



INDIANA DEPARTMENT OF TRANSPORTATION

STANDARDS COMMITTEE MEETING MINUTES

Driving Indiana's Economic Growth

October 27, 2006

MEMORANDUM

TO: Standards Committee

FROM: Dannie L. Smith, Secretary

RE: Minutes for the October 19, 2006 Standards Committee Meeting

The Standards Committee meeting was called to order by the Chairman at 9:00 a.m. on October 19, 2006 in the N755 Bay Window Conference Room. The meeting was adjourned at 12:25 p.m.

The following members were in attendance:

Mark Miller, Chairman	Dave Andrews, Pvmt. Engineering
Gary Bowser, Crawfordsville Dist.	Bob Cales, Contract Admin.
Ron Heustis, Constr. Management	Jim Keefer, Ft. Wayne Dist.
Dennis Kuchler, State Constr. Engr.	Anne Rearick, Structural Services
Larry Rust, Traffic Control	Ron Walker, Materials Mgmt.
John Wright, Roadway Services	

Also in attendance were the following:

Jeff James, INDOT	Dan Smith, Secretary
Tony Uremovich, INDOT	David Unkefer, FHWA
Paul Berebitsky, ICI	Charlie Alley, Contech
Steve Apple, NES Traffic Safety	Mike Byers, IN-ACPA
Eric Carleton, Ind. Conc. Pipe	John Susong, Rinker Materials
Doug Witten, Contech	

Old Business

Item 15-9	Ms. Rearick	10/19/06	4
724	Structural Expansion Joints	700-149	
Action:	Passed as Revised		

New Business

Item 16-1	Mr. Heustis	10/19/06	9
211	B BORROW FILL AND STRUCTURE BACKFILL	200-69	
Action:	Tabled - November Agenda		

Item 16-2 401.19(c) Action:	Mr. Heustis Smoothness Passed as Submitted	10/19/06 400-16	14
Item 16-3 501.28(d) Action:	Mr. Heustis Smoothness Passed as Revised	10/19/06 500-13	15
Item 16-4 Standard Drawing Action:	Mr. Heustis 503-CCPJ-01 Passed as Revised	10/19/06	16
Item 16-5 Design Manual Action:	Ms. Rearick Figures 63-15A thru 63-15L Passed as Submitted	10/19/06	18
Item 16-6 Policy Change Action:	Ms. Rearick Semi-Integral End Bents Withdrawn - November Agenda	10/19/06	20
Item 16-7 Design Manual Action:	Ms. Rearick Figures 67-1C(1), 67-1C(2) Withdrawn - November Agenda	10/19/06	22
Item 16-8 702.03 Action:	Ms. Rearick Materials Withdrawn - November Agenda	10/19/06 700-17	23
Item 16-9 702.23 Action:	Ms. Rearick Waterproofing Withdrawn - November Agenda	10/19/06 700-42	24
Item 16-10 702.27 Action:	Ms. Rearick Method of Measurement Withdrawn - November Agenda	10/19/06 700-44	25
Item 16-11 702.28 Action:	Ms. Rearick Basis of Payment Withdrawn - November Agenda	10/19/06 700-44	26
Item 16-12 714.02 714.03.1 714.07 714.08 Action:	Mr. Heustis Materials <i>Backfill</i> Method of Measurement Basis of Payment Tabled - November Agenda	10/19/06 700-102 700-103 700-104 700-104	27
Item 16-13 715.02 715.09 715.13 715.14 Action:	Mr. Heustis Materials Backfilling Method of Measurement Basis of Payment Tabled - November Agenda	10/19/06 700-105 700-111 700-113 700-114	29
Item 16-14 717.01 717.02 717.04 717.08 717.09 Action:	Mr. Heustis Description Materials Backfill Method of Measurement Basis of Payment Tabled - November Agenda	10/19/06 700-121 700-121 700-123 700-124 700-124	32

Item 16-15 722.14 Action:	Mr. Heustis Method of Measurement Passed as Submitted	10/19/06 34 700-147
Item 16-16 Standard Drawing Action:	Mr. Rust 801-TCDV-01 Passed as Revised	10/19/06 35
Item 16-17 904.05 Action:	Mr. Heustis Structure Backfill Tabled - November Agenda	10/19/06 37 900-35
Item 16-18 906.02(a)5 Action:	Ms. Rearick <i>Neoprene Sheeting</i> Withdrawn - November Agenda	10/19/06 38 900-40
Item 16-19 906.07 906.07(a) 906.07(b) 906.07(e)(b) Action:	Ms. Rearick Bridge Expansion Joints Type SS Type BS2, BS6, BS8, BS9, and BS11 Type M Passed as Revised	10/19/06 39 900-41 900-41 900-42 900-42
Item 16-20 906.08 Action:	Ms. Rearick <i>High Density Plastic Bearing Strips</i> Withdrawn - November Agenda	10/19/06 43 900-43
Item 16-21 910.08 Action:	Ms. Rearick Blank <i>Drive Pins and Washers For Semi-Integral End Bents</i> Withdrawn	10/19/06 44 900-78

cc: Committee Members (11)
FHWA (4)
ICI Representative (1)

REVISIONS TO 2006 STANDARD SPECIFICATIONS

SECTION 724, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 724 – STRUCTURAL EXPANSION JOINTS

724.01 Description

(a) Structural Expansion Joint

This work shall consist of furnishing and placing, for new construction, structural expansion joints of the type specified, in accordance with ~~the plans and these requirements~~ 105.03.

(b) Replacement of Existing Structural Expansion Joint

This work shall consist of the removal and replacement of an existing structural expansion joint with a joint of the type ~~shown on the plans and~~ specified, in accordance with ~~these requirements~~ 105.03.

(c) Replacement of Existing Structural Expansion Joint Seal

This work shall consist of the replacement of the joint seal in an existing structural expansion joint of the type ~~shown on the plans~~ specified.

MATERIALS

724.02 Materials

Materials shall be in accordance with the following:

Expansion Joint BS	906.07(b)
Concrete, Class C.....	702
Expansion Joint M.....	906.07(c)
Expansion Joint SS.....	906.07(a)
Inorganic Zinc Primer	909.02(a)1
Structural Steel.....	910.02

The joint manufacturer shall prepare and submit four sets of shop drawings showing details of the assembly, manufacturer's specifications, and joint setting data, for approval, prior to manufacture of the joints.

(a) Expansion Joint SS

~~The sliding cover plate required over that portion of expansion joint SS located in a sidewalk shall be the same material as the extrusion and shall be galvanized in accordance with ASTM A 123.~~

The joint assembly shall consist of one of the allowable alternates for this type of joint as shown on the plans. The strip seal shall be sized to accommodate a minimum of 4 in. (100 mm) of movement. The strip seal shall be furnished in one continuous length for the entire limits of the installed joint. Field splicing of the strip seal will not be allowed.

(b) Expansion Joint M

~~This joint shall consist of prefabricated, multiple elastomeric seals, separator beams, and support bars. The structural design of expansion joint M shall be in accordance with the current AASHTO Standard Specifications for Highway Bridges and shall be for the same design loading as the bridge structure at which it is installed, but in no case less than HS 20—44 truck loading and impact. The joint shall be designed to accommodate the movement shown on the plans. The sliding cover plate required over that portion of expansion joint M located in a sidewalk or concrete rail shall be the same material as the extrusion and shall be galvanized in accordance with ASTM A 123.~~

~~The manufacturer of the joint assembly shall prepare shop drawings showing details of the assembly. Three sets of the shop drawings, manufacturer's specifications and joint setting data shall be submitted for approval. This information shall be approved prior to manufacture of the joint.~~

~~The joint assembly shall be manufactured in accordance with the details shown on the shop drawings as prepared by the manufacturer of the joint assembly. The strip seals shall be furnished in one continuous length for the entire limits of the installed joint. Field splicing of the strip seal will not be allowed.~~

~~The modular expansion joint assembly shall be preset by the manufacturer in accordance with the approved shop drawings, joint setting data and specifications. The assembly shall be properly secured for shipping and contain provision for final field adjustment at the time of installation.~~

~~The joint, including anchor assembly, shall be shop fabricated, delivered and installed as a continuous unit for lengths up to 44 ft (13 m). Joints longer than 44 ft (13 m) shall be furnished in continuous units or in appropriate shorter sections as shown on the shop drawings and approved by the Engineer. Joints used in stage construction shall be furnished in sections appropriate to accommodate the work. All joints furnished in sections shall be spliced with welds, with ends prepared for welding in the shop. All welds, both shop and field, shall be in accordance with 711.32.~~

