard plan note into the Standard Specifications.

12. Article 2529.05, B, CD Joint Assembly, EF Joint Assembly, and CT Joint.

The Office of Design requested changes to eliminate incidental subbase patching for EF Joint Assembly construction.

13. Article 2538.03, A, General (Salvage, Removal, and Disposal of Obstructions).

The Office of Design requested changes to incorporate a standard plan note into the Standard Specifications.

14. Article 2602.01, Description (Water Pollution Control (Soil Erosion)).

The Office of Design requested changes to incorporate a standard plan note into the Standard Specifications.

15. Article 4186.09, A, 4, Washers (Type A Signs).

The Office of Traffic & Safety requested changes to washer specifications for Type A signs.

16. Voiding Standard Plan Notes.

The Office of Design requested voiding four standard plan notes.

- The Specification Committee agreed that notes 222-1 and 222-2 should be voided.
- The Specification Committee would like more information on the background for note 261-2 before it is voided. Specifically, why the limitation of within 300 feet of an existing pipeline. Typically, One Call would let them know about the pipeline and then the contractor would be responsible for notifying the pipeline company, per Article 1107.15, C. The Offices of Design and Traffic and Safety will look into the issue some more. Voiding of this note is deferred until the April Specification Committee meeting.

- The Specification Committee would like this note added to Article 1104.10. Adding this note to Article 1104.10 will be brought back to the Committee with the final wording at the April Specification Committee meeting.

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Donna Buchwald	**Office:** Local Systems	**Item 1**
Submittal Date: 2011.02.16	**Proposed Effective Date:** October 18, 2011	
Article No.: 1102.19, E, 5, a, 6 **Title:** Placement of EEO/AA Notices and Posters	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 3/10/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: The Specifications Section asked if the updated form was identified in the Construction Manual. The Office of Construction indicated that both forms were listed. The Office of Contracts indicated their office distributes the form to contractors. The Construction Manual will be revised to remove reference to the old form.

Specification Section Recommended Text:

1102.19, E, 5, a, 6.

Replace the Article:

~~IOSH 30 Safety and Health Protection on the Job~~ Form 70-8025 Job Safety and Health.

Comments:

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

Replace the entire article:

~~IOSH 30 Safety and Health Protection on the Job~~ Form 70-8025 Job Safety and Health.

Reason for Revision: To require use of current form.

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 2**
Submittal Date: 2/25/11	**Proposed Effective Date:** 10/18/11	
Article No.: 1104.11 **Title:** Filling Holes Resulting from Contractor Operations	**Other:**	

Specification Committee Action: Deferred until the April Specification Committee meeting.

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

Specification Committee Approved Text:

Comments: The Office of Design indicated this note appears on a majority of projects.

The Specifications Section wondered if a new article is necessary or if should be incorporated into Article 1104.08 or 1107.11.

The Office of Construction wondered if this note was necessary. Specifically, filling guardrail post holes is covered in Section 2505.

The Office of Bridges and Structures pointed out that this proposed revision does have a time requirement of the next day for filling holes.

The District 6 Office wondered why Article 1104.08 is only "Final Cleaning Up" and shouldn't we apply it on a continual basis during a project. Then this proposed revision would fit in Article 1104.08.

The Specifications Section will review other sections to see if filling holes is required for removal of fence posts, utility poles, or foundation studies. Article 1104.08 will be revised to apply during the project, not only for final clean up. The requirement to fill holes the following working day will be incorporated into Article 1104.08.

Specification Section Recommended Text:

1104, Scope of Work.

Add new Article:

1104.11, Filling Holes Resulting from Contractor Operations.
Fill holes resulting from the Contractor's operations including removal of guardrail posts, fence posts, utility poles, or foundation studies. Consolidate material and shape to finished grade as directed by the Engineer. Fill voids no later than the following working day. Areas within the right-of-way or project limits (including borrow sites and plant sites) disturbed by operations of the Contractor shall be restored to a condition acceptable to the Engineer. This work shall be considered incidental to other bid items on the contract.

Comments:

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

1104.11, Filling Holes Resulting from Contractor Operations.

Add as a new article:

All holes resulting from operations of the Contractor, including removal of guardrail posts, fence posts, utility poles, or foundation studies, shall be filled and consolidated to finished grade as directed by the Engineer to prevent future settlement. The voids shall be filled as soon as practical, preferably the day created and not later than the following day. Any portion of the right-of-way or project limits (including borrow areas and operation sites) disturbed by any such operations shall be restored to an acceptable condition. This operation shall be considered incidental to other bid items on the project.

Reason for Revision: The proposed changes consist of language currently contained in Standard Note 204-2 (see below). The Office of Design is proposing this language be added (and updated if needed) to the Standard Specifications.

01-20-84 204-2

All holes resulting from operations of the contractor, including removal of guardrail posts, fence posts, utility poles, or foundation studies, shall be filled and consolidated to finished grade as directed by the engineer to prevent future settlement. The voids shall be filled as soon as practical - preferably the day created and not later than the following day. Any portion of the right-of-way or project limits (including borrow areas and operation sites) disturbed by any such operations shall be restored to an acceptable condition. This operation shall be considered incidental to other bid items in project.

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: 2/25/11	**Proposed Effective Date:** 10/18/~~25~~ 11	
Article No.: 1105.14, C, 5 **Title:** Disposal and Handling	**Other:**	

Specification Committee Action: ~~Tentatively~~ approved with changes.

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

Specification Committee Approved Text:

~~**1105.14, Protection of Water Quality and Wetlands.**~~

~~**Retitle** the Article:~~

~~**1105.14, Protection of Water Quality and Wetlands Environmental Protection Requirements.**~~

1105.14, C, 5, Disposal and Handling.

Add as the second and third paragraphs:

The Contractor shall provide waste areas or disposal sites for excess material not desirable to be incorporated into the work. The Contractor shall ensure areas (including haul roads) selected for waste or disposal do not impact:

- Culturally sensitive sites or graves.
- Wetlands or "Waters of the U.S.", including streams or stream banks below the "ordinary high water mark", without an approved U.S. Army Corps of Engineers Section 404 Permit.

Payment for overhaul will not be allowed for material hauled to these sites. Excess material shall not be placed within the right-of-way unless specifically stated in the plans.

Comments: The Office of Construction indicated the origin of the note was to place responsibility of disposal of material removed from a project on the contractor.

The Specifications Section wondered if Article 1105.14 is the correct location for this language since it applies to culturally sensitive sites or graves as well as wetlands. Article 1105.14 does include items that are not related to protection of water quality and wetlands, which is the title of the article. Perhaps Article 1105.14 needs to be retitled. The Specifications Section will work with the Office of Location and Environment to see if we can come up with a more appropriate title for the article. The Office of Location and Environment does not wish to have Article 1105.14 retitled. All items in the article are general conditions of Clean Water Act 404 permits.

The Statewide Operations Bureau wondered if "(excavated material or broken concrete)" is necessary or do we want the statement to apply to other materials, such as RAP. The phrase in parentheses will be deleted.

Specification Section Recommended Text:

1105.14, C, 5, Disposal and Handling.

Add as the second and third paragraphs:

The Contractor shall provide waste areas or disposal sites for excess material (excavated material or broken concrete) not desirable to be incorporated into the work. The Contractor shall ensure areas (including haul roads) selected for waste or disposal do not impact:

- Culturally sensitive sites or graves.
- Wetlands or "Waters of the U.S.", including streams or stream banks below the "ordinary high water mark", without an approved U.S. Army Corps of Engineers Section 404 Permit.

Payment for overhaul will not be allowed for material hauled to these sites. Excess material shall not be placed within the right-of-way unless specifically stated in the plans.

Comments:

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

1105.14, C, 5, Disposal and Handling.

Add as the second and third paragraphs:

The Contractor is responsible for providing waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project. The Contractor shall ensure that areas (including haul roads) selected for waste or disposal do not impact:

- Culturally sensitive sites or graves.
- Wetlands or "Waters of the U.S.", including streams or stream banks below the "ordinary high water mark", without an approved U.S. Army Corps of Engineers Section 404 Permit.

No payment for overhaul will be allowed for material hauled to these sites. No excess material shall be placed within the right-of-way unless specifically stated in the plans.

Reason for Revision: The proposed changes consist of language currently contained in Standard Note 213-1. The Office of Design is proposing this language be added (and updated if needed) to the Standard Specifications.

04-15-08 213-1

It shall be the contractor's responsibility to provide waste areas or disposal sites for excess material (excavated material or broken concrete) which is not desirable to be incorporated into the work involved on this project.

It shall be the contractor's responsibility to ensure that areas (including haul roads) selected for waste or disposal not impact 1) culturally sensitive sites or graves or 2) wetlands or "Waters of the U.S.", including streams or stream banks below the "ordinary high water mark", without an approved U.S. Army Corps of Engineers Section 404 Permit.

No payment for overhaul will be allowed for material hauled to these sites. No material shall be placed within the right-of-way, unless specifically stated in the plans.

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 4**
Submittal Date: 2/25/11	**Proposed Effective Date:** 10/18/11	
Article No.: 1106.06 **Title:** Reusing HMA and other Bituminous Materials	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 3/10/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text:

1106, Control of Materials.

Add new Article:

1106.06, Reusing HMA and other Bituminous Materials.

Unless specified otherwise, bituminous materials not specifically addressed in the contract documents shall become property of the Contractor. The Contractor may remove from the project according to the rules and regulations of the DNR or, with approval of the Engineer, use the material as allowed by the contract documents.

Comments: The Office of Contracts asked if it is necessary to list use as shoulder or special backfill aggregate or soil aggregate subbase if those sections already allow it. Such as using the material as RAP is not specified in this article, because it is already allowed in 2303.

The Office of Construction pointed out that the contractor does not need approval of the Engineer to remove the material from the project. The last sentence of the proposed article will be revised to reflect this.

The Office of Materials pointed out that there are other possible uses, such as modified subbase. We should either add this and any other options, or make the statement generic about other potential uses on the project.

Specification Section Recommended Text:

1106, Control of Materials.

Add new Article:

1106.06, Reusing HMA and other Bituminous Materials.

Unless specified otherwise, bituminous materials not specifically addressed in the contract documents shall become property of the Contractor. The Contractor may, with approval of the Engineer and according to the rules and regulations of the DNR:

- blend or process for use with shoulder or special backfill aggregate,
- place in areas designated by the Engineer, as Soil Aggregate Subbase, with no additional cost to the Contracting Authority, or
- remove from project.

Comments:

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

1106.06, Reusing HMA and other Bituminous Materials.

Add as a new article:

Unless otherwise directed or authorized, all HMA and other bituminous materials which are not specifically addressed or described in the contract documents shall become the property of the Contractor. The Contractor, in accordance with current rules and regulations of the Iowa Department of Natural Resources, may:

- With the approval of the Engineer, blend or otherwise process the material for use with shoulder or special backfill aggregate.
- With the approval of the Engineer, place material in areas designated by the Engineer as

Soil Aggregate Subbase without extra charge.

- Remove the material from the project and stockpile for the Contractor's future use.

Reason for Revision: The proposed changes consist of language currently contained in Standard Note 213-7. The Office of Design is proposing this language be added (and updated if needed) to the Standard Specifications.

04-30-02 213-7

Unless otherwise directed or authorized, all hot mix asphalt and other bituminous materials which are not specifically addressed or described in the contract documents shall become the property of the contractor.

The contractor, in accordance with current rules and regulations of the Iowa Department of Natural Resources, may:

1. With the approval of the Engineer, blend or otherwise process the material for use with shoulder or special backfill aggregate, for use on the project.
2. With the approval of the Engineer, place with material in areas designated by the Engineer as Soil Aggregate Subbase without extra charge.
3. Remove the material from the project and stockpile for the contractor's future use.

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 5**
Submittal Date: 2/25/2011	**Proposed Effective Date:** 10/18/2011	
Article No.: 1104.09 **Title:** Right-of-way **Section No.:** 1107 **Title:** Legal Relations and Responsibility to the Public	**Other:**	

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

Specification Committee Approved Text:

1104.09, Right-of-Way.

Add new second paragraph:

The Contractor shall not disturb desirable grass areas or desirable trees outside construction limits. The Contractor shall not park or service vehicles and equipment or use these areas for storage of materials. Storage, parking, and service area(s) will be subject to approval of the Engineer.

1107.08, A.

