INDIANA DEPARTMENT OF TRANSPORTATION

100 North Senate Avenue
Room N758 CM
Indianapolis, Indiana 46204

www.in.gov/indot

Mike Braun, Governor
Lyndsay Quist, Commissioner

AGENDA

September 18, 2025, Standards Committee Meeting

MEMORANDUM

September 2, 2025

TO: Standards Committee

FROM: Scott Trammell, Secretary

RE: Agenda for the September 18 Standards Committee Meeting

A Standards Committee meeting is scheduled for 09:00 a.m. on Thursday, September 18, and will be held virtually via *Teams* (Microsoft application). Please contact Scott Trammell (strammell@indot.in.gov) for instructions on how to join this event.

The following items are listed for consideration:

A. GENERAL BUSINESS

OLD BUSINESS

(No items on this agenda)

NEW BUSINESS

Approval of the Minutes from the August 21, 2025 meeting

B. CONCEPTUAL PROPOSAL

(No items on this agenda)

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C. STANDARD SPECIFICATIONS, DRAWINGS, AND SPECIAL PROVISIONS PROPOSAL

OLD BUSINESS

Item No. 3 (8/21/25)	Mr. Reilman	pg. 3

2026 Standard Specifications:

203.20	Rock and Shale Embankment

NEW BUSINESS

Item No. 1	Mr. Reilman	pg. 8

2026 Standard Specifications:

904.03	Coarse Aggregates
904.07	Exceptions to AASHTO Standard Methods

Item No. 2	Mr. White	pg. 16

2026 Standard Specifications:

SECTION 713	TEMPORARY BRIDGES AND APPROACHES

Recurring Special Provision:

105-C-247	BRIDGE INSPECTION COORDINATION

Item No. 3	Mr. Dave	pg. 29

2026 Standard Drawings:

E 610-DRIV series	DRIVES
E 610-PRAP series	PUBLIC ROAD APPROACH

Item No. 4	Mr. Reilman	pg. 90

Recurring Special Provision:

914-M-070	ROADSIDE DEVELOPMENT MATERIALS

Item No. 5	Mr. Reilman	pg. 97

2026 Standard Specifications:

203.18	Embankment Construction

cc: Committee Members
FHWA
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PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The original rock embankment construction was not clear enough for designers, often times the designer asked about the embankment and the subgrade.

PROPOSED SOLUTION: We reduced the overburden of the rock embankment, we added a geotextile separation layer between the coarse and finer material, and clarification language was added.

APPLICABLE STANDARD SPECIFICATIONS: 203.20

APPLICABLE STANDARD DRAWING: None

APPLICABLE DESIGN MANUAL CHAPTER: None

APPLICABLE SECTION OF GIFE: Yes

APPLICABLE RECURRING SPECIAL PROVISION OR PLAN DETAILS: Yes

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad Hoc committee consisting of Nayyar Siddiki, Mike Koch, and Samuel Clawson

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:

IMPACT ANALYSIS (attach report): Yes

Submitted By: Jim Reilman and Nayyar Siddiki

Title: State Material Engineer

Division: Materials and Test

E-mail: Jreilman@INDOT.IN.GOV

Date: 7/21/2025

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IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Qualified Products List (QPL)? No
Will this proposal improve:

- Construction costs? Yes
- Construction time? Yes
- Customer satisfaction? Yes
- Congestion/travel time? No
- Ride quality? Yes

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

- For motorists? No
- For construction workers? No

Will this proposal improve quality for:

- Construction procedures/processes? Yes
- Asset preservation? No
- Design process? Yes

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? Yes

Is this proposal needed for compliance with:

- Federal or State regulations? N/A
- AASHTO or other design code? N/A

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

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(**Note:** Proposed changes shown highlighted gray.)

The Standard Specifications are revised as follows:

SECTION 203, BEGIN LINE 853, DELETE AND INSERT AS FOLLOWS:

203.20 Rock and Shale Embankment

Utilization of these materials in embankment construction shall be in accordance with the following.

(a) Rock Embankment

~~Where~~*When* rock is used for embankment, no large stones shall be allowed to nest but shall be distributed over the area to avoid pockets. Voids shall be filled carefully with small stones. The final ~~2 ft~~*6 in.* of the embankment ~~just below the subgrade elevation shall be composed of suitable material placed in layers not exceeding 8 in. loose measurement and compacted to the required density. Shale or shale-like materials shall not be incorporated in the upper 2 ft of the embankment~~*shall be constructed with No. 53 aggregate in accordance with 301. A geotextile in accordance with 918.02(a), Type 2A shall be placed between the rock and No. 53 aggregate in the embankments described below. The geotextile shall be placed in accordance with 214. The lift thickness shall be 2 ft.*

~~Where~~*When* the depth of an embankment exceeds ~~5~~*10* ft ~~and is to consist entirely of rock,~~ the rock *size* shall ~~be deposited in lifts~~ not ~~to~~ exceed ~~the top size of the material being placed, but in no event exceeding 4~~*2* ft *in each direction*. The rock for any particular lift shall be deposited on and pushed over the end of the lift being constructed by means of ~~bulldozers~~*track mounted dozers* or other approved equipment. Depositing of rock over the end of any lift from hauling equipment will not be allowed. If the voids of the last lift are not closed sufficiently, they shall be choked with small broken stone or other suitable material and compacted ~~as directed~~*with a vibratory roller. The material shall be spread with a track mounted dozer or other equipment having a minimum effective weight of 40 t. This sequence of steps shall be repeated for the remaining sections of the embankment. The final 6 in. of the embankment shall be constructed in accordance with 301.* ~~A geotextile in accordance with 918.02(a), Type 2A shall be placed between the rock and the soil~~.

~~Where the depth of embankment is 5 ft or less, or where the material being placed does not consist entirely of rock, the material shall be placed in lifts not to exceed the top size of the rock being placed but not exceeding 2 ft. Each layer shall be choked thoroughly with broken stone or other suitable material and be compacted to the required density or as directed. A geotextile in accordance with 918.02(a), Type 2A shall be placed between the rock and the soil~~*When the depth of an embankment is less than or equal to 10 ft, the rock size shall not exceed 1 ft in each direction. The material shall be spread with a track mounted dozer or other equipment having a minimum effective weight of 40 t. The material shall be choked with small broken stone and compacted with a vibratory roller. This sequence of steps shall be repeated for the remaining sections of the embankment. The final 6 in. of the embankment shall be constructed in accordance with 301.*

Where a rock fill is to be placed over a structure, the structure shall first be covered with 2 ~~to 4~~ ft of ~~earth~~*B borrow* or other approved material *as directed* and properly compacted before the

rock is placed. This covering shall be placed in accordance with 203.19. *B borrow shall be constructed in accordance with 211.*

~~Shale shall not be incorporated as rock embankment unless written permission is obtained.~~ *Proof rolling shall be performed on the final lift of the embankment in accordance with 203.26.*

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[OLD BUSINESS ITEM 3 8/21/25]
Mr. Reilman
Date: 9/18/25

COMMENTS AND ACTION

203.20 Rock and Shale Embankment

DISCUSSION:

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Motion: Second: Ayes: Nays: FHWA Approval:	**Action:** __ Passed as Submitted __ Passed as Revised __ Withdrawn
2026 Standard Specifications Sections: 203.10 pg. 171. Recurring Special Provisions or Plan Details: NONE Standard Drawing affected: NONE Design Manual Chapter: NONE GIFE Section: TBD	__ 2028 Standard Specifications __ Revise Pay Items List __ Notification to Designers if change is <u>not</u> addressed by RSP __ Create RSP (No.__) Effective: __ Revise RSP (No.__) Effective: __ Standard Drawing Effective: __ Create RPD (No. __) Effective: __ GIFE Update __ Frequency Manual Update __ AWP Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Coarse Aggregate size No. 43 is no longer needed.

PROPOSED SOLUTION: Remove coarse aggregate no. 43 from the Standard Specifications.