~~All welds in contact with the elastomeric seals shall be ground smooth. Metal surfaces in direct contact with the elastomeric seal shall be clean and properly treated in accordance with the manufacturer's recommendations to provide a high strength bond between elastomeric seal and mating metal surfaces. The elastomeric seals shall be clean and free of foreign materials. All exposed structural steel surfaces, except stainless steel or teflon coated, shall be painted in accordance with 619.~~

~~The method of installation of the joint, including all items incidental to the installation, shall be in accordance with the recommendations of the manufacturer. In all cases, excess sealant shall be removed before it has set. The Contractor shall submit for approval the manufacturer's recommendations for the installation of the joint. This information shall be approved before installation begins.~~

~~The profile of the joint in the roadway area shall conform to the roadway cross section. Where changes in direction are required, such as at curbs or concrete rails, the sections shall be cut to the bevel required to produce the same cross section on each piece being joined. Slider plates shall be provided at curbs, walkways and concrete rails as part of the completed joint assembly.~~

CONSTRUCTION REQUIREMENTS

724.03 General Requirements

The manufacturer shall prepare and submit four sets of detailed shop drawings for approval, prior to the manufacture of joint assemblies SS and M. The shop drawings shall be a minimum of 22 in. by 34 in. (560 mm by 860 mm) in overall size. Expansion joints SS and M shall not be fabricated until the shop drawings are approved. Joint installation and the replacement of existing joints shall be in accordance with the manufacturer's recommendations, the plans, and the approved shop drawings. If there is a dispute between the plans and the approved shop drawings, the approved shop drawings shall govern. *The Contractor shall submit, for approval, the manufacturer's ~~shall furnish a copy of the~~ installation instructions prior to the placement of these joints. The instructions must be approved before installation begins.*

The ~~fabrication and~~ installation of the joint assembly, where changes in joint direction are required, shall be in accordance with the plans and the approved shop drawings. All welding shall be in accordance with 711.32. All splice welds shall develop full strength. All welds which come in contact with the seals shall be ground smooth. All metal surfaces in direct contact with the seal shall be cleaned and properly treated in accordance with the manufacturer's recommendations. ~~All exposed structural steel surfaces, except for polytetrafluoroethylene coated surfaces and stainless steel, shall be shop painted in accordance with 619.11.~~ Lubricants and adhesives shall be used in accordance with the joint manufacturer's recommendations. All excess lubricant and adhesive shall be removed before it has set.

Final adjustment of the assembly shall be made as directed at the time of installation. All movements due to such factors as shrinkage, creep, and midslab deflection shall be accounted for prior to this final adjustment.

~~(a) Expansion Joint SS~~

The joint assembly shall consist of one of the allowable alternates for this type of joint as shown on the plans. A sliding cover plate shall be required over that portion of expansion joint SS located in a sidewalk. The strip seal shall be sized to accommodate a minimum of four inches of movement.

The strip seal shall be furnished in one continuous length for the entire limits of the installed joint. Field splicing of the strip seal will not be permitted. Miter cut, vulcanized shop splices will be required in the strip seal as shown on the plans. The shop vulcanizing of the strip seal splice may be either a hot or cold process so long as the process produces a splice of equal or greater strength than the elastomer.

The ~~extrusion and plate assemblies with anchors shall be shop fabricated, delivered, and installed in one continuous length except as otherwise permitted for crown breaks in the roadway, stage construction, or impractical shipping lengths exceed 46 ft (14 m). Extrusion and plate assemblies with anchors, permitted to be furnished in sections, shall have shop prepared ends for field welding. This work shall be in accordance with 711.03.~~

(b) Expansion Joint BS

~~This type of joint shall be in accordance with the details shown on the plans for the size specified. The joint seal shall be furnished in one continuous length for the limits as shown on the plans. Miter cut, vulcanized shop splices will be required in the joint seal at those locations where a change in direction is required as shown on the plans. Field splicing of the joint seal will not be permitted. The distance from the top of the bridge deck to the joint seal, as shown on the plans, shall be in accordance with the joint manufacturer's recommendations. The distance from the top of the bridge deck to the top of the joint seal, when the joint is at its minimum width, shall be as shown on the plans.~~

(c) Expansion Joint M

~~The joint manufacturer shall submit the material specifications and joint setting data with the shop drawings as required elsewhere herein. This joint setting data shall be applicable to the particular bridge structure at which the joint is to be installed. The joint and anchor assembly shall be prefabricated and preset by the manufacturer in accordance with the approved shop drawings, joint setting data and the manufacturer's specifications. The assembly shall contain provisions for final field adjustment at the time of installation. All movements due to such factors as shrinkage, creep, and midslab deflection shall be properly accounted for prior to this final adjustment. Final adjustment of the assembly shall be made as directed at the time of installation.~~

~~The joint and anchor assembly shall be delivered and installed as a continuous unit for lengths up through 46 ft (14 m). Joints longer than 46 ft (14 m) shall be furnished in continuous units or in appropriate shorter sections as shown on the shop drawings and as approved. Joints used in stage construction shall be furnished in sections appropriate to accommodate the work. All joints furnished in sections shall have shop prepared ends for field splice welds. All work, both shop and field, shall be in accordance with 711.03. A sliding cover plate shall be required over that portion of expansion joint M located in a sidewalk or concrete rail.~~

(d) (a) Replacement of Existing Structural Expansion Joint

The existing joint and adjacent concrete shall be removed to the limits shown on the plans. Additional removal, as directed, may be required to encounter sound concrete adjacent to the joint area. The replacement joint shall be in accordance with the requirements contained herein for the specified type. *Concrete shall be class C in accordance with 702.*

(e) (b) Replacement of Existing Structural Expansion Joint Seal

The existing seal shall be removed in its entirety. The new seal shall be installed in accordance with the requirements contained herein for the specified joint type.

724.04 Method of Measurement

Structural expansion joints will be measured by the linear foot (meter) along and parallel to the plane of the finished joint surface. Replacement of existing structural expansion joints will be measured by the linear foot (meter) along and parallel to the plane of the finished joint surface. Concrete removal and new concrete required for the replacement of existing structural expansion joints will not be measured for payment. Sliding cover plates will not be measured for payment. Replacement of existing structural expansion joint seals will be measured by the linear foot (meter) along and parallel to the plane of the finished seal installation.

REVISIONS TO 2006 STANDARD SPECIFICATIONS

SECTION 724, CONTINUED.

724.05 Basis of Payment

Structural expansion joint will be paid for at the contract unit price per linear foot (meter) of the type specified, complete in place. Replacement of existing structural expansion joint will be paid for at the contract unit price per linear foot (meter) for structural expansion joint, of the type specified, replace, complete in place. Replacement of existing structural expansion joint seals will be paid for at the contract unit price per linear foot (meter) for structural expansion joint seal, of the joint type specified, replace.

Payment will be made under:

Pay Item	Pay Unit Symbol
Structural Expansion Joint, _____ type	LFT (m)
Structural Expansion Joint, _____, Replace type	LFT (m)
Structural Expansion Joint Seal, _____, Replace type	LFT (m)

The cost of sliding cover plates shall be included in the cost of structural expansion joint or structural expansion joint, replace, as applicable. The cost of *reinforcing steel*, concrete removal and ~~new~~ *class C* concrete for the replacement of existing structural expansion joint shall be included in the cost of structural expansion joint, replace.

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N_X

By - Addition or Revision

Frequency Manual

Update Required? Y___ N_X

By - Addition or Revision

Recurring Special Provisions
potentially affected:

724-B-046

724-B-086

Standard Sheets potentially affected:

724-BJTS-02

724-BSSJ-01 thru 09

Motion: Ms. Rearick

Second: Mr. Cales

Ayes: 10

Nays: 0

Action: Passed as revised

Effective: February 2007 Letting

X 2008 Standards Specifications Book

___ 2008 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 211, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 211 – B BORROW ~~FILL~~ AND STRUCTURE BACKFILL

211.01 Description

This work shall consist of backfilling excavated or displaced peat deposits; filling up to designated elevations of spaces excavated for structures and not occupied by permanent work; constructing bridge approach embankment; and filling over structures and over arches between spandrel walls, all with special material.

MATERIALS

211.02 Materials

Materials shall be in accordance with the following.