Replace the Article:

~~If traffic is to be maintained through the project, t~~The Contractor shall conduct the work to assure the least possible obstruction to access by the residents along the project. The Contractor shall schedule and conduct the work in such a way as to provide for their safety and convenience. The Contractor shall submit a construction staging plan to the Engineer for local access required to remain open. Relocated accesses shall be completed prior to removal of existing accesses. If a permanent access cannot be completed prior to removal of an existing access, the Contractor shall provide and maintain an alternate access. Work and materials required by the Engineer for public convenience and safety in excess of that provided for in the contract documents will be paid for per Article 1109.03, B.

1107.11, Protection and Restoration of Property.

Renumber Articles C, D, and E and **Add** new Article:

C. Unnecessary breaks in tile lines due to the Contractor's operations shall be replaced at no additional cost to the Contracting Authority.

~~**C**~~ **D.** The Contractor shall be responsible for damage to property resulting from the performance of the work; however, this responsibility shall not extend to damage to fences, telephone, telegraph, or electric lines occupying the right-of-way unlawfully, provided due caution has been used in removing them.

~~**D**~~ **E.** The Contractor shall carefully protect from disturbance all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location, and the Contractor shall not remove them until so directed.

~~**E**~~ **F.** The Contractor's responsibility shall not be released until the work under the Contractor's contract is completed and accepted.

Comments: The Office of Construction pointed out that Article 1107.08, A only applies when traffic is maintained through the project. The Specifications Section proposed eliminating the qualifier "If traffic is maintained through the project". This will make Article 1107.08, A apply to all projects with traffic control.

The Office of Bridges and Structures wondered if the new Article 1107.11, D is contradictory since it applies we will not pay in certain situations, but will in others. The word "unnecessary" will be added to the beginning of the article. Also, the second part of this article would be handled by tile line exploration or as unspecified site conditions. The second two sentences of this article will be deleted.

The proposed Article 1107.11, A will be moved to Article 1104.09 so that it also applies within our right of way, such as within interchanges, etc.

Specification Section Recommended Text:

1107.08, A.

Replace the Article:

If traffic is to be maintained through the project, the Contractor shall conduct the work to assure the least possible obstruction to access by the residents along the project. The Contractor shall schedule and conduct the work in such a way as to provide for their safety and convenience. The Contractor shall submit a construction staging plan to the Engineer for local access required to remain open. Relocated accesses shall be completed prior to removal of existing accesses. If a permanent access cannot be completed prior to removal of an existing access, the Contractor shall provide and maintain an alternate access. Work and materials required by the Engineer for public convenience and safety in excess of that provided for in the contract documents will be paid for per Article 1109.03, B.

1107.11, Protection and Restoration of Property.

Replace the Article:

A. The Contractor shall not disturb desirable grass areas or desirable trees outside construction limits. The Contractor shall not park or service vehicles and equipment or use these areas for storage of materials. Storage, parking, and service area(s) will be subject to approval of the Engineer.

~~**A**~~ **B.** The Contractor shall replace or renew fences, sidewalks, or other property damaged by performance of the work or the negligence of the Contractor's employees.

~~**B**~~ **C.** The Contractor shall take suitable precautions to prevent damage to telephone, telegraph, and electric transmission lines along the highway and to pipes, conduits, and other underground structures.

D. Breaks in tile lines due to the Contractor's operations shall be replaced at no additional cost to the Contracting Authority. Tile lines broken or disturbed by the Contracting Authority's cut lines shall be replaced as directed by the Engineer. Payment will be according to Article 1109.03, B.

~~**C**~~ **E.** The Contractor shall be responsible for damage to property resulting from the performance of the work; however, this responsibility shall not extend to damage to fences, telephone, telegraph, or electric lines occupying the right-of-way unlawfully, provided due caution has been used in removing them.

~~**D**~~ **F.** The Contractor shall carefully protect from disturbance all land monuments and property marks until an authorized agent has witnessed or otherwise referenced their location, and the Contractor shall not remove them until so directed.

~~**E**~~ **G.** The Contractor's responsibility shall not be released until the work under the Contractor's contract is completed and accepted.

Comments:

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

1107.08, Public Convenience and Safety.

Add as the third, fourth, and fifth sentences of Paragraph A:

The Contractor shall submit a plan to the Engineer for stage construction of local access which are required to remain open to traffic. Relocated accesses shall be completed prior to removal of existing accesses. If a permanent access cannot be completed prior to removal of an existing access, the Contractor shall provide and maintain an alternate access.

1107.11, Protection and Restoration of Property.

Add as Paragraph A:

A. The Contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The Contractor will not be allowed to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking, and service area(s) will be subject to the approval of the Engineer.

Renumber Paragraphs A and B as Paragraphs B and C.

Add as Paragraph D:

D. Breaks in tile line due to the Contractor's negligence shall be replaced at no additional cost to the Contracting Authority. Tile lines broken or disturbed by the Department's cut lines shall be replaced as directed by the Engineer. Payment will be according to Article 1109.03, B.

Renumber Paragraphs C through E as Paragraphs E through G.

Reason for Revision: The proposed changes consist of language currently contained in several Standard Notes (see attached). The Office of Design is proposing this language be added (and updated if needed) to the Standard Specifications.

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:					

Place in 1107.11

01-20-84 232-5

The contractor shall not disturb desirable grass areas and desirable trees outside the construction limits. The contractor will not be permitted to park or service vehicles and equipment or use these areas for storage of materials. Storage, parking and service area(s) will be subject to the approval of the resident engineer.

Place in Article 1107.11

01-20-84 241-1

Road contractor is to use due caution in working over and around all tile lines. Breaks in the tile line due to the contractor's carelessness are to be replaced at his expense without cost to the State of Iowa. Any tile lines broken or disturbed by our cut lines will be replaced as directed by the engineer in charge of construction and at the State of Iowa's expense.

Place in 1107.08, A

01-19-88 251-1

The contractor shall be responsible to maintain access to individual properties during construction.

Relocated access shall be completed to individual properties prior to removal of existing access.

If the permanent access cannot be completed prior to removal of the existing access, the contractor shall provide and maintain an alternate access. Temporary Granular Surfacing will be paid for as a contract item or by extra work.

Place in 1107.08, A

06-22-84 251-3

A plan for stage construction of local accesses which are required to remain open to traffic during construction shall be submitted by the contractor for approval by the engineer.

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Deanna Maifield	**Office:** Design	**Item 6**
Submittal Date: 2/25/2011	**Proposed Effective Date:** 10/18/2011	
Article No.: 2303.03, C, 7, c **Title:** Placing Concrete	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 3/10/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: None.

Specification Section Recommended Text:

2303.03, C, 7, c, Fixtures in Pavement Surface.

Add new Article:

4) When shaping and compacting resurfacing near inlets to storm sewer intakes, shape to ensure maximum drainage into intakes.

Comments:

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

2303.03, C, 7, c, Fixtures in the Pavement Surface.

Add as Paragraph 4:

4) When shaping and compacting resurfacing in the area of inlets to storm sewer intakes, shape to ensure maximum drainage into the intakes.

Reason for Revision: The proposed changes consist of language currently contained in Standard Note 223-6 (see below). The Office of Design is proposing this language be added (and updated if needed) to the Standard Specifications.

01-20-84 223-6

The Contractor is required to exercise care in shaping and compacting the resurfacing in the area of inlets to storm sewer intakes. The resurfacing course shall be shaped as necessary to insure maximum drainage into the intakes.

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 7**
Submittal Date: 2011.01.27	**Proposed Effective Date:** 10/18/2011	
Section No.: 2435 **Title:** Sanitary and Storm Sewer Structures	**Other:**	

Specification Committee Action: Deferred until the April Spec. Committee meeting.

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

Specification Committee Approved Text:

Comments: Some additional revisions to match SUDAS are highlighted in yellow in the Specification Section Recommended Text.

The District 4 Office asked about testing for Atterberg Limits and soil coefficients for Class II through V material. If there is a specification, the materials office will have to write an exception if they don't do testing. The Specifications Section and Office of Design will resolve this issue with SUDAS personnel.

The District 4 Office pointed out that Class V can be a soil designation (Article 2552.02, C) and also an aggregate designation (Section 4117). This could potentially cause confusion. This issue will also be discussed with SUDAS personnel.

Specification Section Recommended Text:

2435.03, A, 12, Placing and Compacting Backfill Material.

Replace the Article and title:

12. ~~Placing and Compacting~~ Backfill and Compaction ~~Material~~ .

a. Place suitable backfill material according to Article 2552.02 after concrete in structure has reached at least 3000 psi (21 MPa) compressive strength or 550 psi (3850 kPa) flexural strength. If concrete strength is not determined, place backfill material at least 14 calendar days after initial concrete placement.

b. Place backfill material simultaneously on all sides of walls and structures so the fill is kept at approximately the same elevation at all times.

c. Compact the 3 feet (1 m) closest to all walls ~~for wing faces~~ using pneumatic or hand tampers only. Ensure proper and uniform compaction of backfill material around structure.

2435.03, E, Connection to Existing Manhole or Intake.

Replace the Article:

1. General.

a. Remove invert as ~~required~~ necessary to ~~accommodate new~~ install pipe at required elevation and develop hydraulic channel.

b. Insert pipe into structure and trim end flush with inside wall of structure.

~~**c. Reconstruct invert to provide a well defined channel between pipes.**~~

d. Place backfill material according to Section 2552.

~~1~~2. Sanitary Sewer.

a. General.

1) ~~Excavate as required.~~ Core openings in existing manholes unless specified otherwise in the contract documents.

2) Divert flow as necessary. Obtain approval of the diversion plan from the Engineer. Maintain sanitary sewer service at all times unless specified otherwise in the contract documents.

~~**3) Remove existing invert as necessary to install pipe at required elevation and develop hydraulic channel.**~~

b. Cored Opening.

1) Insert flexible watertight connector into new opening.

2) Install and tighten internal expansion sleeve to hold flexible connector in place.

3) Insert pipe through flexible connector and tighten external compression ring.

4) Do not grout opening or pour collar for cored opening with flexible connector.

c. Cut and Chipped Opening (Knockout).

1) Saw opening to approximate dimensions with a masonry saw. Saw to depth sufficient to sever reinforcing steel.

2) Remove concrete and expand opening to a diameter at least 6 inches (150 mm) larger than the outside diameter of the new pipe.
3) Cut off all reinforcing steel protruding from the structure wall.
~~**4)** Remove existing concrete invert as required to accommodate new pipe.~~
~~**5)** Insert pipe into structure and trim end flush with inside wall of structure.~~
~~**6**~~**4)** Install waterstop around new pipe centered within structure wall.
~~**7**~~**5)** Fill opening between structure and pipe with non-shrink grout.
~~**8**~~**6)** Construct concrete collar around pipe and exterior manhole opening.
a) For new pipes 12 inches (300 mm) or smaller, install two No. 3 steel reinforcing hoops on collar around pipe. Pour concrete collar around pipe/structure junction to a minimum thickness and width of 6 inches (150 mm).
b) For new pipes larger than 12 inches (300 mm), install two No. 4 steel reinforcing hoops in collar around pipe. Pour concrete collar around pipe/structure junction to a minimum thickness and width of 9 inches (230 mm).
~~**9**~~**7)** Provide pipe joint, non-shear coupling, or other approved flexible coupling within 2 feet (600 mm) of structure wall to allow for differential settlement between the new sewer and the structure.
~~**10)** Reconstruct structure invert to provide a well defined channel between pipes.~~

~~**2**~~**3. Storm Sewer.**
~~**a.** Excavate as required.~~
~~**b**~~**a.** Cut opening to manhole or intake to 3 to 6 inches (75 to 150 mm) beyond the outside of the pipe. ~~Remove existing invert as necessary to install pipe at required elevation and develop hydraulic channel.~~
~~**c.** Position end of pipe flush with interior wall of manhole.~~
~~**d**~~**b.** Fill opening between manhole or intake wall and outside of pipe with non-shrink grout. Construct a concrete collar around the pipe.
~~**e.** Reconstruct invert according to Article 4149.04, K~~
~~**f.** Place backfill material according to Section 2533.~~

2435.05, A, 2.
Replace the Article:
Payment is full compensation for excavation, placing bedding and backfill material, compaction, base, structural concrete, reinforcing steel, precast units (if used), inverts, chimney seals, castings, and adjustment rings.

