

SUPPLEMENTAL SPECIFICATIONS  
INDIANA DEPARTMENT OF TRANSPORTATION  
1999 STANDARD SPECIFICATIONS

REVISION TO 1999 STANDARD SPECIFICATIONS

SECTION 601, LINE 19, DELETE AND INSERT AS FOLLOWS:

~~Concrete~~ *PCC in anchors and in pads or bases for impact attenuators shall be class A, in accordance with 702. Sheet signs and sign posts shall be in accordance with 802.*

*Barrels used in impact attenuators shall be yellow with black lids. Gravel used in the barrels shall be uncrushed coarse aggregate, size No. 12 in accordance with 904.02. All other impact attenuators shall have end reflectorization as shown on the plans or attached to the nose of the attenuator in accordance with the attenuator manufacturer's recommendation.*

SECTION 601, BEGIN LINE 99, DELETE AND INSERT AS FOLLOWS:

The fabrication, assembly, and installation of thrie-beam components and timber posts and

100 blocks for guardrail transitions ~~type TCB or WGB, and CP~~ will be required at for the locations shown on the plans.

**601.07 Guardrail End Treatments.** Guardrail end treatments ~~shall be~~ are required to terminate guardrail installations at the locations shown on the plans. ~~The type of guardrail end treatment, the allowable alternates for each type of guardrail end treatment, the~~ *The type I guardrail end treatment shall be either as shown on the plans, or shall be selected from the Department's List of Approved Guardrail End Treatments. The type II guardrail end treatment shall be as shown on the plans. The type OS or MS guardrail end treatment shall be selected from the Department's List of Approved Guardrail End Treatments. The reflectorization of guardrail end treatments, and the grading requirements shall be as shown on the plans.*

Double facing of guardrail end treatment type I will be required when it is used in conjunction with double faced guardrail.

*Each unit shall be installed in accordance with the manufacturer's recommendations.*

*Assembly and installation shall be supervised or performed at all times by an installer trained and certified by the unit's manufacturer, and shall be in accordance with the manufacturer's recommendations at the locations shown on the plans. A copy of the installer's certificate shall be provided to the Engineer prior to the start of the work.*

*The Contractor shall provide the Department with original copies of all necessary current manufacturer's installation manuals and shop drawings prior to beginning installation work. Shop drawings shall be a minimum of 550 by 850 mm (22 by 34 in.) in size. No installation work shall begin prior to the Department's receipt of such manuals and drawings. Such manuals and drawings will remain the property of the Department. If there is a discrepancy between shop drawings and the plans, the shop drawings shall govern.*

When installing end treatments to existing rub rail type guardrail, the rub rail, if not spliced at the last existing post, shall be cut and the end repositioned behind the flange of the post. If the rub rail is spliced at the last existing post, the existing splice material shall be removed and the end of the rub rail repositioned behind the flange of the post. In both cases, the rub rail shall be connected to the post as shown on the plans.

Guardrail end treatments shall be installed within 24 h of the completion of the guardrail installation to which they are to be attached. Drums in accordance with 801.10 shall be placed for overnight marking of the bare end of the guardrail when the installation of the guardrail end treatment will not be completed until the day following the completion of the guardrail installation to which it is to be attached.

**601.07.1 Impact Attenuators.** *Impact attenuators shall be placed where shown on the plans. The unit for each location shall be of the width recommended by the manufacturer and for the test level specified and shall be chosen from those shown on the Department's Approved List of Impact Attenuators. Each unit shall be placed in accordance with the manufacturer's recommendations, on a PCC pad.*

*Assembly and installation shall be supervised or performed at all times by an installer trained and certified by the unit's manufacturer, and shall be in accordance with the manufacturer's recommendations at the locations shown on the plans. A copy of the installer's certificate shall be provided to the Engineer prior to the start of work.*

*The Contractor shall provide the Department with original copies of all necessary current manufacturer's installation manuals and shop drawings prior to beginning installation work. Shop drawings shall be a minimum of 550 by 850 mm (22 by 34 in.) in size. No installation work shall begin prior to the Department's receipt of such manuals and drawings. Such manuals and drawings will remain the property of the Department. If there is a discrepancy between shop drawings and the plans, the shop drawings shall govern.*

*Transition panels and all other necessary hardware shown in the manufacturer's recommendations to be required for bi-directional traffic protection shall be included in the installation, if the unit is installed at a location where traffic is passing the unit on both sides in opposite directions.*

*If a spare parts package is required for the unit being installed, such package shall consist of those parts which are shown on the list provided by the manufacturer. The spare parts shall correspond to those shown on the list for the unit to be placed. The package shall be delivered to the location directed and will become the property of the Department.*