APPLICABLE STANDARD SPECIFICATIONS: 904

APPLICABLE STANDARD DRAWINGS: None

APPLICABLE DESIGN MANUAL SECTION: None

APPLICABLE SECTION OF GIFE: None

APPLICABLE RECURRING SPECIAL PROVISIONS: None

PAY ITEMS AFFECTED:

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc: Matt Beeson, Melissa Ehrhart, IMAA Technical Committee, Bart Williamson

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE: No RSP needed, incorporate into the 2028 Standards Specifications is sufficient.

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: (317) 522-9692

Date: 8/14/25

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IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Approved Materials List? Yes
Will this proposal improve:

- Construction costs? N/A
- Construction time? N/A
- Customer satisfaction? N/A
- Congestion/travel time? N/A
- Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? N/A

Will this item improve safety:

- For motorists? N/A
- For construction workers? N/A

Will this proposal improve quality for:

- Construction procedures/processes? N/A
- Asset preservation? N/A
- Design process? N/A

Will this change provide the contractor more flexibility? N/A

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? N/A

Is this proposal needed for compliance with:

- Federal or State regulations? No
- AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

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(Note: Proposed changes shown highlighted gray.)

The Standard Specifications are revised as follows:

SECTION 904, BEGIN LINE 191, DELETE AS FOLLOWS:

904.03 Coarse Aggregates

Coarse aggregates are defined as having a minimum of 20% retained on the No. 4 (4.75 mm) sieve. Coarse aggregates shall not contain adherent fines that are detrimental to the end product as defined in ITM 211.

The coarse aggregate shall comply with the quality requirements and the additional requirements in accordance with 904.03(a). Coarse aggregate may be rejected based on previous performance service records. Class AP is defined as the highest classification and Class F the lowest.

Blending of material for compliance with gradation or crushed particle requirements may be approved when requested in writing.

Blending of aggregate products to improve the quality classification of the finished product will not be allowed.

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(a) Classification of Aggregates

Characteristic Classes	AP	AS	A	B	C	D	E	F
Quality Requirements:								
Freeze and Thaw Beam Expansion, % max. (Note 1).....	.060							
Los Angeles Abrasion, % max. (Note 2).....	40.0	30.0	40.0	40.0	45.0	45.0	50.0	
Freeze and Thaw, AASHTO T 103, Procedure A, % max. (Note 3)	12.0	12.0	12.0	12.0	16.0	16.0	20.0	25.0
Sodium Sulfate Soundness, % max. (Note 3).....	12.0	12.0	12.0	12.0	16.0	16.0	20.0	25.0
Brine Freeze and Thaw Soundness, % max. (Note 3).....	30	30	30	30	40	40	50	60
Absorption, % max. (Note 4).....	5.0	5.0	5.0	5.0	5.0			
Additional Requirements:								
Deleterious, % max.								
Clay Lumps and Friable Particles.....	1.0	1.0	1.0	1.0	2.0	4.0		
Non-Durable (Note 5).....	4.0	2.0	4.0	4.0	6.0	8.0		
Coke					(See Note 6)			
Iron.....					(See Note 6)			
Chert (Note 7).....	3.0	3.0	3.0	5.0	8.0	10.0		
Weight per Cubic Foot for Slag, lb, min.	75.0		75.0	75.0	70.0	70.0	70.0	
Crushed Particles, % min. (Note 8)								
Compacted Aggregates.....			20.0	20.0	20.0	20.0		

Notes:

1. Freeze and thaw beam expansion shall be tested and re-tested in accordance with ITM 210.

2. Los Angeles abrasion requirements shall not apply to BF.

3. Aggregates may, at the option of the Engineer, be accepted by the Sodium Sulfate Soundness or Brine Freeze and Thaw Soundness requirements.

4. Absorption requirements apply only to aggregates used in PCC and HMA mixtures except they shall not apply to BF. When crushed stone coarse

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aggregates from Category I sources, in accordance with ITM 203, consist of production from ledges whose absorptions differ by more than two percentage points, the absorption test will be performed every three months on each size of material proposed for use in PCC or HMA mixtures. Materials having absorption values between 5.0 and 6.0 that pass AP testing may be used in PCC. If variations in absorption preclude satisfactory production of PCC or HMA mixtures, independent stockpiles of materials will be sampled, tested, and approved prior to use.

5. Non-durable particles include: a) soft particles as determined by ITM 206, b) other particles which are structurally weak, such as soft sandstone, shale, limonite concretions, coal, weathered schist, cemented gravel, ocher, shells, and wood, and c) other objectionable material. Determination of non-durable particles shall be made from the total weight (mass) of material retained on the 3/8 in. (9.5 mm) sieve. Scratch Hardness Test shall not apply to crushed stone coarse aggregate.

6. ACBF and SF coarse aggregate shall be free of objectionable amounts of coke, iron, and lime agglomerates.

7. The bulk specific gravity of chert shall be based on the saturated surface dry condition. The amount of chert less than 2.45 bulk specific gravity shall be determined on the total weight (mass) of material retained on the 3/8 in. (9.5 mm) sieve for sizes 2 through 8, ~~43,~~ 53, and 73 and on the total weight (mass) of material retained on the No. 4 (4.75 mm) sieve for sizes 9, 11, 12, and 91.

8. Crushed particle requirements apply to gravel coarse aggregates used in compacted aggregates. Determination of crushed particles shall be made from the weight (mass) of material retained on the No. 4 (4.75 mm) sieve in accordance with ASTM D5821.

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SECTION 904 – AGGREGATES
904.03 Coarse Aggregates

SECTION 904, BEGIN LINE 275, DELETE AS FOLLOWS:

(e) Sizes of Coarse Aggregates

Sieve Sizes	COARSE AGGREGATE SIZES (Percent Passing)											
	Coarse Graded										**Dense Graded**	
	2	**5**	**8**	**9**	**11, SC 11[5]**	**12, SC 12[5]**	**SC 16[5]**	**~~43~~[1]**	**91**	**93PG[6]**	**53[1]**	**73[1]**
4 in. (100 mm)												
3 1/2 in. (90 mm)												
2 1/2 in. (63 mm)	100											
2 in. (50 mm)	80 - 100											
1 1/2 in. (37.5 mm)		100						~~100~~			100	
1 in. (25 mm)	0 - 25	85 - 98	100					~~70 - 90~~	100		80 - 100	100
3/4 in. (19 mm)	0 - 10	60 - 85	75 - 95	100				~~50 - 70~~			70 - 90	90 - 100
1/2 in. (12.5 mm)	0 - 7	30 - 60	40 - 70	60 - 85	100	100	100	~~35 - 50~~		98 - 100	55 - 80	60 - 90
3/8 in. (9.5 mm)		15 - 45	20 - 50	30 - 60	75 - 95	95 - 100	94 - 100			75 - 100		
No. 4 (4.75 mm)		0 - 15	0 - 15	0 - 15	10 - 30	50 - 80	15 - 45	~~20 - 40~~		10 - 60	35 - 60	35 - 60
No. 8 (2.36 mm)		0 - 10	0 - 10	0 - 10	0 - 10	0 - 35		~~15 - 35~~		0 - 15	25 - 50	
No. 16 (1.18 mm)							0 - 4					
No. 30 (600 µm)						0 - 4		~~5 - 20~~		0 - 5	12 - 30	12 - 30
No. 200 (75 µm)[2]								~~0 - 6.0~~			5.0 - 13.0[4]	5.0 - 12.0
Decant (PCC)[3]		0 - 1.5	0 - 1.5	0 - 1.5	0 - 1.5	0 - 1.5			0 - 1.5			
Decant (Non-PCC)	0 - 2.5	0 - 2.5	0 - 3.0	0 - 2.5	0 - 2.5	0 - 2.0			0 - 2.5	0 - 2.0		
Decant (SC)					0 - 1.5	0 - 1.5	0 - 1.5					

(1) The liquid limit shall not exceed 25 (35 if slag) and the plasticity index shall not exceed 5. The liquid limit shall be determined in accordance with AASHTO T 89 and the plasticity index in accordance with AASHTO T 90.

