



INDIANA DEPARTMENT OF TRANSPORTATION
Driving Indiana's Economic Growth

Design Memorandum No. 10-17
Technical Advisory

May 26, 2010

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

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

SUBJECT Adjacent Prestressed-Concrete Box Beams Transverse Connection

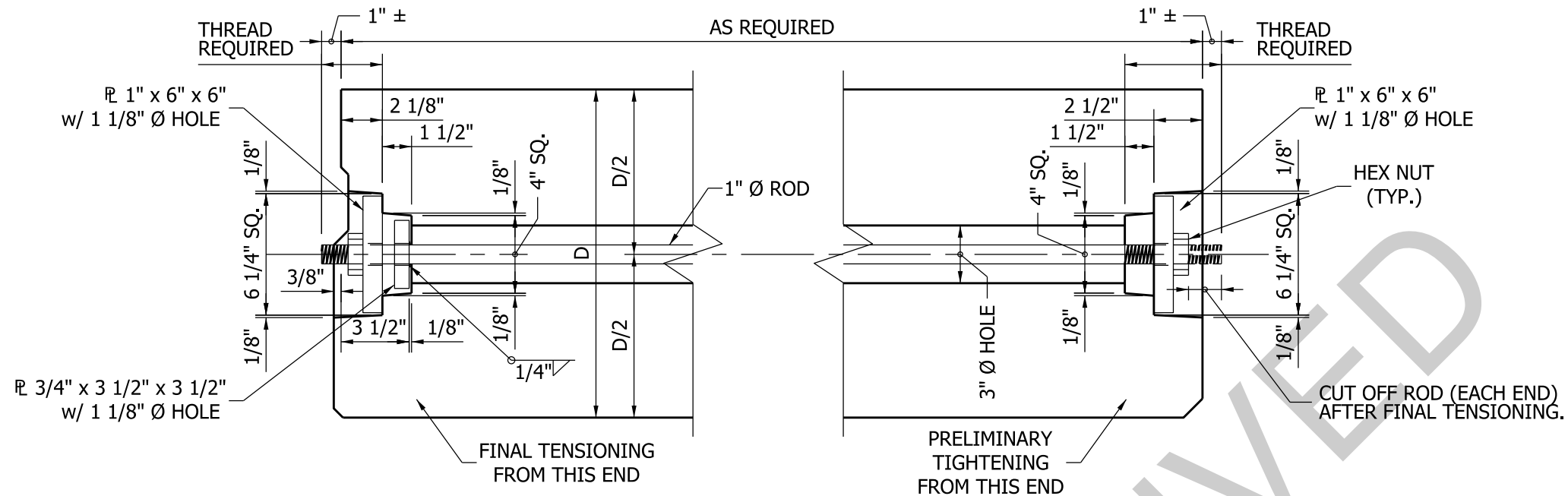
REVISES: *Indiana Design Manual Section 63-8.0*

EFFECTIVE: September 1, 2010, Letting

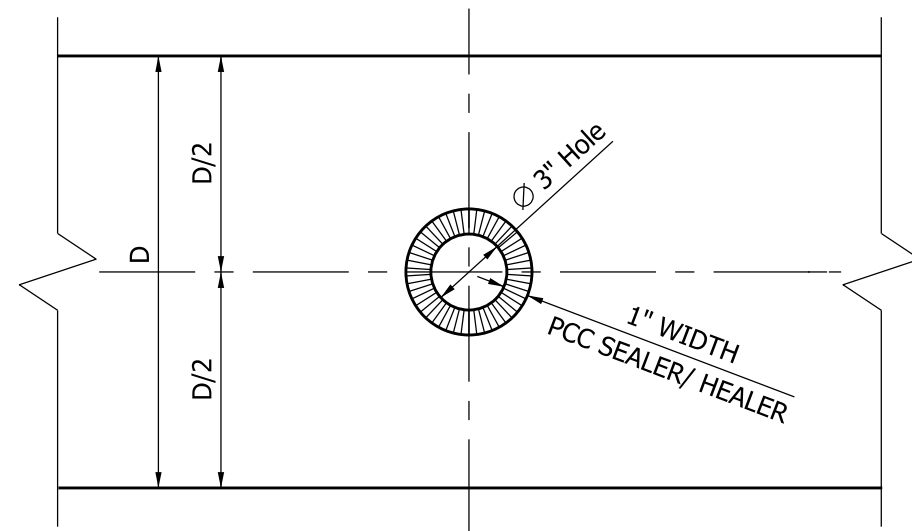
Indiana Design Manual Figure 63-8A illustrates the use of transverse tensioning rods. Figures 63-8B and 63-8C, which illustrate methods of detailing this work, will no longer apply. This information is now shown on INDOT *Standard Drawing* 707-BPBB-01. It therefore should not be shown on the plans.