B Borrow	As Defined*
<i>Coarse Aggregate for Structure Backfill</i>	904
Geotextile	918.02
Structure Backfill	904
<i>Aggregate for Endbent Backfill</i>	904

* The material used for special filling shall be of acceptable quality, free from large or frozen lumps, wood, or other extraneous matter and shall be known as B borrow. It shall consist of suitable sand, gravel, crushed stone, ACBF, GBF, or other approved material. The material shall contain no more than 10% passing the No. 200 (75 µm) sieve and shall be otherwise suitably graded. The use of an essentially one-size material will not be permitted unless approved.

The Contractor has the option of either providing B borrow, *coarse aggregate for structure backfill*, or structure backfill from an established CAPP source, or supplying the material from another source. The Contractor has the following options for supplying B borrow, *coarse aggregate for structure backfill*, or structure backfill from a local site:

- (a) the establishment of a CAPP Producer Yard at the local site in accordance with 917; or
- (b) use a CAPP Certified Aggregate Technician or a consultant on the Department's list of approved Geotechnical Consultants For Gradation Control Testing.

For material excavated within the project limits, gradation control testing will be performed by the Department if the Contractor is directed to use the material as B borrow or as structure backfill.

The frequency of gradation control testing shall be one test per 2000 t (2000 Mg) based on production samples into a stockpile or by over the scales measurement, with a minimum of two tests per contract (one in the beginning and one near the mid-point). The sampling and testing of these materials shall be in accordance with applicable requirements of 904 for fine and coarse aggregates. The Contractor shall advise, in writing, the Engineer and the District Materials and Testing Engineer of the plan to measure the material.

~~When~~ *Unless otherwise specified, where structure backfill is specified, the Contractor may substitute coarse aggregate for structure backfill or flowable backfill in accordance with 213. However, flowable backfill shall not be placed into or through standing water, unless approved in writing.*

CONSTRUCTION REQUIREMENTS

211.03 General Requirements

If B borrow, *coarse aggregate for structure backfill*, or structure backfill is obtained from borrow areas, the items of obtaining the areas, their locations, depths, drainage, and final finish shall be in accordance with 203.

Unless otherwise specified, if excavated material complies with 211.02 and if B borrow, *coarse aggregate for structure backfill*, or structure backfill is required for special filling, the excavated material shall be used as such. If there is a surplus of this material, such surplus shall be used in embankment. The provisions of 203.19 shall apply to placing this material at structures. All surplus in excess of the directed or specified use on the right-of-way shall be disposed of in accordance with 201.03.

If fill or backfill as described in this specification is within embankment limits, and if it is not required that the entire fill or backfill be of B borrow and placed as such, then that portion above the free-water level shall be placed in accordance with applicable provisions of 203 and compacted to the required density.

If borrow is required outside the specified limits of B borrow, material in accordance with the specifications for B borrow may be furnished at the contract unit price for borrow; however, the quantity of borrow measured for payment outside the limits of structure backfill will not exceed the theoretical quantity of B borrow furnished.

Unless otherwise specified, all spaces excavated for and not occupied by bridge abutments and piers, if within embankment limits, shall be backfilled to the original ground line with B borrow, and placed in accordance with 211.04.

Where B borrow, *coarse aggregate for structure backfill*, or structure backfill is required as backfill at culverts, retaining walls, sewers, manholes, catch basins, and other miscellaneous structures, it shall be compacted in accordance with 211.04.

Where specified, aggregate for end bent backfill shall be placed behind end bents and compacted in accordance with 211.04. Prior to placing the aggregate, a geotextile shall be installed in accordance with 616.11.

211.04 Mechanical Compaction

~~Where B borrow or and structure backfill is to shall be compacted by mechanical compaction, it shall, unless otherwise specified, be placed with mechanical tamps or vibrators in accordance with the applicable provisions of 203.23 except, if mechanical tamps or vibrators are used, the material shall be deposited in approximately 6 in. (150 mm) lifts, loose measurements, and each lift compacted to density requirements.~~

Coarse aggregate for structure backfill and aggregate for end bent backfill shall, unless otherwise specified, be deposited in layers not to exceed 12 in. (300 mm) loose

measurement. Each layer shall be mechanically compacted with a compactor having a plate width of 17 in. (425 mm) or larger that delivers 3000 to 9000 lb (13.3 to 40 kN) per blow. Each lift shall be compacted with two passes of the compactor.

211.05 Embankment for Bridges

When special filling is required, the embankment for bridges shall be constructed using B borrow within the specified limits shown on the plans. All embankment construction details specifically set out in this specification for embankment for bridges shall be considered in accordance with the applicable requirements of 203.

At the time B borrow is being placed for approach embankment, a well compacted watertight dam shall be constructed in level lifts, the details of which are shown on the plans. Except as hereinafter specified for material to be used in constructing the enclosing dam, and for growing vegetation, and unless otherwise provided, the material for constructing bridge approach embankment shall be B borrow compacted by mechanical methods. If approach embankment or shoulders are constructed of material not suitable for growing seed or sod, and if one or both of these is required, then such areas shall, unless otherwise specified, be covered with a layer of clay, loam, or other approved material. This layer shall be approximately 1 ft (0.3 m) thick after being compacted into place.

211.06 B Borrow Around Bents

When specified, B borrow shall be placed around all bents falling within the limits of the approach grade as shown on the plans. Before placing, the surface of the ground on which it is to be placed shall be scarified or plowed as directed. The embankment slope shall be 2:1 on the sides and beneath the structure, and shall be 6:1 from the end of the bridge down to the average ground line, or it may be required to complete the approaches back to the existing grade. An enclosing dam and provisions for growing vegetation shall be constructed in accordance with 211.05.

~~211.07 Aggregate For End Bent Backfill~~ Blank

~~When specified, coarse aggregate shall be placed behind end bents as shown on the plans. The material shall be deposited in lifts not to exceed 12 in. (300 mm) loose measurement, and each lift shall be mechanically compacted using a hand held vibratory plate compactor having a plate width of 17 in. (425 mm) or larger that delivers 3000 to 9000 lb (13.3 to 40 kN) per blow. Each lift shall be compacted with two passes of the compactor.~~

~~Prior to placing the aggregate, a geotextile shall be installed in accordance with 616.11.~~

211.08 Spandrel Filling

Unless otherwise specified, spandrel fills for arch structures shall be composed of B borrow. The fill shall be carried up symmetrically in lifts from haunch to crown and simultaneously over all piers, abutments, and arch rings. Compaction shall be in accordance with 211.04.

211.09 Method of Measurement

B borrow, structure backfill, *coarse aggregate for structure backfill*, and aggregate for end bent backfill will be measured by the cubic yard (cubic meter) as computed from the neat line limits shown on the plans, or as adjusted. If cubic yards (cubic meters) are set out as the pay item for B borrow or structure backfill in the Schedule of Pay Items and if neat line limits are not specified for measurement of volume for the material, measurement will be made by the cubic yard (cubic meter) at the loading point in truck beds which have been measured, stenciled, and approved. The B borrow may be weighed and converted to cubic yards (cubic meters) by assuming the weight per cubic foot (mass per cubic meter) to be 90% of the maximum wet density in accordance with AASHTO T 99. The material may be cross sectioned in its original position and again after excavation is complete, and the volume computed by the average end area method. If B borrow is used for backfill in areas where unsuitable material is present or peat excavation has been performed, unless otherwise directed, the B borrow will be cross sectioned, and the volume will be computed by the average end area method.

If the material is to be paid for by the ton (megagram), it will be weighed in accordance with 109.01(b).

If the material comes from a wet source such as below water or a washing plant, and weighing is involved in the method of measurement, there shall be a 12 h drainage period prior to the weighing.

Geotextile will be measured in accordance with 616.12.

211.10 Basis of Payment

The accepted quantities of B borrow will be paid for at the contract unit price per cubic yard (cubic meter) or per ton (megagram) as specified, complete in place.

Structure backfill will be paid for at the contract unit price per cubic yard (cubic meter), based on the neat line limits shown on the plans or as adjusted for authorized changes, provided the material comes from outside the permanent right-of-way. If the Schedule of Pay Items does not contain a pay item for structure backfill and it is required to backfill pipes or culverts within the project limits, a change order will be generated to establish a unit price.

Coarse aggregate for structure backfill will be paid for as structure backfill.

B borrow material placed outside the neat lines will be paid for as borrow when such B borrow eliminates required borrow material. Otherwise, no payment will be made for backfill material placed outside the neat lines.