(2) Includes the total amount passing the No. 200 (75 µm) sieve as determined by AASHTO T 11 and AASHTO T 27.

(3) Decant may be from 0 to 2.5 for stone and slag.

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(4) When slag is used for separation layers as defined in 302.01, the total amount passing the No. 200 (75 µm) sieve shall be 10.0 to 12.0.

(5) Seal coat (SC) aggregates shall be 85% one face and 80% two face crushed. The Flakiness Index in accordance with ITM 224 shall be a maximum of 25%.

(6) Pea gravel shall be generally uncrushed gravel, with a maximum of 20% crushed particles, and shall meet the gradation requirements of 93PG. Determination of crushed particles shall be made from the weight (mass) of material retained on the No. 4 (4.75 mm) sieve in accordance with ASTM D5821.

SECTION 904, BEGIN LINE 395, DELETE AS FOLLOWS:

(c) Exceptions to AASHTO T 27 for Coarse Aggregates

The size of test samples for coarse aggregate shall be as follows:

Aggregate Size	**Mass of Test Sample**
No. 2	11.3 kg min.
No. 5, 8, ~~43,~~ 53, 73, and 91	6.0 - 8.0 kg
No. 9	4.0 - 6.0 kg
Structure Backfill	
2 in.	11.3 kg min.
1 1/2 in. and 1 in.	6.0 - 8.0 kg
1/2 in.	4.0 - 6.0 kg
No. 4 and No. 30	300 g

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COMMENTS AND ACTION

904.03 Coarse Aggregates
904.07 Exceptions to AASHTO Standard Methods

DISCUSSION:

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Motion: Second: Ayes: Nays: FHWA Approval:	**Action:** ___ Passed as Submitted ___ Passed as Revised ___ Withdrawn
2026 Standard Specifications Sections: 904.03 pg. 1022 and 1025; 904.07 pg. 1030. Recurring Special Provisions or Plan Details: NONE Standard Drawing affected: NONE Design Manual Chapter: NONE GIFE Section: NONE	___ 2028 Standard Specifications ___ Revise Pay Items List ___ Notification to Designers if change is not addressed by RSP ___ Create RSP (No.___) Effective: ___ Revise RSP (No.___) Effective: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: ___ GIFE Update ___ Frequency Manual Update ___ SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: The current Section 713 – Temporary Bridges and Approaches isn't up to date with the latest AASHTO Bridge Design requirements, and also doesn't address federal load rating and oversize, overweight permitting requirements as defined in CFR 650.313 (k)-. RSP 105-C-247 doesn't include requirements for inspecting temporary bridges, which should be performed prior to opening to traffic.

PROPOSED SOLUTION: Update Section 713 and RSP 105-C-247 to bring the design standards up to current code and INDOT policy.

APPLICABLE STANDARD SPECIFICATIONS: 713 – Temporary Bridges and Approaches

APPLICABLE STANDARD DRAWING: N/A

APPLICABLE DESIGN MANUAL CHAPTER: N/A

APPLICABLE SECTION OF GIFE: 5.28 Temporary Bridges

APPLICABLE RECURRING SPECIAL PROVISION OR PLAN DETAILS: RSP 105-C-247

PAY ITEMS AFFECTED: The following pay items are proposed to be eliminated:
713-07661 GUARDRAIL END TREATMENT, TYPE OS, TEMPORARY BRIDGE APPROACH
713-99365 GUARDRAIL, W BEAM, 6.3 FT SPACING, TEMPORARY BRIDGE APPROACHES
713-04858 TEMPORARY BRIDGE
713-51334 TEMPORARY PIPE AND APPROACHES
713-04509 TEMPORARY PIPE

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc committee consisting of Michael Black, Stephanie Wagner, Jennifer Hart, Anne Rearick, Michael Koch, Joe Novak, and Gary Kreutzjans

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:
Contracts that contain pay item 713-51335 TEMPORARY BRIDGE AND APPROACHES

IMPACT ANALYSIS (attach report):

Submitted By: Pete White
Title: Design Manager
Division: INDOT Bridge Engineering
E-mail: pewhite@indot.in.gov
Date: August 21, 2025

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IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Qualified Products List (QPL)? No
Will this proposal improve:

Construction costs? Yes
Construction time? Yes
Customer satisfaction? Yes
Congestion/travel time? Yes
Ride quality? No

Will this proposal reduce operational costs or maintenance effort? No

Will this item improve safety:

For motorists? Yes
For construction workers? Yes

Will this proposal improve quality for:

Construction procedures/processes? Yes
Asset preservation? Yes
Design process? Yes

Will this change provide the contractor more flexibility? No

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? No

Is this proposal needed for compliance with:

Federal or State regulations? Yes
AASHTO or other design code? Yes

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

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(Note: Proposed changes shown highlighted gray.)

The Standard Specifications are revised as follows:

SECTION 713, BEGIN LINE 1, DELETE AND INSERT AS FOLLOWS:

SECTION 713 – TEMPORARY BRIDGES AND APPROACHES

713.01 Description

This work shall consist of the *design, load rating,* construction, ~~and~~ maintenance*, and removal* of temporary ~~pile or timber trestle~~ bridges and approaches in accordance with 105.03. *Temporary pipes used to convey channel flow under traffic shall also be included in this work and shall be designed and load rated as bridges when the length is more than 20 ft as measured in accordance with 101.06.*

MATERIALS

713.02 Materials

Materials shall be in accordance with the following:

Delineator Posts	910.15
Delineators	926.02
Fence	910.18
HMA for Temporary Pavement	*402*
Piling	701
Reinforcing Bars	*910.01*
Structural Concrete	*702*
Structural Steel	*910.02*
Temporary Pavement Markings	*801*
Temporary Traffic Barrier	*801*

CONSTRUCTION REQUIREMENTS

713.03 Design Requirements

The temporary bridge shall be in accordance with the overall minimum span length, clear roadway, and vertical clearance or low structure elevation as shown on the approved plans.

The temporary bridge, including the barriers and railings, shall be designed in accordance with the latest edition of the AASHTO LRFD Bridge Design Specifications and load rated in accordance with the AASHTO Manual for Bridge Evaluation and Part 3 of the INDOT Bridge Inspection Manual. The resulting HL-93 LRFR Design Inventory load rating factor shall be greater than 1.0. The Department will be evaluating and approving overweight permit vehicle loads based on the load ratings provided by the Contractor. Barriers and railings shall satisfy the LRFD Section 13 design forces for traffic railings for railing test level TL-3 and have a minimum height of 32 in. or the test level and minimum height shown on the plans.

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The temporary bridge substructure and foundations shall be designed in accordance with the requirements of the Indiana Design Manual.

The vehicular live load used for design shall be HL-93.

The temporary bridge deck wearing surface shall be a durable, skid resistant material.

The materials used to construct the temporary bridge may be salvaged steel subject to inspection and approval by the Contractor. The Contractor's approval of salvaged steel shall be certified by a professional engineer registered in the state of Indiana and submitted to the Engineer for acceptance.

713.04 Working Drawings

The Contractor shall submit working drawings, erection plan, design calculations, bridge load rating calculations and a Load Rating Summary Report in accordance with 105.02 and the following requirements. Working drawings, design calculations, and load ratings shall be signed by and shall bear the seal of a professional engineer and shall be submitted at least 14 calendar days prior to beginning construction of any portion of the temporary bridge. Temporary pipes used to convey channel flow under traffic that are not considered to be bridges per 101.06 will not require design calculations, bridge load rating calculations, or a Load Rating Summary Report. Temporary bridge or temporary pipe construction operations shall not begin until the Contractor receives written notice that the working drawings are approved by the Engineer.