Complementary Recurring Special Provision 707-B-183 should be called for through the August 2011 letting for each adjacent prestressed-concrete box-beams bridge project. The standard drawing, english- and metric-units versions, and the recurring special provision are attached herewith. Approved versions of the attachments will be posted on the INDOT website within one month.

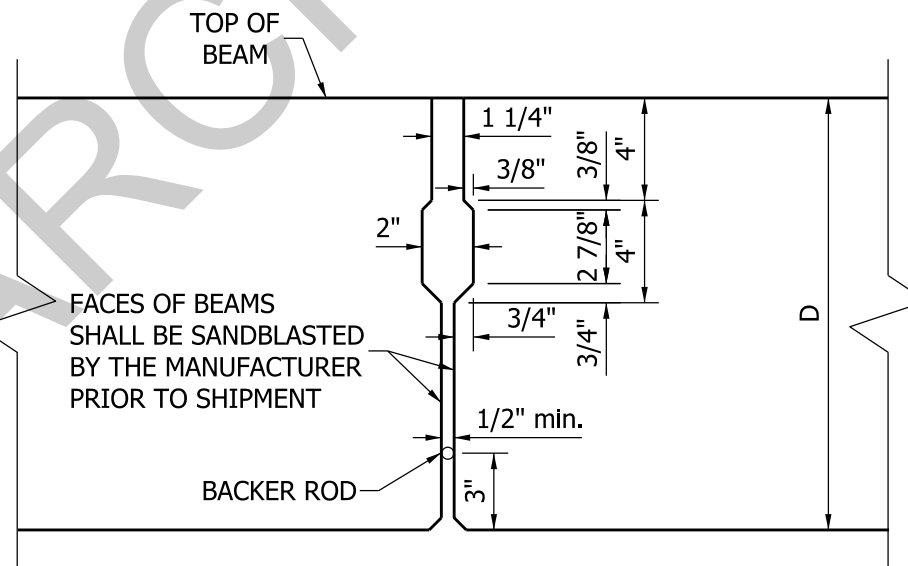
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Attachments