Aggregate for end bent backfill will be paid for at the contract unit price per cubic yard (cubic meter), based on the neat line limits shown on the plans or as adjusted by authorized changes.

Geotextile will be paid for in accordance with 616.13.

Flowable backfill which is substituted for structure backfill will be paid for as structure backfill.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 211, CONTINUED.

If topsoil, loam, or other suitable material in accordance with 211.05 is used for expediting the growth of seed or sod, it will be paid for at the contract unit price per cubic yard (cubic meter) for borrow, unless otherwise provided.

Payment will be made under the following:

Pay Item	Pay Unit Symbol
Aggregate For End Bent Backfill.....	CYS (m3)
B Borrow.....	CYS (m3)
	TON (Mg)
Structure Backfill	CYS (m3)

No payment will be made under this section for material obtained within the excavation limits of the project if the Contractor is directed to use the material as B borrow or structure backfill in a pipe trench, culvert, construction of an embankment or fill, or if the Contractor uses the material for its own convenience. Material obtained from within the excavation limits of the project and which the Contractor is directed to use as B borrow or structure backfill for other purposes including replacement of undercut areas, support for a MSE wall, and end bent fill will be paid for at the contract unit price of \$5.00 per cubic yard (\$6.50 per cubic meter) for B borrow/structure backfill handling.

The cost of disposal of excavated material shall be included in the cost of the pay items in this section.

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N_X_ By - Addition or Revision
202.08 Pg 200-10	621.13 Pg 600-69 Frequency Manual
202.09 Pg 200-13	714.07 Pg 700-104 Update Required? Y___ N_X_ By - Addition or Revision
202.14 Pg 200-15	714.08 Pg 700-104
203.09 Pg 200-23 (3)	715.02 Pg 700-105
203.16 Pg 200-29	715.04 Pg 700-109
203.27(b) Pg 200-38	715.09 Pg 700-111
203.27(e) Pg 200-39	715.13 Pg 700-113
203.27(f) Pg 200-40 (3)	715.14 Pg 700-114
204.02 Pg 200-44	717.04 Pg 700-123
204.03 Pg 200-45	717.08 Pg 700-124
206.07 Pg 200-55 (2)	717.09 Pg 700-124
212.02 Pg 200-74	718.09 Pg 700-127
	718.10 Pg 700-128
	719.07 Pg 700-130
	719.08 Pg 700-131
	720.03 Pg 700-134 (2)
	802.11 Pg 800-28
	802.12 Pg 800-29
	807.05 Pg 800-50
	904.01 Pg 900-25

Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
714-R-437	211-BFIL-01 thru 05
723-R-282	714-BCEX-01 and 02
717-R-152	715-BKFL-01 thru 12
723-R-282f	

Motion: Mr. Heustis
 Second: Mr. Keefer
 Ayes:
 Nays:

Action: Tabled - November Agenda

Received FHWA Approval? _____

REVISION TO 2006 STANDARD SPECIFICATIONS
 SECTION 401, DELETE LINES 574 THROUGH 574aa.

SECTION 401, AFTER LINE 575, INSERT AS FOLLOWS:

<i>ADJUSTMENT FOR SMOOTHNESS (PI_{0.0}) ZERO BLANKING BAND</i>	
<i>Design Speed Greater Than 45 mph (70 km/hr)</i>	
<i>Profile Index in./0.1 mi. (mm per 0.16 km)</i>	<i>Pay Factor</i>
<i>Over 0.00 to 1.20 in. (Over 0 to 30 mm)</i>	<i>1.06</i>
<i>Over 1.20 to 1.40 in. (Over 30 to 35 mm)</i>	<i>1.05</i>
<i>Over 1.40 to 1.60 in. (Over 35 to 40 mm)</i>	<i>1.04</i>
<i>Over 1.60 to 1.80 in. (Over 40 to 45 mm)</i>	<i>1.03</i>
<i>Over 1.80 to 2.00 in. (Over 45 to 50 mm)</i>	<i>1.02</i>
<i>Over 2.00 to 2.40 in. (Over 50 to 60 mm)</i>	<i>1.01</i>
<i>Over 2.40 to 3.20 in. (Over 60 to 80 mm)</i>	<i>1.00</i>
<i>Over 3.20 to 3.40 in. (Over 80 to 85 mm)</i>	<i>0.96</i>
<i>All pavement with a profile index (PI_{0.0}) greater than 3.40 in. (85 mm) shall be corrected to 3.40 in. (85 mm).</i>	

Other sections containing specific cross references:

- 109.05.1(a), Pg 100-92
- 401.09, Pg 400-6
- 410.19, Pg 400-13

General Instructions to Field Employees

Update Required? Y___ N_X

By - Addition or Revision

Frequency Manual

Update Required? Y___ N_X

By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

None

Motion: Mr. Heustis
 Second: Mr. Cales
 Ayes: 10
 Nays: 0

Action: Passed as submitted
 Effective: January 2007 Letting
X 2008 Standards Specifications Book
 _____ 2008 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS
 SECTION 501, DELETE LINES 571 THROUGH 571aa.

SECTION 501, AFTER LINE 572, INSERT AS FOLLOWS:

<i>SECTION PAY FACTORS FOR SMOOTHNESS (PI_{0.0}) ZERO BLANKING BAND</i>	
<i>Design Speed Greater Than 45 mph (70 km/hr)</i>	
<i>Profile Index in./0.1 mi. (mm/0.16 km)</i>	<i>Pay Factor</i>
<i>Over 0.00 to 1.40 in. (Over 0 to 35 mm)</i>	<i>1.06</i>
<i>Over 1.40 to 1.60 in. (Over 35 to 40 mm)</i>	<i>1.05</i>
<i>Over 1.60 to 1.80 in. (Over 40 to 45 mm)</i>	<i>1.04</i>
<i>Over 1.80 to 2.00 in. (Over 45 to 50 mm)</i>	<i>1.03</i>
<i>Over 2.00 to 2.40 in. (Over 50 to 60 mm)</i>	<i>1.02</i>
<i>Over 2.40 to 2.80 in. (Over 60 to 70 mm)</i>	<i>1.01</i>
<i>Over 2.80 to 3.60 in. (Over 70 to 90 mm)</i>	<i>1.00</i>
<i>Over 3.60 to 3.80 in. (Over 90 to 95 mm)</i>	<i>0.96</i>
<i>All pavements with a Profile Index (PI_{0.0}) greater than 3.80 in. (95 mm) shall be corrected to 3.80 in. (95mm).</i>	

Other sections containing
 specific cross references:
 109.05.1(b), Pg 100-90
 501.27(c), Pg 500-10
 501.27(d), Pg 500-10
 501.28, Pg 500-10

General Instructions to Field Employees
 Update Required? Y___ N_X
 By - Addition or Revision
 Frequency Manual
 Update Required? Y___ N_X
 By - Addition or Revision

Recurring Special Provisions
 potentially affected:

Standard Sheets potentially affected:

None

None

Motion: Mr. Heustis
 Second: Mr. Cales
 Ayes: 10
 Nays: 0

Action: Passed as revised
 Effective: January 2007 Letting
X 2008 Standards Specifications Book
 _____ 2008 Standards Edition

Received FHWA Approval? Yes

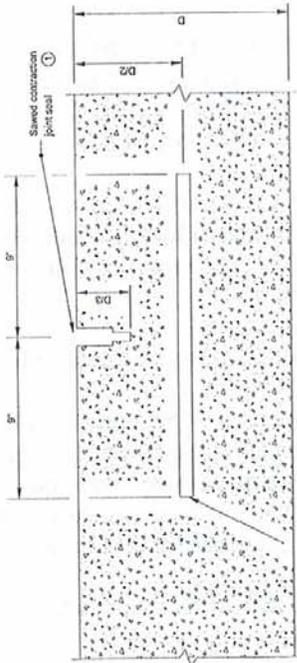
REVISION TO STANDARD DRAWING
503-CCPJ-01, Type D-1 Contraction Joint

This revision proposes the deletion of the word "Minimum" from the table of dowel bar sizes.