2435.05, B, 2.
Replace the Article:
Payment is full compensation for excavation, placing bedding and backfill material, compaction, base, structural concrete, reinforcing steel, precast units (if used), inverts, castings, and adjustment rings~~, and all appurtenances necessary for proper installation~~.

2435.05, G, 2.
Replace the Article:
Payment is full compensation for coring into the existing manhole or intake, pipe ~~connectors~~ connections, grout, and waterstop (when required).

Comments: The District 6 Office asked if Article 2435.03, E, 1, c, was necessary since it seems to say the same things as Article a and d. Articles a and d will be deleted to be consistent with SUDAS.

The Office of Construction asked which class of material in Article 2552.02 was desired for Iowa DOT projects. Without an indication on the plans, any of the classes may be used except Class I material which is unsuitable per Article 2552.02, A, 1, a. The Office of Construction was primarily concerned with the use of Class I material. The Office of Design asked which class would be the Department's preference for backfilling and should this be specified in the specifications for interstate and primary projects?

The District 4 Office asked if the Department is doing the testing of bedding and backfill material. Typically they do not do some of the testing for the properties shown in the appendices. SUDAS personnel indicated that these properties are not routinely tested, but could be tested if there is a question about the quality of the material.

The District 4 Office asked about moisture and density testing for backfill compaction. Typically if it is not indicated as being the contractor's responsibility, it falls back on the Department.

The District 4 Office indicated that aggregate producers had asked that the bedding and backfill material gradations be matched with existing gradation table gradations or added to the gradation table themselves. That way, producers can more easily identify that materials meets the required gradation. The Office of Materials did not indicate an issue with adding these gradations to the gradation table.

Member's Requested Change: **(Do not use 'Track Changes', or 'Mark-Up'. Use ~~Strikeout~~ and Highlight.)** See attached.					
Reason for Revision: To match SUDAS.					
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:					

Section 2435. Sanitary and Storm Sewer Structures

2435.01 DESCRIPTION.
This section was developed in conjunction with Sections 6010 and 6030 of the SUDAS Standard Specifications, with modifications to suit the needs of the Department.

A. Construct sanitary and storm sewer manholes to provide access to sewer systems for maintenance and cleaning purposes.

B. Construct storm sewer intakes for collection of surface water and conveyance to the storm sewer system.

C. Modify existing manholes and intakes as necessitated by other improvements adjacent to the manholes or intakes.

D. Clean and inspect sanitary and storm sewer manholes, intakes, and other utility structures. Test sanitary sewer manholes.

2435.02 MATERIALS.
Apply Article 4149.04.

2435.03 CONSTRUCTION.

A. General Requirements for Installation of Manholes and Intakes.

1. Excavation.
Excavate according to Section 2552.

2. Subgrade Preparation.
- **a. Cut Sections (Undisturbed Soil):** Prepare subgrade to accurate elevation required to place structure base or subbase.
- **b. Fill Sections:** Compact to 95% of maximum Standard Proctor Density and hand grade to accurate elevation required to place structure base or subbase, or install stabilization material as directed by the Engineer.
- **c. Unstable Soil:** Install stabilization material as directed by the Engineer.

3. Subbase.
- **a. Cast-in-place Structures:** No subbase material is required.
- **b. Precast Structures:** If precast structure is provided, install 8 inch (200 mm) thick pad of Class I bedding material a minimum of 12 inches (300 mm) outside the footprint of the structure.

4. Installation of Manhole or Intake Structure.
Adjust wall height and depth of base, when necessary, to provide a minimum of 48 inches (1200 mm) between form grade elevation and top of base.
- **a. Cast-in-place:** Apply Article 2435.03, B.
- **b. Precast:** Apply Article 2435.03, C.

5. Pipes.
Install and bed pipes and connect to manhole or intake. Install pipe flush with inside wall of structure. Place bedding and pipe embedment material according to Section 2552.
- **a. Cast-in-place Structures.**
  - **1) Storm:** Form structure walls around pipe.
  - **2) Sanitary:** Form or core circular opening and install flexible watertight gasket according to Article 4149.04, G. Keep void between pipe and manhole section free of debris and concrete.
- **b. Precast Storm Sewer Manholes or Intakes.**
  Fill space between pipe and structure with non-shrink grout.
- **c. Precast Sanitary Sewer Manholes.**
  Connect to structure with flexible watertight gasket according to Article 4149.04, G. Keep void between pipe and manhole section free of debris and concrete.
- **d. Sanitary Sewer Manholes on Existing Pipe.**
  Install waterstop according to Article 4149.04, G.

6. Joint Sealant.
- **a. Sanitary Sewer Manholes.**
  - **1)** Install rubber O-ring or profile gasket (precast structures).

2) Apply bituminous jointing material or butyl sealant wrap to exterior of all sanitary sewer manhole joints.

b. Storm Sewer Manholes and Intakes.

1) Apply bituminous jointing material or install rubber rope gasket.

2) If indicated in the contract documents, apply engineering fabric wrap to joints.

7. Invert.

a. Construct manhole invert up to one half of pipe diameter to produce a smooth half pipe shape between pipe inverts.

b. Shape invert to provide a smooth transition between pipe inverts.

c. Slope invert top toward pipe 1/2 inch per foot (40 mm per meter) perpendicular to flow line.

d. For sanitary sewer, keep void between pipe and structure wall free of debris and concrete.

e. For precast inverts, remove projections and repair voids to provide a hydraulically smooth channel between ends of pipes.

8. Top Sections.

Install manhole eccentric cone or flat top section or install intake top.

9. Adjustment Ring(s).

Bed each concrete ring with bituminous jointing material in trowelable or rope form. Bed each polyethylene ring with the manufacturer's approved product. Do not install more than a total ring stack height of 12 inches (300 mm). For greater adjustment, modify lower riser section(s).

10. Casting.

Install the type of casting specified in the contract documents and adjust to proper grade. Where a manhole or intake is to be in a paved area, adjust the casting to match the slope of the finished surface. When specified in the contract documents, attach a casting frame to the structure with four anchor bolts.

11. Chimney Seal.

For sanitary sewer manholes, install an internal or external rubber chimney seal.

a. Do not use external chimney seal if seal will be permanently exposed to sunlight.

b. Extend seal 3 inches (75 mm) below the lowest adjustment ring.

c. Extend seal to 2 inches (50 mm) above the flange of the casting for a standard two piece casting, or 2 inches (50 mm) above the top of the base section of the casting for an adjustable three piece casting.

d. Use multiple seals, if necessary.

e. Install compression bands (external chimney seal) or expansion bands (internal chimney seal) to lock the rubber sleeve or extension into place and to provide a positive watertight seal. Once tightened, lock bands into place. Use only manufacturer recommended installation tools and sealants.

12. ~~Placing and Compacting~~ Backfill and Compaction ~~Material~~ .

a. Place suitable backfill material according to Article 2552.02 after concrete in structure has reached at least 3000 psi (21 MPa) compressive strength or 550 psi (3850 kPa) flexural strength. If concrete strength is not determined, place backfill material at least 14 calendar days after initial concrete placement.

b. Place backfill material simultaneously on all sides of walls and structures so the fill is kept at approximately the same elevation at all times.

c. Compact the 3 feet (1 m) closest to all walls ~~for wing faces~~ using pneumatic or hand tampers only. Ensure proper and uniform compaction of backfill material around structure.

B. Additional Requirements for Cast-In-Place Concrete Structures.

1. Forms.

a. Apply Article 2403.03, B, 5.

b. Form all cast-in-place manholes and intakes on both the inside and the outside face above the base. Do not form against excavated earthen surface.

2. Reinforcing Steel.

a. Apply Section 2404.

b. Lap bars a minimum of 36 diameters, unless specified otherwise in the contract documents.

c. Provide a minimum of 3 inches (75 mm) of clearance for structure bases and 2 inches (50 mm) of clearance for walls and tops.

3. Concrete Mixing.
- **a.** Apply Article 2403.02, D.
- **b.** When using ready-mixed concrete, comply with ASTM C 94/C 94M.

4. Concrete Placing.
- **a.** Apply Article 2403.03, C.
- **b.** Do not place concrete when the air temperature is less than 40°F (5º C) without the approval of the Engineer. When placement below 40ºF (5ºC) is allowed, apply Article 2403.03, F.
- **c.** Place concrete continuously in each section until complete. Do not allow more than 30 minutes to elapse between depositing adjacent layers of concrete within each section.
- **d.** Apply Article 2403.03, D, for concrete vibration.
- **e.** Form 1 1/2 by 3 inch (38 mm by 75 mm) keyed construction joints at locations shown in the contract documents.
- **f.** Provide a broom finish on portions of structure that are to become part of exposed pavement.

5. Stripping and Cleaning.
- **a.** Remove forms for manhole and intake walls and tops according to Article 2403.03, M. References to culverts include all sanitary and storm structures. When allowed by the Engineer, compressive strengths at six times the stated flexural strengths may be used in determining concrete strength of structure tops.
- **b.** Finish surfaces according to Article 2403.03, P. Give exposed surfaces a Class 2 finish.

6. Curing.
- **a.** Apply Article 2403.03, E.
- **b.** For surfaces visible to the public, use only curing compounds complying with ASTM C 309, Type 1-D or Type 2.

7. Exterior Loading.
- **a.** Restrict exterior loads on concrete according to Article 2403.03, N.
- **b.** When allowed by the Engineer, compressive strengths at six times the stated flexural strengths may be used.

8. Repairs.
After visual inspection of the completed manhole or intake, repair honeycomb areas, visible leaks, tie holes, or other damage areas. Remove concrete webs or protrusions.

C. Additional Requirements for Precast Concrete Structures.

1. Substitutions.
Precast structures may be substituted for designated cast-in-place structures so long as structure is constructed as specified in the contract documents and according to Article 2435.03, B.

2. Cast-in-place Base.
- **a.** Apply Article 2435.03, B, for placement of concrete.
- **b.** Ensure proper vertical and horizontal alignment of base riser section.

3. Precast Base or Base with Integral Riser Section.
Place base or base with integral riser section and ensure proper vertical and horizontal alignment.

4. Additional Riser Sections.
Install additional riser sections as required.

5. Lift Holes.
Install rubber plug in lift holes. Cover plug and hole with non-shrink grout.

D. Adjustment of Existing Manhole or Intake.

1. Casting Extension Rings.
- **a.** Only install casting extension rings when allowed by the contract documents, and only in conjunction with pavement overlays.
- **b.** Install according to the manufacturer's recommendation and adjust for proper alignment.

2. Minor Adjustment (Adding or Removing Adjustment Rings).
- **a.** Remove casting.
- **b.** Modify adjustment ring stack height by one of the following methods:

1) Add adjustment rings as necessary to adjust existing manhole or intake to finished pavement grade or finished topsoil grade, to a maximum ring stack height of 16 inches (400 mm). Bed each concrete ring with bituminous jointing material. Bed each polyethylene ring with manufacturer's approved product.

2) Remove one or more adjustment rings, as appropriate, to reduce casting elevation.

c. Install new casting on modified adjustment ring stack. Existing casting may be reinstalled when specified in the contract documents.

d. Replace chimney seal for sanitary sewer manhole using only new materials.

3. Major Adjustment (Adding, Removing, or Modifying Riser or Cone Section).
When adjustment is greater than can be accomplished through adding or removing adjustment rings, a major adjustment will be required.

a. Remove casting.

b. Remove top.

c. Remove and replace or modify existing riser section and/or top section, as appropriate.

d. Install new frame and cover or grate. Existing casting may be reinstalled when allowed by the contract documents.

e. Replace chimney seal for sanitary sewer manhole using only new materials.

E. Connection to Existing Manhole or Intake.

1. General.

a. Remove invert as required to accommodate new pipe and develop hydraulic channel.

b. Insert pipe into structure and trim end flush with inside wall of structure.

c. Reconstruct invert to provide a well defined channel between pipes.

d. Place backfill material according to Section 2552.

~~1~~2. Sanitary Sewer.

a. General.

1) ~~Excavate as required.~~ Core openings in manholes unless specified otherwise in the contract documents.

2) Divert flow as necessary. Obtain approval of the diversion plan from the Engineer. Maintain sanitary sewer service at all times unless specified otherwise in the contract documents.

~~**3)** Remove existing invert as necessary to install pipe at required elevation and develop hydraulic channel.~~

b. Cored Opening.

1) Insert flexible watertight connector into new opening.

2) Install and tighten internal expansion sleeve to hold flexible connector in place.