The temporary bridge design calculations shall include each AASHTO LRFD load combination analyzed. A summary sheet that shows design assumptions and their source, controlling parameters and load combinations, and other pertinent input and output information shall be included with the calculations package. Bridge railing design calculations shall include bridge railing capacity in accordance with the designated test level. The load rating methodology shall be in accordance with the AASHTO Manual for Bridge Evaluation using the LRFD methodology. The Load Rating Summary Report shall be in accordance with the INDOT Bridge Inspection Manual.

The working drawings shall include details and design strengths for all structural components including bridge railing with test level verification. Drawings shall include details for the connection of the bridge railing to the approach barrier.

The working drawings shall include all details, dimensions, quantities, and cross-sections necessary to construct the temporary bridge or temporary pipes. They shall include, but shall not be limited to, the following:

(a) Foundations

If the Contractor elects to provide a foundation system for the Temporary Bridge that differs from the recommendations provided by the Geotechnical Report, the Contractor shall be responsible for obtaining any additional subsoil borings and providing a Geotechnical Addendum

to the Engineer for review and approval. All field testing of temporary foundations shall be the responsibility of the Contractor.

The following information shall be provided for spread footing foundations.

1. *Recommended footing elevations.*
2. *Bearing capacity design calculations and recommendations.*
3. *Estimated footing settlements and differential settlement, if applicable.*
4. *Eccentric loading limit.*
5. *Sliding resistance.*
6. *Overall stability analysis of spread footing locations.*
7. *Method of providing adequate footing scour protection.*

The following information shall be provided for driven pile foundations.

1. *Pile type, size, and steel grade.*
2. *Pile layout and spacing.*
3. *Factored design loads, nominal soil resistance, factored design soil resistance, and nominal driving resistance.*
4. *Method for determining the nominal driving resistance in accordance with 701.05.*
5. *Minimum pile tip elevations.*
6. *Estimated scour depths used in the analysis.*
7. *Pile structural capacity calculations.*
8. *Lateral pile load analysis.*
9. *Pile tip protection.*
10. *Pile uplift capacity, if required.*

The following information shall be provided for drilled shaft foundations.

1. *QCP in accordance with ITM 803 and RSP 728-B-203.*
2. *Contractor's method of integrity testing.*
3. *Side and tip resistance for drilled shaft rock socket.*
4. *Drilled shaft and column structural capacity.*

(b) Substructures and Bearings

1. *Seat elevations.*
2. *End bent or pier dimensions.*
3. *Reinforcement details.*
4. *Structural capacity calculations.*
5. *Bearing design including out-of-plane loading and anchor bolt capacity.*

(c) Geometry

1. *Clear Roadway.*
2. *Out to Out Bridge Deck.*

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3. Overhead clearance, if applicable.
4. Conformance with Roadway Alignment on the plans.
5. Vertical and horizontal clearances to the feature crossed.

(d) Materials

1. For salvaged or previously used materials, the following shall be provided.
2. The locations of all known defects which have been determined to be acceptable by the Contractor's engineer, along with supporting design calculations.
3. A certification, stamped by the Contractor's engineer, stating that the used material to be incorporated into the temporary bridge has been inspected within the past 24 months and subsequent to its most recent use and has been found to be acceptable.

713.~~03~~*05* General Requirements

Unless otherwise provided, the right-of-way will be furnished for temporary bridges and approaches.

The Contractor shall be responsible for amending environmental permits in the event that the construction impacts deviate from what is stated on the approved permits.

The following requirements shall be met prior to opening the temporary bridge to traffic. The Contractor and the Contractor's engineer shall accompany the Engineer on an inspection of the structure to verify that the structure and materials conform to the approved working drawings and specifications. A written statement prepared by the Contractor's engineer shall be submitted to the Engineer by the Contractor confirming the inspection and compliance with the working drawings. The Department's Engineer will notify the District Bridge Inspection Engineer 7 days prior to the temporary bridge opening to traffic. The temporary bridge shall be complete in place for 2 days prior to opening to traffic to allow time for inspection.

~~Information indicating the details of the temporary bridge proposed to be built shall be submitted for approval. If this information is not in accordance with the plans, details of the proposed temporary bridge signed by and bearing the seal of a registered professional engineer shall be submitted. These details shall be supplied in triplicate or in such form that may be reproduced readily. Information or details, or both if required, regarding temporary bridges shall be submitted and approved before work is started.~~

Where it is necessary to remove existing fence, a temporary fence shall be erected along the temporary right-of-way line~~, if so directed~~. This fence shall be ~~substantially as good as~~*in accordance with 603 and match or exceed the height of* the existing fence.~~ It shall be built and maintained satisfactorily.~~

~~713.04 Temporary Bridge~~

~~Unless otherwise provided, the temporary bridge shall have a clear roadway of no less than 28 ft and be designed to carry an HS20 truck loading. The bridge shall be provided with substantial~~

~~railings which shall be kept painted white. Backwalls shall be built at each end bent to hold the approach fills. Each bent shall have at least four piles or four substantial posts on an adequate mudsill.~~

~~The temporary bridge shall be built to an elevation of not less than that shown on the plans. It shall have a clear length opening no less than shown or otherwise designated. All timber and piles may be treated or untreated, unless otherwise specified.~~

713.~~05~~*06* Temporary Pipe

The minimum thickness required for the temporary pipe or pipe-arch shall be as follows:

(a) Corrugated Steel Circular Pipe

Thickness, in.	Pipe Diameter, in.
0.064	48 or less
0.079	54 or less
0.109	72 or less
0.138	78 or less
0.168	84 or less

(b) Corrugated Steel Pipe-Arch, 3 in. by 1 in. Corrugations

Thickness, in.	Pipe-Arch Area, sq ft
0.109	40 or less
0.138	58 or less

(c) Structural Plate Pipe-Arch 6 in. by 2 in. Corrugations

Thickness, in.	Pipe-Arch Area, sq ft
0.111	38 or less
0.140	71 or less
0.170	122 or less
0.188	131 or less

For thicknesses, diameters, or areas not listed above, the Engineer shall be contacted for approval.

713.~~06~~*07* Temporary Approaches

Temporary approaches shall be constructed to a line and grade ~~which will provide a reasonably convenient and safe connection between the temporary bridge and the existing road. The grade and crown elevation shall be as shown on the plans. The roadway and slopes shall be~~ as shown on the *approved* plans. All necessary drainage shall be provided. *Existing drainage shall*

AGENDA

be maintained, except as shown on the approved plans. Embankment shall be compacted in accordance with 203. If it becomes necessary to reconstruct the connection of the approaches with the existing roadway, ~~either because of the operations or other cause,~~ such adjustment shall be made as directed. *Subgrade treatment shall be in accordance with 207.*

A temporary reinforced concrete bridge approach slab shall be constructed in accordance with 609 if shown on the approved plans.

~~HMA pavement for temporary approaches shall be in accordance with 402. Temporary pavement markings in accordance with 801.12 shall be placed as shown on the plans. Delineators in accordance with 804 shall be placed as shown on the plans.~~

~~Guardrail and guardrail end treatment shall be provided at each corner of the temporary bridge as shown on the plans or as directed. The furnishing of materials and installation shall be provided in accordance with 601. After removal, the guardrail and guardrail end treatment will remain the property of the Contractor.~~

713.~~07~~*08* Maintenance

Unless otherwise provided, where a temporary bridge is required, traffic over the existing ~~bridge~~*structure* shall be allowed until the temporary bridge and approaches are satisfactorily completed and opened to traffic. They shall be so maintained until the new structure is opened to traffic. The necessary material and labor shall be furnished to repair or replace any portion of the temporary bridge and approaches which may have deteriorated under traffic. ~~During the winter months, salt or other equivalent materials shall be used as directed to prevent slippery conditions.~~

713.~~08~~*09* Removal

When the new work is opened to traffic, all the temporary work*, including temporary drainage features,* shall be removed and the ~~temporary right-of-way~~*site* shall be restored as nearly as possible to its original or satisfactorily altered state. All bents in the stream shall be removed entirely or down to the bed of the stream. All other bents either removed entirely or to 2 ft below the ground surface~~, unless the property owner of the temporary right-of-way consents in writing to have them cut at the ground line~~. Temporary ~~bituminous~~ HMA pavement~~, when no longer required for maintenance of traffic,~~ shall be removed and disposed of in accordance with 203.10.