Other sections containing specific cross references:	General Instructions to Field Employees Update Required? Y___ N_ <u>X</u> By - Addition or Revision
None	Frequency Manual Update Required? Y___ N_ <u>X</u> By - Addition or Revision
Recurring Special Provisions potentially affected:	Standard Sheets potentially affected:
None	See Above
Motion: Mr. Heustis Second: Mr. Andrewski Ayes: 10 Nays: 0	Action: Passed as revised Effective: ___ 2008 Standards Specifications Book <u>X</u> 2008 Standards Edition
	Received FHWA Approval? <u>Yes</u>

DOWEL BAR SIZES	
Pavement Thickness, D	Minimum Dowel Bar Diameter
Less than 6"	1"
6" through 12"	1 1/4"
Greater than 12"	1 1/2"

SP



Epoxy coating for dowel bars is 1/8" dia. 3/16" min. from edge of PCCP (See also specification for bar diameter)

LONGITUDINAL SECTION THROUGH PCCP

NOTES:

① For Type D-1 contractor list assistant options, see Standard Drawing E 503-CCPJ-06.

INDIANA DEPARTMENT OF TRANSPORTATION

TYPE D-1
CONTRACTION JOINT
MARCH 2005
STANDARD DRAWING NO. E 503-CCPJ-01

INTEGRITY ENGINEERING
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INDIANAPOLIS, IN 46204
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J.W. ROYCE, L.P.E. DESIGNER
J.W. ROYCE, L.P.E. DESIGNER
J.W. ROYCE, L.P.E. DESIGNER
J.W. ROYCE, L.P.E. DESIGNER

EMPIRICAL COMPOSITE PRESTRESSED-CONCRETE BOX BEAMS

This item proposes changes to Indiana Design Manual Part VI, Structural Design, Chapter 63, Prestressed Concrete, Figures 63-15A through 63-15L.

The most notable changes in the beam sections is eliminating the mark-1303 M-shaped stirrup, extending the mark-1301 hooked stirrup's legs such that the hooks are exposed above the beam, and eliminating a column of two prestressing strands. These changes affect the beam and steel dimensions as shown on the markups. The beam properties are also affected as shown.

Markups are included here only for CB 305 x 914 (12 x 36), CB 838 x 914 (33 x 36), CB 305 x 1220 (12 x 48), and CB 838 X 1220 (33 x 48). The other figures are similarly affected. Only the metric-units versions are currently available, so only they are provided here. The English-units versions, once available, will reflect these changes.

The other beam sizes affected are as follows:

CB 432 x 914 (17 x 36)	CB 432 x 1220 (17 x 48)
CB 533 x 914 (21 x 36)	CB 533 x 1220 (21 x 48)
CB 686 x 914 (27 x 36)	CB 686 x 1220 (27 x 48)
CB 1067 x 914 (42 x 36)	CB 1067 x 1220 (42 x 48)

New figures are also proposed, 63-13F(1), which shows details for the placement of mild reinforcement at the end of a 914-mm- (36-in.)-width skewed beam, and 63-15L(1), which shows such details for a 1220-mm- (48-in.)-width skewed beam. Only Fig. 63-15L(1) is included herewith.

This proposal does not affect non-composite box beams, which are those designated WS.

As part of the ASCE-INDOT Structural Subcommittee meetings, there was fabrication input from Chris Hill of Prestressed Services. It was the fabrication industry that initiated these changes since beams based on the current standards cannot be fabricated without violating a number of clearances. The Subcommittee used details that were developed by the Ohio Precasters' Organization as a basis for these changes.

This proposal does not affect the text of Design Manual Chapter 63, nor the Standard Specifications or Standard Drawings.

DESIGN MANUAL CHANGE

Various revisions to Box Beam Details

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N_X

By - Addition or Revision

Frequency Manual

Update Required? Y___ N_X

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

707-BPBF-01 thru 03

Motion: Ms. Rearick
Second: Mr. Andrewski
Ayes: 10
Nays: 0

Action: Passed as submitted

Effective:

___ 2008 Standards Specifications Book

X 2008 Design Manual

Received FHWA Approval? Yes

POLICY CHANGE

Semi-Integral End Bents

Revises Indiana Design Manual Section 67-1.01

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn - November Agenda

 INDIANA DEPARTMENT OF TRANSPORTATION INTER-DEPARTMENT COMMUNICATION <i>Production Management Division – Room N642</i> 
<i>Writer's Direct Line</i> 232-6775

October 5, 2006 DRAFT

DESIGN MEMORANDUM No. 06-__
POLICY CHANGE

TO: All Design, Operations, and District Personnel, and Consultants

FROM: _____
Anthony L. Uremovich
Design Resources Engineer
Production Management Division

SUBJECT: Semi-Integral End Bents

REVISES: *Indiana Design Manual Section 67-1.01*

EFFECTIVE: _____, 2006, Letting

Semi-integral end bents should be considered for each bridge for which integral end bents are not practical or feasible. For a skew angle of greater than 30 deg or an expansion length of 250 ft (80 m) or longer, twisting or racking of the bridge should be investigated.

Indiana Design Manual Figure 67-1C(1) shows details for Method 1, and Figure 67-1C(2) shows details for Method 2. Both figures are attached hereto. All applicable information shown in the figures should be shown on the plans.

Recurring Special Provision 702-B-____, attached hereto and regarding plastic bearing strip, and neoprene sheeting, materials required in the construction of semi-integral end bents, should be called for beginning with the _____, 2007, letting, and through the _____, 2007, letting. Beginning with the September __, 2007, letting, the recurring special provision will be incorporated into the INDOT *Standard Specifications*. The provision will then no longer be required to be called for in specific contracts.

DESIGN MANUAL

Figures 67-1C(1) and 67-1C(2)

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 702, AFTER LINE 43, INSERT AS FOLLOWS:

High Density Plastic Bearing Strips906.08
Neoprene Sheeting906.02(a)5

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 702, AFTER LINE 1270 INSERT AS FOLLOWS:

Where semi-integral end bents are constructed, a neoprene sheet with nylon fabric reinforcement shall be installed as shown on the plans. The neoprene shall be secured to the concrete with drive pins through washers. Other similar galvanized fastening devices, which will not damage either the neoprene or the concrete, may be used subject to approval. The neoprene sheet shall be centered on the joints. Additional fasteners shall be installed as shown on the plans. Laps shall not be incorporated into the vertically installed neoprene sheeting.

Other sections containing
specific cross references:

203.19 Pg 200-32
714.03 Pg 700-103

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 702, AFTER LINE 1374, INSERT AS FOLLOWS:

Neoprene sheeting and all materials required for installation of the sheeting will not be measured for payment.

High density plastic bearing strips will not be measured for payment.

Other sections containing
specific cross references:

704.07 Pg 700-53
714.07 Pg 700-104
717.08 Pg 700-124

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 702, AFTER LINE 1454, INSERT AS FOLLOWS:

The cost of furnishing and installing neoprene sheeting shall be included in the cost of concrete, class A.

The cost of high density plastic bearing strips shall be included in the cost of concrete, class A.

Other sections containing
specific cross references:

206.11 Pg 200-58
704.08 Pg 700-53
714.08 Pg 700-104

General Instructions to Field Employees
Update Required? Y___ N___
By - Addition or Revision

Frequency Manual
Update Required? Y___ N___
By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 714, AFTER LINE 12, INSERT AS FOLLOWS:

Coarse Aggregate for Structure Backfill.....904

SECTION 714, AFTER LINE 37, INSERT AS FOLLOWS:

714.03.1 Backfill

Structure backfill, coarse aggregate for structure backfill, or flowable backfill shall be used as backfill around concrete culverts. Backfill shall be placed in accordance with 211 or 213 as applicable.

SECTION 714, BEGIN LINE 86, INSERT AS FOLLOWS:

714.07 Method of Measurement

Concrete used in retaining walls, culverts, and culvert extensions will be measured in accordance with 702.27. Reinforcing steel will be measured in accordance with 703.07. Precast reinforced concrete box sections and precast reinforced concrete box section extensions will be measured by the linear foot (meter), complete in place. *Common excavation for retaining walls will be measured by the cubic yard (cubic meter) to the neat lines shown on the plans.* Structure backfill and B borrow for retaining walls will be measured in accordance with 211.09 to the neat lines shown on the plans. *Structure backfill and coarse aggregate for structure backfill for drainage structures will be measured in accordance with 211.09. Flowable backfill will be measured in accordance with 213.08.* Field drilled holes will be measured in accordance with 702.27.

