INDIANA DEPARTMENT OF TRANSPORTATION

STANDARDS COMMITTEE MEETING MINUTES

Driving Indiana's Economic Growth

September 27, 2006

MEMORANDUM

TO: Standards Committee

FROM: Dannie L. Smith, Secretary

RE: Minutes for the September 21, 2006 Standards Committee Meeting

The Standards Committee meeting was called to order by the Chairman at 9:00 a.m. on September 21, 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 Andrewski, Pvmt. Engineering
Ron Heustis, Constr. Management	Jim Keefer, Ft. Wayne Dist.
Dennis Kuchler, State Constr. Engr.	Ann Rearick, Structural Services
Larry Rust, Traffic Control	Ron Walker, Materials Mgmt.
John Wright, Roadway Services	

Also in attendance were the following:

Dan Smith, Secretary	Lee Gallivan, FHWA
Ed Ratulowski, FHWA	Paul Berebitsky, ICI
Barry Bauer, ADS	Mike Pluimer, Plastic Pipe Inst.
Joe Rogers, ADS	

A presentation was made by the representatives from ADS and the Plastic Pipe Institute concerning the Department's specifications for plastic pipe and more specifically about the Department's requirement for the backfill requirements for non HDB-rated resin pipe. They feel the requirement for flowable backfill is not necessary.

The following items were considered and acted upon.

Old Business

Item 13-3	Ms. Rearick	9/21/06	4
729	*Patching Non-Deck Areas of Bridge Structures*	700-158	
Action:	Withdrawn		

New Business

Item 15-1	Mr. Kuchler	9/21/06	7
101.03	~~Blank~~ *Auxiliary Lane*	100-3	
Action:	Withdrawn		
Item 15-2	Mr. Heustis	9/21/06	8
205.06	Method of Measurement	200-51	
Action:	Passed as revised		
Item 15-3	Mr. Heustis	9/21/06	9
507.04(a)	Sawing, Cleaning and Sealing	500-45	
Action:	Passed as submitted		
Item 15-3a	Mr. Heustis	9/21/06	10
503.03(a)	Type D-1 Contraction Joint	500-28	
Action:	Passed as developed @ meeting		
Item 15-4	Mr. Walker	9/21/06	11
604.02	Materials	600-14	
Action:	Passed as revised		
Item 15-5	Mr. Andrewski	9/21/06	12
Standard Drawings	610-DRIV-01 thru 04 610-DRIV-06, 08, 12, 13, 15, Thru 19		
Action:	Passed as revised		
Item 15-5a	Mr. Andrewski	9/21/06	27
610.05	Method of Measurement	600-33	
610.06	Basis of Payment	600-33	
Action:	Passed as developed @ meeting		
Item 15-6	Mr. Heustis	9/21/06	28
715.02	Materials	700-105	
Action:	Passed as submitted		
Item 15-7	Mr. Heustis	9/21/06	29
715.02*(k)*	*Pipe End Sections*	700-108	
Action:	Passed as revised		
Item 15-8	Mr. Heustis	9/21/06	30
715.06	Joining Pipe	700-110	
Action:	Passed as submitted		
Item 15-9	Ms. Rearick	9/21/06	31
724.02(b)	Expansion Joint M	700-150	
724.03	General Requirements	700-150	
Action:	Withdrawn		
Item 15-10	Mr. Rust	9/21/06	33
801.15(c)	Temporary Worksite Speed Limit Sign Assembly	800-15	
Action:	Passed as revised		
Item 15-11	Mr. Walker	9/21/06	34
905.05	Detectable Warning Elements	900-37	
Action:	Passed as submitted		

Item 15-12	Mr. Heustis	9/21/06	35
908.02	Corrugated Steel Pipe and Pipe Arches	900-49	
Action:	Passed as submitted		
Item 15-13	Mr. Walker	9/21/06	36
918.02	Geotextile for Use Under Riprap	900-142	
Action:	Passed as submitted		
Item 15-13a	Mr. Walker	9/21/06	37
918.03	Geotextile for Use With Underdrains	900-143	
Action:	Passed as developed @ meeting		
Item 15-14	Mr. Wright	9/21/06	38
Design Manual	Section 14-1.02(02) and Section 17-3.02(01)		
Action:	Passed as revised		
Item 15-15	Mr. Cales	9/21/06	41
107.01	Laws To Be Observed	100-56	
108.10	Default and Termination of Contract	100-80	
Action:	Passed as developed @ meeting		

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

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 729, BEGIN LINE 1, INSERT AS FOLLOWS:

SECTION 726 – BLANK

SECTION 727 – BLANK

SECTION 728 – BLANK

SECTION 729 – PATCHING NON-DECK AREAS OF BRIDGE STRUCTURES

729.01 Description

This work shall consist of the removal of existing concrete from outside the deck area of a bridge structure and replacing such concrete with new mortar or concrete in accordance with 105.03.

729.02 Materials

Materials shall be in accordance with the following:

Concrete, Class A.....702.02
Epoxy Resin Adhesive 909.11

The cement shall be portland cement type I.

Mortar shall consist of one part portland cement to two parts No. 23 sand.

An epoxy resin adhesive shall be selected from the Department's list of approved Non-Vapor Barrier Type Bonding Agents.

CONSTRUCTION REQUIREMENTS

729.03 Construction Requirements

(a) Concrete Removal

Areas of unsound concrete to be removed will be marked by the Engineer. Removal of the unsound concrete shall be performed by handchipping. Handchipping tools may be hand or mechanically driven. Jack hammers shall not be heavier than nominal 45 lb (20.5 kg) class and chipping hammers shall not be heavier than nominal 15 lb (6.8 kg) class. Only chipping hammers shall be used when removing concrete within 1 in. (25 mm) of reinforcing steel. Mechanically driven tools shall be operated at a maximum angle of 45 degrees from the concrete surface. Power-driven hand tools for removal by hand chipping will be permitted, as set out above.

Regardless of the method of removal, the removal operation shall be stopped if it is determined that sound concrete is being removed. Appropriate recalibration, or changes in equipment and methods shall be performed prior to resuming the removal operation.

Where the bond between the existing concrete and reinforcing steel has been destroyed, the concrete adjacent to the steel shall be removed to a minimum clearance of

1 in. (25 mm) around the entire periphery of the exposed steel. Exposed reinforcing steel shall not be damaged by the removal operation. All damaged reinforcing steel shall be replaced or repaired as directed.

A saw cut shall be made perpendicular to the existing concrete surface at least 1 in. (25 mm) outside the spalled area before the mortar or concrete is placed. The cut shall be a minimum 1 in. (25 mm) deep or to the top of reinforcing steel, whichever is less.

(b) Patching

After the concrete removal operation is completed and just prior to placing the patches, all patch areas shall be sandblasted to expose fine and coarse aggregates and to remove unsound concrete or laitance layers from the surface. Exposed reinforcing steel and the concrete under and around the exposed steel shall be cleaned by sandblasting. The surface shall then be cleaned free of all dust, chips, water, and foreign material to the extent necessary to produce a firm, solid surface for adherence of the new concrete. The final surface shall be free of oil, grease and water. The air lines for sandblasting and air cleaning shall be equipped with oil traps.

The surfaces of the prepared cavities and all the exposed reinforcing steel within the cavities shall be coated with an epoxy resin adhesive in accordance with 722.06(a)1 prior to placement of the patching materials.

Cavities of 1/2 in. (13 mm) in depth or greater shall be filled with concrete. Cavities less than 1/2 in. (13 mm) in depth, shall be filled with mortar.

The concrete patches shall be finished to closely match the texture and finish of the abutting existing concrete.

The concrete patches shall be cured in accordance with 702.22.

729.04 Method of Measurement

Patching of non-deck areas of bridges will be measured by the square foot (square meter). Measurements will be recorded for payment as follows:

(a) Patches greater than 0 and less than or equal to 0.5 ft^2 (0.05 m^2) will be recorded as 0.5 ft^2 (0.05 m^2).

(b) Patches greater than 0.5 ft^2 (0.05 m^2) and less than or equal to 1 ft^2 (0.1 m^2) will be recorded as 1.0 ft^2 (0.1 m^2).

(c) Patches greater than 1.0 ft^2 (0.1 m^2) will be recorded as the actual measurement of the patch to the nearest 0.1 ft^2 (0.01 m^2).

729.05 Basis of Payment

This work will be paid for at the contract unit price per square foot (square meter) for concrete, A, patching.

Payment will be made under:

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 729, CONTINUED.

Pay Item	***Pay Unit Symbol***
Concrete, A, Patching	*SFT (m^2)*

The areas where the patching exceeds an average of 4 in. (100 mm) in depth will be paid for at a price to be determined by multiplying the contract unit price for concrete, A, patching by the following factors:

(a) For portions thereof whose average depth is greater than 4 in. (1.00 mm) but not more than 6 in. (150 mm) 1.25

(b) For portions thereof whose average depth is greater than 6 in. (150 mm) but not more than 8 in. (200 mm) 1.50

(c) For portions thereof whose average depth is greater than 8 in. (200 mm) but not more than 10 in. (250 mm) 1.75

(d) For portions thereof whose average depth is greater than 10 in. (250 mm) but not more than 12 in. (300 mm) 2.00

(e) For all portions thereof whose average depth is greater than 12 in. (300 mm), the work shall be done as extra work. Payment will be made in accordance with 104.03.

The cost of removing the existing concrete, furnishing, hauling, and placing all materials, preparing the surface, and all necessary incidentals shall be included in the cost of concrete, A, patching.

The cost of replacing or repairing damaged reinforcing steel shall be included in the cost of concrete, A, patching.

Other sections containing specific cross references:

None

Recurring Special Provisions potentially affected:

729-B-009

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

Standard Sheets potentially affected:

None

Action: Withdrawn - Task group consisting of Rearick, Reilman, Walker, Zander, Snyder, Carleton, Gallivan, and Smith assigned to re-write.

Item No. 15-1
Mr. Kuchler
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 101, LINE 114,DELETE AND INSERT AS FOLLOWS:

101.03 ~~Blank~~ *Auxiliary Lane*

An auxiliary lane is defined as the portion of the roadway adjoining the traveled way for parking, speed change, right & left turning movements, storage for turning, weaving, truck climbing, passing blisters and other purposes supplementary to through-traffic movement.

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

Action: Withdrawn Smith to do word search for “mainline” and “travel way” and Kuchler, Andrewski, Gallivan, and Smith to re-write.