713.~~09~~*10* Method of Measurement

Temporary bridges, temporary pipes *used to convey channel flow under traffic*, and *embankment for* approaches will not be measured for payment unless otherwise specified. *Temporary reinforced concrete bridge approaches will be measured by the square yard as computed by the dimensions shown on the approved plans. Reinforcing bars used in temporary reinforced concrete bridge approaches will be measured by the pound as shown on the approved plans. Subgrade treatment will be measured in accordance with 207.05. Placement of* HMA ~~mixtures~~ for temporary pavement will be measured ~~by the ton~~*in accordance with 402.19*. Guardrail of the type specified will be measured by the linear foot along the top of rail *in accordance with 601.13*. Guardrail end treatments will be measured ~~per each of the type specified~~*in accordance with 601.13*. *Temporary drainage structures will be measured in accordance with 715.13 and*

720.06. Temporary ~~pavement markings~~*traffic control devices* will be measured in accordance with 801.17. ~~Seeding and sodding will be measured in accordance with 621.13. The removal and disposal of temporary HMA pavement will not be measured for payment~~*Temporary surface stabilization will be measured in accordance with 205. No measurements will be made for maintenance of temporary bridge and approaches. Removal of temporary bridges, temporary pipes, temporary embankment, and temporary drainage structures will not be measured for payment.*

713.~~10~~*11* Basis of Payment

The accepted quantities of temporary bridge and approaches~~, or temporary pipe and approaches~~ will be paid for at the contract lump sum price for the work, complete in place and later removed as specified. *Temporary pipes used to convey channel flow under traffic will be paid for as temporary bridge and approaches, regardless of length. Subgrade treatment will be paid for as the type specified, in accordance with 207.06.* HMA ~~mixtures~~ for temporary pavement will be paid for as the type of mixture specified in accordance with ~~610.06~~*402.20*, complete in place. Guardrail installed along approaches will be paid for at the contract unit price per linear foot *in accordance with 601.14*. Guardrail end treatment will be paid for at the contract unit price per each for the type specified *in accordance with 601.14*. *Temporary reinforced concrete bridge approaches will be paid for in accordance with 609.14. Reinforcing bars used in temporary reinforced concrete bridge approaches will be paid for in accordance with 703.08. Temporary drainage structures and temporary pipe culverts will be paid for in accordance with 715.14 and 720.07.* Temporary ~~pavement markings~~*traffic control devices* will be paid for in accordance with 801.18.

~~Seeding and sodding will be paid for in accordance with 621.14.~~*Temporary surface stabilization will be paid for in accordance with 205.*

~~If adjustment of approach embankments is necessary, the additional excavation and borrow will be paid for in accordance with 203.28.~~

Payment will be made under:

Pay Item	**Pay Unit Symbol**
~~Guardrail End Treatment, _____, Temporary _____ type Bridge Approaches~~	~~EACH~~
~~Guardrail, W-Beam, ____ ft. ____ in. Spacing, Temporary Bridge Approaches~~	~~LFT~~
Temporary Bridge and Approaches	LS
~~Temporary Bridge~~	~~LS~~
~~Temporary Pipe and Approaches~~	~~LS~~
~~Temporary Pipe~~	~~LS~~

The cost of excavation, embankment, backfill, removal and disposal of temporary HMA

pavement, delineators, and temporary fence, shall be included in the cost of the pay items.

The cost of furnishing, installation, and removal of guardrail and guardrail end treatment *for bridge approaches* shall be included in the cost of the pay items.

The cost of installing and removing any riprap or geotextiles placed on the spill slopes for temporary bridge scour protection shall be included in the cost of the pay item.

The cost of designing the temporary bridge and foundations, working drawings, and inspections shall be included in the cost of the pay item.

The cost of furnishing, installation, and removal of the bridge wearing surface shall be included in the cost of the pay item.

No additional payment will be made for the cost of maintaining the temporary bridge and approaches, including the pavement and drainage.

If the Contractor elects to build a longer bridge*, larger reinforced concrete bridge approaches,* or *larger* approaches than specified, such work shall be done with no additional payment. If such work requires additional right-of-way, it shall be provided with no additional payment.

AGENDA

(Note: Proposed changes shown highlighted gray)

105-C-247 BRIDGE INSPECTION COORDINATION

(Revised 04-20-23)

The following bridge inspections are due to be performed by the Department's Bridge Inspection Office, or its authorized representative, on each bridge within the construction limits of the contract.

~~Structure Number~~*Bridge Name*[1]	~~NBI~~*Bridge* Number[2]	Location	Inspection Type	Last Inspection Date (MM/DD/YY)	~~Frequency~~*Inspection Interval* (Mos.)	First Scheduled Inspection (MM/YY)	Second Scheduled Inspection (MM/YY)

[1] *Bridge Name is the Asset Name [example: I70-154-10118 EBL]*
[2] *Bridge Number is the unique Asset Number previously referred to as the NBI number*

Each bridge inspection shall be included in the schedule of work in accordance with 108.04. ~~Portions of each bridge replaced, reconstructed, or repaired will receive an initial inspection within 60 days of being opened to traffic~~*Notice will be given no less than seven days prior to each bridge inspection. Access, coordination, and cooperation for the required bridge inspections shall be in accordance with 105.05.*

~~The Department's onsite Engineer will notify the Department's Bridge Inspection Office by email when construction is complete for each phase for each bridge included in the contract. This notification will assist the Department's Bridge Inspection office schedule an initial bridge inspection. The notification will be directed to inbridgeshelp@indot.in.gov. The email notification will include the Contract Number, Des Number, NBI Number and Structure Number in the subject line.~~

~~Notice will be given no less than seven days prior to each bridge inspection. Access, coordination, and cooperation for the required bridge inspections shall be in accordance with 105.05.~~

The Department's onsite Engineer will notify the Department's Bridge Inspection Office by email 7 days prior to any temporary bridge opening to traffic. The temporary bridge shall be complete in place for 2 days prior to opening to traffic to allow time for inspection. The notification will be directed to inbridgeshelp@indot.IN.gov, and copied to LoadRating@indot.IN.gov. The email notification will include the Contract Number, Des Number of the permanent bridge under construction if applicable, NBI Number of the existing bridge and "Temporary Bridge Inspection Request" in the subject line.

REVISION TO 2026 STANDARD SPECIFICATIONS AND RECURRING SPECIAL PROVISION

SECTION 713 – TEMPORARY BRIDGES AND APPROACHES
105-C-247 BRIDGE INSPECTION COORDINATION

The Department's onsite Engineer will notify the Department's Bridge Inspection Office by email 7 days prior to moving traffic to a newly constructed or altered portion of a structure during a maintenance of traffic phase change. The phase shall be complete in place for 2 days prior to opening to traffic to allow time for inspection. The notification will be directed to inbridgeshelp@indot.IN.gov, and copied to LoadRating@indot.IN.gov. The email notification will include the Contract Number, Des Number of the permanent bridge under construction if applicable, NBI Number of the existing bridge and "Safety Inspection Request" in the subject line.

The Department's onsite Engineer will notify the Department's Bridge Inspection Office by email 7 days prior to opening the full bridge structure to traffic. The bridge shall be complete in place for 2 days prior to opening to traffic to allow time for inspection. The notification will be directed to inbridgeshelp@indot.IN.gov, and copied to LoadRating@indot.IN.gov. The email notification will include the Contract Number, Des Number of the permanent bridge under construction if applicable, NBI Number of the existing bridge and "Initial Inspection Request" in the subject line.