SECTION 601, BEGIN LINE 152, INSERT AS FOLLOWS:

*place. Guardrail transitions and guardrail end treatments will be measured per each complete in place. Guardrail buried end treatments type II will be measured per each. Impact attenuators and impact attenuator spare parts packages will be measured per each for the type and width and test level, complete in place. The curved W-beam guardrail connector system and the curved*

SECTION 601, AFTER LINE 200, INSERT AS FOLLOWS:

SECTION 601, BEGIN LINE 205, INSERT AS FOLLOWS:

SECTION 605, BEGIN LINE 138, DELETE AND INSERT AS FOLLOWS:

SECTION 605, BEGIN LINE 150, DELETE AND INSERT AS FOLLOWS:

SECTION 605, BEGIN LINE 239, DELETE AND INSERT AS FOLLOWS:

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SECTION 605, BEGIN LINE 253, DELETE AND INSERT AS FOLLOWS:

Reinforcing steel for integral curb walk will be paid for in accordance with ~~501.26~~ 610.07. The portion of expansion joint contained in the center curb ~~will be paid for in accordance with 501.26~~ shall be included in the cost of center curb.

SECTION 610, BEGIN LINE 3, DELETE AND INSERT AS FOLLOWS:

**610.01 Description.** This work shall consist of constructing ~~ement reinforced~~ concrete bridge approaches and surfacing or resurfacing the area from the edge of the main line surface to the right-of-way line at public road intersections; turn lanes, passing lanes, acceleration lanes, deceleration lanes, or recovery lanes between the edge of the main line surface and the right-of-way line, of which the total longitudinal dimension is less than 30 m (100 ft), excluding tapers; over the area of rural mail box approaches; from the edge of the mainline surface to a width of 1 m (~~36 in.~~ 3 ft) on private and commercial driveways; over the area of public road and private and commercial driveway crossovers; and other locations as specified in accordance with 105.03.

## **MATERIALS**

**610.02 Materials.** Materials shall be in accordance with 402, 500, or 700, whichever is applicable. HMA for approaches may be that specified for mainline or HMA base, intermediate, or surface. Mixture adjustments in accordance with 904.02(a) will not apply to approaches. *Mixtures will be sampled, tested, and accepted in accordance with 402.06(a) unless the mixtures are supplied in accordance with 401.08 as allowed in 402.03. When mixtures in accordance with 401.08 are supplied, all applicable requirements of 401.02 shall be met and acceptance will be in accordance with 402.06(b).*

SECTION 610, BEGIN LINE 57, DELETE AND INSERT AS FOLLOWS:

**610.05 Cement Reinforced Concrete Bridge Approach Pavement.** ~~Cement Reinforced concrete bridge approaches pavement shall be either reinforced or plain as specified, and constructed as pavement on approaches to bridges when such approaches are a part of the bridge contract. It may be constructed by either machine or hand methods. Regardless of the method of construction, the pavement approach will be cored as miscellaneous pavement. The pavement thickness and location of reinforcing steel will be measured. All variations~~ *Variations in thickness* will be administered in accordance with ~~501.24~~ 502.21.

**(a) Machine Method.** The ~~pavement may approach~~ shall be constructed in accordance with ~~501~~ 502, including composition of concrete, except construction of the ~~pavement approach~~ in traffic lane widths will be permitted provided an approved, power driven, tandem screed, finishing machine is used. Forms and joints shall be in accordance with the requirements set out for hand methods.

**(b) Hand Method.** The concrete shall be class A in accordance with 702. ~~If mixed at the site, it may be transported from the mixer to the subgrade by any satisfactory means.~~ The ~~pavement approach~~ shall be poured in a minimum width of one traffic lane, and a maximum width of 7.3 m (24 ft). Screeds shall be, as a minimum, the full width of the pour. Forms shall be of metal with no less than a base width of 150 mm (6 in.). The forms shall be drilled or slotted to provide for placement of dowel bars. The longitudinal ~~keyway~~ construction joint shall be in accordance with ~~501.14(b)~~ 503.03(d). A drag template or strike-off shall be used to ensure accurate placing of the mesh. Finishing shall be in accordance with applicable provisions of ~~501.15~~ 504.03 except the use of the vibrator on the strike-off template shall be provided during the first pass and as directed on subsequent passes.

SECTION 610, BEGIN LINE 89, DELETE AND INSERT AS FOLLOWS:

**610.06 Method of Measurement.** HMA mixtures and compacted aggregate will be measured by the megagram (ton). ~~Cement Reinforced concrete bridge approach pavement will be measured by the square meter (square yard) in accordance with 501.25. Plain cement concrete pavement substituted for HMA mixture for approaches will be measured in accordance with 610.07.~~ Reinforcing steel will be measured in accordance with 703.07.