3) Insert pipe through flexible connector and tighten external compression ring.

4) Do not grout opening or pour collar for cored opening with flexible connector.

c. Cut and Chipped Opening (Knockout).

1) Saw opening to approximate dimensions with a masonry saw. Saw to depth sufficient to sever reinforcing steel.

2) Remove concrete and expand opening to a diameter at least 6 inches (150 mm) larger than the outside diameter of the new pipe.

3) Cut off all reinforcing steel protruding from the structure wall.

~~**4)** Remove existing concrete invert as required to accommodate new pipe.~~

~~**5)** Insert pipe into structure and trim end flush with inside wall of structure.~~

~~6~~4) Install waterstop around new pipe centered within structure wall.

~~7~~5) Fill opening between structure and pipe with non-shrink grout.

~~8~~6) Construct concrete collar around pipe and exterior manhole opening.

a) For new pipes 12 inches (300 mm) or smaller, install two No. 3 steel reinforcing hoops on collar around pipe. Pour concrete collar around pipe/structure junction to a minimum thickness and width of 6 inches (150 mm).

b) For new pipes larger than 12 inches, install two No. 4 steel reinforcing hoops in collar around pipe. Pour concrete collar around pipe/structure junction to a minimum thickness and width of 9 inches (230 mm).

~~9~~7) Provide pipe joint, non-shear coupling, or other approved flexible coupling within 2 feet (600 mm) of structure wall to allow for differential settlement between the new sewer and the structure.

~~**10)** Reconstruct structure invert to provide a well defined channel between pipes.~~

~~2~~3. Storm Sewer.

~~**a.** Excavate as required.~~

~~**b**~~**a.** Cut opening to manhole or intake to 3 to 6 inches (75 to 150 mm) beyond the outside of the pipe. ~~Remove existing invert as necessary to install pipe at required elevation and develop hydraulic channel.~~

~~**c. Position end of pipe flush with interior wall of manhole.**~~

~~**d**~~**b.** Fill opening between manhole or intake wall and outside of pipe with non-shrink grout. Construct a concrete collar around the pipe.

~~**e. Reconstruct invert according to Article 4149.04, K**~~

~~**f. Place backfill material according to Section 2533.**~~

F. Cleaning, Inspection, and Testing of Structures.

1. Cleaning.

a. Clean all manholes, intakes, and structures by removing sheeting, bracing, shoring, forms, soil sediment, concrete waste, and other debris.

b. Do not discharge soil sediment or debris to drainage channels, existing storm sewer, or existing sanitary sewer system.

2. Visual Inspection.

a. Examine structure for:

1) Damage.
2) Slipped forms.
3) Indication of displacement of reinforcement.
4) Porous areas or voids.
5) Proper placement of seals, gaskets, and embedments.

b. Verify that the structure is set to true line, grade, and plumb.

c. Verify structure dimensions and thicknesses.

3. Repair.

Apply Article 2435.03, B, 8.

4. Sanitary Sewer Manhole Testing.

a. General.

1) Use vacuum testing for new sanitary sewer manholes unless exfiltration testing is specified in the contract documents.
2) Conduct final test after manhole construction is complete, all repairs and connections have been made, and invert has been installed.

b. Vacuum Test.

1) Applicable only for new manholes isolated from connecting sewer lines.
2) Use manufactured vacuum test equipment meeting the Engineer's approval. Follow the equipment manufacturer's recommended procedures throughout.
3) Use extreme care and follow safety precautions during testing operations. Keep personnel clear of manholes during testing.
4) Seal all openings except manhole top access using pneumatic plugs rated for test pressures. Install plugs according to the test equipment manufacturer's recommendations.
5) Brace pipe inverts if backfill material has not been placed around connecting pipes.
6) Install the vacuum tester head assembly on the manhole top access, and inflate the seal.
7) Evacuate the manhole to 5 psi (35 kPa). Close the isolation valve and start the test. Record the starting time.
8) Maintain vacuum in the manhole for the time indicated in Table 2435.03-1 below for the diameter and depth of manhole being tested.
9) Test failure is indicated by vacuum loss greater than 0.5 psi (4 kPa) within the minimum test time indicated in Table 2435.03-1 below for the depth and diameter of the manhole being tested.

Table 2435.03-1: Minimum Vacuum Test Times for Various Manhole Diameters

Depth feet (m)	**Diameter inches (mm)**				
	48 (1200)	**54 (1350)**	**60 (1500)**	**66 (1650)**	**72 (1825)**
	Time, Seconds				
8 (2.45)	20	23	26	29	33
10 (3.28)	25	29	33	36	41

12 (3.66)	30	35	39	43	49
14 (4.27)	35	41	46	51	57
16 (4.88)	40	46	52	58	67
18 (5.49)	45	52	59	65	73
20 (6.10)	50	53	65	72	81
22 (6.71)	55	64	72	79	89
24 (7.32)	59	64	78	87	97
26 (7.93)	64	75	85	94	105
28 (8.54)	69	81	91	101	113
30 (9.15)	74	87	98	108	121

c. Exfiltration Test.

1) Applicable to new manholes (when specified in the contract documents) or rehabilitated manholes.
2) Testing may be performed in conjunction with sanitary sewer line testing. Apply Section 2504.
3) Do not test by this method if water may potentially freeze during the test.
4) Plug the manhole inlet and outlet.
5) Fill the manhole with water to 2 feet (600 mm) above the outside top of the connecting pipe. If groundwater is present, fill the manhole to no less than 2 feet (600 mm) nor more than 5 feet (1.5 meters) above the groundwater level. Do not fill above the top of the standard barrel sections.
6) Mark the water level.
7) Allow water to stand in the manhole for 1 hour, then refill to the original water level and begin the test.
8) Determine the allowable drop in water level by using the equation given in Article 2504.03, L, 4, b, 3, c. After 1 hour, measure the drop in water level.
9) Test failure is indicated by water loss greater than maximum allowable calculated exfiltration.

5. Test Failure.

If testing fails, reseal the openings, repair the manhole, and retest. An alternate test method complying with these specifications may be used for a retest if desired.

2435.04 METHOD OF MEASUREMENT.

A. Manhole.
Each type and size of manhole will be counted.

B. Intake.
Each type and size of intake will be counted.

C. Drop Connection.
Each drop connection will be counted.

D. Casting Extension Rings.
Each casting extension ring will be counted.

E. Manhole or Intake Adjustment, Minor.
Each existing manhole or intake adjusted to finished grade by addition or removal of adjustment rings or adjustment of adjustable casting will be counted.

F. Manhole or Intake Adjustment, Major.
Each existing manhole or intake adjusted to grade by addition or removal of riser, cone or flat top sections, or the exchange of existing riser sections with sections having different vertical dimensions will be counted.

G. Connection to Existing Manhole or Intake.
Each connection made to an existing manhole or intake will be counted.

H. Cleaning, Inspection, and Testing.
None.

2435.05 BASIS OF PAYMENT.

A. Manhole.

1. Payment will be at the contract unit price for each type and size of manhole.

2. Payment is full compensation for excavation, placing bedding and backfill material, compaction, base, structural concrete, reinforcing steel, precast units (if used), inverts, chimney seals, castings, and adjustment rings.

B. Intake.

1. Payment will be at the contract unit price for each type and size of intake.

2. Payment is full compensation for excavation, placing bedding and backfill material, compaction, base, structural concrete, reinforcing steel, precast units (if used), inverts, castings, and adjustment rings~~, and all appurtenances necessary for proper installation~~.

C. Drop Connection.

1. Payment will be at the contract unit price for each drop connection.

2. Payment is full compensation for the connection to the manhole and all pipe, fittings, concrete encasement, and bedding and backfill material.

D. Casting Extension Rings.
Payment will be at the unit price for each casting extension ring.

E. Manhole or Intake Adjustment, Minor.

1. Payment will be made at the contract unit price for each minor manhole or intake adjustment.

2. Payment is full compensation for:
- Removing existing casting and existing adjustment rings,
- Furnishing and installing adjustment rings,
- Furnishing and installing new casting, and
- Installing new chimney seal (sanitary sewer manholes only).

F. Manhole or Intake Adjustment, Major.

1. Payment will be at the contract unit price for each major adjustment.

2. Payment is full compensation for:
- Removal of existing casting, adjustment rings, top sections and risers,
- Excavation,
- Concrete and reinforcing steel or precast sections,
- Furnishing and installing new casting
- Installing new chimney seal (sanitary sewer manholes only),
- Placing backfill material, and
- Compaction.

G. Connection to Existing Manhole or Intake.

1. Payment will be made at the contract unit price for each sewer connection.

2. Payment is full compensation for coring into the existing manhole or intake, pipe ~~connectors~~ connections, grout, and waterstop (when required).

H. Cleaning, Inspection, and Testing.
Cleaning, inspection, and testing of structures are incidental to construction of structures and will not be paid for separately.

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Jim Berger	**Office:** Materials	**Item 8**
Submittal Date: 2/08/11	**Proposed Effective Date:** October, 2011	
Article No.: 2511.03, B, 2, a **Title:** Recreational Trails	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 3/10/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: None.

Specification Section Recommended Text:

2511.03, B, 2, a.

Replace the second bulleted item:

- Compact to no less than 95% maximum density as determined by ~~Iowa DOT Materials Laboratory Test Method 103~~ Materials I.M. 309 or AASHTO T 99, with moisture content no less than optimum or more than 4% above optimum moisture content.

Comments:

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

- Compact to no less than 95% maximum density as determined by Materials I.M. 309 or AASHTO T99 ~~Iowa DOT Materials Laboratory Test Method 103~~, with moisture content no less than optimum or more than 4% above optimum moisture content.

Reason for Revision: Test method 103 is the mechanical method for AASHTO T99 or I.M. 309. Spec. requirement for 103 is causing confusion.

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

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

SPECIFICATION REVISION SUBMITTAL FORM

Submitted by: Deanna Maifield	**Office:** Design	**Item 9**
Submittal Date: 2011.01.27	**Proposed Effective Date:** 10/18/2011	
Section No.: 2516 **Title:** Removal and Construction of Retaining Walls and Steps	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 3/10/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text:

2516, Removal and Construction of Retaining Walls and Steps.

Replace title and entire section:

~~**Section 2516. Removal and Construction of Retaining Walls and Steps**~~

~~**2516.01 DESCRIPTION.**~~

~~Remove retaining walls and steps as designated, and construct new PCC retaining walls and steps according to the contract documents and the following provisions.~~

~~**2516.02 MATERIALS.**~~

~~For construction of retaining walls and steps, meet the requirements of Division 41 for the respective materials.~~

~~**2516.03 CONSTRUCTION.**~~

~~**A. Removal of Retaining Walls and Steps.**~~

~~When the contract documents indicate that retaining walls and steps are to be removed, break and remove the walls and steps designated by the Engineer according to Article 2510.03, A.~~

~~**B. Construction of Retaining Walls and Steps.**~~

~~Construct walls and steps to the dimensions shown in the contract documents and according to Section 2403. Unless designated otherwise, use Class C concrete as specified in Section 2403. Give exposed vertical surfaces a Class 2, strip down surface finish.~~

~~**2516.04 METHOD OF MEASUREMENT.**~~

~~Measurement for walls and steps removed and replaced will be as follows:~~

~~**A. Removal of Retaining Walls and Steps.**~~

~~Cubic yards (cubic meters) shown in the contract documents, without remeasurement.~~

~~**B. Construction of Walls and Steps.**~~

~~Cubic yards (cubic meters) shown in the contract documents. When the quantities of concrete have been modified by direction of the Engineer, the Engineer will compute the cubic yards (cubic meters) of concrete involved in the modification and adjust the quantity accordingly.~~

~~**2516.05 BASIS OF PAYMENT.**~~

~~Payment for retaining walls and steps removed and constructed will be the contract unit price as follows:~~

~~**A. Removal of Retaining Walls and Steps.**~~

~~**1.** Per cubic yard (cubic meters).~~

~~**2.** Payment is full compensation for the cost of all labor and equipment necessary to remove and haul the material according to Article 1104.08.~~

~~**B. Construction of Retaining Walls and Steps.**~~

~~**1.** Per cubic yard (cubic meter). Includes modifications ordered by the Engineer.~~

~~**2.** Payment is full compensation for furnishing all materials required, including all steel reinforcement~~

~~specified, and all equipment and labor necessary to construct the walls and steps as specified.~~

Section 2516. Combined Concrete Sidewalk and Retaining Wall

2516.01 DESCRIPTION.

A. This section was developed in conjunction with Section 9072 of the SUDAS Standard Specifications, with modifications to suit the needs of the Department.