AGENDA

COMMENTS AND ACTION

SECTION 713 – TEMPORARY BRIDGES AND APPROACHES
105-C-247 BRIDGE INSPECTION COORDINATION

DISCUSSION:

AGENDA

Motion: Second: Ayes: Nays: FHWA Approval:	**Action:** ___ Passed as Submitted ___ Passed as Revised ___ Withdrawn
2026 Standard Specifications Sections: 713 begin pg. 730. Recurring Special Provisions or Plan Details: 105-C-247 Bridge Inspection Coordination **Basis for Use:** Required for any "B" or "R" contracts. Standard Drawing affected: NONE Design Manual Chapter: NONE GIFE Section: 5.28	___ 2028 Standard Specifications ___ Revise Pay Items List ___ Notification to Designers if change is not addressed by RSP ___ Create RSP (No.___) Effective: ___ Revise RSP (No.___) Effective: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: ___ GIFE Update ___ Frequency Manual Update ___ SiteManager Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: There is inconsistency between the pavement sections for Commercial Drives and Public Road Approaches shown on the Standard Drawings. Drive pavement sections can be used for up to 400 trucks per day and Public Road drawings are for less than 50 trucks a day or less than 100 trucks a day, which results in thinner sections for public road approaches. This has caused confusion during the review of commercial drive permits.

PROPOSED SOLUTION: Revise 610-PRAP Public Road Approach standard drawings to use a pavement section acceptable for up to 400 trucks per day (AADTT ≤ 400). Revise 610-DRIV crossover section for commercial drives to be acceptable for AADTT ≤ 400.

APPLICABLE STANDARD SPECIFICATIONS: N/A

APPLICABLE STANDARD DRAWING: E 610-DRIV (Drives) E 610-PRAP (Public Road Approaches)

APPLICABLE DESIGN MANUAL CHAPTER:

APPLICABLE SECTION OF GIFE: N/A

APPLICABLE RECURRING SPECIAL PROVISION OR PLAN DETAILS: N/A

PAY ITEMS AFFECTED: N/A

APPLICABLE SUB-COMMITTEE ENDORSEMENT: N/A

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:

IMPACT ANALYSIS (attach report): attached

Submitted By: Kumar Dave, Matt Thomas

Title: Pavement Design Manager, Pavement Design Engineer

Division: Highway Engineering

E-mail:

Date:

AGENDA

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No.
Will approval of this item affect the Qualified Products List (QPL)? No.
Will this proposal improve:

Construction costs? No.
Construction time? No.
Customer satisfaction? No.
Congestion/travel time? No.
Ride quality? No.

Will this proposal reduce operational costs or maintenance effort? Using a thicker pavement section will increase the life of the pavement and decrease maintenance effort needed to sustain pavement quality.

Will this item improve safety:

For motorists? No.
For construction workers? No.

Will this proposal improve quality for:

Construction procedures/processes? No.
Asset preservation? Thicker pavement section will increase design life of the public road approaches.
Design process? No.

Will this change provide the contractor more flexibility? No.

Will this proposal provide clarification for the Contractor and field personnel? No.

Can this item improve/reduce the number of potential change orders? No.

Is this proposal needed for compliance with:

Federal or State regulations? No.
AASHTO or other design code? No.

Is this item editorial? No.

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

AGENDA

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-01 INDEX GENERAL NOTES AND LEGEND (WITH MARKUPS)

INDEX

GENERAL NOTES

1. 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.
2. The appropriate pipe end treatment should be provided for pipes located either inside the clear zone or outside the clear zone.
3. The minimum driveway pavement sections for Class III, IV, VI and VII Drives have been designed for 400 trucks per day. If the truck traffic count is greater than 400 per day, the required pavement section shall be as shown elsewhere on the plans.

Truck Class 4 and above.

4. For Class III, IV, VI and VII Drives, if length of the driveway is more than 15 feet, then D-1 contraction joints are required in transverse direction. Spacing shall be 1/2 the length of the driveway or 15 feet max.
5. Embankment slopes within the mainline clear zone for new construction/reconstruction projects or within the obstruction-free zone for 3R projects should be as shown in the table on Standard Drawing E 610-PRAP-01. Outside the clear zone or the obstruction-free zone, the embankment slopes should desirably be 4:1 but not steeper than 3:1.

INDIANA DEPARTMENT OF TRANSPORTATION

INDEX
GENERAL NOTES AND LEGEND

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-01

ELIZABETH N. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

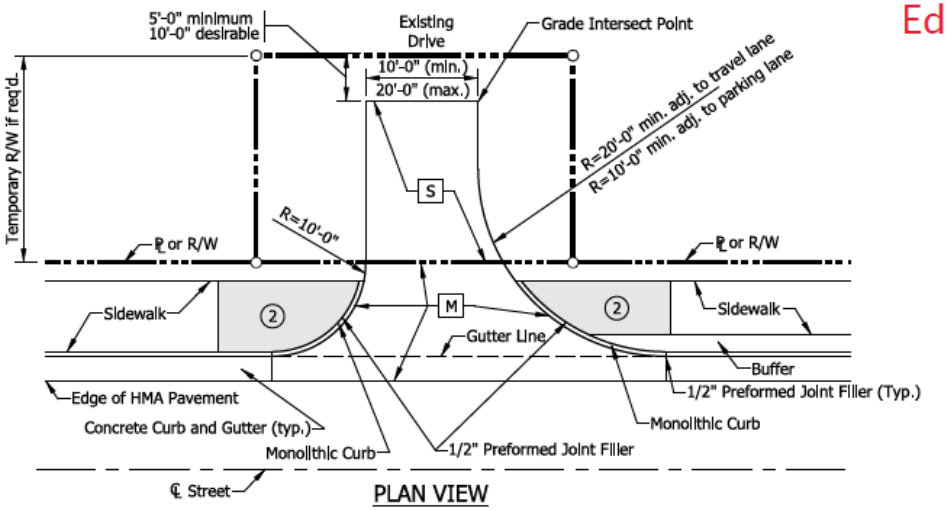
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

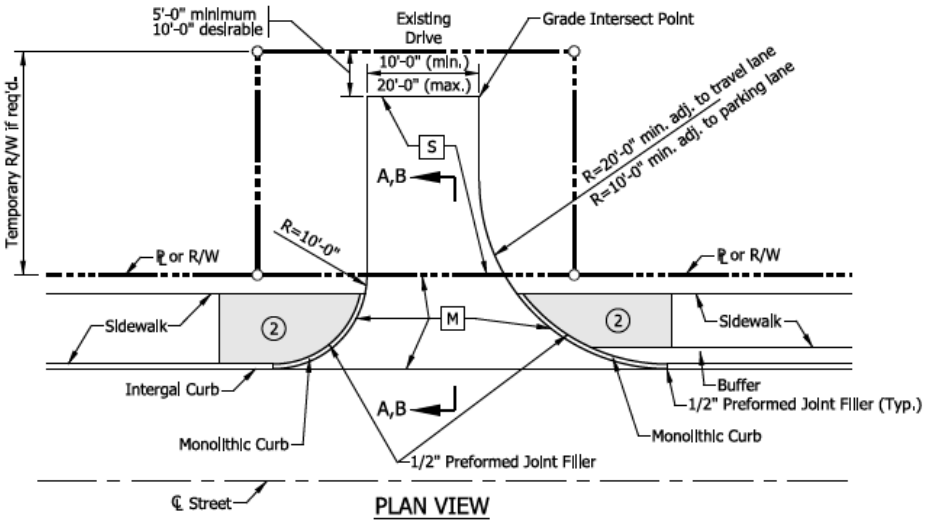
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-02 CLASS I DRIVE (RESIDENTIAL) (WITH MARKUPS)

Editorial - Format Changes Only



PLAN VIEW
CONCRETE CURB AND GUTTER



PLAN VIEW
INTEGRAL CONCRETE CURB

NOTES:

1. See Standard Drawing series E 610-DRIV-14 for joint placement, corner reinforcing, monolithic curb, and concrete curb and gutter details.
2. See Standard Drawing E 604-SDWK-03 sidewalk driveway crossing details.
3. See Standard Drawing E 610-DRIV-09 for Sections A-A and B-B.