714.08 Basis of Payment

The accepted quantities of concrete used in retaining walls, culverts, and culvert extensions will be paid for at the contract unit price per cubic yard (cubic meter) for concrete, of the class specified, structures. Reinforcing steel will be paid for in accordance with 703.08. Precast reinforced concrete box sections will be paid for at the contract unit price per linear foot (meter) for culvert, precast reinforced concrete box sections, of the size specified, complete in place. Precast reinforced concrete box section extensions will be paid for at the contract unit price per linear foot (meter) for culvert extension, precast reinforced concrete box sections, of the size specified, complete in place. *Common excavation for retaining walls will be paid for at the contract unit price per cubic yard (cubic meter) to the neat lines shown on the plans in accordance with 203.28.* Structure backfill and B borrow for retaining walls will be paid for in accordance with 211.10 to the neat lines shown on the plans. *Structure backfill for drainage structures will be paid for in accordance with 211.10. Flowable backfill will be paid for in accordance with 213.09.* Field drilled holes will be paid for in accordance with 702.28.

Coarse aggregate for structure backfill will be paid for as structure backfill.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 714 CONTINUED.

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y__ N__

By - Addition or Revision

Frequency Manual

Update Required? Y__ N__

By - Addition or Revision

Recurring Special Provisions
potentially affected:

714-R-437
717-R-152
723-R-228
723-R-228f

Standard Sheets potentially affected:

211-BFIL-01 thru 05
714-BCEX-01 and 02
715-BKFL-01 thru 12

Motion: Mr.
Second: Mr.
Ayes:
Nays:

Action: Tabled - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 715, AFTER LINE 27, INSERT AS FOLLOWS:

<i>Coarse Aggregate for Structure Backfill</i>	904
Concrete	702
Flowable Backfill	213
<i>Geotextiles</i>	918.03
Reinforcing Steel.....	910.01
Rubber Type Gaskets	906.04
Straps, Hook Bolts, and Nuts	908.12
Structure Backfill	904

The maximum particle size of backfill material for corrugated pipe shall be less than one-half the corrugation depth.

SECTION 715, BEGIN LINE 287, DELETE AND INSERT AS FOLLOWS:

715.09 Backfilling

All plastic pipes, ~~except longitudinal underdrains, which are not fabricated with hydrostatic design basis rated resins and are installed within 5 ft (1.5 m) of mainline or public road approach pavement, paved shoulders, or sidewalks~~ shall be backfilled with *structure backfill, coarse aggregate for structure backfill, or flowable backfill as shown on the plans or as otherwise specified. Structure backfill and coarse aggregate for structure backfill shall be placed in accordance with 211.* Flowable backfill shall be placed in accordance with 213.07. ~~All other pipe installations shall be backfilled as shown on the plans or as directed. Structure backfill shall be placed in accordance with 211.04.~~

Prior to placing flowable backfill, all standing water shall be removed from the trench. If the water cannot be removed from the trench, structure backfill *or coarse aggregate for structure backfill* shall be used in lieu of flowable backfill to an elevation 2 ft (0.6 m) above the groundwater. The remainder of the trench shall be backfilled as shown on the plans.

~~Except where prohibited due to groundwater, flowable backfill may be used as a substitute for structure backfill.~~

~~After the completion of the backfill operation and prior to beginning the paving operation, all plastic pipes, except longitudinal underdrains, not fabricated with hydrostatic design basis rated resins installed within 5 ft (1.5 m) of mainline or public road approach pavement, paved shoulders, or sidewalks~~ *Except for underdrains, all polyethylene, polyvinyl chloride, and circular corrugated metal pipes 36 in. (900 mm) or less in pipe pay item diameter shall be mandrel tested a minimum of 30 days after the completion of backfill operations, or as otherwise directed.* The mandrel shall be a go/no go mandrel with a minimum of nine arms or prongs and a diameter of 5% less than the pipe pay item diameter. If the mandrel does not pass through the pipe when pulled by hand or the mandrel damages the pipe, the deficient pipe shall be removed, replaced, and mandrel tested *a minimum of 30 days* after the ~~flowable~~ backfill has been replaced *or as otherwise directed.* Pipes having a pipe pay item diameter greater than 36 in. (900 mm) will be visually inspected for acceptance. Pipes that cannot be visually inspected shall be video inspected in accordance with 718.07. The Engineer will determine the sections of

pipe to be video inspected. Video inspection shall be conducted a minimum of 30 working days after the completion of the backfill operations or as otherwise directed. Commercial and private drive pipes are excluded from the mandrel testing and video inspection requirements.

Where material other than structure backfill or flowable backfill is permitted and used for backfilling, it shall be of such nature that compacts readily. That portion around and for 6 in. (150 mm) above the top of the pipe shall be free from large stones. This material shall be placed in layers not to exceed 6 in. (150 mm), loose measurement, and each layer compacted thoroughly by means of mechanical tamps. *Where coarse aggregate for structure backfill is used the backfill material shall be wrapped with geotextile as shown on the plans.*

An adequate earth cover, as shown on the plans, shall be placed over the structure before heavy equipment is ~~driven~~ operated over it.

Backfill for slotted drain pipe and slotted vane drain pipe shall consist of class A concrete on both sides of the pipe. During the backfilling and paving operations, the slot shall be covered to prevent infiltration of material into the pipe.

SECTION 715, BEGIN LINE 408, INSERT AS FOLLOWS:

Structure backfill and coarse aggregate for structure backfill will be measured in accordance with 211.09. Flowable backfill will be measured in accordance with 213.08.

Pavement replacement and subbase necessary due to structure replacement under an existing pavement will be measured to the neat lines shown on the plans.

For structures for which the plans permit pipes of differing sizes for either smooth or corrugated interiors, and the corrugated interior alternate is installed, measurement of ~~B-borrow for~~ structure backfill, *coarse aggregate for structure backfill*, or flowable ~~mortar~~ backfill will be based on the neat line dimensions shown on the plans for the smooth interior alternate.

Grated box end sections will be measured per each for the specified type, surface slope, and pipe size.

Video inspection for pipe will be measured by the linear foot (meter) as determined by the electronic equipment.

Geotextile used to wrap backfill material will not be measured.

SECTION 715, AFTER LINE 439, INSERT AS FOLLOWS:

Structure backfill will be paid for in accordance with 211.10. If utilized as a substitute for structure backfill, flowable backfill will be paid for as structure backfill. Otherwise, flowable backfill will be paid for in accordance with 213.09.

Coarse aggregate for structure backfill will be paid for as structure backfill.

SECTION 715, AFTER LINE 461, INSERT AS FOLLOWS:

Video inspections for pipe will be paid for at the contract unit price per linear foot (meter) completed.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 715, AFTER LINE 562, INSERT AS FOLLOWS:

Video Inspection for Pipe..... LFT (m)

SECTION 715, AFTER LINE 592, INSERT AS FOLLOWS:

Geotextile used to wrap the backfill material will not be paid for separately. The cost of the geotextile shall be included in the cost of structure backfill.

The cost of providing the video inspection equipment, technician, videotapes, or computer disks shall be included in the cost of the video inspection for pipe. No additional payment will be made for repair or removal of pipes, backfill, the video re-inspection of the repairs or replaced pipe, and all other work associated with the repair or removal or unaccepted pipes.

Other Section Containing specific cross references

- 205.02, Pg. 200-49
- 205.06, Pg. 200-51
- 205.07, Pg. 200-52
- 717.02, Pg. 700-121
- 717.08, Pg. 700-124
- 717.09, Pg 700-124
- 718.09, Pg 700-127
- 718.10, Pg 700-127
- 719.02, Pg 700-129
- 719.04, Pg 700-130
- 719.05, Pg 700-130
- 719.07, Pg 700-130
- 719.08, Pg 700-130

Other sections containing specific cross references:

See Above

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions potentially affected:

- 714-R-437
- 717-R-152
- 723-R-282
- 723-R-282f

Standard Sheets potentially affected:

- 211-BFIL-01 thru 05
- 714-BCEX-01 and 02
- 715-BKFL-01 thru 12

Motion: Mr.
Second: Mr.
Ayes:
Nays:

Action: Tabled - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 717, BEGIN LINE 3, DELETE AND INSERT AS FOLLOWS:

717.01 Description

This work shall consist of furnishing and placing structural plate pipe, pipe-arches, or arches in accordance with ~~these specifications and in reasonably close conformance with the lines, grades, and details shown on the plans or as directed~~ 105.03.