Item No. 15-2
Mr. Heustis
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 205, BEGIN LINE 134, INSERT AS FOLLOWS:

205.06 Method of Measurement

Silt fence and straw bale check dams will be measured by the linear foot (meter). *Straw bale check dams will be measured once per dam parallel to the dam and at the widest point.* Sediment basins will be measured by the units installed complete in place. Revetment riprap check dams, sediment traps, and splashpads will be measured by the ton (megagram). *The measurement of temporary revetment riprap check dams will include the revetment riprap and the No. 5 stone.* Measurement of sediment traps will include the riprap and the No. 8 filter stone. Temporary mulching will be measured by the ton (megagram).

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:

205-R-528

Standard Sheets potentially affected:

205-TECD-02

Motion: Mr. Heustis
Second: Mr. Kuchler
Ayes: 8
Nays: 0

Action: Passed as revised
Effective: January 2008 Letting
2008 Specifications Book

Received FHWA Approval? _yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 507, BEGIN LINE 68, DELETE AND INSERT AS FOLLOWS:

(a) Sawing, Cleaning and Sealing

Joints in PCCP shall be sawed, cleaned and sealed when specified. Air compressors shall be capable of producing a minimum air pressure of 100 psi (690 kPa). Water blasting shall not be ~~utilized~~ *applied under pressure which may damage the concrete*. The existing joints shall be sawed to the width and depth as shown on the plans. Slurry or saw residue remaining in the slot shall be immediately flushed *with water*. Traffic may be allowed on the PCCP for up to 7 calendar days after the saw cutting prior to sealing.

Joints shall be sealed with joint sealing materials in accordance with the sealant manufacturer's recommendations. Transverse joints shall be sealed with silicone sealant or preformed ~~electrometric~~ *elastomeric* joint sealant. Longitudinal joints shall be sealed with an asphalt rubber or silicone sealants.

Application of asphalt materials shall be completed without covering existing pavement markings. When traffic is to be maintained within the limits of the section, temporary traffic control measures in accordance with 801 shall be used. Treated areas shall not be opened to traffic until the asphalt material has set.

Other sections containing specific cross references: 507.06, Pg. 500-46	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. Andrewski Ayes: 8 Nays: 0	Action: Passed as submitted Effective: January 2008 Letting 2008 Specifications Book Received FHWA Approval? _yes

Item No. 15-3a
Mr. Heustis
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 503, BEGIN LINE 56, INSERT AS FOLLOWS:

The second saw cut shall be made after the concrete has sufficiently cured, but before opening the pavement to non-construction traffic. Slurry or saw residue remaining in the slot shall be immediately flushed *with water*. Construction traffic shall not be allowed on the PCCP after the second saw cut until the joint is sealed.

Other sections containing specific cross references:

503.03(c), Pg. 500-29
506.10(b), Pg. 500-42
507.08, Pg 500-47

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. Kuchler
Ayes: 8
Nays: 0

Action: Passed as developed @ meeting
Effective – 2008 Specifications

Received FHWA Approval? Yes

Item No. 15-4
Mr. Walker
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 604, BEGIN LINE 25, DELETE AS FOLLOWS:

The detectable warning elements shall be set in *a* thin set latex modified mortar ~~in accordance with ANSI A108.1 or as~~ recommended by the element manufacturer for outdoor use for adhering brick to concrete.

A type A certification in accordance with 916 for ~~detectable warning elements and~~ thin set latex modified mortar shall be furnished prior to use of the materials.

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. Walker Second: Mr. Keefer Ayes: 8 Nays: 0	Action: Passed as revised Effective: January 2008 Letting 2008 Specifications Book Received FHWA Approval? _yes

Item No. 15-5
Mr. Andrewski
Date: 9/21/06

REVISION TO STANDARD DRAWINGS

610-DRIV-01, Class I Drive
610-FRIV-02, Class II Drive
610-DRIV-03, Class III Drive
610-DRIV-04, Class IV Drive
610-DRIV-06, Class VI Drive Plan and Sections
610-DRIV-08, Class I and Class III Drive Grade Profiles
610-DRIV-12, Class VII Drive Profile Grade & Detail A
610-DRIV-13, Drives General Notes and Legend
610-DRIV-15, Class VII Drive Plan and Profile Grade
610-DRIV-16, Class VII Drive Joint Placement and Corners
610-DRIV-17, Private Drive Crossovers Plans
610-DRIV-18, Private Drive Crossovers Cross Sections
610-DRIV-19, Commercial Drive Crossovers Plans

The above listed standard drawings are being revised to reflect thicker pavement sections.

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

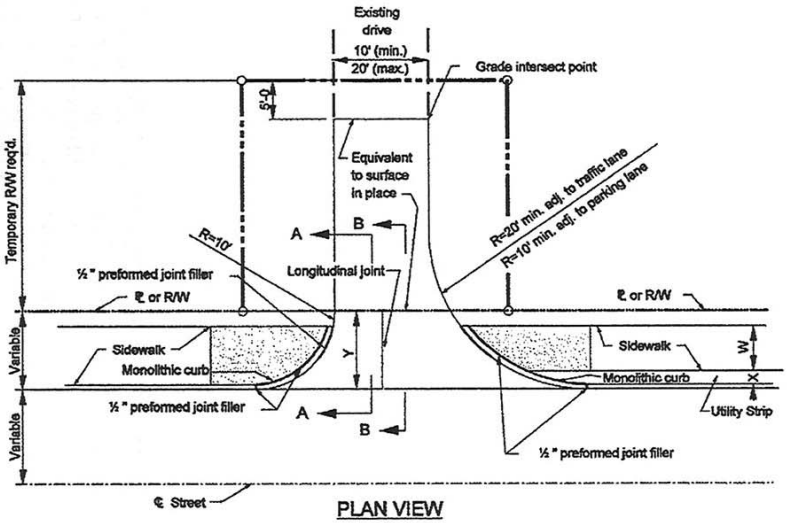
Standard Sheets potentially affected:

See Above

Motion: Mr. Andrewski
Second: Mr. Keefer
Ayes: 7
Nays: 0

Action: Passed as revised
Effective: 2008 Standards Edition

Received FHWA Approval? _yes



PLAN VIEW

NOTES:

1. See Standard Drawing E 610-DRIV-13 for General Notes.
2. See Standard Drawings E 604-SDWK-01 or E 604-SDWK-02 for sidewalk elevation transition details.
3. See Standard Drawings E 610-DRIV-03 for concrete curb and gutter connection detail.
4. See Standard Drawings E 610-DRIV-07 for PCCP joint placement detail.
5. Class I drive pavement shall be 6 in. PCCP ~~over 6 in. of compacted aggregate base.~~ on dense graded ~~Subbase~~ on Subgrade treatment Type III A.
6. See Standard Drawings E 610-DRIV-08 for section A-A and B-B.

LEGEND

W = Width of sidewalk
X = Distance between back face of curb and sidewalk.
Y = Distance from front face of curb to ℄ or R/W

Sidewalk elevation transition.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I DRIVE

MARCH 2006

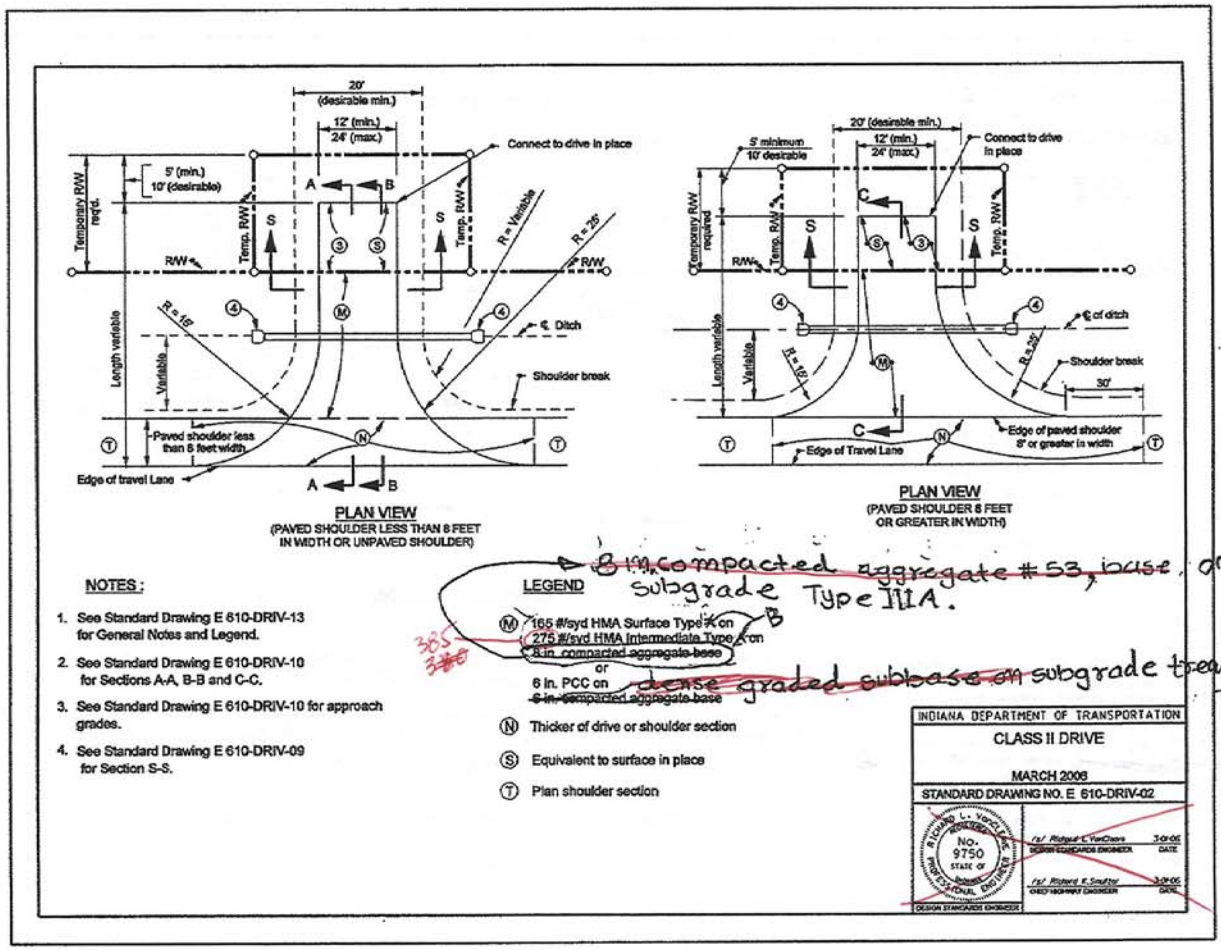
STANDARD DRAWING NO. E 610-DRIV-01

RICHARD L. VANCLEAVE — REGISTERED — NO. 9750 — STATE OF INDIANA — PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Richard L. VanCleave 3-01-06
DESIGN STANDARDS ENGINEER DATE

/s/ Richard K. Sautter 3-01-06
CHIEF HIGHWAY ENGINEER DATE



NOTES :

1. See Standard Drawing E 610-DRIV-13 for General Notes and Legend.
2. See Standard Drawing E 610-DRIV-10 for Sections A-A, B-B and C-C.
3. See Standard Drawing E 610-DRIV-10 for approach grades.
4. See Standard Drawing E 610-DRIV-09 for Section S-S.