B. Construct combined concrete sidewalk and retaining wall.

2516.02 MATERIALS.

A. Combined Concrete Sidewalk and Retaining Wall.

1. Portland Cement Concrete.
Comply with Article 2511.02, A.

2. Reinforcing Steel.
Comply with Section 4151.

3. Expansion Joint.
Comply with Article 4136.02. Use resilient filler when type is not specified.

B. Subdrain.
Use minimum 4 inch (100 mm) diameter pipe.

1. Polyvinyl Chloride Pipe and Fittings (Solid Wall PVC):
- **a.** Comply with ASTM D 3034, minimum thickness SDR 35, 46 psi (320 kPa) minimum pipe stiffness.
- **b.** Use PVC plastic conforming to ASTM D 1784, Cell Classification 12454.
- **c.** Integral bell and spigot type rubber gasket joint complying with ASTM D 3212 and ASTM F 477.
- **d.** Slot subdrain pipe according to ASTM F 949 or perforate with four rows of 1/4 to 3/8 inch (6 to 9 mm) diameter holes along the bottom of pipe.

2. Corrugated Polyvinyl Chloride Pipe and Fittings (Corrugated PVC):
- **a.** Use corrugated exterior, smooth interior, PVC.
- **b.** Comply with ASTM F 949, minimum pipe stiffness, 46 psi (320 kPa).
- **c.** Use PVC plastic complying with ASTM D 1784, Cell Classification 12454.
- **d.** Integral bell and spigot type rubber gasket joint complying with ASTM D 3212 and ASTM F 477.
- **e.** Slot subdrain pipe according to ASTM F 949.

3. Corrugated Polyethylene Tubing and Fittings (Corrugated PE):
- **a.** Comply with Article 4143.01, B, 1.
- **b.** Use only fittings supplied or recommended by pipe manufacturer for soil tight service.

C. Porous Backfill Material for Subdrain:

1. Crushed Stone or Processed Gravel.
Comply with Section 4131.

2. Pea Gravel.
Comply with Gradation No. 20 or 21 of Section 4109 and the quality requirements of Section 4131.

D. Suitable Backfill Material.
Comply with Article 2102.02, D, 2.

E. Rodent-Proof Hardware Cloth.
Comply with Materials I.M. 443.01.

2516.03 CONSTRUCTION.

A. Excavation and Embankment.

1. At locations where the wall will be constructed against embankment, compact to a minimum of 90% of maximum Standard Proctor Density prior to beginning wall construction.

2. Excavate to the line and grade specified in the contract documents. Minimize over-excavation. Install sheeting, shoring, or other retention systems as required to ensure the stability of the excavation.

B. Installation.

1. Forming the back of the wall is not required. Where the back of the wall is not formed and sloughing occurs, remove loose material, and replace with concrete at no additional cost to the Contracting Authority.

2. Install 3 inch (75 mm) diameter weep holes at 8 foot (2.5 m) intervals. Form weep holes with an approved rustproof device backed with rodent-proof hardware cloth.

3. Install 8 inch (200 mm) wide trench of porous backfill behind the wall. Install subdrain within porous backfill trench when specified in the contract documents. Ensure positive drainage on subdrain. Outlet subdrain to weep holes.

C. Joints.

1. Form ED joints in wall at no more than 60 foot (18 m) spacing. Affix expansion material to retaining wall.

2. Form C joints in the wall at no more than 20 foot (6 m) spacing.

3. Form E joints in sidewalk to coincide with ED joints in wall. Form C joints in sidewalk at spacing equal to sidewalk width.

4. Form longitudinal joint in sidewalk when sidewalk width is greater than 8 feet (2.4 m).

D. Rustication.
Decorative form liners or inserts may be used when forming the face of the wall with the approval of the Engineer. Form rustications as specified in the contract documents.

2516.04 METHOD OF MEASUREMENT.
Measurement for Combined Concrete Sidewalk and Retaining Wall will be cubic yards (cubic meters) shown in the contract documents.

2516.05 BASIS OF PAYMENT.
Payment for Combined Concrete Sidewalk and Retaining Wall will be the contract unit price per cubic yard (cubic meter). Payment is full compensation for:

- Excavation and foundation preparation,
- Furnishing and placing concrete and reinforcing steel,
- Joint material,
- Subdrain,
- Porous backfill material,
- Suitable backfill material,
- Finishing disturbed areas, and
- Shoring as necessary.

Comments: The Soils Design Section could not remember specifically why circular perforations were not allowed. The Specifications Section could not find where this issue had been discussed at a Specification Committee meeting. For now, this section will refer to Article 4143.01, B, 1 and a discussion concerning the use of drains with circular perforations will be scheduled in the future.

The Office of Materials asked about specifying the quality of the porous backfill material. A reference will be added to Section 4131 for the quality of both materials.

The Office of Contracts asked about a bid item for removals. Removals could be handled by the bid item Removals, As Per Plan since each removal will be different. Removals, As Per Plan is a lump sum bid item. The old item was a cubic yard item, which is hard to estimate and measure.

Specification Section Recommended Text:

2516, Removal and Construction of Retaining Walls and Steps.

Replace title and entire section:

~~**Section 2516. Removal and Construction of Retaining Walls and Steps**~~

~~**2516.01 DESCRIPTION.**~~

~~Remove retaining walls and steps as designated, and construct new PCC retaining walls and steps according to the contract documents and the following provisions.~~

~~**2516.02 MATERIALS.**~~

~~For construction of retaining walls and steps, meet the requirements of Division 41 for the respective materials.~~

~~**2516.03 CONSTRUCTION.**~~

~~**A. Removal of Retaining Walls and Steps.**~~

~~When the contract documents indicate that retaining walls and steps are to be removed, break and remove the walls and steps designated by the Engineer according to Article 2510.03, A.~~

~~**B. Construction of Retaining Walls and Steps.**~~

~~Construct walls and steps to the dimensions shown in the contract documents and according to Section 2403. Unless designated otherwise, use Class C concrete as specified in Section 2403. Give exposed vertical surfaces a Class 2, strip down surface finish.~~

~~**2516.04 METHOD OF MEASUREMENT.**~~

~~Measurement for walls and steps removed and replaced will be as follows:~~

~~**A. Removal of Retaining Walls and Steps.**~~

~~Cubic yards (cubic meters) shown in the contract documents, without remeasurement.~~

~~**B. Construction of Walls and Steps.**~~

~~Cubic yards (cubic meters) shown in the contract documents. When the quantities of concrete have been modified by direction of the Engineer, the Engineer will compute the cubic yards (cubic meters) of concrete involved in the modification and adjust the quantity accordingly.~~

~~**2516.05 BASIS OF PAYMENT.**~~

~~Payment for retaining walls and steps removed and constructed will be the contract unit price as follows:~~

~~**A. Removal of Retaining Walls and Steps.**~~

~~**1.** Per cubic yard (cubic meters).~~

~~**2.** Payment is full compensation for the cost of all labor and equipment necessary to remove and haul the material according to Article 1104.08.~~

~~**B. Construction of Retaining Walls and Steps.**~~

~~**1.** Per cubic yard (cubic meter). Includes modifications ordered by the Engineer.~~

~~**2.** Payment is full compensation for furnishing all materials required, including all steel reinforcement specified, and all equipment and labor necessary to construct the walls and steps as specified.~~

Section 2516. Combined Concrete Sidewalk and Retaining Wall

2516.01 DESCRIPTION.

A. This section was developed in conjunction with Section 9072 of the SUDAS Standard Specifications, with modifications to suit the needs of the Department.

B. Construct combined concrete sidewalk and retaining wall.

2516.02 MATERIALS.

A. Combined Concrete Sidewalk and Retaining Wall.

1. Portland Cement Concrete.
Comply with Article 2511.02, A.

2. Reinforcing Steel.
Comply with Section 4151.

3. Expansion Joint.
Comply with Article 4136.02. Use resilient filler when type is not specified.

B. Subdrain.
Use minimum 4 inch (100 mm) diameter pipe.

1. Polyvinyl Chloride Pipe and Fittings (Solid Wall PVC):
- **a.** Comply with ASTM D 3034, minimum thickness SDR 35, 46 psi (320 kPa) minimum pipe stiffness.
- **b.** Use PVC plastic conforming to ASTM D 1784, Cell Classification 12454.
- **c.** Integral bell and spigot type rubber gasket joint complying with ASTM D 3212 and ASTM F 477.
- **d.** Slot subdrain pipe according to ASTM F 949 or perforate with four rows of 1/4 to 3/8 inch (6 to 9 mm) diameter holes along the bottom of pipe.

2. Corrugated Polyvinyl Chloride Pipe and Fittings (Corrugated PVC):
- **a.** Use corrugated exterior, smooth interior, PVC.
- **b.** Comply with ASTM F 949, minimum pipe stiffness, 46 psi (320 kPa).
- **c.** Use PVC plastic complying with ASTM D 1784, Cell Classification 12454.
- **d.** Integral bell and spigot type rubber gasket joint complying with ASTM D 3212 and ASTM F 477.
- **e.** Slot subdrain pipe according to ASTM F 949.

3. Corrugated Polyethylene Tubing and Fittings (Corrugated PE):
- **a.** Comply with Article 4143.01, B, 1.
- **b.** Use only fittings supplied or recommended by pipe manufacturer for soil tight service.

C. Porous Backfill Material for Subdrain:

1. Crushed Stone or Processed Gravel.
Comply with Gradation No. 29 of Section 4109.

2. Pea Gravel.
Comply with Gradation No. 20 or 21 of Section 4109.

D. Suitable Backfill Material.
Comply with Article 2102.02, D, 2.

E. Rodent-Proof Hardware Cloth.
Comply with Materials I.M. 443.01.

2516.03 CONSTRUCTION.

A. Excavation and Embankment.

1. At locations where the wall will be constructed against embankment, compact to a minimum of 90% of maximum Standard Proctor Density prior to beginning wall construction.

2. Excavate to the line and grade specified in the contract documents. Minimize over-excavation. Install sheeting, shoring, or other retention systems as required to ensure the stability of the excavation.

B. Installation.

1. Forming the back of the wall is not required. Where the back of the wall is not formed and sloughing occurs, remove loose material, and replace with concrete at no additional cost to the Contracting Authority.

2. Install 3 inch (75 mm) diameter weep holes at 8 foot (2.5 m) intervals. Form weep holes with an approved rustproof device backed with rodent-proof hardware cloth.

3. Install 8 inch (200 mm) wide trench of porous backfill behind the wall. Install subdrain within porous backfill trench when specified in the contract documents. Ensure positive drainage on subdrain. Outlet subdrain to weep holes.

C. Joints.

1. Form ED joints in wall at no more than 60 foot (18 m) spacing. Affix expansion material to retaining wall.

2. Form C joints in the wall at no more than 20 foot (6 m) spacing.

3. Form E joints in sidewalk to coincide with ED joints in wall. Form C joints in sidewalk at spacing equal to sidewalk width.

4. Form longitudinal joint in sidewalk when sidewalk width is greater than 8 feet (2.4 m).

D. Rustication.
Decorative form liners or inserts may be used when forming the face of the wall with the approval of the Engineer. Form rustications as specified in the contract documents.

2516.04 METHOD OF MEASUREMENT.
Measurement for Combined Concrete Sidewalk and Retaining Wall will be cubic yards (cubic meters) shown in the contract documents.

2516.05 BASIS OF PAYMENT.
Payment for Combined Concrete Sidewalk and Retaining Wall will be the contract unit price per cubic yard (cubic meter). Payment is full compensation for:

- Excavation and foundation preparation,
- Furnishing and placing concrete and reinforcing steel,
- Joint material,
- Subdrain,
- Porous backfill material,
- Suitable backfill material,
- Finishing disturbed areas, and
- Shoring as necessary.

Comments: The word “Sidewalk” will be added in the Method of Measurement and Basis of Payment sections.

This change will eliminate the Department’s specifications for steps. Due to ADA requirements, steps should not be used except in special circumstances. These special circumstances would require step design in the plans or the use of SUDAS step specifications.

The District 6 Office had concerns about the compaction specified in Article 2516.03, A, 1. Typically the Department specifies moisture and density control, not just density. The Specifications Section will discuss this issue with Construction and Soils personnel prior to the March Specification Committee meeting.

