



INDIANA DEPARTMENT OF TRANSPORTATION

STANDARDS COMMITTEE MEETING AGENDA

Driving Indiana's Economic Growth

August 8, 2007

MEMORANDUM

TO: Standards Committee

FROM: Mike Milligan, Secretary

RE: Agenda for the August 16, 2007 Standards Committee Meeting

A Standards Committee meeting is scheduled for 9:00 a.m. on August 16, 2007 in the N755 Bay Window Conference Room. Please enter the meeting through the double doors directly in front of the conference room. The following agenda items are listed for consideration.

Old Business

<u>Item No.</u>	<u>Sponsor</u>	<u>Page</u>
Item 18-13 Standard Drawings	Mr. Wright 614-RRGC-01 through 05	3
Item 18-14 614	Mr. Wright CONCRETE HEADERS	9

New Business

Item 08-3-1 921.02(b) 921.02(b)1	Mr. Rust Preformed Plastic Material Requirements	15
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cc: Committee Members (11)
FHWA (4)
ICA Representative (1)

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Need Standardized Railroad Headers

PROPOSED SOLUTION: create and approve standard drawings

APPLICABLE STANDARD SPECIFICATIONS: 614

APPLICABLE STANDARD DRAWINGS: 614-RRGC-01 thru 05

APPLICABLE DESIGN MANUAL SECTION: 17-3.01

APPLICABLE SECTION OF GIFE: _____

Submitted By: John Wright

Title: Roadway Services Manager

Organization: INDOT

Phone Number: 232-5147

Date: 7/26/07

PROPOSED NEW STANDARD DRAWINGS

- 614-RRGC-01, Railroad Crossing Details, HMA Header
- 614-RRGC-02, Railroad Crossing Details, RC Header
- 614-RRGC-03, Railroad Crossing Details, HMA Inter-Track Header
- 614-RRGC-04, Railroad Crossing Details, RC Inter-Track Header
- 614-RRGC-05, Railroad Crossing Details, Crown-Out Diagram

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:

See Above

Motion: M
Second: M
Ayes:
Nays:

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting

___ 2009 Standard Specifications Book

___ 2009 Standards Edition

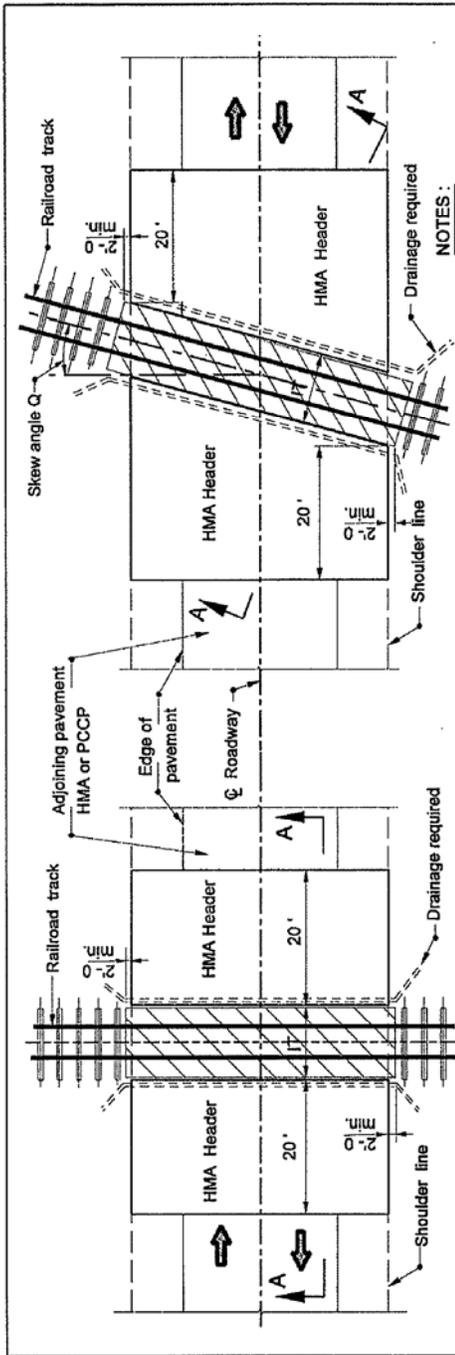
___ 2008 Design Manual

___ Technical Advisory

Withdrawn _____

Received FHWA Approval? _____

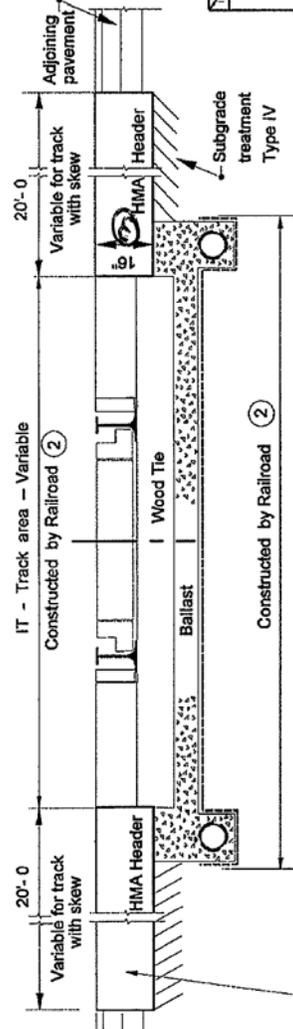
The HMA type shall be that specified or as determined from table on Standard Drawing E614-RRGC-05.



- NOTES:**
1. The HMA Type shall match that of the adjoining pavement. The HMA Type shall be according to existing AADT when the adjoining pavement is PCCP.
 2. Construction between headers to be executed by the railroad company in accordance with details as provided for in the crossing agreement.

PLAN - SKEWED TRACK

PLAN - SQUARE TRACK

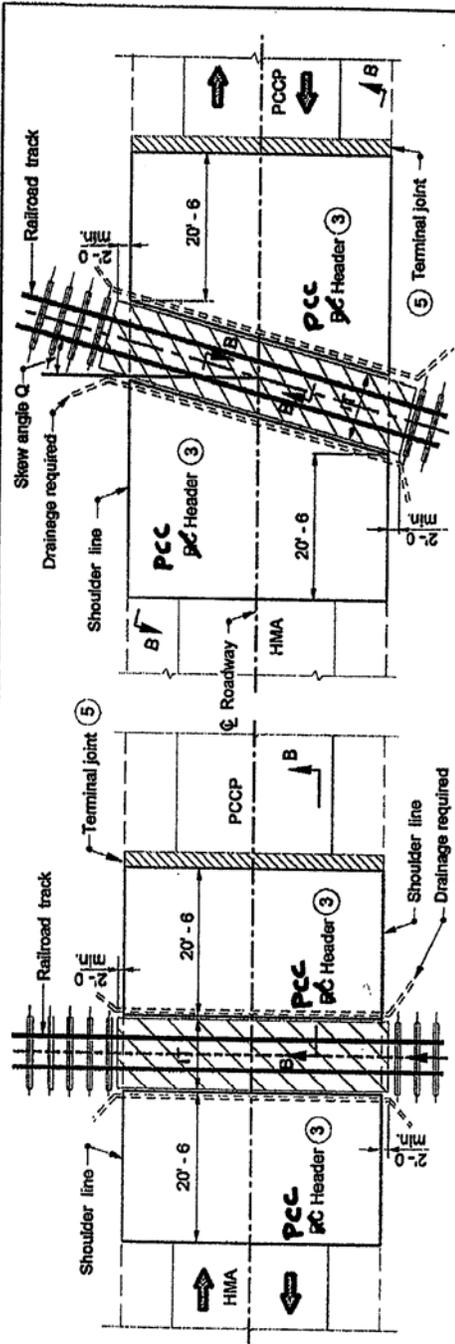


③ Depth shall match that of adjoining pavement if greater.

SECTION A - A

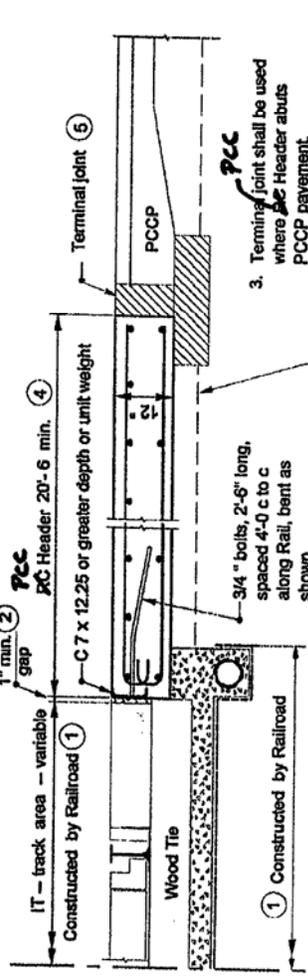
HMA Header Section : ①
 165# / syd HMA, Type, Surface on
 330# / syd HMA, Type, Intermediate on
 1265# / syd HMA, Type, Base on
 Subgrade treatment Type IV