LEGEND

(M) 165 #/syd HMA Surface Type ~~A~~ on
275 #/syd HMA Intermediate Type ~~A~~ on
~~8 in. compacted aggregate base~~
or
6 in. PCC on
~~6 in. compacted aggregate base~~

~~8 in. compacted aggregate #53, base, on subgrade Type IIIA.~~

~~dense graded subbase on subgrade treatment~~ Type IIIA.

(N) Thicker of drive or shoulder section

(S) Equivalent to surface in place

(T) Plan shoulder section

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II DRIVE

MARCH 2006

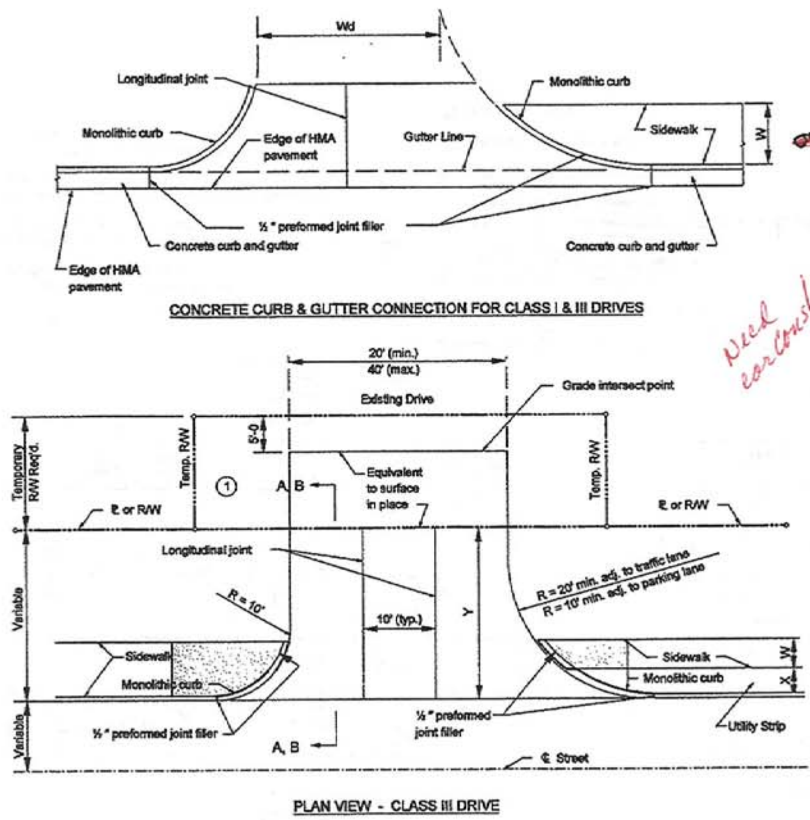
STANDARD DRAWING NO. E 610-DRIV-02

RICHARD L. VANCLEAVE No. 9750 STATE OF Indiana PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Richard L VanCleave 3-07-06
DESIGN STANDARDS ENGINEER DATE

/s/ Richard K Snyder 3-07-06
CHIEF HIGHWAY ENGINEER DATE



NOTES:

① See Standard Drawing E 610-DRIV-06 for Section A-A, and Section B-B.

2. For Class III drive, ~~PCCP~~ 9 in PCCP pavement for driveways shall be placed ~~over 8 in of compacted aggregate base~~ ~~on dense graded subbase~~ on subgrade treatment Type IIIA.

3. See Standard Drawings E 604-SDWK-01 or E 604-SDWK-02 for side walk elevation transition details, or Standard Drawing E 604-SWCR-09 for sidewalk curb ramp details if the drive is signalized.

LEGEND

W = Width of sidewalk

Wd = Driveway width

X = Distance between back face of curb and sidewalk

Y = Distance from front face of curb to ℄ or R/W

Sidewalk elevation transition.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS III DRIVE

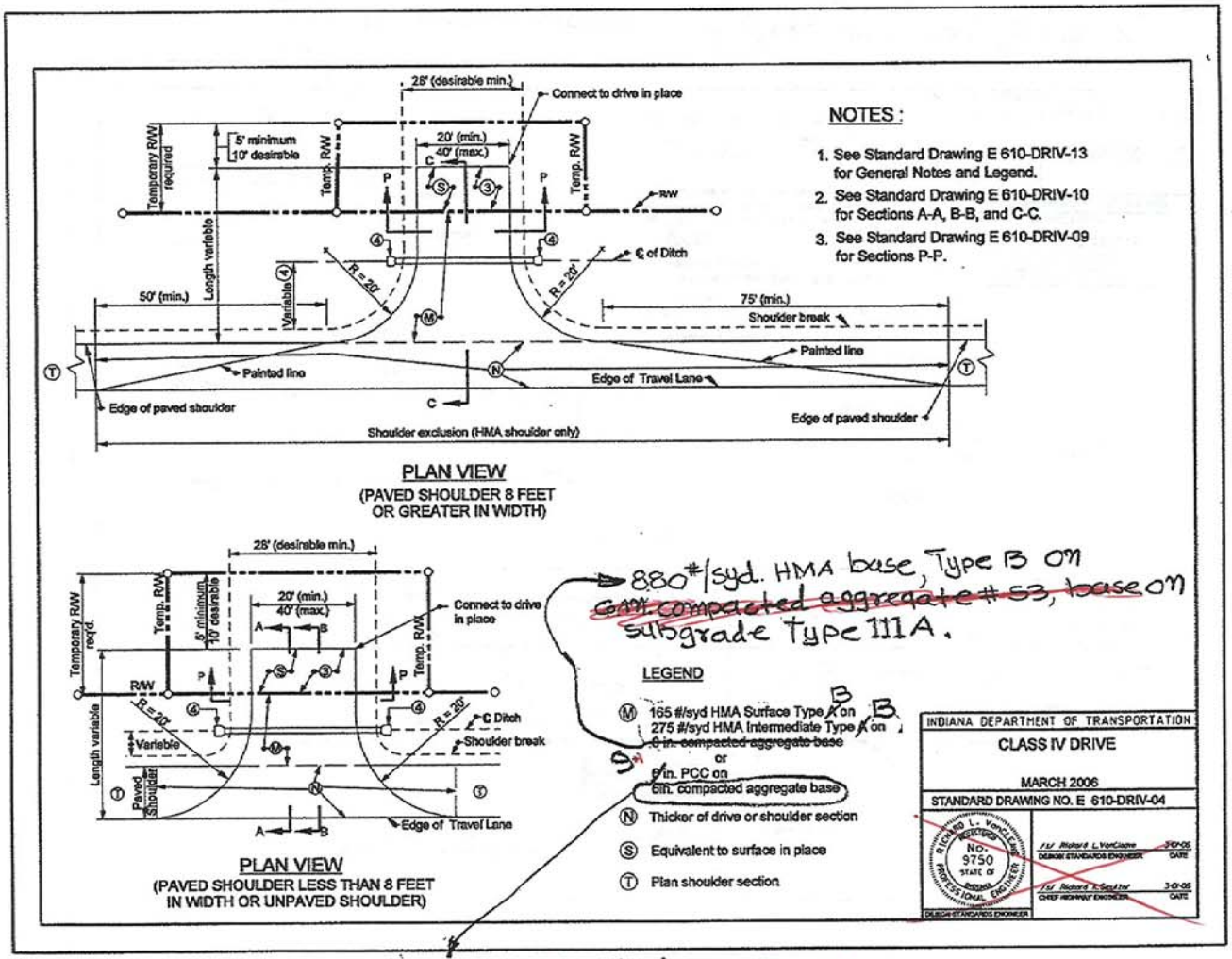
MARCH 2006

STANDARD DRAWING NO. E 610-DRIV-03

Richard L. VanCleave, Registered No. 9750, State of Indiana, Professional Engineer

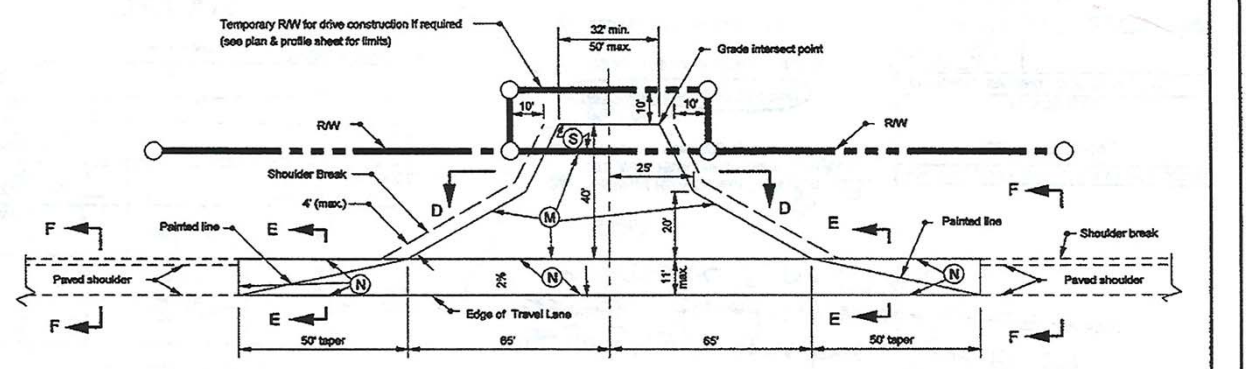
/s/ Richard L. VanCleave 3-01-06
DESIGN STANDARDS ENGINEER DATE

/s/ Richard K. Smutzer 3-01-06
CHIEF HIGHWAY ENGINEER DATE

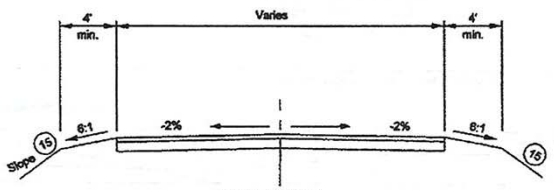


880 #/syd. HMA base, Type B on ~~6in. compacted aggregate #53, base on~~ subgrade Type III A.