The Office of Local Systems asked about allowing slotted or perforated drain pipe. The referenced Article 4143.01, B does not allow circular perforations. The Specifications Engineer indicated that his recollection was that circular perforations were not allowed because they are more easily clogged than slots. The Office of Local Systems requested that circular perforations be allowed for this use. The Office of Construction asked why this situation should be different than other uses of drain pipe. We should be consistent or have a reason for not being that way. The allowance for circular perforations in Section 2516 will be eliminated and the reference will be to Article 4143.01, B. The Soils Section is reviewing to see if there is a reason to not allow circular perforations. If it is discovered that we do not have a justifiable reason, the elimination of circular perforations will be deleted from Article 4143.01, B.

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

2516, Removal and Construction of Retaining Walls and Steps.

Replace the title and the entire section:

~~**Section 2516. Removal and Construction of Retaining Walls and Steps**~~

~~**2516.01 DESCRIPTION.**~~

~~Remove retaining walls and steps as designated, and construct new PCC retaining walls and steps according to the contract documents and the following provisions.~~

~~**2516.02 MATERIALS.**~~

~~For construction of retaining walls and steps, meet the requirements of Division 41 for the respective materials.~~

~~**2516.03 CONSTRUCTION.**~~

~~**A. Removal of Retaining Walls and Steps.**~~

~~When the contract documents indicate that retaining walls and steps are to be removed, break and remove the walls and steps designated by the Engineer according to Article 2510.03, A.~~

~~**B. Construction of Retaining Walls and Steps.**~~

~~Construct walls and steps to the dimensions shown in the contract documents and according to Section 2403. Unless designated otherwise, use Class C concrete as specified in Section 2403. Give exposed vertical surfaces a Class 2, strip down surface finish.~~

~~**2516.04 METHOD OF MEASUREMENT.**~~

~~Measurement for walls and steps removed and replaced will be as follows:~~

~~**A. Removal of Retaining Walls and Steps.**~~

~~Cubic yards (cubic meters) shown in the contract documents, without remeasurement.~~

~~**B. Construction of Walls and Steps.**~~

~~Cubic yards (cubic meters) shown in the contract documents. When the quantities of concrete have been modified by direction of the Engineer, the Engineer will compute the cubic yards (cubic meters) of concrete involved in the modification and adjust the quantity accordingly.~~

~~**2516.05 BASIS OF PAYMENT.**~~

~~Payment for retaining walls and steps removed and constructed will be the contract unit price as follows:~~

~~**A. Removal of Retaining Walls and Steps.**~~

~~**1.** Per cubic yard (cubic meters).~~

~~**2.** Payment is full compensation for the cost of all labor and equipment necessary to remove and haul the material according to Article 1104.08.~~

~~**B. Construction of Retaining Walls and Steps.**~~

~~**1.** Per cubic yard (cubic meter). Includes modifications ordered by the Engineer.~~

~~**2.** Payment is full compensation for furnishing all materials required, including all steel reinforcement specified, and all equipment and labor necessary to construct the walls and steps as specified.~~

Section 2516. Combined Concrete Sidewalk and Retaining Wall

2516.01 DESCRIPTION.

A. This section was developed in conjunction with Section 9072 of the SUDAS Standard Specifications, with modifications to suit the needs of the Department.

B. Construct combined concrete sidewalk and retaining wall.

2516.02 MATERIALS.

Upon request, submit certification that products supplied comply with identified specifications.

A. Combined Concrete Sidewalk and Retaining Wall.

1. Portland Cement Concrete.
Comply with Article 2511.02, A.

2. Reinforcing Steel.
Comply with Section 4151.

3. Expansion Joint.
Comply with Article 4136.02. Use resilient filler when the type is not specified.

B. Subdrain.
Use minimum 4 inch (100 mm) diameter pipe.

1. Polyvinyl Chloride Pipe and Fittings (Solid Wall PVC):
- **a.** Comply with ASTM D 3034, minimum thickness SDR 35, 46 psi (320 kPa) minimum pipe stiffness.
- **b.** Use PVC plastic conforming to ASTM D 1784, Cell Classification 12454.
- **c.** Integral bell and spigot type rubber gasket joint complying with ASTM D 3212 and ASTM F 477.
- **d.** Slot subdrain pipe according to ASTM F 949 or perforate with four rows of 1/4 to 3/8 inch (6 to 9 mm) diameter holes along the bottom of pipe.

2. Corrugated Polyvinyl Chloride Pipe and Fittings (Corrugated PVC):
- **a.** Use corrugated exterior, smooth interior, PVC.
- **b.** Comply with ASTM F 949, minimum pipe stiffness, 46 psi (320 kPa).
- **c.** Use PVC plastic complying with ASTM D 1784, Cell Classification 12454.
- **d.** Integral bell and spigot type rubber gasket joint complying with ASTM D 3212 and ASTM F 477.
- **e.** Slot subdrain pipe according to ASTM F 949.

3. Corrugated Polyethylene Tubing and Fittings (Corrugated PE):
- **a.** Comply with Article 4143.01, B, 1. Slot or perforate according to AASHTO M 252, Type CP or Type SP.
- **b.** Use only fittings supplied or recommended by pipe manufacturer for soil tight service.

C. Porous Backfill Material for Subdrain:

1. Crushed Stone or Processed Gravel.
Comply with Gradation No. 29 of Section 4109.

2. Pea Gravel.
Comply with Gradation No. 20 or No. 21 of Section 4109.

D. Suitable Backfill Material.
Comply with Article 2102.02, D, 2.

E. Rodent-Proof Hardware Cloth.
Comply with I.M. 443.01.

2516.03 CONSTRUCTION.

A. Excavation and Embankment.

1. At locations where the wall is to be constructed against embankment, compact to a minimum of 90% of maximum Standard Proctor Density prior to beginning wall construction.

2. Excavate to the line and grade specified in the contract documents. Minimize over-excavation. Install sheeting, shoring, or other retention systems as required to ensure the stability of the excavation.

B. Installation.

1. Forming the back of the wall is not required unless otherwise specified in the contract documents. Where the back of the walls is not formed and sloughing occurs, remove the loose material, and replace with concrete at no additional cost to the Contracting Authority.

2. Install 3 inch (75 mm) diameter weep holes at 8 foot (2.5 m) intervals. Form weep holes with an approved rustproof device backed with rodent-proof hardware cloth.

3. Install 8 inch (200 mm) wide trench of porous backfill behind the wall. Install subdrain within porous backfill trench when specified in the contract documents. Ensure positive drainage on subdrain. Outlet subdrain to weep holes.

C. Joints.

1. Form ED joints in wall at no more than 60 foot (18 m) spacing. Affix expansion material to retaining wall.

2. Form C joints in wall at no more than 20 foot (6 m) spacing.

3. Form E joints in sidewalk to coincide with ED joints in wall. Form C joints in sidewalk at spacing equal to sidewalk width.

4. Form longitudinal joint in sidewalk when sidewalk width is greater than 8 feet (2.4 m).

D. Rustication.
Decorative form liners or inserts may be used when forming the face of the wall with the approval of the Engineer. Form rustications as specified in the contract documents.

2516.04 METHOD OF MEASUREMENT.
Measurement for Combined Concrete and Retaining Wall will be cubic yards (cubic meters) shown in the contract documents.

2516.05 BASIS OF PAYMENT.
Payment for Combined Concrete and Retaining Wall will be the contract unit price per cubic yard (cubic meter). Payment is full compensation for:

- Excavation and foundation preparation,
- Furnishing and placing concrete and reinforcing steel,
- Joint material,
- Subdrain,
- Porous backfill material,
- Suitable backfill material,
- Finishing disturbed areas, and
- Shoring as necessary.

Reason for Revision: The Department worked with SUDAS to develop joint standards and specifications for combined sidewalk with retaining wall. SUDAS is proposing to include these specifications in their 2012 manual (to be released in October 2011).

This change will remove construction of steps from the specifications. If it is necessary to construct steps for a private property, designers will include SUDAS specifications as Special Provisions and would include the SUDAS standard as a detail sheet. The Office of Design will provide instructions to designers.

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 10**
Submittal Date: 2/25/11	**Proposed Effective Date:** 10/18/11	
Section No.: 2519 **Title:** Fencing **Section No.:** 4154 **Title:** Fence Materials	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 3/10/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text:

2519.03, Construction.

Replace the first paragraph:

Furnish and erect field fence, deer fence, or chain link fence~~s~~ of the type and dimensions shown in the contract documents and according to the ~~following~~ provisions~~:~~ below. Do not disturb right-of way-markers.

2519.03. A, Field Fence.

Replace the title:

A. Field Fence and Deer Fence.

2519.03, A, 1, a.

Delete the Article:

~~**a.** Erect the fence along the right of way line, parallel to and 1 foot (300 mm) inside the right of way line, unless shown otherwise in the contract documents. Unless required otherwise by the contract documents, install the wire on the roadway side of the posts.~~

2519.03, A, 3, a.

Delete the first sentence:

~~Pull post assemblies are required when the distance between pull posts is greater than 960 feet (300 m) in straight lines of fence.~~

2519.03, B, 1, General.

Replace the Article:

Unless indicated otherwise in the contract documents, use chain link fence ~~that is a nominal 72 inches (1.8 m) in height~~ with steel posts connected with pipe rails at the top and tensioned stretcher wire at the bottom.

2519.03, B, 2, b.

Replace the Article:

Set posts with the required brace post assembly at each end, angle, corner, and gate. Brace post assemblies will not be paid for separately. Set ~~all~~ posts ~~vertically as shown in the contract documents~~ plum and true to line. Reset posts that are:

- Out-of-plumb more than 1 inch (25 mm).
- Out-of-line more than 2 inches (50 mm).

2519.03, B, 2, h.

Delete the article:

~~**h.** Install the top rail according to the contract documents.~~

2519.03, B, 3, Chain Link Fabric.

Replace the article:

~~**a.** Unless required otherwise, place the fabric on the side of the posts closest to the roadway to be protected. For non-roadway installations, attach the fabric on the side designated in the contract documents.~~

~~**b.** Construct as follows:~~

~~**1)** Secure each end of each run of chain link fabric by a stretcher bar inserted in the final link of the fabric. Use a stretcher bar that is as long as the fabric is wide.~~
~~**2)** Secure this bar and the tight fabric to the end post by tension bands equally spaced no more than 15 inches (380 mm) apart.~~
~~**3)** Place a tension wire tightened by mechanical means approximately 4 inches (100 mm) from the lower edge of the fence.~~
~~**4)** Securely attach the chain link fabric to the braces, top rail, tension wire, and all intermediate posts at intervals of no more than 1 foot (300 mm) by wire ties or clips.~~
~~**5)** Uniformly smooth the ground surface along the line of the fence for a width of 2 feet (600 mm) so that the fabric will conform to the ground surface.~~

Construct as shown in the contract documents. Uniformly smooth ground surface along the line of fence for a width of 2 feet (600 mm) so fabric will conform to ground surface.

2519.04, Method of Measurement.

Replace Articles A and B:

A. Field Fence, Deer Fence, or Chain Link Fence: linear feet (meters) constructed, of the height and type specified, measured along the fence at the bottom of the fabric, excluding the length of gates or fence otherwise measured for payment.

B. Field Fence and Deer Fence Brace Panels: by count of the metal braces properly installed for the various units.

2519.05, A, 2.

Replace the Article:

Field Fence and Deer Fence Brace Panels: each. Payment is compensation for brace wires and metal braces.

4154.02, Field Fence.

Replace the title and Article:

4154.02, FIELD FENCE AND DEER FENCE.

A. Field Fence.

1. Use fabric meeting the requirements of ASTM A 116, Class 3 coating~~, or ASTM A 584~~.
- For Type 47 fence, the fabric design is ASTM Design Number 1047-6-11 grade 60 wire or 1047-6-12 1/2 grade 125 wire.
- For Type 39 fence, the fabric design is ASTM Design Number 939-6-11 grade 60 wire or 939-6-12 1/2 grade 125 wire.

~~**B**~~**2.** When the type is not designated, furnish one of the above 1047 fabrics.

~~**C**~~**3.** Fabric may be furnished in lengths greater than 20 rods (100 m).

~~**D**~~**4.** Use galvanized (as determined by visual inspection) steel rod for splicing fence material.