INDIANA DEPARTMENT OF TRANSPORTATION	
RAILROAD CROSSING DETAILS	
HMA HEADER	
SEPTEMBER 20XX	
STANDARD DRAWING NO./E 614-RRGC-01	
	DESIGN ENGINEER DATE CHECKED BY DATE NOTE



PLAN - SQUARE TRACK

PLAN - SKEWED TRACK



HALF SECTION B - B

- NOTES:**
- Construction between headers to be executed by the railroad company in accordance with details as provided for in the crossing agreement.
 - 1 in. min. joint filler

INDIANA DEPARTMENT OF TRANSPORTATION
RAILROAD CROSSING DETAILS
PCC HEADER
 SEPTEMBER 2008

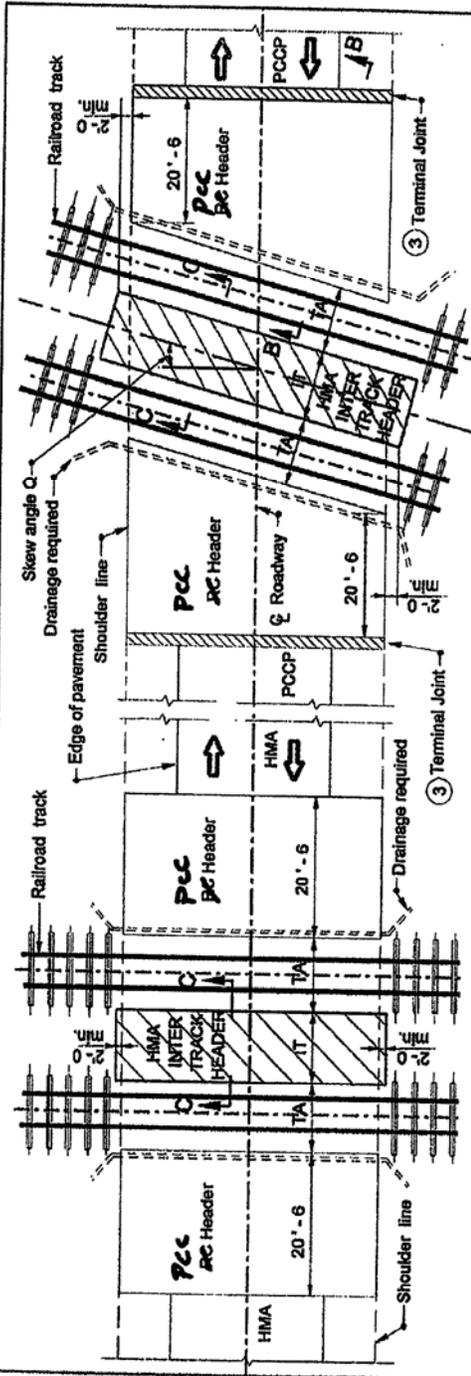
STANDARD DRAWING NO. E 614-RRGC-02

NO. 9750
 STAFF
 DATE

DESIGN ENGINEER
 DATE

CHECK ENGINEER
 DATE

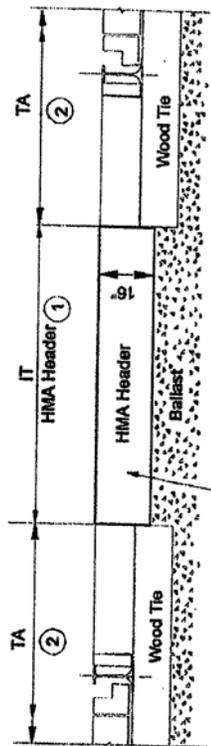
- Termining joint shall be used where PCC Header abuts PCCP pavement.
- For reinforcement details see Standard Drawing E 609-RCBA-01 and E 609-RCBA-03 to -06
- For Terminal joint details see Standard Drawing E 609-RCBA-02.