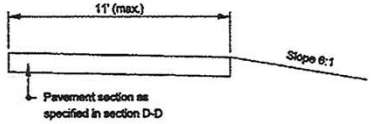
~~dense graded subbase on~~ subgrade treatment Type III A.



PLAN VIEW



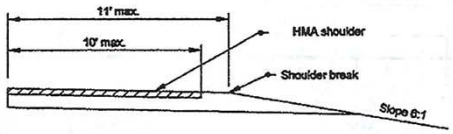
SECTION D-D



SECTION E-E

NOTES:

1. See Standard Drawing E 610-DRIV-11 for profile grades.
2. See Standard Drawing E 610-DRIV-13 for General Notes and Legend.
3. Class VI Drive accommodates a WB-65 (IDV) design vehicle with a 45 ft turning radius.



SECTION F-F

LEGEND

(M) 165 #/syd HMA Surface 9.5 mm, Type A on
550 #/syd HMA Intermediate 19 mm, Type A on
12 in compacted aggregate base #53
or
6 in PCCP on
6 in compacted aggregate base #53

(N) Thicker of drive or shoulder section

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VI DRIVE
PLAN AND SECTIONS

MARCH 2006

STANDARD DRAWING NO. E 610-DRIV-06

RICHARD L. VONDRAN REGISTERED PROFESSIONAL ENGINEER NO. 9750 STATE OF Indiana

/s/ Richard L. Vondran — 3-01-06
DESIGN STANDARDS ENGINEER — DATE

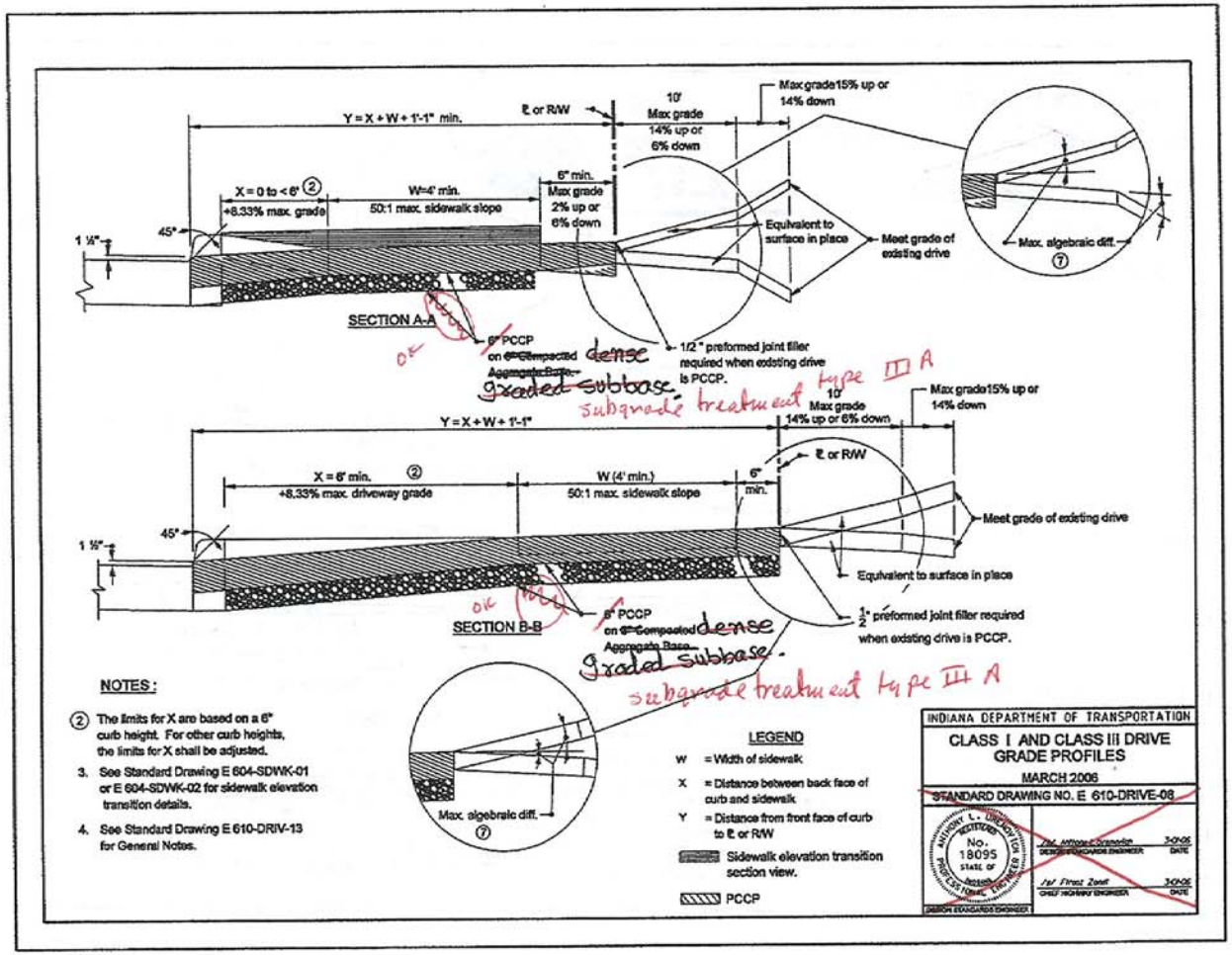
/s/ Richard K. Snutzer — 3-01-06
CHIEF HIGHWAY ENGINEER — DATE

DESIGN STANDARDS ENGINEER

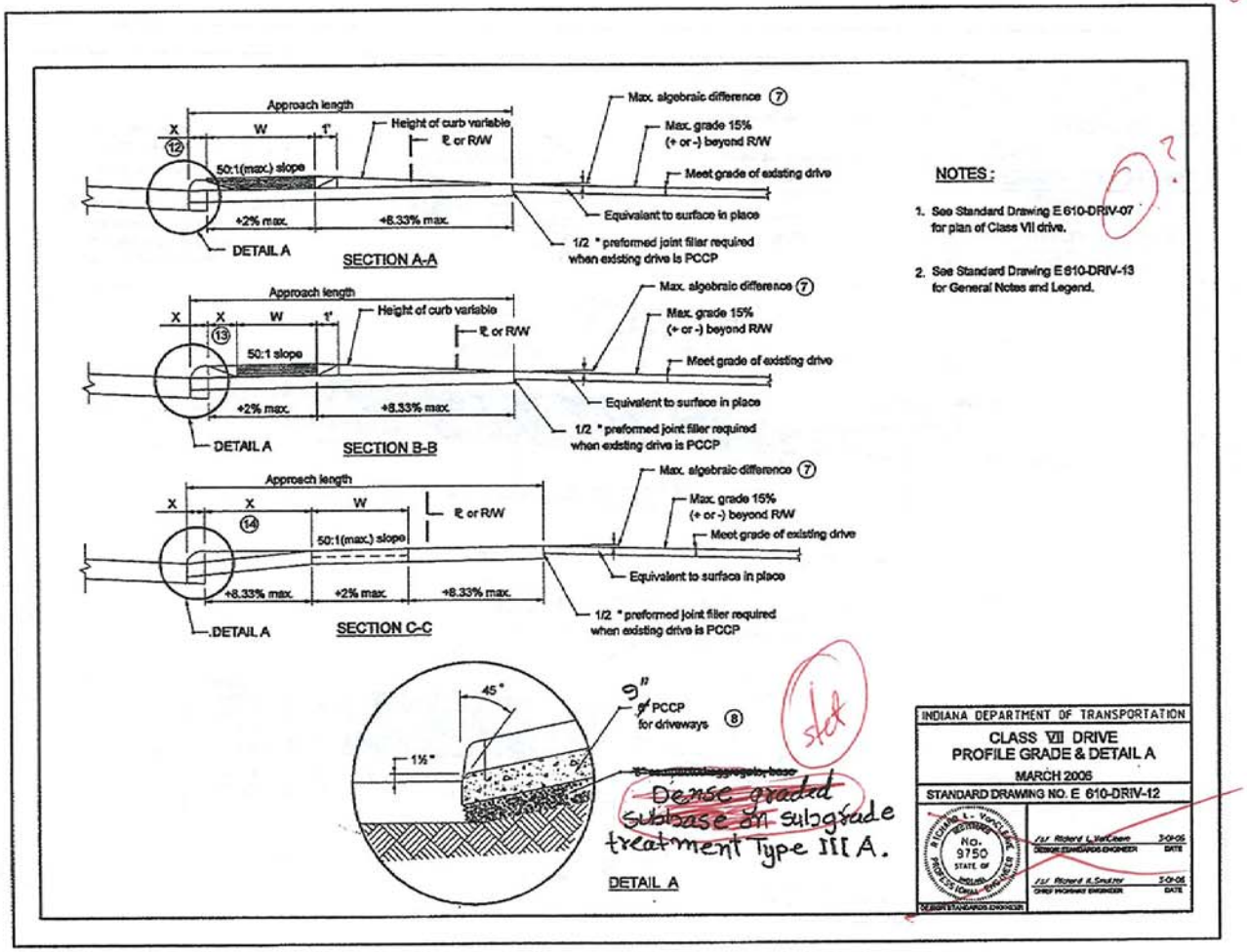
ok as is

dense graded subbase on subgrade treatment Type IIIA.

880 #/syd HMA base, Type B on 6 IN. compacted aggregate #53, base on subgrade Type IIIA.


Y = X + W + 1'-1" min.
℄ or R/W
10' Max grade 14% up or 6% down
Max grade15% up or 14% down
X = 0 to < 6" ②
+8.33% max. grade
W=4' min.
50:1 max. sidewalk slope
6" min.
Max grade 2% up or 6% down
1 ¼"
45°
Equivalent to surface in place
Meet grade of existing drive
Max. algebraic diff. ⑦
SECTION A-A
6" PCCP on 6" Compacted Aggregate Base
or
dense graded subbase
subgrade treatment type III A
1/2" preformed joint filler required when existing drive is PCCP.
Y = X + W + 1'-1"
X = 6" min. ②
+8.33% max. driveway grade
W (4' min.)
50:1 max. sidewalk slope
6" min.
1 ½"
SECTION B-B
6" PCCP on 6" Compacted Aggregate Base
dense graded subbase
subgrade treatment type III A
½" preformed joint filler required when existing drive is PCCP.
NOTES:
② The limits for X are based on a 6" curb height. For other curb heights, the limits for X shall be adjusted.
3. See Standard Drawing E 604-SDWK-01 or E 604-SDWK-02 for sidewalk elevation transition details.
4. See Standard Drawing E 610-DRIV-13 for General Notes.
LEGEND
W = Width of sidewalk
X = Distance between back face of curb and sidewalk
Y = Distance from front face of curb to ℄ or R/W
Sidewalk elevation transition section view.
PCCP
INDIANA DEPARTMENT OF TRANSPORTATION
CLASS I AND CLASS III DRIVE GRADE PROFILES
MARCH 2006
STANDARD DRAWING NO. E 610-DRIVE-08
No. 18095
DESIGN STANDARDS ENGINEER
CHIEF HIGHWAY ENGINEER

this sheet is duplicated on 15 & 16



slot

Dense graded subbase on subgrade treatment Type III A.

what is type VII?