SECTION SHOWING TRANSVERSE TENSIONING ROD

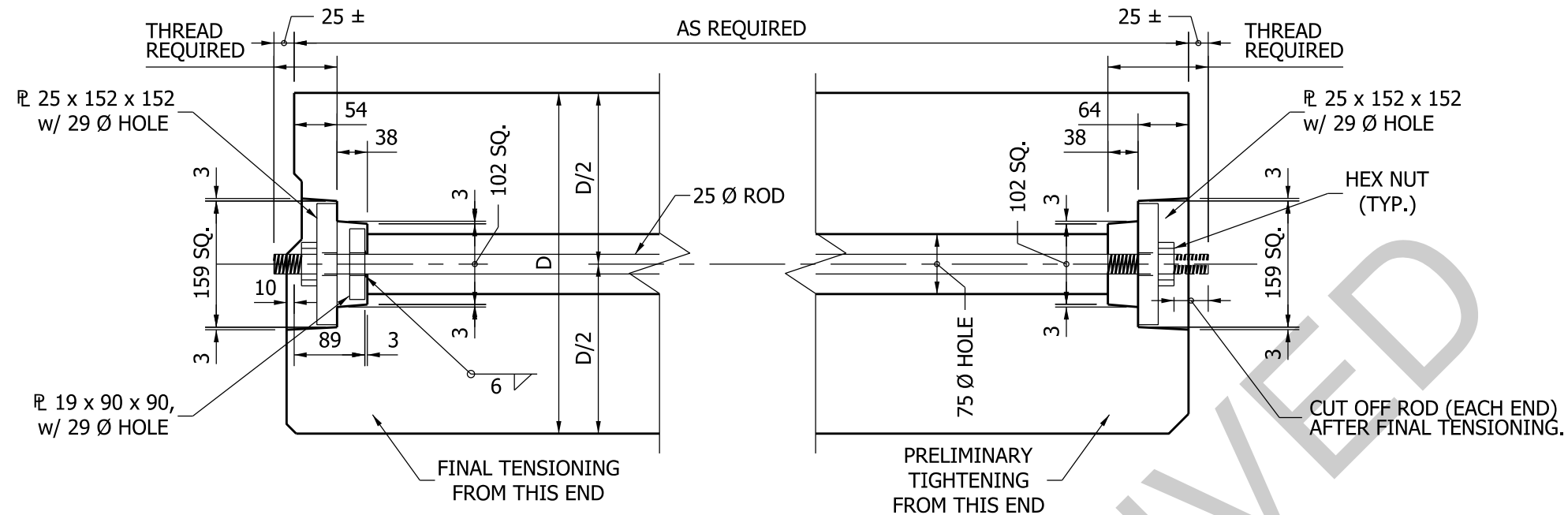


SECTION AT FACE OF BEAM

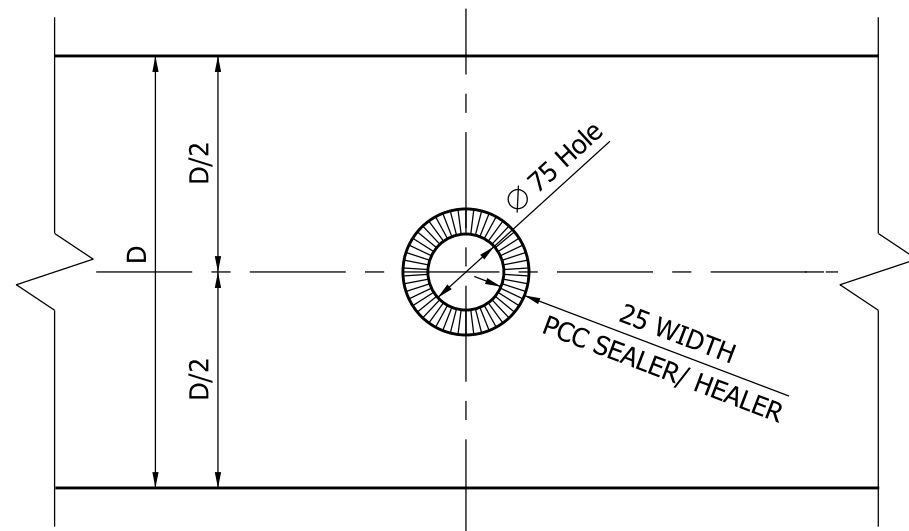


SECTION SHOWING JOINT BETWEEN BEAMS

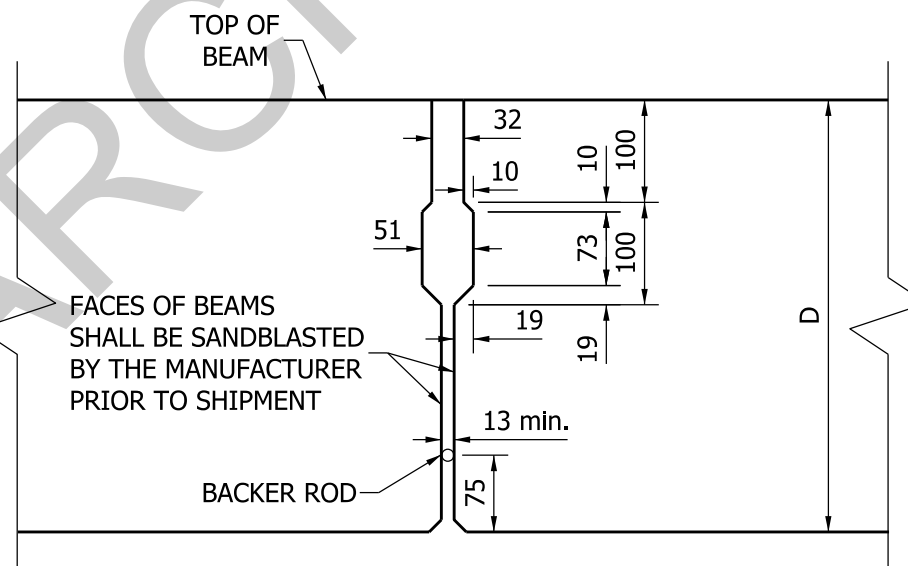
INDIANA DEPARTMENT OF TRANSPORTATION	
BRIDGE PRESTRESSED BOX BEAM ADJACENT BOX BEAM TRANSVERSE TENSIONING ROD DETAILS SEPTEMBER 2010	
STANDARD DRAWING NO.	E 707-BPBB-01
	DESIGN STANDARDS ENGINEER _____ DATE _____
	CHIEF HIGHWAY ENGINEER _____ DATE _____
DESIGN STANDARDS ENGINEER	



SECTION SHOWING TRANSVERSE TENSIONING ROD



SECTION AT FACE OF BEAM



SECTION SHOWING JOINT BETWEEN BEAMS

All Dimensions are in mm unless otherwise specified.

INDIANA DEPARTMENT OF TRANSPORTATION	
BRIDGE PRESTRESSED BOX BEAM ADJACENT BOX BEAM TRANSVERSE TENSIONING ROD DETAILS SEPTEMBER 2010	
STANDARD DRAWING NO.	707-BPBB-01
	DESIGN STANDARDS ENGINEER DATE
	CHIEF HIGHWAY ENGINEER DATE
DESIGN STANDARDS ENGINEER	

707-B-183 ADJACENT PRESTRESSED-CONCRETE BOX BEAMS

(Adopted 06-18-09)

The Standard Specifications are revised as follows:

SECTION 707, LINE 10, INSERT AS FOLLOWS:

707.02 Materials

Materials shall be in accordance with the following:

Admixture for Concrete	912.03
<i>Backer Rod</i>	906.02(b)
Coarse Aggregates, Class A or Higher, Size No. 91.....	904
Concrete Curing Materials	912
Concrete Sealers.....	909.09, 909.10
Elastomeric Bearings	915.04
Fine Aggregates, Size No. 23.....	904