SECTION 610, BEGIN LINE 103, DELETE AND INSERT AS FOLLOWS:

contract unit price per megagram (ton). ~~Cement Reinforced concrete bridge approach pavement will be paid for at the contract unit price per square meter (square yard).~~ Reinforcing steel will be paid for at the contract unit price per kilogram (pound).

SECTION 610, BEGIN LINE 116, DELETE AND INSERT AS FOLLOWS:

<del>Cement Concrete Pavement,</del>	<del>_____ mm</del>	<del>..... m2</del>
	<del>type — thickness</del>	
<del>(Cement Concrete Pavement,</del>	<del>_____ in.</del>	<del>..... SYS)</del>
	<del>type — thickness</del>	
Compacted Aggregate.	_____	Mg (TON)
	type	
HMA for Approaches	.....	Mg (TON)
Reinforced Concrete Bridge Approach,	_____ mm	m2
	thickness	
(Reinforced Concrete Bridge Approach	_____ in.	SYS)
	thickness	
Reinforcing Steel.....		kg (LBS)

SECTION 610, BEGIN LINE 128, DELETE AND INSERT AS FOLLOWS:

If the 1 m ~~(36 in. 3 ft)~~ wedge is placed on approaches at the same time and in conjunction with the mainline HMA base, intermediate, or surface, payment will be made at the same unit price as for the material placed on the mainline.

SECTION 610, DELETE LINES 131 THROUGH 140.

SECTION 610, AFTER LINE 141 INSERT AS FOLLOWS:

*The cost of all cores for determination of pavement thickness shall be included in the cost of reinforced concrete bridge approach.*

SECTION 611, BEGIN LINE 11, DELETE AND INSERT AS FOLLOWS:

**611.02 Materials.** Materials for crossover, driveway, and mailbox pavements shall be in accordance with the applicable requirements of 402 or ~~504~~ 502 as applicable. HMA mixtures shall consist of HMA base, intermediate, or surface. Other materials shall be in accordance with the following:

SECTION 611, BEGIN LINE 84, DELETE AND INSERT AS FOLLOWS:

621.12. Flashing arrow signs, type III-B barricades, road closure sign assemblies, temporary pavement markings and temporary raised pavement markers, if specified, will be measured in accordance with ~~801.17~~ 801.15. Permanent pavement markings and

SECTION 611, BEGIN LINE 111, DELETE AND INSERT AS FOLLOWS:

Flashing arrow signs required for use with temporary crossovers will be paid for in accordance with ~~801.18~~ 801.16.

Traffic control devices which are specified as pay items will be paid for in accordance with ~~801.18~~ 801.16.

Temporary pavement markings and temporary raised pavement markers, if specified, will be paid for in accordance with ~~801.18~~ 801.16. Removing existing conflicting

SECTION 614, BEGIN LINE 3, DELETE AND INSERT AS FOLLOWS:

**614.01 Description.** This work shall consist of the construction or reconstruction of ~~portland cement concrete~~ PCC headers adjacent to railroad tracks, bridges, and similar locations 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.

## **MATERIALS**

**614.02 Materials.** Materials shall be in accordance with the following:

Concrete.....	<del>504</del> 702
Reinforcing Steel.....	<del>910</del> 910.01

SECTION 614, BEGIN LINE 20, DELETE AND INSERT AS FOLLOWS:

If the header is adjacent to asphalt pavement, the concrete ~~may~~ shall be proportioned in accordance with ~~501.03~~, or it may be class A in accordance with 702 using class AP coarse aggregate.

## **CONSTRUCTION REQUIREMENTS**

**614.03 Cement Concrete PCC Header.** Construction shall be in accordance with the applicable provisions of ~~504~~ 702 and with these requirements.

SECTION 614, BEGIN LINE 36, DELETE AND INSERT AS FOLLOWS:

If the header is adjacent to ~~flexible-type~~ *asphalt* pavement, the concrete ~~may~~ *shall* be proportioned in accordance with ~~501.03~~, or it may be class A in accordance with 702.

SECTION 619, BEGIN LINE 116, DELETE AND INSERT AS FOLLOWS:

Construction signs in accordance with ~~801.03~~ *801.04* shall be furnished and placement at each project site shall be shown in the QCP. However, a "Bridge Painting Ahead" sign

SECTION 622, LINE 368, DELETE AND INSERT AS FOLLOWS:

The sign shall otherwise be in accordance with ~~621.05(h)~~ *621.06(h)*.