GENERAL NOTES:

(1) These notes apply to Standard Drawings E 610-DRIV-01 through 12.

2. If a PCCP approach is ~~designed for a~~ class II or class III IV ~~drive~~, the radii shall be constructed using ear construction type C as detailed on Standard Drawing E 605-ERCN-02.

(3) When the maximum approach grade of ±10% does not meet the grade of the existing drive before the R/W line, the approach grade of ±10% shall extend beyond the R/W to the point of intersection with the existing driveway grade. Construction beyond the R/W line shall be done in temporary R/W.

(4) The appropriate pipe end treatment should be provided for pipes located either inside the clear zone or outside the clear zone.

(7) The maximum algebraic difference in grades shall not exceed 8% for crested grade nor 12% for sagged grades for Types I and III drives, nor 11% for crested grade and 14% for sagged grades for Types II, IV, and V drives.

(8) The minimum driveway pavement sections for ~~Class VI and Class VII~~ III, IV, VI and VII Drives have been designed for ~~200~~ 400 trucks per day. If the truck traffic count is greater than ~~200~~ 400 per day, the required pavement section shall be as shown elsewhere on the plans.

(11) Hc - earth cover over culvert or pipe shall be 1 ft or greater.

(12) Curb ramp type H, as shown on Standard Drawing E 604-SWCR-09, when the approach is signalized, or a sidewalk elevation transition as shown on Standard Drawing E 604-SDWK-02 shall be used when sidewalk is adjacent to curb.

(13) When X is equal to or greater than 2 ft but less than 6 ft, either a curb ramp type G as shown on Standard Drawing E 604-SWCR-09, when the approach is signalized, or a sidewalk elevation transition as shown on Standard Drawing E 604-SDWK-01 shall be used.

(14) When X is equal to or greater than 6 ft, no curb ramp or sidewalk elevation transition is required unless the curb height is in excess of 6 inches.

(15) Driveway embankment slope within the clear zone for a road functionally classified as follows shall be:
a.) 6:1 for an arterial or a high speed (50 mph or greater design speed) collector.
b.) 4:1 for a local road or a low speed (less that 50 mph design speed) collector.

(11) See Standard Drawing E 610-DRIV-14 for shoulder treatment at driveways.

LEGEND

(5) ½ in. preformed joint filler
(6) Monolithic curb
(9) Longitudinal joint
(F) Concrete sidewalk
(S) For type and thickness equivalent to surface in place, see plans.

X = Distance between face of curb and sidewalk
W = Width of sidewalk
PCCP
Curb ramp, if signalized, or typically, sidewalk elevation transition.
Curb ramp or sidewalk elevation transition section view.

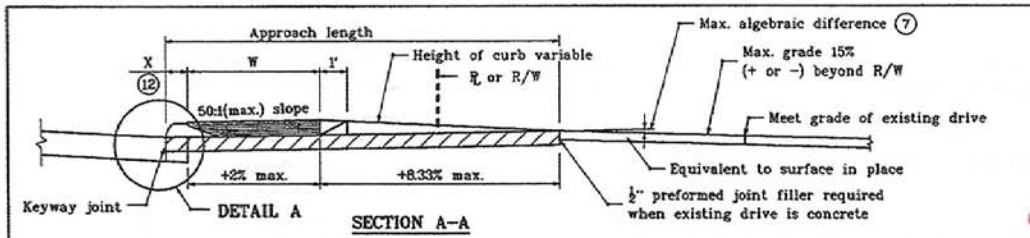
INDIANA DEPARTMENT OF TRANSPORTATION

DRIVES
GENERAL NOTES AND LEGEND
MARCH 2006

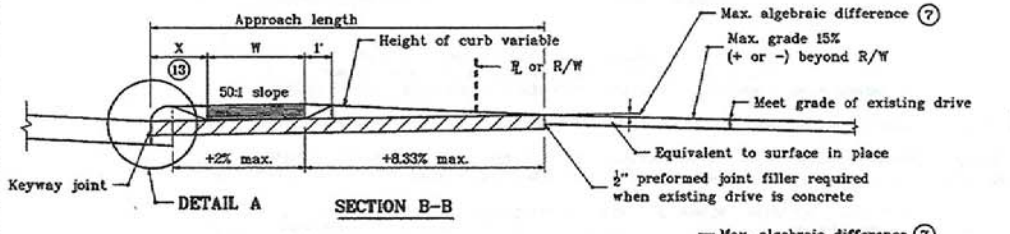
STANDARD DRAWING NO. E 610-DRIV-13

No. 9750 STATE OF INDIANA PROFESSIONAL ENGINEER

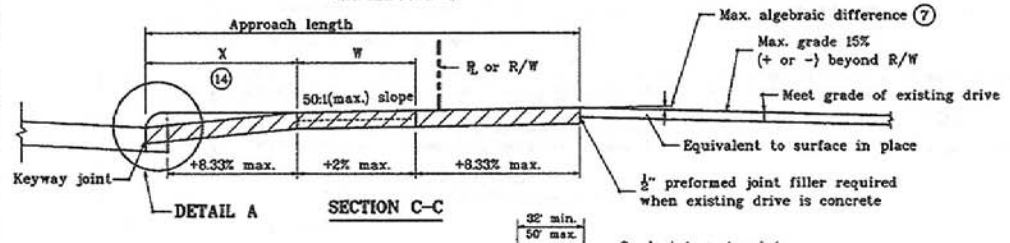
/s/ Richard L. VanCleave — DESIGN STANDARDS ENGINEER — 3-01-06 DATE
/s/ Richard K. Smutzer — CHIEF HIGHWAY ENGINEER — 3-01-06 DATE



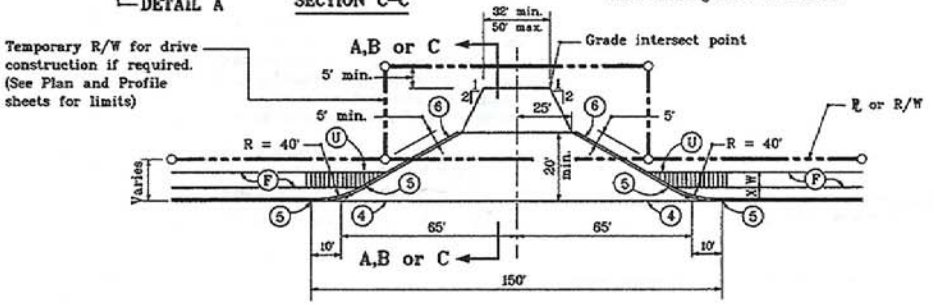
SECTION A–A



SECTION B–B



SECTION C–C



CLASS VII DRIVE (COMMERCIAL)

NOTES :

1. The Class VII drive shall be specified at truck stops and entrances to heavy industrial property.
2. All Class VII drives shall be concrete to at least the Right-of-Way line with minimum length 20'.
3. See Standard Drawing E 610–DRIV–16 for keyway joint shown in Detail A and for joint placement and corner reinforcement.
4. See Standard Drawing E 610–DRIV–14 for General Notes and Legend.

13

INDIANA DEPARTMENT OF TRANSPORTATION

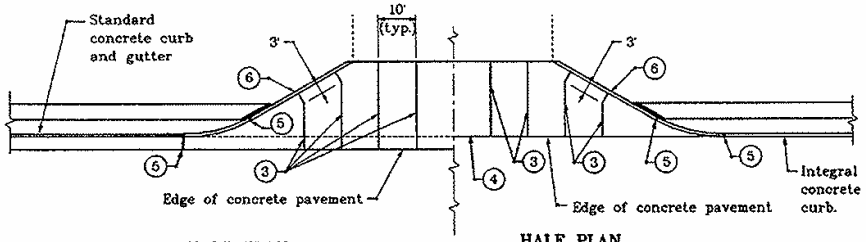
CLASS VII DRIVE
PLAN AND PROFILE GRADE
JANUARY 2000

STANDARD DRAWING NO. E 610–DRIV–15

ANTHONY L. DRENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Drenovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE



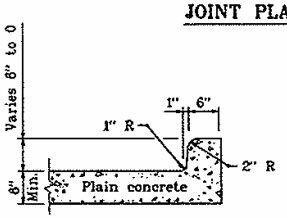
HALF PLAN
STANDARD COMBINED CURB & GUTTER

HALF PLAN
INTEGRAL CONCRETE CURB

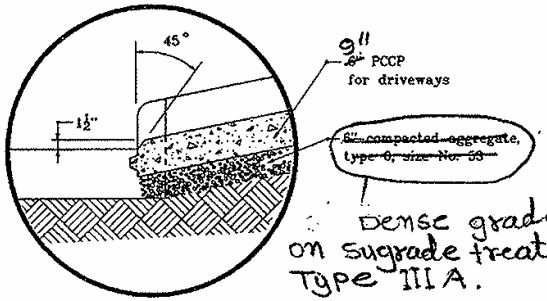
NOTES :

1. See Standard Drawing E 610-DRIV-15 for plan and profiles of Class VII drive.
2. See Standard Drawing E 610-DRIV-~~14~~ 13 for General Notes and Legend.
3. DETAIL A – shows keyway construction joint in detail. For location see Drawing E 610-DRIV-15.