PLAN - SQUARE TRACKS

PLAN - SKEWED TRACKS

LEGEND:
 IT - INTER TRACK HEADER
 TA - track area
 Terminal joint - see Standard Drawing E 608-RCBA-02



SECTION C - C

HMA Header Section : 5
 165# / syd HMA, Type, Surface on
 330# / syd HMA, Type, Intermediate on
 1265# / syd HMA, Type, Base on
 Subgrade treatment Type IV

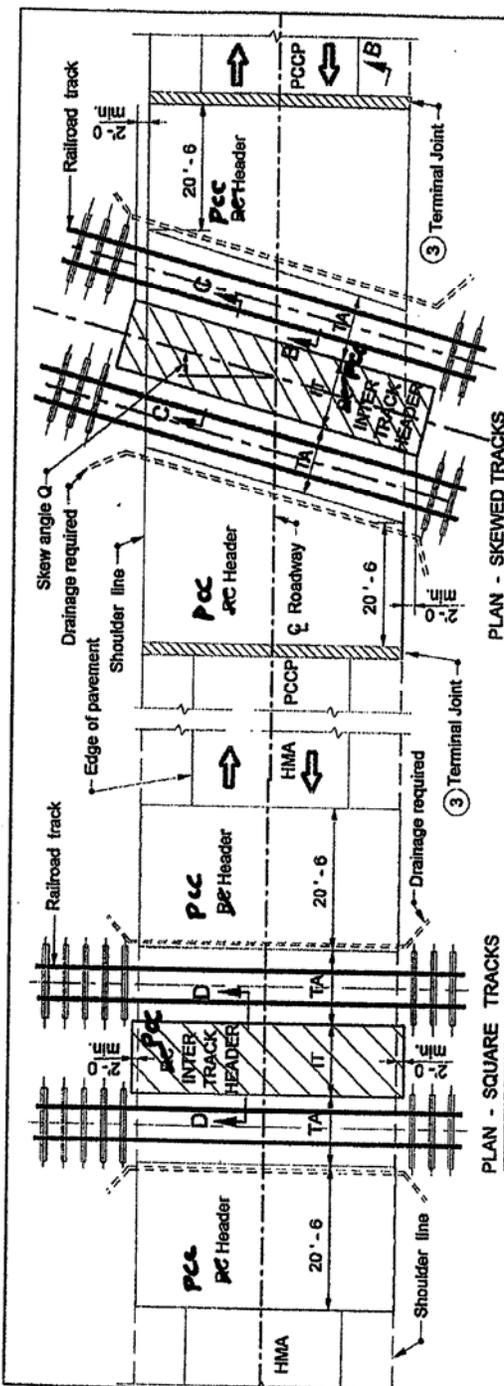
NOTES:

- 1 See Standard Drawing E 614-RRGC-04 for PCC INTER TRACK HEADER.
- 2 Construction between headers as indicated on the drawing to be executed by the railroad company in accordance with details as provided for in the crossing agreement.
- 3 Terminal Joint shall be used where PCC Header abuts PCCP pavement.
- 4 See Standard Drawing E 614-RRGC-02 for the details of RC Header and Section B - B.
- 5 The HMA Type, shall match that of the adjoining asphalt pavement.
 HMA Type, shall be according to existing AADT when the adjoining pavement is PCCP.

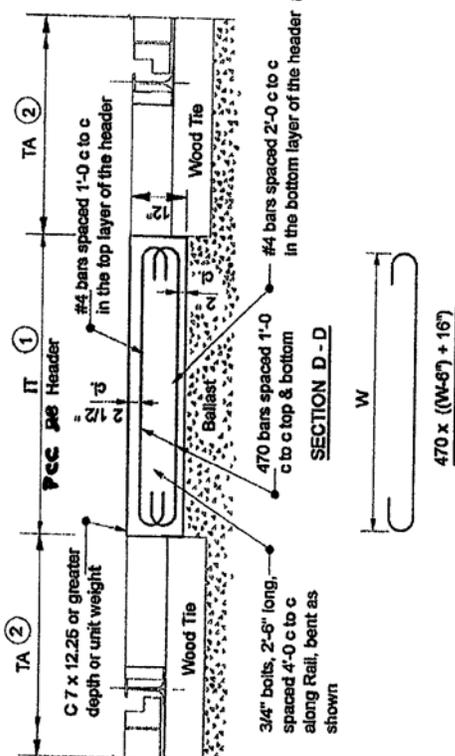
INDIANA DEPARTMENT OF TRANSPORTATION
RAILROAD CROSSING DETAILS
HMA-INTER TRACK HEADER
 SEPTEMBER 2008
 STANDARD DRAWING NO. E 614-RRGC-03