LEGEND

M PCCP for Approaches, 6 in., on Dense Graded Subbase, 6 in., on Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53)

S For type and thickness equivalent to surface in place, see plans.

Sidewalk Elevation Transition

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I DRIVE
(RESIDENTIAL)

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-02

ELIZABETH N. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

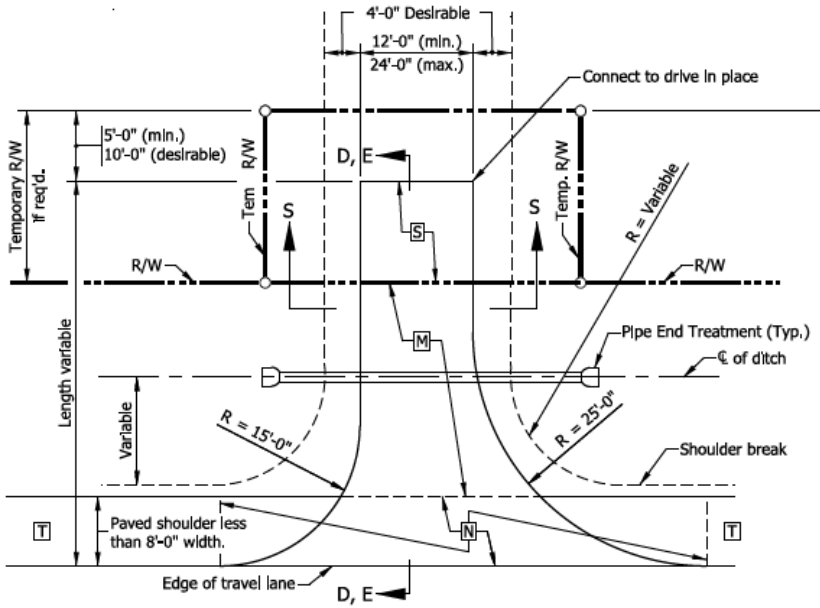
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

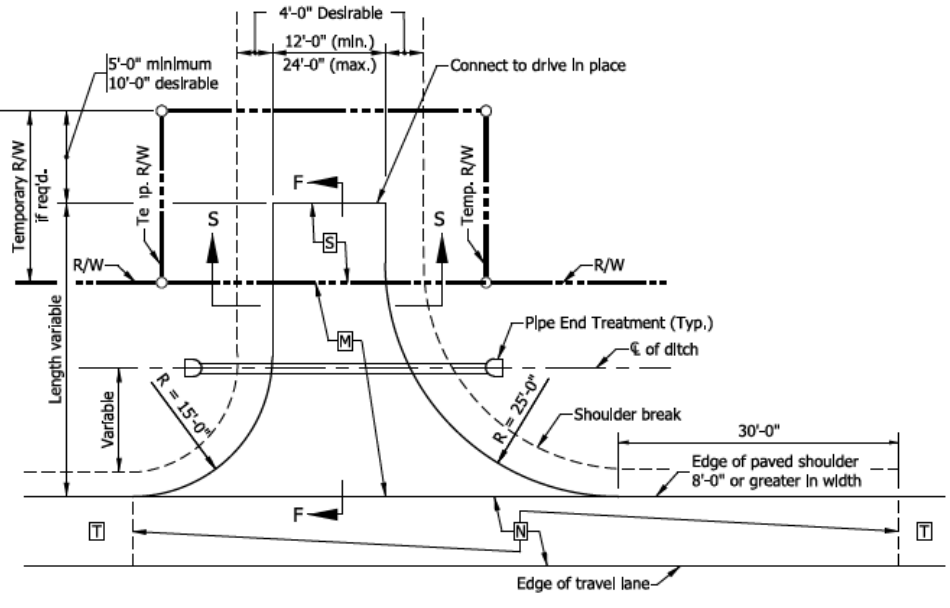
E 610-DRIV-03 CLASS II DRIVE (RESIDENTIAL) (WITH MARKUPS)

Editorial - Format Changes Only



PLAN VIEW

(PAVED SHOULDER LESS THAN 8'-0" IN WIDTH OR UNPAVED SHOULDER)



PLAN VIEW

(PAVED SHOULDER 8'-0" OR GREATER IN WIDTH)

NOTES: (move to upper right)

1. See Standard Drawing E 610-DRIV-10 for Section S-S.
2. See Standard Drawing E 610-DRIV-11 for Sections D-D, E-E and F-F for approach grades.
3. The radii for PCCP Class II drives shall be constructed using corner reinforcement as detailed in Standard Drawing E 610-DRIV-14.
4. For PCCP Drives see Standard Drawing E 610-DRIV-14 for joint placement details.

LEGEND (move under new Notes location)

(indent)

M HMA for Approaches, Type B, consisting of
165#/syd HMA Surface Type B on
275#/syd HMA Intermediate Type B on
6" Compacted Aggregate No. 53, on
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53)
or
PCCP for Approaches, 6 in., on
Dense Graded Subbase, 6 in., on
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53)

N The greater thickness of either the drive M or the paved shoulder T section.

S For type and thickness equivalent to surface in place, see plans.

T Plan shoulder section.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II DRIVE
(RESIDENTIAL)

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-03

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

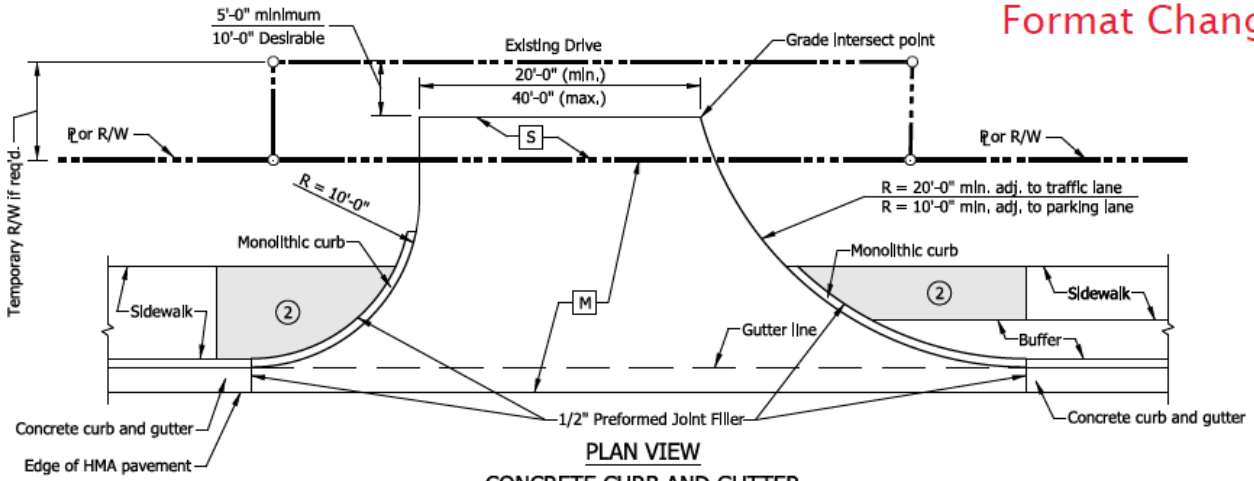
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