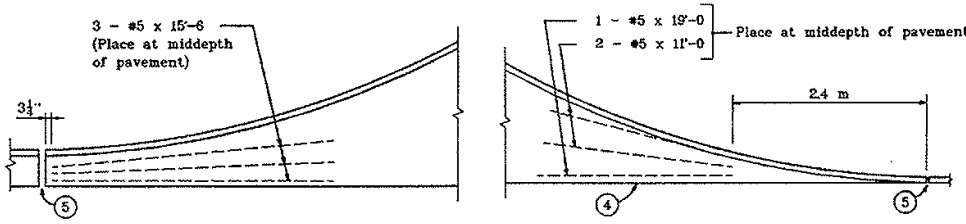
JOINT PLACEMENT DETAIL



MONOLITHIC CURB (6)



DETAIL A



COMBINED CURB & GUTTER

INTEGRAL CONCRETE CURB

TYPICAL CORNER REINFORCING

INDIANA DEPARTMENT OF TRANSPORTATION

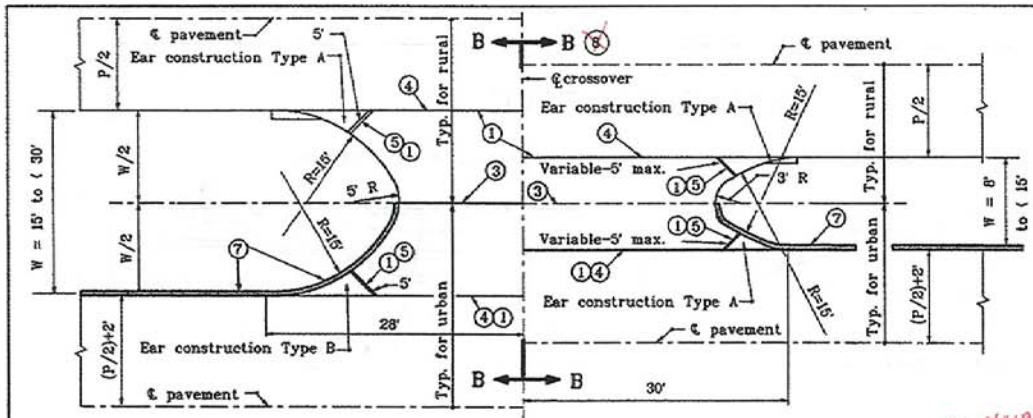
CLASS VII DRIVE
JOINT PLACEMENT AND CORNERS
JANUARY 2000

STANDARD DRAWING NO. E 610-DRIV-16

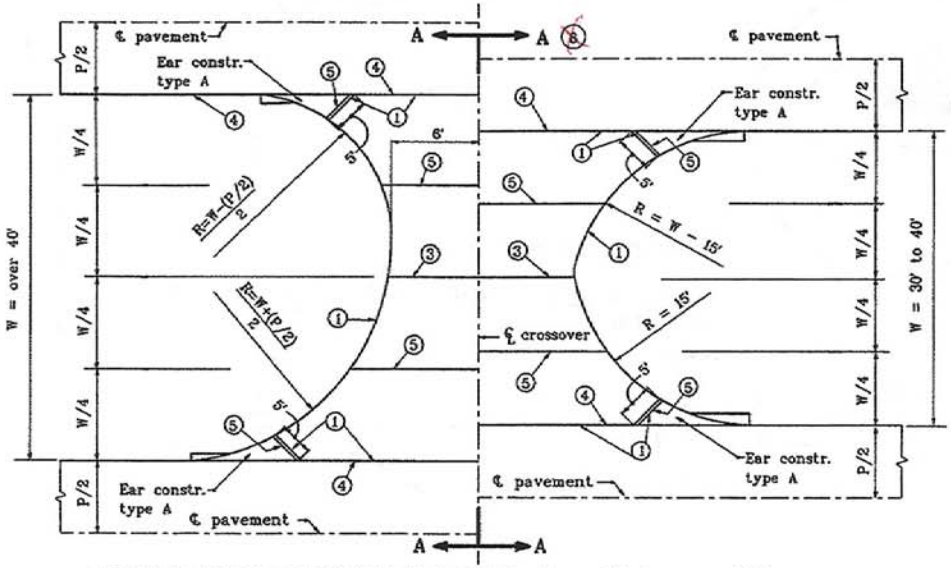
ANTHONY L. URDMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Urdmovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoz Zaidi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



PRIVATE DRIVE CROSSOVER PLAN FOR W = 8' to less than 30'



PRIVATE DRIVE CROSSOVER PLAN FOR W = 30' to over 40'

NOTES :

1. Thickened edge
2. See Standard Drawings:
   E 605-ERCN-01 for TYPE "A" ear construction
   E 605-ERCN-02 for TYPE "B" ear construction
   E 610-DRIV-17 for sections A-A and B-B
3. Contraction joint type D-1, see Standard Drawing E 503-CCPJ-01 for details.
4. Keyway construction joint, see Standard Drawing E 610-DRIV-16 for details.
5. 1" preformed joint filler
6. Private drive crossover shall be constructed of a flexible section unless otherwise directed by the engineer.
7. Intergral concrete curb, see Standard Drawing E 605-CCIN-01 for details.
8. For cross sections A-A and B-B see Standard Drawing E 610-DRIV-18.

INDIANA DEPARTMENT OF TRANSPORTATION

PRIVATE DRIVE CROSSOVERS PLANS

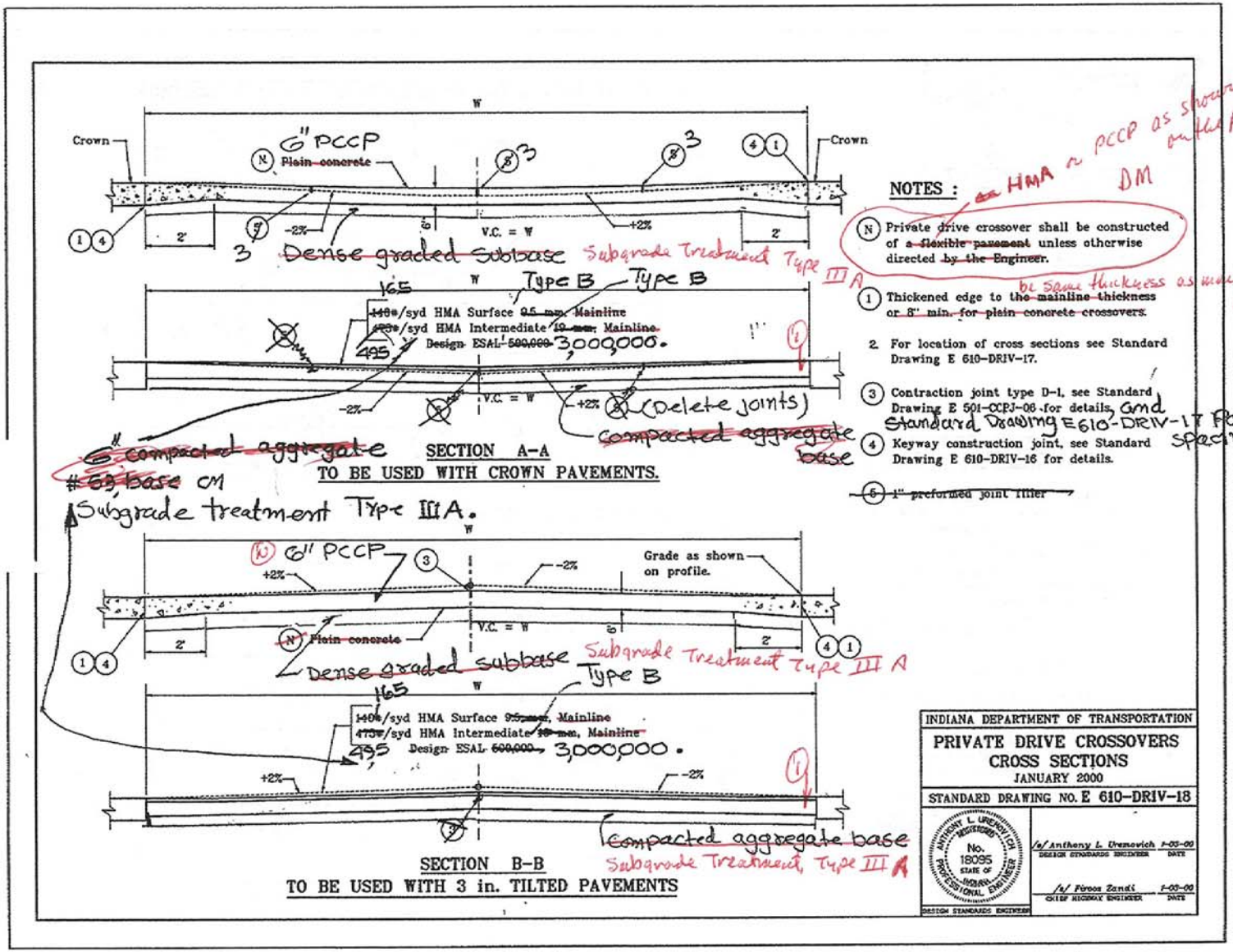
JANUARY 2000

STANDARD DRAWING NO. E 610-DRIV-17

ANTHONY L. URENOVICH No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Urenovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoze Zandi 1-03-00
CHIEF BRIDGE ENGINEER DATE



NOTES :

(N) Private drive crossover shall be constructed of a flexible pavement unless otherwise directed by the Engineer.

(1) Thickened edge to the mainline thickness or 8" min. for plain concrete crossovers.

2. For location of cross sections see Standard Drawing E 610-DRIV-17.

(3) Contraction joint type D-1, see Standard Drawing E 501-CCPJ-06 for details.

(4) Keyway construction joint, see Standard Drawing E 610-DRIV-16 for details.