DESIGN ENGINEER	DATE
CHECK ENGINEER	DATE

Professional Engineer Seal: L. V. ... No. 9750 State of Indiana

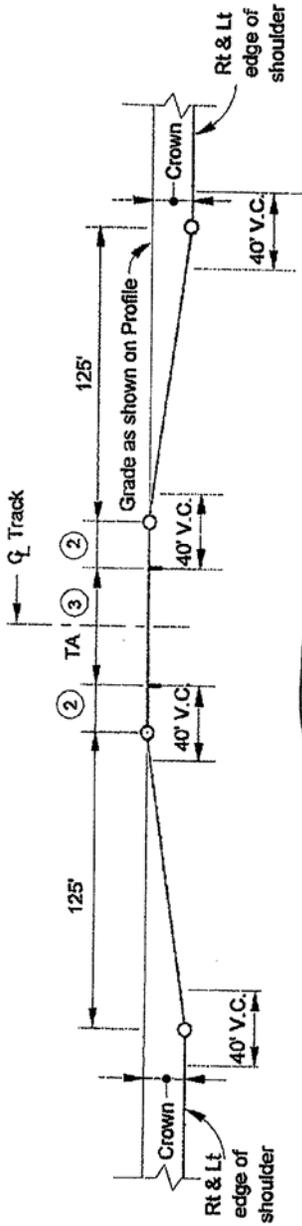


- NOTES:**
1. See Standard Drawing E 614-RRGC-03 for details of HIMA INTER TRACK HEADER.
 2. Construction between headers as indicated on the drawing to be executed by the railroad company in accordance with details as provided for in the crossing agreement.
 3. Terminal joint shall be used where RC Header abuts PCCP pavement.
 4. See Standard Drawing E 614-RRGC-02 for details of RC Header and Section B - B.



INDIANA DEPARTMENT OF TRANSPORTATION
RAILROAD CROSSING DETAILS
PCC-RC-INTER TRACK HEADER
 STANDARD DRAWING NO. E 614-RRGC-04
 SEPTEMBER 2008

DESIGN ENGINEER: _____ DATE: _____
 CHECK ENGINEER: _____ DATE: _____
 PROJECT NO.: 9750
 SHEET NO.: _____ OF _____
 SCALE: _____



NOTES:

- ① Crown shall be taken out of pavement at each railroad crossing.
- ② 20 ft or as required due to track skew.
- ③ TA is a track area to be constructed by railroad company.

Construction-Year AADT	HMA Type
< 200	A
200 ≤ AADT < 2000	B
2000 ≤ AADT < 7000	C
≥ 7000	D

HMA TYPES FOR RAILROAD HEADERS

INCLUDE THIS TABLE ON DWG.

INDIANA DEPARTMENT OF TRANSPORTATION
 RAILROAD CROSSING DETAILS
 CROWN-OUT DIAGRAM
 SEPTEMBER 2008
 STANDARD DRAWING NO. E 014-RRGC-05

NO. 18095
 STATE OF INDIANA
 PROFESSIONAL ENGINEER

DATE
 DATE
 DATE

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 614, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 614 – CONCRETE HEADERS

614.01 Description

This work shall consist of the construction or reconstruction of PCC headers adjacent to railroad tracks, bridges, and similar locations in accordance with 105.03.

MATERIALS

614.02 Materials

Materials shall be in accordance with the following:

Concrete, <i>Class C</i>	702
<i>Curing Materials</i>	912.01
<i>Dense Graded Subbase</i>	302
<i>HMA</i>	402.02
<i>Reinforcing Steel, Epoxy Coated</i>	910.01(b)9

~~If the header is adjacent to cement concrete base or pavement, the header concrete shall be the same composition as that of the base or pavement header constructed monolithic with the base or pavement. If the adjacent base or pavement is thickened, that portion forming the thickening shall be considered as part of the header.~~

~~If the header is adjacent to asphalt pavement, the concrete shall be class A in accordance with 702 using class AP coarse aggregate.~~

CONSTRUCTION REQUIREMENTS

614.03 General

Construction of headers shall not begin until after the railroad has completed its work. The railroad's work shall not be damaged. The elevation of the headers shall match the elevation of the portion constructed by the railroad. Terminal joints shall be constructed in accordance with 503.