SECTION 717, AFTER LINE 11, INSERT AS FOLLOWS

Coarse Aggregate for Structure Backfill.....904

SECTION 717, BEGIN LINE 81, DELETE AND INSERT AS FOLLOWS:

717.04 Backfill

~~Where shown on the plans or when directed,~~ *All structural plate pipe and pipe arches shall be backfilled with structure backfill, coarse aggregate for structure backfill, or flowable backfill, shall be used in backfilling around pipe and pipe arch structures or as otherwise directed. Arch structure backfill shall be structure backfill or coarse aggregate for structure backfill. The amount of camber on the invert of the pipe or pipe-arch shall be varied to suit the height of fill and supporting soil, except the camber grade shall not be above level. The finished backfill grade shall be as shown on the plans. Structure backfill and coarse aggregate for structure backfill shall be placed in accordance with 211. Flowable backfill shall be placed in accordance with 213.*

~~After the pipe or pipe-arch has been assembled and is in place, backfill material shall be placed in accordance with 211.04 or 213.07.~~

An adequate earth cover shall be provided over the structure, as shown on the plans, before heavy construction equipment is ~~driven~~ *operated* over it. This earth cover shall be free of stones.

~~When~~ *Where* backfilling at arches before headwalls are placed, the material shall first be placed midway between the ends of the arch, forming as narrow a ramp as possible, until the top of the arch is reached. The ramp shall be built up evenly on both sides and the backfilling material compacted as it is placed. After both ramps have been built to the top of the arch, the remainder of the backfill shall be deposited in both directions from the center to the ends and evenly on both sides of the arch.

SECTION 717, BEGIN LINE 144, INSERT AS FOLLOWS:

Structure backfill *and coarse aggregate for structure backfill* will be measured in accordance with 211.09. Flowable backfill used for backfill will be measured in accordance with 213.08.

SECTION 717, LINE 160, INSERT AS FOLLOWS:

Flowable backfill will be paid for in accordance with 213.09. *Coarse aggregate for structure backfill will be paid for as structure backfill.*

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 717 CONTINUED.

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

714-R-437
717-R-152
723-R-282
723-R-282f

Standard Sheets potentially affected:

211-BFIL-01 thru 05
714-BCEX-01 and 02
715-BKFL-01 thru 12

Motion: Mr.
Second: Mr.
Ayes:
Nays:

Action: Tabled - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 722, BEGIN LINE 495,DELETE AND INSERT AS FOLLOWS:

Full depth patching will be measured by the square ~~yard~~ foot (square meter). The patching material used in full depth patching will not be measured for payment.

Partial depth patching will be measured by the square ~~yard~~ foot (square meter).
The

The passage of this item will bring the Method of Measurement and the Basis of Payment into agreement.

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N_X

By - Addition or Revision

Frequency Manual

Update Required? Y___ N_X

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: Mr. Heustis

Second: Mr. Cales

Ayes: 10

Nays: 0

Action: Passed as submitted

Effective:

X 2008 Standards Specifications Book

___ 2008 Standards Edition

Received FHWA Approval? Yes

REVISION TO STANDARD DRAWING

801-TCDV-01, Channelizing Devices

This revision proposes two changes:

1. Adding orange reflective material to tubular markers; and
2. Adding 42" cones.

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N_X

By - Addition or Revision

Frequency Manual

Update Required? Y___ N_X

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

See Above

Motion: Mr. Rust

Second: Mr. Cales

Ayes: 10

Nays: 0

Action: Passed as revised

Effective:

___ 2008 Standards Specifications Book

X 2008 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 904, BEGIN LINE 360, DELETE AND INSERT AS FOLLOWS:

904.05 Structure Backfill

The material shall be of acceptable quality, free from large or frozen lumps, wood, or other extraneous matter. It shall consist of suitable sand, gravel, crushed stone, ACBF, or GBF. ~~Coarse aggregate used for backfilling end bents on beam structures shall be No. 8 or No. 9 crushed stone or BF slag, class D or higher, in accordance with 904.~~ Structure backfill shall be in accordance with one of the following gradations.

SECTION 904, AFTER LINE 367, INSERT AS FOLLOWS:

Coarse aggregate for structure backfill shall be crushed stone and shall meet one of the following gradations.

SIEVE SIZES	NOMINAL SIZES AND PERCENTS PASSING			
	PB8	PB9	PB11	PB12
2 in. (50 mm)				
1 1/2 in (37.5 mm)				
1 in. (25.0 mm)	100			
3/4 in. (19.0 mm)	75-100	100		
1/2 in. (12.5 mm)	40-90	60-85	100	100
No.4 (4.75 mm)	0-25	0-25	0-35	50-80
No. 8 (2.36 mm)	0-15	0-15	0-20	0-35
No. 30 (600 μm)	--	---	---	0-10
No. 200 (75 μm)	0-10	0-10	0-10	0-8
Decant				

Other sections containing specific cross references:
 204.02, Pg 200-44, 211.02, Pg 200-70
 714.02, Pg 700-102, 715.02, Pg 700-106
 717.02, Pg 700-121, 718.02, Pg 700-125
 719.02. Pg 700-129

General Instructions to Field Employees
 Update Required? Y___ N___
 By - Addition or Revision
 Frequency Manual
 Update Required? Y___ N___
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Recurring Special Provisions potentially affected:

Standard Sheets potentially affected:

714-R-437
 717-R-152
 723-R-282
 723-R-282f

211-BFIL-01 thru 05
 714-BCEX-01 and 02
 715-BKFL-01 thru 12

Motion: Mr.
 Second: Mr.
 Ayes:
 Nays:

Action: Tabled - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 906, AFTER LINE 97, INSERT AS FOLLOWS:

5. Neoprene Sheeting

Neoprene sheeting shall be general purpose, heavy duty with nylon fabric reinforcement. The neoprene sheeting shall be in accordance with the test requirements as follows:

<i>Test Description</i>	<i>ASTM Method</i>	<i>Requirement</i>
<i>Thickness</i>	<i>D 751</i>	<i>0.10 in. ± 0.01 in. (25 mm ± 0.3 mm)</i>
<i>Minimum Breaking Strength, Grab, W x F</i>	<i>D 751</i>	<i>700 lb x 700 lb (3120 N x 3120 N)</i>
<i>Minimum Adhesion, 1 in. wide Strip, 2 in. min. Pull</i>	<i>D 751</i>	<i>6 lb min. (27 N min.)</i>
<i>Minimum Burst Strength (Mullen)</i>	<i>D 751</i>	<i>1.40 ksi min. (9.65 MPa min.)</i>
<i>Heat Aging, 70 h, Temp. 212°F (100°C), 180 deg Bend, without cracking</i>	<i>D 2136</i>	<i>No Cracking of Coating</i>
<i>Low-Temperature Brittleness, 1 h at -40°F (-40°C), Bend Around 1/4 in. (6 mm) Mandrel</i>	<i>D 2136</i>	<i>No Cracking of Coating</i>

Other sections containing specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 906, BEGIN LINE 173, DELETE AND INSERT AS FOLLOWS:

906.07 Bridge Expansion Joints

Joints, including anchor assemblies, shall be shop fabricated, delivered and installed as a continuous unit for lengths up to 46 ft (14 m). Joints longer than 46 ft (14 m) shall be furnished in continuous units or in appropriate shorter sections as shown on the shop drawings and approved by the Engineer. Joints used in stage construction shall be furnished in sections appropriate to accommodate the work. All joints furnished in sections shall be spliced with welds, with ends prepared for welding in the shop. All welds shall be in accordance with 711.32.

The profile of the joint in the roadway area shall conform to the roadway cross section. Where changes in direction are required, such as at curbs or concrete rails, the sections shall be cut to the bevel required to produce the same cross section on each piece being joined. Slider plates shall be provided at curbs, walkways, and concrete rails as part of the completed joint assembly. The slider plate shall be the same material as the extrusion and shall be galvanized in accordance with ASTM A 123.

All welds in contact with the elastomeric seals shall be ground smooth. Metal surfaces in direct contact with the elastomeric seal shall be cleaned and treated in accordance with the manufacturer's recommendations to provide a high strength bond between the elastomeric seal and mating metal surfaces. The elastomeric seals shall be clean and free of foreign materials. All exposed structural steel surfaces, except stainless steel or polytetrafluoroethylene coated, shall be shop painted in accordance with 619.

(a) Type SS

Structural steel shall be in accordance with ASTM A 36 (A 36M), A 588 (A 588M), A 570 (A 570M), A 242 (A 242M), or Merchant Quality 1010, 1020.

Sealant and grouts shall be in accordance with ~~Federal Specifications TT-S-00230~~ or as recommended by the manufacturer's recommendations.