(5) 1" preformed joint filler

INDIANA DEPARTMENT OF TRANSPORTATION

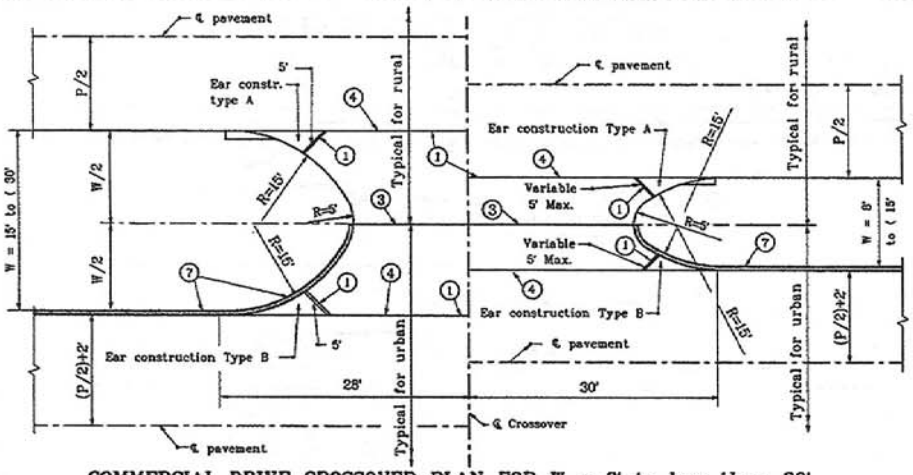
PRIVATE DRIVE CROSSOVERS
CROSS SECTIONS
JANUARY 2000

STANDARD DRAWING NO. E 610-DRIV-18

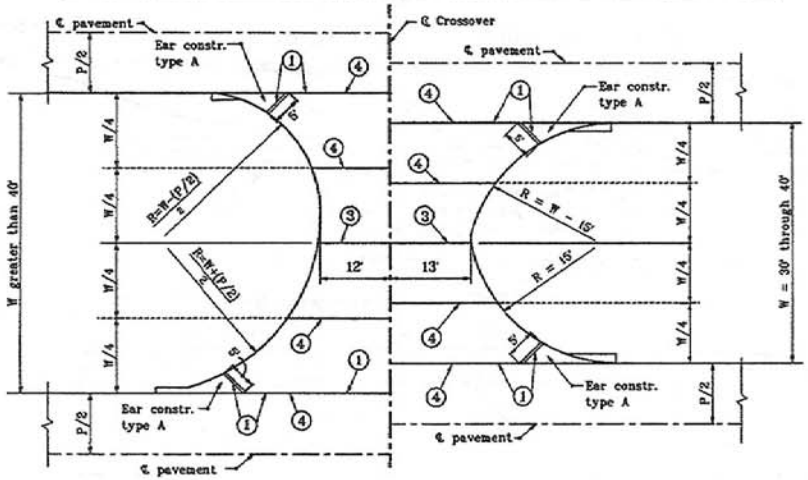
ANTHONY L. URENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Urenovich 1-05-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoz Zaidi 1-05-00
CHIEF HIGHWAY ENGINEER DATE



COMMERCIAL DRIVE CROSSOVER PLAN FOR W = 8' to less than 30'



COMMERCIAL DRIVE CROSSOVER PLAN FOR W = 30' to over 40'

NOTES :

(1) Thickened edge ~~9 m. PCCP~~.

2. See Standard Drawings :
   E 605-ERCN-01 for TYPE "A" ear construction
   E 605-ERCN-02 for TYPE "B" ear construction

(3) Contraction joint type D-1, see Standard Drawing E 503-CCPJ-01 for details.

(4) Keyway construction joint – see Drawing E 610-DRIV-16 for details.

6. Grade ~~and cross section~~ for commercial drive crossover shall be the same as for private drive crossover, ~~except that the HMA intermediate 19 mm, Mainline shall be PCCP as~~
   For cross sections see Standard Drawing E 610-DRIV-18, except the PCCP thickness shall be 9 m.

(7) Integral concrete curb, see Standard Drawing E 605-CCIN-01 for details.

8. Commercial drive crossover shall be consrtucted of ~~a flexible section~~ unless otherwise directed ~~by the Engineer~~.
   an HMA or PCCP as shown on the plans

INDIANA DEPARTMENT OF TRANSPORTATION

COMMERCIAL DRIVE CROSSOVERS PLANS

JANUARY 2000

STANDARD DRAWING NO. E 610-DRIV-19

ANTHONY L. URENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Anthony L. Urenovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoz Zandi 1-03-00
CHIEF BRIDGE ENGINEER DATE

August 28, 2006

DESIGN MEMORANDUM No. 06-XX
TECHNICAL ADVISORY

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

FROM:

Richard L. VanCleave
Design Policy Engineer
Office of Roadway Engineering Services

SUBJECT: **PCCP Thickness for Drive Approaches**
EFFECTIVE: **XXXXXX, 2006 Letting**

The PCCP thickness for commercial and industrial drives is being changed from 6" PCCP on 6" compacted aggregate base to 9" PCCP on dense graded subbase on subgrade treatment Type IIIA. These drives are designed for 400 trucks per day which also accommodate a WB-65, the Indiana Design Vehicle. The corresponding changes to HMA pavement thicknesses for these drives also have been made. There is no change in the PCCP thickness for residential drives which will remain 6" PCCP thickness as shown currently on the Standard Drawings. The following Standard Drawings, both Metric and English, have been revised to incorporate the PCCP thickness changes for the construction of the drives:

E 610-DRIV-01	E 610-DRIV-13
E 610-DRIV-02	E 610-DRIV-15
E 610-DRIV-03	E 610-DRIV-16
E 610-DRIV-04	E 610-DRIV-17
E 610-DRIV-06	E 610-DRIV-18
E 610-DRIV-08	E 610-DRIV-19
E 610-DRIV-12	

These revisions to the Standard Drawings do not require a Design Manual change.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 610, BEGIN LINE 37, INSERT AS FOLLOWS:

610.05 Method of Measurement

Compacted aggregate base will be measured by the ton (megagram) in accordance with 109.01(b). HMA mixture for approaches will be measured by the ton (megagram) of the type specified, in accordance with 109.01(b). Dense graded subbase will be measured in accordance with 302.08. PCCP for approaches will be measured in accordance with 502.22. *Subgrade treatment will be measured in accordance with 207.05.*

SECTION 610, BEGIN LINE 52, INSERT AS FOLLOWS:

610.06 Basis of Payment

The accepted quantities of HMA mixture for approaches will be paid for at the contract unit price per ton (megagram) of the type specified, complete in place. Compacted aggregate base will be paid for in accordance with 301.10. PCCP for approaches will be paid for at the contract unit price per square yard (square meter), complete in place. *Dense graded subbase will be paid for in accordance with 302.09. Subgrade treatment will be paid for in accordance with 207.06.*

Other sections containing specific cross references:

713.09, Pg 700-101

Recurring Special Provisions potentially affected:

None

Motion: Mr. Andrewski
Second: Mr. Keefer
Ayes: 7
Nays: 0

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

Standard Sheets potentially affected:

See Item 15-5

Action: Passed as developed @ meeting
Effective – January 2008 Letting
2008 Specifications

Withdrawn

Received FHWA Approval? ____

Item No. 15-6
Mr. Heustis
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 715, BEGIN LINE 17, DELETE AS FOLLOWS:

Concrete used for anchors, collars, grated box end sections, encasements, and sealing existing pipes shall be class A. Corrugated polyethylene pipe, type S has a smooth interior liner with a corrugated outer wall. Type SP pipe is a type S pipe with perforations. ~~Polymer precoated galvanized corrugated steel pipe type IA and pipe-arch type IIA have an outer shell of corrugated sheet with helical corrugations and an inner liner of smooth sheet attached to the shell with a helical lock seam.~~

Other sections containing specific cross references:

717.02 Pg 700-121

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. Andrewski
Ayes: 7
Nays: 0

Action: Passed as submitted
Effective: January 2008 Letting
2008 Specifications Book

Received FHWA Approval? _yes

Item No. 15-7
Mr. Heustis
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 715, AFTER LINE 149, INSERT AS FOLLOWS:

(k) Pipe End Sections

Metal pipe end sections shall be in accordance with 908.06. Precast concrete pipe end sections shall be in accordance with 905.06.

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. Andrewski
Ayes: 7
Nays: 0

Action: Passed as revised
Effective: January 2008 Letting
2008 Specifications Book

Received FHWA Approval? _yes

Item No. 15-8
Mr. Heustis
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 715, BEGIN LINE 239, INSERT AS FOLLOWS:

715.06 Joining Pipe

Band couplers for AASHTO M 36 (M 36M) type I and type II corrugated steel pipe and pipe-arches shall have corrugations that mesh with the corrugations of the pipe sections being joined or the annular rerolled ends of those pipe sections. Band couplers with projections (dimples) may be used with pipe having either annular or helical corrugations only when corrugated band couplers will not provide a matching connection to both pipes. Band couplers for AASHTO M 36 (M 36M) type IA and IIA corrugated steel pipe and pipe-arches shall have corrugations that mesh with the corrugations of the pipe or shall be gasketed flat bands.

Other sections containing specific cross references:

908.02 Pg 900-49

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. Andrewski
Ayes: 7
Nays: 0

Action: Passed as submitted
Effective: January 2008 Letting
2008 Specifications Book

Received FHWA Approval? _yes

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 724, BEGIN LINE 33, DELETE AND INSERT AS FOLLOWS:

(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 shall be constructed in accordance with the details shown on the shop drawings as prepared by the manufacturer of the expansion joint assembly.

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. Final adjustment of the assembly shall be made at the direction of the Engineer. All movements due to factors such as shrinkage, creep and mid-slab deflection shall be properly accounted for prior to this final adjustment.

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.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 724 CONTINUED.

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.

SECTION 724, BEGIN LINE 45, DELETE AND INSERT AS FOLLOWS:

724.03 General Requirements

The manufacturer shall prepare ~~and submit four sets of~~ detailed shop drawings *showing details of the assembly,* 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.~~ *Four sets of shop drawings, manufacturer's specifications, and joint setting data shall be submitted.* 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 manufacturer shall furnish a copy of the installation instructions prior to the placement of these joints.

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:

724-B-046

Standard Sheets potentially affected:

None

Motion: Mr.

Action: Withdrawn - Rearick, Smith, Uremovich, Snyder to re-write.

Item No. 15-10
Mr. Rust
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 801, BEGIN LINE 693, INSERT AS FOLLOWS:

Wherever a permanent speed limit sign exists within the limits controlled by the worksite speed limit sign assemblies, additional worksite speed limit sign assemblies shall be placed next to the permanent signs *or the permanent signs shall be covered.*

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:

801-T-158

Standard Sheets potentially affected:

None

Motion: Mr. Rust
Second: Mr. Keefer
Ayes: 8
Nays: 0

Action: Passed as revised
Effective: January 2008 Letting
2008 Specifications Book

Received FHWA Approval? _yes

Item No. 15-11
Mr. Walker
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 905, BEGIN LINE 36, INSERT AS FOLLOWS:

905.05 Detectable Warning Elements

Detectable warning bricks used in sidewalk curb ramps shall be in accordance with ASTM C 902, Class SX, type II. The color shall approximate 30109 or 30166 in accordance with Federal Standard No. 595a. The color shall be consistent throughout the brick. The truncated domes shall be as shown on the plans. The minimum dimensions of the brick shall be 2 1/4 in. (60 mm) thick by 3 5/8 in. (90 mm) wide by 7 5/8 in. (195 mm) long. The minimum thickness shall not be measured within the area of the domes. *Detectable warning elements shall be selected from the Department's list of approved Detectable Warning Elements.*

Other sections containing specific cross references:

604.02

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. Walker
Second: Mr. Keefer
Ayes: 8
Nays: 0

Action: Passed as submitted
Effective: January 2008 Letting
2008 Specifications Book

Received FHWA Approval? _yes

Item No. 15-12
Mr. Walker
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 908, BEGIN LINE 5, DELETE AND INSERT AS FOLLOWS:

908.02 Corrugated Steel Pipe and Pipe-Arches

Corrugated steel pipe and pipe-arches shall be type I, IA, II, or IIA in accordance with AASHTO M 36 (M 36M).