Fly Ash.....	901.02
<i>PCC Sealer/Healer</i>	901.06
Portland Cement.....	901.01(b)
Prestressing Strand.....	910.01(b)7
Reinforcing Bars	910.01

Structural steel for steel intermediate diaphragms shall be in accordance with 910.02(a) and shall be galvanized in accordance with ASTM A 123 after cutting, bending, and welding. Bolts for steel intermediate diaphragms shall be 7/8 in. (22 mm) and in accordance with 910.02(f), except they shall be type 1. All bolts, nuts, washers, and similar threaded fasteners shall be galvanized in accordance with ASTM A 123 or may be mechanically zinc coated in accordance with ASTM B 695, class 50.

Tensioning rods and steel plates used with adjacent prestressed-concrete box beams shall be in accordance with ASTM A 706, Grade 36 (A 706M, Grade 250). Nuts used with such tensioning rods shall be heavy hex in accordance with ASTM A 563 (A 563M). Grout used with such beams shall be non-shrink in accordance with ASTM C 1107.

SECTION 707, AFTER LINE 364, INSERT AS FOLLOWS:

After adjacent prestressed-concrete box beams are in place, the transverse tensioning rods shall be preliminarily tightened as shown on the plans. The rods shall be final tensioned as shown on the plans. The final tensioning shall yield 20,000 psi (138 MPa) as developed by means of a torque of 19 lb-ft (271 N-m). The tensioning-rod recesses and longitudinal joints between beams shall be filled with grout.