B. Deer Fence

Use woven wire fence fabric that:
- meets the requirements (excluding wire spacing and fence height) for 12.5 gage wire according to ASTM A 116, and
- has wires spaced horizontally and vertically as shown in the contract documents or closer.

4154.10, A.

Replace the second sentence and add new third sentence:

Posts, braces, and rails of ~~A~~alternate cross sectional shape, material, or protective coating may be used if approved according to Materials I.M. 454.10.

4154.12, A.

Replace the article:

A. Field Fence and Chain Link Fence.

1. Ensure ~~all~~ gates provide the width of opening shown in the contract documents. Install a vertical stay in gates more than 6 feet (1.8 m) wide. Where the width of opening specified is:
- 16 feet (5 m) or less, provide a single gate frame.

- More than 16 feet (5 m), provide two gate frames using a drop bar locking device allowing operation as a double gate.

~~**B**~~**2.** Ensure each gate is furnished complete with necessary hinges, latch, and other special fittings recommended for the type of gate and gate post being installed.

~~**C**~~**3.** For chain link fence gates, use the pipe size shown in the contract documents or approved by the Engineer. When size is not shown in the contract documents, use:
- 1 1/2 inch (40 mm) nominal diameter pipe for gates 6 feet (1.8 m) wide or more, and
- 1 1/4 inch (30 mm) nominal diameter pipe for gates less than 6 feet (1.8 m) wide.

~~**D**~~**4.** Use gate fabric similar to that used for the fence. Attach using stretcher bars.

~~**E**~~**5.** Use adjustable rods to cross truss gates 6 feet (1.8 m) wide or more.

~~**F**~~**6.** Ensure ~~all~~ materials are galvanized with no less than 0.8 ounce per square foot (244 g/m^2) of surface. Gates for field fence may be painted with a prime coat and an enamel finish coat.

B. Deer Fence.
Furnish the following, galvanized according to Article 4154.10:

1. Tines molded in one piece of steel with no welds.

2. Structural steel tubes with wall thickness of 0.1875 inches (4.75 mm) and unit weight of 4.32 pounds per foot (6.43 kg/m).

3. Support plates, hinges, and top braces.

Comments: The Office of Materials thought that the new Article 2519.03, B, 1, b, was covered by Section 4154. The new article was deleted.

The Committee decided to measure all fence similarily for consistency. Previously, deer fence was not measured, but was plan quantity.

The District 6 Office pointed out that we do not have tolerances for the posts for chain link fence. The tolerances used for field fence will be used for chain link fence.

Specification Section Recommended Text:

2519.03, Construction.

Replace the first paragraph:

Furnish and erect field fence, deer fence, or chain link fence~~s~~ of the type and dimensions shown in the contract documents and according to the ~~following~~ provisions~~:~~ below. Do not disturb right-of way-markers.

2519.03. A, Field Fence.

Replace the title:

A. Field Fence and Deer Fence.

2519.03, A, 1, a.

Delete the Article:

~~**a.** Erect the fence along the right of way line, parallel to and 1 foot (300 mm) inside the right of way line, unless shown otherwise in the contract documents. Unless required otherwise by the contract documents, install the wire on the roadway side of the posts.~~

2519.03, A, 3, a.

Delete the first sentence:

~~Pull post assemblies are required when the distance between pull posts is greater than 960 feet (300 m) in straight lines of fence.~~

2519.03, B, 1, General.

Replace the Article:

a. Unless indicated otherwise in the contract documents, use chain link fence ~~that is a nominal 72 inches (1.8 m) in height~~ with steel posts connected with pipe rails at the top and tensioned stretcher wire at the bottom.

b. Specific details of the manufacture of component parts of the complete fence construction are subject to the approval of the Engineer. Use commercially available items produced specifically for the use intended wherever possible.

2519.03, B, 2, b.

Add as the third sentence:

Brace post assemblies will not be paid for separately.

2519.03, B, 2, h.

Delete the article:

~~**h.** Install the top rail according to the contract documents.~~

2519.03, B, 3, Chain Link Fabric.

Replace the article:

~~**a.** Unless required otherwise, place the fabric on the side of the posts closest to the roadway to be protected. For non-roadway installations, attach the fabric on the side designated in the contract documents.~~

~~**b.** Construct as follows:~~

~~**1)** Secure each end of each run of chain link fabric by a stretcher bar inserted in the final link of the fabric. Use a stretcher bar that is as long as the fabric is wide.~~

~~**2)** Secure this bar and the tight fabric to the end post by tension bands equally spaced no more than 15 inches (380 mm) apart.~~

~~**3)** Place a tension wire tightened by mechanical means approximately 4 inches (100 mm) from the lower edge of the fence.~~

~~**4)** Securely attach the chain link fabric to the braces, top rail, tension wire, and all intermediate posts at intervals of no more than 1 foot (300 mm) by wire ties or clips.~~

~~**5)** Uniformly smooth the ground surface along the line of the fence for a width of 2 feet (600 mm) so that the fabric will conform to the ground surface.~~

Construct as shown in the contract documents. Uniformly smooth ground surface along the line of fence for a width of 2 feet (600 mm) so fabric will conform to the ground surface.

2519.04, Method of Measurement.

Replace Articles A and B:

A. Field Fence, Deer Fence, or Chain Link Fence: linear feet (meters) constructed, of the height and type specified, measured along the fence at the bottom of the fabric, excluding the length of gates or fence otherwise measured for payment.

B. Field Fence and Deer Fence Brace Panels: by count of the metal braces properly installed for the various units.

2519.05, A, 2.

Replace the Article:

Field Fence and Deer Fence Brace Panels: each. Payment is compensation for brace wires and metal braces.

4154.02, Field Fence.

Replace the title and Article:

4154.02, FIELD FENCE AND DEER FENCE.

A. Field Fence.

1. Use fabric meeting the requirements of ASTM A 116, Class 3 coating~~, or ASTM A 584~~.

- For Type 47 fence, the fabric design is ASTM Design Number 1047-6-11 grade 60 wire or 1047-6-12 1/2 grade 125 wire.
- For Type 39 fence, the fabric design is ASTM Design Number 939-6-11 grade 60 wire or 939-6-12 1/2 grade 125 wire.

~~**B**~~**2.** When the type is not designated, furnish one of the above 1047 fabrics.

~~C~~**3.** Fabric may be furnished in lengths greater than 20 rods (100 m).

~~D~~**4.** Use galvanized (as determined by visual inspection) steel rod for splicing fence material.

B. Deer Fence

Use woven wire fence fabric that:

- meets the requirements (excluding wire spacing and fence height) for 12.5 gage wire according to ASTM A 116, and
- has wires spaced horizontally and vertically as shown in the contract documents or closer.

4154.10, A.

Replace the second sentence and add new third sentence:

Posts, braces, and rails of ~~A~~alternate cross sectional shape, material, or protective coating may be used if approved according to Materials I.M. 454.10.

4154.12, A.

Replace the article:

A. Field Fence and Chain Link Fence.

1. Ensure ~~all~~ gates provide the width of opening shown in the contract documents. Install a vertical stay in gates more than 6 feet (1.8 m) wide. Where the width of opening specified is:

- 16 feet (5 m) or less, provide a single gate frame.
- More than 16 feet (5 m), provide two gate frames using a drop bar locking device allowing operation as a double gate.

~~B~~**2.** Ensure each gate is furnished complete with necessary hinges, latch, and other special fittings recommended for the type of gate and gate post being installed.

~~C~~**3.** For chain link fence gates, use the pipe size shown in the contract documents or approved by the Engineer. When size is not shown in the contract documents, use:

- 1 1/2 inch (40 mm) nominal diameter pipe for gates 6 feet (1.8 m) wide or more, and
- 1 1/4 inch (30 mm) nominal diameter pipe for gates less than 6 feet (1.8 m) wide.

~~D~~**4.** Use gate fabric similar to that used for the fence. Attach using stretcher bars.

~~E~~**5.** Use adjustable rods to cross truss gates 6 feet (1.8 m) wide or more.

~~F~~**6.** Ensure ~~all~~ materials are galvanized with no less than 0.8 ounce per square foot (244 g/m^2) of surface. Gates for field fence may be painted with a prime coat and an enamel finish coat.

B. Deer Fence.

Furnish the following, galvanized according to Article 4154.10:

1. Tines molded in one piece of steel with no welds.

2. Structural steel tubes with wall thickness of 0.1875 inches (4.75 mm) and unit weight of 4.32 pounds per foot (6.43 kg/m).

3. Support plates, hinges, and top braces.

Comments: All fence should be measured and paid for similarily.

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

2519.03, Construction.

Replace the first paragraph:

Furnish and erect field fence, deer fence, or chain link fences of the type and dimensions shown in the contract documents and according to the ~~following~~ provisions below.~~:~~ Do not disturb or destroy right of way markers.

2519.03. A, Field Fence.

Replace the title:

Field Fence and Deer Fence.

2519.03, A, 1, a, General.

Delete the article:

~~**a.** Erect the fence along the right of way line, parallel to and 1 foot (300 mm) inside the right of way line, unless shown otherwise in the contract documents. Unless required otherwise by the contract documents, install the wire on the roadway side of the posts.~~

2519.03, A, 3, a, Pull Post Assemblies.

Delete the first sentence:

~~Pull post assemblies are required when the distance between pull posts is greater than 960 feet (300 m) in straight lines of fence.~~

2519.03, B, 1, General.

Replace the first paragraph and **add** a new second paragraph:

a. Unless indicated otherwise in the contract documents, use chain link fence ~~that is a nominal 72 inches (1.8 m) in height~~ with steel posts connected with pipe rails at the top and tensioned stretcher wire at the bottom.

b. Specific details of the manufacture of component parts of the complete fence construction are subject to the approval of the Engineer. Use commercially available items produced specifically for the use intended wherever possible in the construction of the fence.

2519.03, B, 2, b, Posts.

Add as the third sentence:

Brace post assemblies will not be paid for separately.

2519.03, B, 2, h, Posts.

Delete the article:

~~**h.** Install the top rail according to the contract documents.~~

2519.03, B, 3, Chain Link Fabric.

Replace the article:

~~**a.** Unless required otherwise, place the fabric on the side of the posts closest to the roadway to be protected. For non-roadway installations, attach the fabric on the side designated in the contract documents.~~

~~**b.** Construct as follows:~~

~~**1)** Secure each end of each run of chain link fabric by a stretcher bar inserted in the final link of the fabric. Use a stretcher bar that is as long as the fabric is wide.~~

~~**2)** Secure this bar and the tight fabric to the end post by tension bands equally spaced no more than 15 inches (380 mm) apart.~~

~~**3)** Place a tension wire tightened by mechanical means approximately 4 inches (100 mm) from the lower edge of the fence.~~

~~**4)** Securely attach the chain link fabric to the braces, top rail, tension wire, and all intermediate posts at intervals of no more than 1 foot (300 mm) by wire ties or clips.~~

~~**5)** Uniformly smooth the ground surface along the line of the fence for a width of 2 feet (600 mm) so that the fabric will conform to the ground surface.~~

Construct as shown in the contract documents. Uniformly smooth the ground surface along the line of the fence for a width of 2 feet (600 mm) so that the fabric will conform to the ground surface.

2519.04, A, Method of Measurement.

Replace the article with:

Field Fence, Deer Fence, or Chain Link Fence: linear feet (meters) constructed, of the height and type specified, measured along the fence at the bottom of the fabric, excluding the length of gates or fence otherwise measured for payment.

2519.05, A, Basis of Payment.

Replace Articles 1 and 2 with:

1. For the various types of fence: Per linear foot (meter). The quantity for Deer Fence will be the quantity shown in the contract documents.

2. Field Fence and Deer Fence Brace Panels: each. Payment is compensation for brace wires and metal braces.

4154.02, Field Fence.

Replace the title entire article:

FIELD FENCE AND DEER FENCE.

A. Field Fence.

1. Use fabric meeting the requirements of ASTM A 116, Class 3 coating~~, or ASTM A 584~~.

- For Type 47 fence, the fabric design is ASTM Design Number 1047-6-11 grade 60 wire or 1047-6-12 1/2 grade 125 wire.
- For Type 39 fence, the fabric design is ASTM Design Number 939-6-11 grade 60 wire or 939-6-12 1/2 grade 125 wire.

~~B~~**2.** When the type is not designated, furnish one of the above 1047 fabrics.