614.03 614.04 PCC Headers

Construction shall be in accordance with the applicable provisions of 702 requirements of 302, 609, and with these requirements.

Welding shall be in accordance with 711.32.

~~Headers at railroad crossings shall be as shown on the plans.~~

614.05 Method of Measurement HMA Headers

Construction of HMA headers shall be in accordance with 402.

614.06 Reconstructed Cement Concrete Header

~~This work shall be in accordance with the plans. Round plug welds or rectangular shaped plug welds may be used to weld the steel angle to the existing steel edge protection. Round plug welds shall be a minimum of 1 in. (25 mm) diameter.~~

~~Welding shall be in accordance with 711.32.~~

614.05 614.06 Method of Measurement

~~Cement Portland cement concrete header and reconstructed cement concrete header~~ will be measured by the ~~linear foot (meter)~~ *square yard (square meter)*. *HMA surface, intermediate, and base will be measured by the ton (megagram) in accordance with 402.19. Dense graded subbase will be measured by the cubic yard (cubic meter) in accordance with 302.08. Terminal joints will be measured by the linear foot (meter) in accordance with 503.07.*

614.06 614.07 Basis of Payment

~~The accepted quantities of this work Portland cement concrete headers~~ will be paid for at the contract unit price per ~~linear foot (meter)~~ *square yard (square meter)* for header, ~~cement concrete, of the type specified, or header, cement concrete, reconstruct, PCC complete~~ in place. *HMA surface, intermediate, and base will be paid for in accordance with 402.20. Dense graded subbase will be paid for in accordance with 302.09. Terminal joints will be paid for in accordance with 503.08.*

Payment will be made under:

Pay Item	Pay Unit Symbol
Header, Cement Concrete PCC, _____	LFT (m) SYS (m2)
Type	
Header, Cement Concrete, Reconstruct	LFT (m)

The cost of *reinforcing steel*, edge protection, metal chairs, excavation, and necessary incidentals shall be included in the cost of ~~the pay items header, cement concrete or in the cost of the HMA surface, intermediate, and base.~~

REVISION TO 2006 STANDARD SPECIFICATIONS

SECTION 614, 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:

None

Standard Sheets potentially affected:

See Item 18-13

Motion: M

Second: M

Ayes:

Nays:

Action: Passed as submitted; revised

___ RSP Effective: _____ Letting

___ 2009 Standard Specifications Book

___ 2009 Standards Edition

___ 2008 Design Manual

___ Technical Advisory

Withdrawn ___

Received FHWA Approval? ___



INDIANA DEPARTMENT OF TRANSPORTATION

Driving Indiana's Economic Growth

Design Memorandum No. 07-__ Technical Advisory

July 13, 2007 DRAFT

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

FROM: _____
Anthony L. Uremovich
Design Policy Engineer
Contracts and Construction Division

SUBJECT: Railroad Headers

REVISES: *Indiana Design Manual Section 17-3.01*

EFFECTIVE: _____, 2007, Letting

Details for both PCC and HMA railroad headers and approach-roadway pavement-crown treatments have been standardized. The designer should contact the Production Management Division, Office of Real Estate, railroads engineer to determine which pavement material should be used for each highway-railway grade crossing's headers.

If HMA headers are to be used with HMA approach pavement, their HMA type should match that of the approach pavement. If HMA headers are to be used with PCC approach pavement, their HMA type should be determined from Figure 07-__A, HMA Types for Railroad Headers, and shown on the plans.

Construction-Year AADT	HMA Type
< 200	A
$200 \leq \text{AADT} < 2000$	B
$2000 \leq \text{AADT} < 7000$	C
≥ 7000	D

HMA TYPES FOR RAILROAD HEADERS

Figure 07-__A

Pavement-materials quantities for headers should be determined based on attached Recurring Plan Detail 614-R-__d. Pavement-materials quantities for HMA headers should be incorporated into the project's total HMA pavement quantities. The new pay item for portland cement concrete header is 614-____, Header, PCC, pay unit square yard (square meter). Quantities for its concrete and reinforcing steel should be shown on the plans.