~~This~~ *Corrugated steel* pipe, ~~or~~ pipe-arch*es*, and ~~the~~ coupling bands shall be zinc coated steel or aluminum coated steel in accordance with AASHTO M 36 (M 36M), except as noted herein. They may be fabricated with circumferential corrugations and riveted lap joint construction or with helical corrugations with continuous lock or welded seam extending from end to end of each length of pipe. Reforming the ends of helical corrugated pipe to form circumferential corrugations will be permitted to allow use of circumferential corrugated coupling bands. The reforming shall be limited to the length required to accommodate the coupling bands and in such a manner that there is not appreciable slippage of the seam nor a plane of weakness created.

~~The pipe shall be type I, IA, II, or IIA~~.

~~Band couplers for type I and type II pipe shall have corrugations that mesh with the corrugations of the pipes sections being joined or the annuar rerolled ends of those pipe sections. Band couplers for type IA and IIA pipe shall have corrugations that mesh with the corrugations of the pipe or shall be gasketed flat bands.~~

Polymer precoated galvanized corrugated steel pipe type IA and pipe-arch type IIA have an outer shell of corrugated sheet with helical corrugations and an inner liner of smooth sheet attached to the shell with a helical lock seam.

Other sections containing specific cross references:

715.02(a) Pg 700-105
715.02(e) Pg 700-107
908.04 Pg 900-50
908.06 Pg 900-50
908.07 Pg 900-51
908.08 Pg 900-52
908.09(a) Pg 900-52
908.09(b) Pg 900-52

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. Andrewski
Ayes: 7
Nays: 0

Action: Passed as submitted
Effective: January 2008 Letting
2008 Specifications Book

Received FHWA Approval? _yes

Item No. 15-13
Mr. Walker
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 918, BEGIN LINE 22h, DELETE AS FOLLOWS:

GEOTEXTILE MATERIAL PROPERTIES

TEST	METHOD	REQUIREMENTS*
Tensile Strength	Grab Tensile Strength, ASTM D 4632	200 lb (890 N)
Elongation	Grab Tensile Strength, ASTM D 4632	15%
Seam Strength	Grab Tensile Strength, ASTM D 4632	180 lb (800 N)
~~Bursting Strength~~	~~Mullen Burst, ASTM D 3786~~	~~320 psi (2.21 MPa)~~
Puncture Strength	ASTM D 4833	80 lb (356 N)
Trapezoid Tear	ASTM C 4533	50 lb (225 N)
Ultraviolet Degradation at 150 h	ASTM D 4355	70% strength retained
Apparent Opening Size (AOS)	ASTM D 4751	AOS shall be No. 50 (300 µm) standard sieve or filter
Permeability**	ASTM D 4491 (Permittivity)	0.01 cm/sec or >

* Use value in weaker principal direction. All numerical values represent minimum average roll value and test results from any sampled roll in a lot shall meet or exceed the minimum values in the table. Lots shall be sampled according to ASTM D 4354.

** The nominal coefficient of permeability shall be determined by multiplying permittivity value by nominal thickness. The nominal thickness is measured under a normal load of 280 psi (1.93 MPa).

Other sections containing specific cross references:

205.02 Pg 200-49
211.02 Pg 200-69
616.02 Pg 600-44
714.02 Pg 700-102

Recurring Special Provisions potentially affected:

None

Motion: Mr. Walker
Second: Mr. Heustis
Ayes: 7
Nays: 0

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

Standard Sheets potentially affected:

None

Action: Passed as submitted
Effective: 2008 Specifications Book

Received FHWA Approval? _yes

Item No. 15-13a
Mr. Walker
Date: 9/21/06

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 918, BEGIN LINE 52, DELETE AS FOLLOWS:

The geotextile shall be in accordance with the physical requirements as follows.

TEST	METHOD	REQUIREMENTS[2]
Grab Strength	ASTM D 4632	80 lb (355.8 N)
Seam Strength[1]	ASTM D 4632	70 lb (311.4 N)
Puncture Strength	ASTM D 4833	25 lb (111.2 N)
~~Burst Strength~~	~~ASTM D 3786~~	~~130 psi (896 kPa)~~
Trapezoid Tear	ASTM D 4533	25 lb (111.2 kg)
Apparent Opening Size (AOS)	ASTM D 4751	Sieve No. 50 or smaller opening
Permeability	ASTM D 4491	0.1 mm/sec
Ultraviolet Degradation at 150 h	ASTM D 4355	70% strength retained

1 Values will apply to both filed and manufactured seams.

2 The value in the weaker principal direction shall be used. All numerical values will represent the minimum average roll value. Test results from a sampled roll in a lot shall be in accordance with or shall exceed the minimum values shown in the table. Lots shall be sampled in accordance with ASTM D 4354.

Other sections containing specific cross references:

702.03, Pg 700-17
718.02, Pg 700-125

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. Walker
Second: Mr. Heustis
Ayes: 7
Nays: 0

Action: Passed as developed @ meeting
Effective – 2008 Specifications Book

Received FHWA Approval? Yes

Item No. 15-14
Mr. Wright
Date: 9/21/06

DESIGN MANUAL CHANGE

Design Manual Change to Section 14-1.02(02) and Section 17-3.02(2)

Interim revisions relating to Field Check Report and Subgrade Treatment Type Determination respectively. This interim change will remain in effect until superseded by an official Design Manual revision or another Design Memorandum/Policy Change document.

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. Wright Second: Mr. Andrewski Ayes: 8 Nays: 0	Action: Passed as revised Effective: 2008 Design Manual Received FHWA Approval? _yes

INDIANA DEPARTMENT OF TRANSPORTATION

INTER-DEPARTMENT COMMUNICATION

Standards/Roadway Engineering – Room N642

Writer's Direct Line
317-233-2273

July 23, 2006

DESIGN MEMORANDUM No. 06-XX
DESIGN MANUAL CHANGE

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

FROM: ***/s/ Richard L. VanCleave***
Richard L. VanCleave
Design Policy Engineer
Office of Roadway Engineering Services

SUBJECT: **Design Manual Sections 14-1.02(02) and 17-3.02(02)**

EFFECTIVE: **XXXXXXX, 2006**

REVISES: **Design Manual Sections 14-1.02(02) and 17-3.02(02)**

The Design Manual Sections 14-1.02(02) and 17-3.02(02**)** have been revised.

Attached are interim revisions of Sections 14-1.02(02) and 17-3.02(02) of the Design Manual relating to Field Check Report and Subgrade Treatment Type Determination respectively. This interim Design Manual change will remain in effect until superseded by an official Design Manual revision or another Design Memorandum/Policy Change document. Designers are instructed to follow the attached interim procedure.

14-1.02(02) Field Check – Consultant Project

Revise the paragraph under 4, Field Check Report as follows:

4. Field Check Report. After the field check has been completed, the consultant will be responsible for preparing the report of meeting and listing the comments from all individuals involved in the field check. Copies of this report will be distributed to all those involved in the field check and to those individuals listed in the distribution in Figure 14-1B. *The following should be discussed in the field check report:*

   The Office of Geotechnical Engineeering should be informed of possible shallow utilities, temporary pavement, and need for a temporary runaround or night construction so that they can make suitable recommendations for subgrade treatment type. Such considerations should be documented in the field check minutes

17-3.02(02) Subgrade Treatment Type Determination

Delete the first paragraph under 2 and revise the second paragraph as follows:

2. ~~Project With Subgrade Treatment Type Yet to be Determined. The preliminary field check plans should include projected AADT figures and subgrade treatment areas tabulated for each survey line as shown in Figure 17-3B. During the field check, the Geotechnical Section should be informed of possible shallow utilities, temporary pavement, and need for a temporary runaround or night construction so that they can make suitable recommendations for subgrade type. Such considerations should be documented in the field check minutes.~~

   The type or types of subgrade treatments described in Section 17-3.02(01) to be used will be specified in the Geotechnical Report. If the Geotechnical Report does not specify the subgrade treatment type, the designer should send a memorandum requesting the subgrade treatment to the *Planning and Production Division's Office of Geotechnical Engineering with a subgrade tabulation sheet as shown in figure 17-3B.*

   The field check may have already been conducted, but the Geotechnical Report may not yet have been received by the designer. For this situation, the designer should submit to the Office of Geotechnical Engineering the tabulation and information regarding shallow utilities, temporary pavement, and need for a temporary runaround or night construction so that they can make suitable recommendations for subgrade type.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 107, BEGIN LINE 51, INSERT AS FOLLOWS:

Maintaining a drug-free workplace will be required in accordance with Executive Order 90-5, as follows:

(a) The Contractor shall agree to make a good faith effort to provide and maintain a drug-free workplace during the contract time. It shall give written notice to the Department within 10 days after receiving actual notice that an employee of the Contractor has been convicted of a criminal drug violation occurring on the project site.

(b) If the total bid amount shown in the Schedule of Pay Items is in excess of $25,000.00, the Contractor shall further agree that the contract is expressly subject to the terms, conditions, and representations contained in the Drug-Free Workplace certification executed by the Contractor in conjunction with the contract, and which is included in the Proposal book.

(c) The failure of the Contractor to comply in good faith with the terms of (a) above, or falsifying or otherwise violating the terms of the certification referenced in (b) above, shall constitute a material breach of the contract. Such failure shall entitle the Department to impose sanctions against the Contractor including, but not limited to, suspension of contract payments, termination of the contact, or debarment of the Contractor from doing further work for the Department for up to three years.

Indiana Code 4-13-18-5 requires all bidders to submit an employee drug testing plan which complies with the requirements of the cited Code. The Contractor is directed to implement the employee drug testing plan as submitted. Material breaches of this requirement may constitute an independent basis to invoke 108.10.

SECTION 108, AFTER LINE 484, INSERT AS FOLLOWS:

(j) fails to implement the employee drug testing plan submitted with the bid; or fails to provide information regarding the implementation of the employee drug testing plan when requested by the Department; or provides false information regarding implementation of the employee drug testing plan.

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTIONS 107 AND 108 CONTINUED:

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. Kuchler
Ayes: 7
Nays: 0

Action: Passed as developed @ meeting
Effective: October 2006 Letting
2008 Specifications

Received FHWA Approval? _yes