~~C~~**3.** Fabric may be furnished in lengths greater than 20 rods (100 m).

~~D~~**4.** Use galvanized (as determined by visual inspection) steel rod for splicing fence material.

B. Deer Fence

Use woven wire fence fabric that:

- Meets or exceeds the requirements (excluding wire spacing and fence height) for 12.5 gage wire according to ASTM A 116.
- Has wires spaced horizontally and vertically as shown in the contract documents or closer.

4154.10, A, Steel Posts, Braces, and Rails for Chain Link Fence.

Replace the second sentence and add as a new third sentence:

Posts, braces, and rails of ~~A~~alternate cross sectional shape, material, or protective coating may be used if approved according to Materials I.M. 454.10. Obtain approval prior to commencing construction.

4154.12, A, Gates.

Replace the article:

A. Field Fence and Chain Link Fence.

~~A~~**1.** Ensure all gates provide the width of opening shown in the contract documents. Install a vertical stay in gates more than 6 feet (1.8 m) wide. Where the width of opening specified is:

- 16 feet (5 m) or less, provide a single gate frame.
- More than 16 feet (5 m), provide two gate frames using a drop bar locking device allowing operation as a double gate.

~~B~~**2.** Ensure each gate is furnished complete with necessary hinges, latch, and other special fittings recommended for the type of gate and gate post being installed.

~~C~~**3.** For chain link fence gates, use the pipe size shown in the contract documents or approved by the Engineer. When size is not shown in the contract documents, use:

- 1 1/2 inch (40 mm) nominal diameter pipe for gates 6 feet (1.8 m) wide or more, and
- 1 1/4 inch (30 mm) nominal diameter pipe for gates less than 6 feet (1.8 m) wide.

~~D~~**4.** Use gate fabric similar to that used for the fence. Attach using stretcher bars.

~~E~~**5.** Use adjustable rods to cross truss gates 6 feet (1.8 m) wide or more.

~~F~~**6.** Ensure all materials are galvanized with no less than 0.8 ounce per square foot (244 g/m^2) of surface. Gates for field fence may be painted with a prime coat and an enamel finish coat.

B. Deer Fence.

Furnish the following, galvanized according to Article 4154.10:

1. Tines molded in one piece of steel with no welds.

2. Structural steel tubes with a wall thickness of 0.1875 inches (4.75 mm) and a unit weight of 4.32 pounds per foot (6.43 kg/m).

3. Support plates, hinges, and top braces.

Reason for Revision: Deleted text is information already covered by the Standard Road Plans that Design would like to leave in the standard. Added text is information currently in the Standard Road Plans that Design would like to move to the Specifications. ASTM A 584 has been withdrawn.

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 11**
Submittal Date: 2/25/2011	**Proposed Effective Date:** 10/18/2011	
Article No.: 2528.01, A **Title:** General (Traffic Control)	**Other:**	

Specification Committee Action: Approved with changes.

Deferred:	**Not Approved:**	**Approved Date:** 3/10/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text:

1107.08.

Renumber Articles A through L and Add new Article:

A. The schedule for removal of existing guardrail, warning devices, and other traffic control devices requires Engineer's approval. The Contractor may be required to place temporary warning devices at locations where replacement features are not installed the same day as removal takes place.

~~**B**~~ **C.**

~~**C**~~ **D.**

~~**D**~~ **E.**

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

~~**F**~~ **G.**

~~**G**~~ **H.**

~~**H**~~ **I.**

~~**I**~~ **J.**

~~**J**~~ **K.**

~~**K**~~ **L.**

~~**L**~~ **M.**

Comments: The Specifications Section wondered if Section 1107 was a more applicable location for this new article. The Specifications Section suggested Article 1107.08 and making this the first article.

The Specifications Section reviewed the Standard Specifications for any references to specific articles in Article 1107.08 and did not find any.

Specification Section Recommended Text:

2528.01, A, General.

Add new Article:

10. The schedule for removal of existing guardrail, warning devices, and other traffic control devices requires Engineer's approval. The Contractor may be required to place temporary warning devices at locations where replacement features are not installed the same day as removal takes place.

Comments:

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

2528.01, A, General.

Add as Paragraph 10:

10. The schedule for removal of existing guardrail, warning devices, and other traffic control devices requires the Engineer's approval. The Contractor may be required to place temporary warning devices at certain locations where replacement features are not installed the same day during which such removal take place.

Reason for Revision: The proposed changes consist of language currently contained in Standard Note 251-2. The Office of Design is proposing this language be added (and updated if needed) to the Standard Specifications.

06-22-84 251-2

The contractor is hereby notified that removal of any existing traffic markers, warning devices or guardrail barriers shall be scheduled subject to the approval of the Engineer. The contractor may be required to place temporary warning devices at certain locations where replacement features are not installed the same day during which any such removals take place.

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 12**
Submittal Date: 2/25/11	**Proposed Effective Date:** 10/18/11	
Article No.: 2529.05, B **Title:** CD Joint Assembly, EF Joint Assembly, and CT Joint	**Other:**	

Specification Committee Action: Approved as recommended.

Deferred:	**Not Approved:**	**Approved Date:** 3/10/2011	**Effective Date:** 10/18/2011

Specification Committee Approved Text: See Specification Section Recommended Text.

Comments: This will make EF Joint Assembly replacement consistent with other joint replacements where the subbase patch is paid for.

Specification Section Recommended Text:

2529.05, B, CD Joint Assembly, EF Joint Assembly, and CT Joint.

Delete the second sentence:

~~Payment for Joint Assembly, EF is full compensation for excavation and removal of existing subgrade or subbase material and furnishing and placing Modified Subbase.~~

Comments:

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

2529.05, CD Joint Assembly, EF Joint Assembly, and CT Joint.

Delete the second sentence of the article:

~~Payment for Joint Assembly, EF is full compensation for excavation and removal of existing subgrade or subbase material and furnishing and placing Modified Subbase.~~

Reason for Revision: Removing and placing subbase material will be paid for.

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 13**
Submittal Date: 2/25/2010	**Proposed Effective Date:** 10/18/2011	
Article No.: 2538.03, A **Title:** General	**Other:**	

Specification Committee Action: This revision was not approved.

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

Specification Committee Approved Text:

Comments: The District 6 Office asked if the new article would conflict with Article 2538.03, A, 3, "Perform Clearing and Grubbing according to Section 2101". Article 3 seems to indicate that Clearing and Grubbing is a bid item which is consistent with Article 2538.05, A, 2, which does not indicate that Clearing and Grubbing is included. In practice, clearing and grubbing is not paid for on demolition projects. Contractors do not know which trees will be required to be cleared and grubbed, so typically they would have to bid removing all of them to be safe. The Specifications Section suggested replacing Article 3 with the new article and adding Clearing and Grubbing to Article 2538.05, A, 2, so that it is incidental to the demolition. The District 6 Office would like to have the chance to tabulate the quantity of Clearing and Grubbing prior to bidding the demolition project. The Specifications Section will discuss with the Right-of-Way office having them notify the local RCE office prior to turning in demolition projects so that the RCE office can tabulate the quantity of Clearing and Grubbing.

Specification Section Recommended Text:

2538.03, A, General.

Add new Article:

4. Remove only those trees necessary to facilitate the removal of buildings, debris, and materials.

Comments:

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

2538.03, A, General.

Add as Paragraph 4:

4. Remove only those trees necessary to facilitate the removal of buildings, debris, and materials.

Reason for Revision: The proposed changes consist of language currently contained in Standard Note 271-2 (see below). The Office of Design is proposing this language be added (and updated if needed) to the Standard Specifications.

8-20-85 271-2

Contractor shall remove only those trees as necessary to facilitate the removal of buildings, debris and materials as directed by the engineer.

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 14**
Submittal Date: 2/25/2011	**Proposed Effective Date:** 10/18/2011	
Article No.: 2602.01 **Title:** Description	**Other:**	

Specification Committee Action: This revision was not approved.

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

Specification Committee Approved Text:

Comments: The Office of Construction will review this issue and resubmit at a future date. Design will continue to use the existing note until a specification revision is approved.

Specification Section Recommended Text:

2602.01, Description.

Add new Article:

D. The Contractor shall have labor, equipment, and materials available daily to install and maintain erosion control features included in the contract documents. This may involve seeding, silt fence, rock ditch checks, silt basins, or silt dikes.

Comments:

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

2602.01, Description.

Add as Paragraph D:

D. The Contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features included in the contract documents. This may involve seeding, silt fence, rock ditch checks, silt basins or silt dikes.

Reason for Revision: The proposed changes consist of language currently contained in Standard Note 232-10. The Office of Design is proposing this language be added (and updated if needed) to the Standard Specifications.

10-28-97 232-10

The contractor is expected to have materials, equipment, and labor available on a daily basis to install and maintain erosion control features on the project. This may involve seeding, silt fence, rock ditch checks, silt basins, or silt dikes.

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: Willy Sorenson	**Office:** Traffic and Safety	**Item 15**
Submittal Date: 2011.01.31	**Proposed Effective Date:** 10/18/2011	
Article No.: 4186.09, A, 4 **Title:** Washers (Type A Signs)	**Other:**	

Specification Committee Action: This item was deferred until the April Specification Committee meeting.

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

Specification Committee Approved Text:

Comments: The Office of Traffic and Safety would like some time to review additional changes to the aluminum sign specifications.

Specification Section Recommended Text:

4186.09, A, 4, b.

Replace the Article:

Washers are to be 3/8 inch (9.5 mm) I.D. by ~~1 3/8~~ 1.5 inch (~~35~~ 38 mm) O.D. by 0.125 inch (3 mm).

Comments: The Office of Local Systems asked if neoprene washers present a problem when used with metal posts. The Office of Traffic and Safety did not know of any problems when used with metal posts.

Subsequent to the Specification Committee meeting, the Office of Materials provided a report showing that aluminum metal will react with the copper in wood preservative. The Office of Materials would recommend a stainless steel or hot dipped galvanized washer be used to separate the aluminum sign from treated wood posts. This recommendation would apply to both Type A and Type B signs.

Member's Requested Change:

4. Washers.
a. Use washers made of a quality of material approved by the Engineer.
b. Washers are to be 3/8 inch (9.5 mm) I.D. by ~~1 3/8~~ 1 ½ inch (~~35~~ 38mm) O.D. by 0.125 inch (3mm).
c. A thickness tolerance of ± 0.006 inch (0.15 mm) is allowed.
d. Neoprene washers are to be 3/8 inch (9.5mm) I.D. by 15/16 inch (24mm) O.D. by 1/8 inch (3 mm) thickness. (~~Neoprene washers are required when treated wood posts are used~~). Durometer hardness is to be 60 to 70, with a tolerance of ± 5.

Reason for Revision:

The 1 ½ in washer seems to be much more readily available than the specified 1 3/8 in.

The neoprene has been drying and shrinking with the resultant lack of snugness leading to problems.

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:					

Item 16

The Office of Design would like to discuss the possibility of voiding these standard notes. The red text is responses by District 6 (with agreement by the Central office) to the Office of Design's comments.

12-08-95 222-1

Special care shall be taken when forming at intersections so that the profiles and elevations shown on the cross sections, street return profile sheets, and staking diagram sheets are obtained. Short lengths of forms or flexible forms may be necessary at these locations.

Is this note still needed? If so, could it go into Article 2301.03, C?

No

01-20-84 222-2

To obtain the correct form grades at low points where intakes are located, the contractor must exercise extreme care when paving full width pavements. This may require pouring one half of the pavement at a time or other methods approved by the engineer.

Is this note still needed? If so, could it go into Article 2301.03, F?

No

01-20-84 261-2

Before performing earthwork, tiling, or excavation within three hundred feet of an existing pipeline, the contractor shall notify the pipeline company and the pipeline company shall mark the location of the pipeline as required by Section 479.47 of the Code of Iowa.

The contractor shall exercise all due caution when working in the vicinity of pipelines carrying combustible or toxic materials which are present on this project. Pipeline location shown on the plans represents the best information available at the time of plan preparation.

Is this covered by Article 1107.15? If not, could it go there? At the very least, the Code of Iowa reference needs to be corrected.

yes

07-21-87 262-2

The establishment of temporary railroad crossings which are required by the contractor for construction operations shall be the responsibility of the contractor. The cost due the railroad for any such temporary crossing including replacing contaminated ballast shall be borne by the contractor.

Is this covered by Article 1104.10? If not, could it go there?

yes