Recurring Special Provision 614-R-____, and Recurring Plan Detail 614-R-__d, both attached hereto, should be called for beginning with the _____, 2007, letting, and through the _____, 2008, letting. Beginning with the September __, 2008, letting, the recurring special provision will be incorporated into the INDOT *Standard Specifications*, and the recurring plan detail will be incorporated into the INDOT *Standard Drawings*. The provision and detail will then no longer be required to be called for in specific contracts.

alu

[P:\Design Memos\07RRhd-pc.doc]

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The current specification only allows preformed plastic marking material that has a uniform thickness across its entire section. There is another material that has performed well in tests but it has a patterned, varied thickness which is not allowed by the current spec. The installation of the two different material configurations is the same.

PROPOSED SOLUTION: Add provisions to the current specification to allow a patterned material in addition to the uniform thickness material.

APPLICABLE STANDARD SPECIFICATIONS: 921.02(b)

APPLICABLE STANDARD DRAWINGS: n/a

APPLICABLE DESIGN MANUAL SECTION: 76-3.01 & 76-3.02(04) - no changes needed

APPLICABLE SECTION OF GIFE: n/a

APPLICABLE RECURRING SPECIAL PROVISIONS: n/a

Submitted By: Larry K. Rust

Title: Supv., Traffic Control Section, Highway Management Div.

Organization: INDOT

Phone Number: 317-232-5549

Date: 7-20-07

APPLICABLE SUB-COMMITTEE ENDORSEMENT? This is not considered a significant change and has not been submitted to the 800 subcommittee for action.

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 921, BEGIN LINE 13, DELETE AND INSERT AS FOLLOWS:

(b) Preformed Plastic

This material shall consist of a homogeneous preformed plastic film. ~~with a minimum thickness of 60 mils (1.5 mm) and a~~ *There shall be two types of preformed plastic material:*

1. *Type A material shall have a smooth plane surface, with a minimum thickness of 60 mils (1.5 mm) throughout the entire cross section.*
2. *Type B material shall have an embossed patterned surface that shall have approximately 35% to 65% of the surface area raised. The edges of the raised areas shall present a near vertical face to traffic from any direction. The minimum thickness of the raised area shall be 60 mils (1.5 mm) measured at the thickest section of the cross section. The area between the raised areas shall be a minimum of 20 mils (0.5 mm) measured at the thinnest section of the cross section. The minimum height of the raised areas above the non-raised areas of the material shall be 40 mils (1.0 mm).*

The width shall be as specified. The back of the preformed plastic material shall have a precoated adhesive and an easily removable backing covering which shall protect the adhesive in storage and facilitate rapid application. The adhesive shall allow the preformed plastic material to be repositioned on the pavement surface to which it is applied before permanently fixing it in its final position with downward pressure.

The plastic material shall be capable of being affixed to either HMA or PCCP by means of the precoated adhesive. ~~and, following~~ *Following* the initial application of pressure, ~~the plastic material~~ shall mold itself to pavement contours, breaks, and faults by traffic action at normal pavement temperatures.

The color of the white plastic film shall be determined by a standard color difference meter, such as the Gardner Color Difference Meter manufactured by Gardner Laboratories, Inc. Bethesda, Maryland. The plastic film shall not show deviations from a magnesium oxide standard greater than the following.

SCALES	DEFINITION	MAGNESIUM OXIDE	SAMPLE
Rd	Reflectance	100	70 Minimum
a	Redness-Greenness	0	-5 to +5
b	Yellowness-Blueness	0	-10 to +10

The color of the yellow plastic film shall visually match color No. 33538 of Federal Standard 595a. The pigment shall include medium chrome yellow.

REVISION TO 2008 STANDARD SPECIFICATIONS

SECTION 921, CONTINUED.

1. Material Requirements

The material shall be composed of plasticizers, pigments, and glass *or ceramic* beads. The pigment shall contain 20% minimum titanium dioxide for white plastic material. During manufacture, glass beads shall be mixed into the compound at a minimum of 15% and a maximum of 20% by weight. A layer of glass beads shall be bonded to the top surface *of type A material. Ceramic beads or glass beads shall be bonded to the top surface of type B material. The near vertical faces of type B material shall be coated with a layer of glass beads.*

Other sections containing
specific cross references:

808.02 Pg 674

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: Passed as submitted; revised

___ RSP Effective: _____ Letting

___ 2009 Standard Specifications Book

___ 2009 Standards Edition

___ 2008 Design Manual

___ Technical Advisory

Withdrawn ___

Received FHWA Approval? ___