The elastomer shall be neoprene in accordance with ASTM D 5973 except that the physical requirements in Table 1 for low temperature recovery, high temperature recovery, and compression-deflection properties will not apply.

The strip seal shall be furnished in one continuous length for the entire limits of the installed joint. Field splicing of the strip seal will not be permitted. Miter cut, vulcanized shop splices will be required in the strip seal. The shop vulcanization of the strip seal splice may be either a hot or cold process so long as the process produces a splice of equal or greater strength than the elastomer.

The structural steel and polyurethane sealant shall be covered by a type C certification, and the elastomer shall be covered by a type B certification, both in accordance with 916.

(b) Type BS2, BS6, BS8, BS9, and BS11

Materials shall be in accordance with ASTM D 3542. The dimension and tolerance requirements shall be as specified in the following table for the type or types of joints specified.

EXPANSION JOINT TYPE	SEAL WIDTH	SEAL HEIGHT	JOINT WIDTH @ INSTALLATION
BS2	1 5/8 in. (41 mm) ± 1/8 in. (± 3 mm)	1 5/8 in. (41 mm) ± 1/8 in. (± 3 mm)	7/8 in. (22 mm) + 1/8 in., - 1/4 in. (+ 3 mm, - 6 mm)
BS6	2 1/2 in. (64 mm) - 0, + 1/4 in. (- 0, + 6 mm)	2 1/2 in. (64 mm) + 3/8, - 1/8 in. (+ 10 mm, - 3 mm)	1 1/2 in. (38 mm) + 1/8 in., - 1/4 in. (+ 3 mm, - 6 mm)
BS8	3 in. (76 mm) - 0, + 1/4 in. (- 0, + 6 mm)	3 1/4 in. (83 mm) ± 1/4 in. (± 6 mm)	1 7/8 in. (48 mm) + 1/8 in., - 1/4 in. (+ 3 mm, - 6 mm)
BS9	4 in. (100 mm) - 0, + 1/4 in. (- 0, + 6 mm)	4 3/8 in. (111 mm) ± 3/8 in. (± 10 mm)	2 1/2 in. (64 mm) + 1.8 in., - 1/4 in. (+ 3 mm, - 6 mm)
BS11	5 in. (127 mm) - 0, + 1/4 in. (- 0, + 6 mm)	5 1/8 in. (128 mm) ± 1/4 in. (± 6 mm)	3 in. (75 mm) + 1/8 in., - 1/4 in. (+ 3 mm, - 6 mm)

The material shall be covered by a type A certification in accordance with 916 and sampling of the material will be required. Satisfactory test results shall be obtained from the samples prior to the installation of the seal. The lubricant adhesive shall be covered by a type C certification in accordance with 916.

(e) (b) Type M

This joint shall consist of prefabricated multiple elastomeric seals, separator beams, and support bars. The structural design of the joint shall be in accordance with AASHTO Standard Specifications for Highway Bridges and shall be for the same design loading as the bridge structure at which it is to be installed, but not less than HS 20-44 truck loading and impact. The joint shall be designed to accommodate the movement shown on the plans.

The joint assembly shall be preset by the manufacturer in accordance with the approved shop drawings, joint setting data and specifications. The assembly shall be properly secured for shipping and contain provision for final field adjustment at the time of installation. The manufacturer shall furnish a copy of the installation instructions prior to the placement of these joints.

Structural steel shall be in accordance with ASTM A 36 (A 36M), A 570 (A 570M), A 242 (A 242M), A 588 (A 588M), or Merchant Quality 1010, 1020 in accordance with ASTM A 576.

Sealant and grout shall be in accordance with ~~Federal Specification TT 00230 or as recommended by the joint manufacturer's recommendation.~~

Elastomer shall be neoprene in accordance with ASTM D 3542.

The structural steel and sealant shall be covered by a type C certification and the elastomer by a type B certification, both in accordance with 916.

Bearings above and below the support bar shall be a nylon or urethane compound with polytetrafluorethylene riding surfaces. All components of the system shall be accessible to periodic inspection and component replacement if necessary.

The elastomer seals shall be in accordance with the requirements as follows:

1. *be held in place by compressive forces throughout the normal limits of joint movement,*
- ~~1.~~ 2. be supplied and installed in one piece;
- ~~2.~~ 3. have corner locked edges for a watertight fit;
- ~~3.~~ 4. not be any part of the load bearing riding surface;
- ~~4.~~ 5. be installed using seal lubricant-adhesive or be mechanically clamped in position to produce a watertight seal;
- ~~5.~~ 6. have a shape which promotes self removal of foreign material during normal joint operation;
- ~~6.~~ 7. be recessed 1/2 in. (13 mm) below the riding surface throughout the normal limits of joint movement;
- ~~7.~~ 8. be held in position by the separator beams;
- ~~8.~~ 9. have a hollow box shape for joints utilizing urethane equilibrium control spacers or a strip seal configuration for joints using a mechanical linkage to maintain equidistant separator beam spacing. *The joint shall have a maximum opening of 3 in. (75 mm) per seal.*

The separator beams shall be in accordance with the requirements as follows:

1. provide the riding surface across the joint;
2. have an extruded or machined shape suitable to hold the seals;
3. be stable against tipping, tilting, or lifting during application of traffic loads by use of a suitable shape and connection to the support bar;
4. be supported individually on their own independent support bars;
5. maintain equidistant spacing through use of suitable urethane equilibrium type control spacers to *counter the compressive forces of the seals* or through a positive horizontal mechanical linkage or proportioning bar.

The support bars shall be in accordance with the requirements as follows:

1. incorporate stainless *steel* sliding surfaces to minimize resistance to joint movements;
2. be supported above, below, and laterally as required to prevent lifting, to transmit bearing loads, and to maintain positioning of the bar.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 906, CONTINUED.

All support bar boxes and joint housings shall have top, bottom, and sides made of steel plate with 1/2 in. (13 mm) minimum thickness. Anchorages shall consist of looped No. 5 reinforcing bars welded to 1/2 in. (13 mm) steel plates spaced at 9 in. (230 mm) centers. ~~No unwelded~~ *Non-welded* steel to steel contact will *not* be permitted.

The sliding cover plate required over that portion of expansion joint M located in a sidewalk or concrete rail shall be the same material as the extrusion and shall be galvanized in accordance with ASTM A 123.

Other sections containing
specific cross references:

724.02, Pg. 700-150

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By - Addition or Revision

Recurring Special Provisions
potentially affected:

724-B-046

724-B-086

Standard Sheets potentially affected:

724-BJTS-02

724-BSSJ-01 thru 09

Motion: Ms. Rearick

Second: Mr. Cales

Ayes: 10

Nays: 0

Action: Passed as revised

Effective:

X 2008 Standards Specifications Book

___ 2008 Standards Edition

Received FHWA Approval? Yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 906, AFTER LINE 255, INSERT AS FOLLOWS:

906.08 High Density Plastic Bearing Strips

The strip shall be of multipolymer plastic and shall have the physical properties as follows:

- (a) *Compressive strength shall be 8000 to 9000 psi (55.2 to 62.1 kPa).*
- (b) *The material shall be nontoxic.*
- (c) *The cold-flow characteristic at 1000 psi and 73°F (6.9 kPa and 22°C) shall be 1%.*
- (d) *The coefficient of linear expansion shall be 3.0×10^{-5} in./in./°C to 5.0×10^{-5} in./in./°C (7.62×10^{-4} mm/mm/°C to 1.27×10^{-3} mm/mm/°C).*

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn - November Agenda

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 910, BEGIN LINE 452, DELETE AND INSERT AS FOLLOWS:

910.08 ~~Blank~~ Drive Pins and Washers for Semi-Integral End Bents

Drive pins and washers used to attach neoprene sheeting to concrete surfaces shall be coated steel in accordance with AISI 1060-1065. The minimum tensile strength shall be 270,000 psi (1862 MPa). The minimum shear strength shall be 162,000 psi (1117 MPa). The coating shall be mechanical zinc plate in accordance with ASTM B 695. The minimum thickness shall be 0.0002 in. (0.00005 mm).

Other sections containing
specific cross references:

None

General Instructions to Field Employees

Update Required? Y___ N___

By - Addition or Revision

Frequency Manual

Update Required? Y___ N___

By - Addition or Revision

Recurring Special Provisions
potentially affected:

None

Standard Sheets potentially affected:

None

Motion: M
Second: M
Ayes:
Nays:

Action: Withdrawn