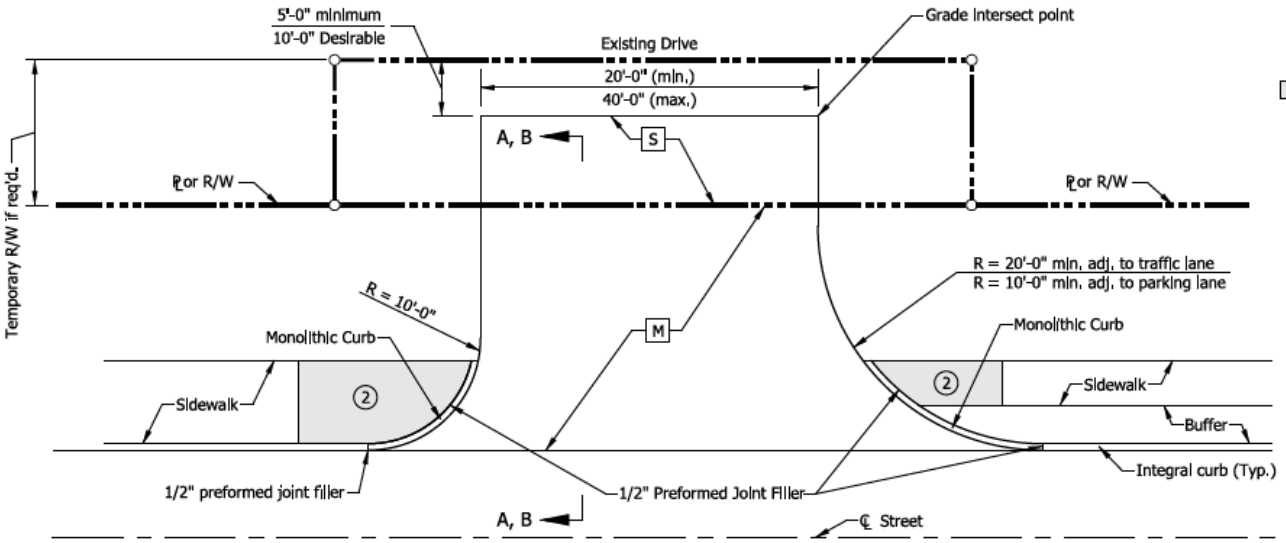
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-04 CLASS III DRIVE (COMMERCIAL) (WITH MARKUPS)

Format Changes +



PLAN VIEW
CONCRETE CURB AND GUTTER



PLAN VIEW
INTEGRAL CONCRETE CURB

NOTES:

1. See Standard Drawing E 610-DRIV-09 for Section A-A, and Section B-B.
2. See Standard Drawing E 604-SDWK-03 for sidewalk driveway crossing details.
3. See Standard Drawing E 610-DRIV-14 for joint placement, monolithic curb, and concrete curb and gutter details.

LEGEND

M PCCP for Approaches, 9 in., on
Dense Graded Subbase, 6 in., on
Geogrid Type ~~1B~~, on IB
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53)

S For type and thickness equivalent to surface in place, see plans.

Sidewalk elevation transitions.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS III DRIVE
(COMMERCIAL)

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-04

ELIZABETH N. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

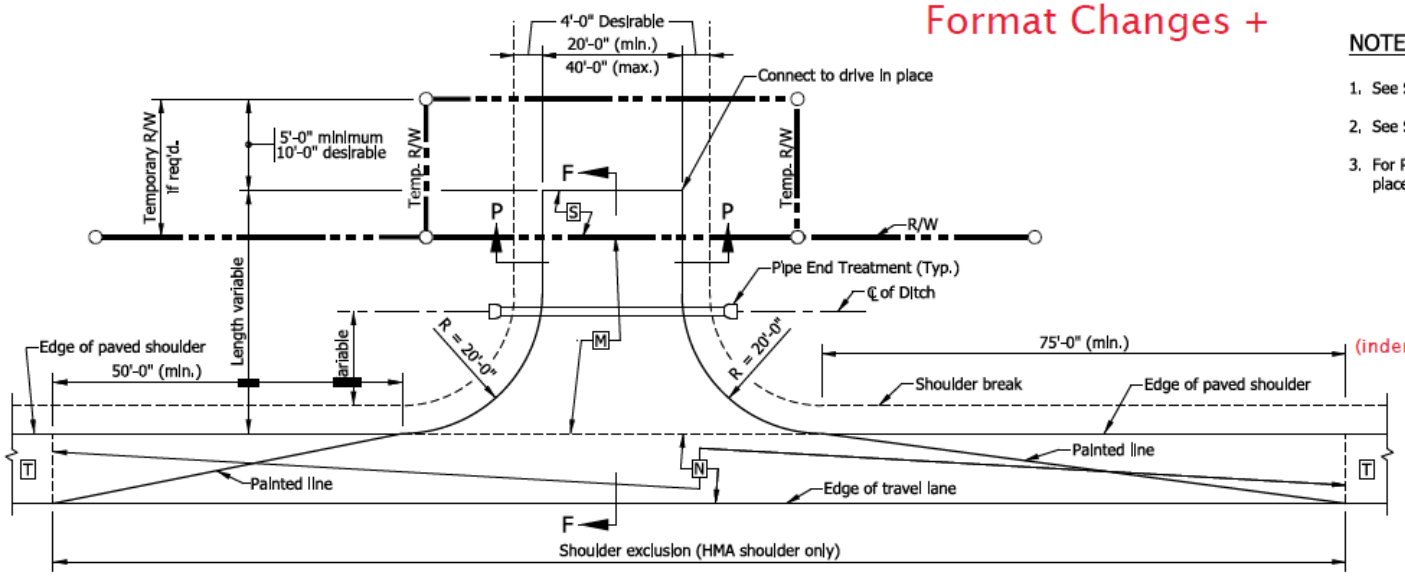
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

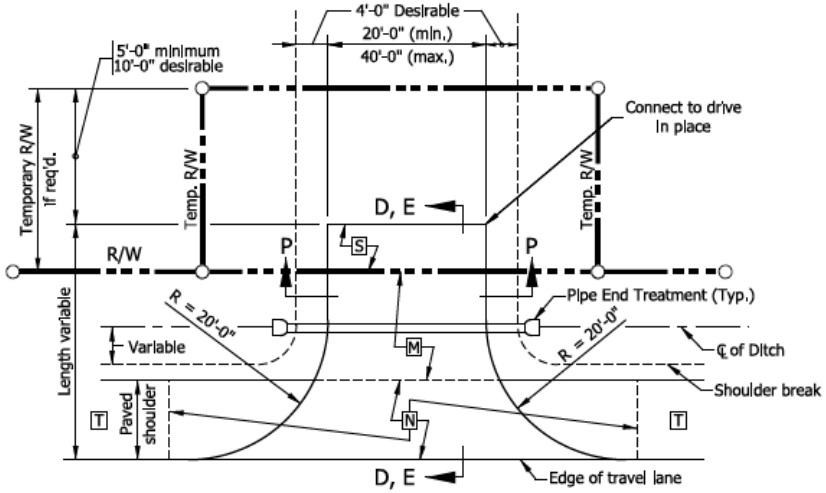
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-05 CLASS IV DRIVE (COMMERCIAL) (WITH MARKUPS)

Format Changes +



PLAN VIEW
(PAVED SHOULDER 8'-0" FEET OR GREATER IN WIDTH)



PLAN VIEW
(PAVED SHOULDER LESS THAN 8'-0" IN WIDTH OR UNPAVED SHOULDER)

NOTES:

1. See Standard Drawing E 610-DRIV-11 for Sections D-D, E-E and F-F.
2. See Standard Drawing E 610-DRIV-10 for Section P-P.
3. For PCCP Drives, see Standard Drawing E 610-DRIV-14 for joint placement details.

LEGEND

M HMA for Approaches, Type B, consisting of
165 lbs/syd HMA Surface, Type B, on
275 lbs/syd HMA Intermediate, Type B, on
660 lbs/syd HMA Base, Type B, on
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53), on
Geogrid, Type ~~1B~~ IB
or
PCCP for Approaches, 9 in., on
Dense Graded Subbase, 6 in., on
Geogrid Type ~~1B~~ on IB
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53)

N The greater thickness of either the drive M or the paved shoulder T section.

S For type and thickness equivalent to surface in place, see plans.

T Plan shoulder section.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS IV DRIVE
(COMMERCIAL)

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-05

ELIZABETH N. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

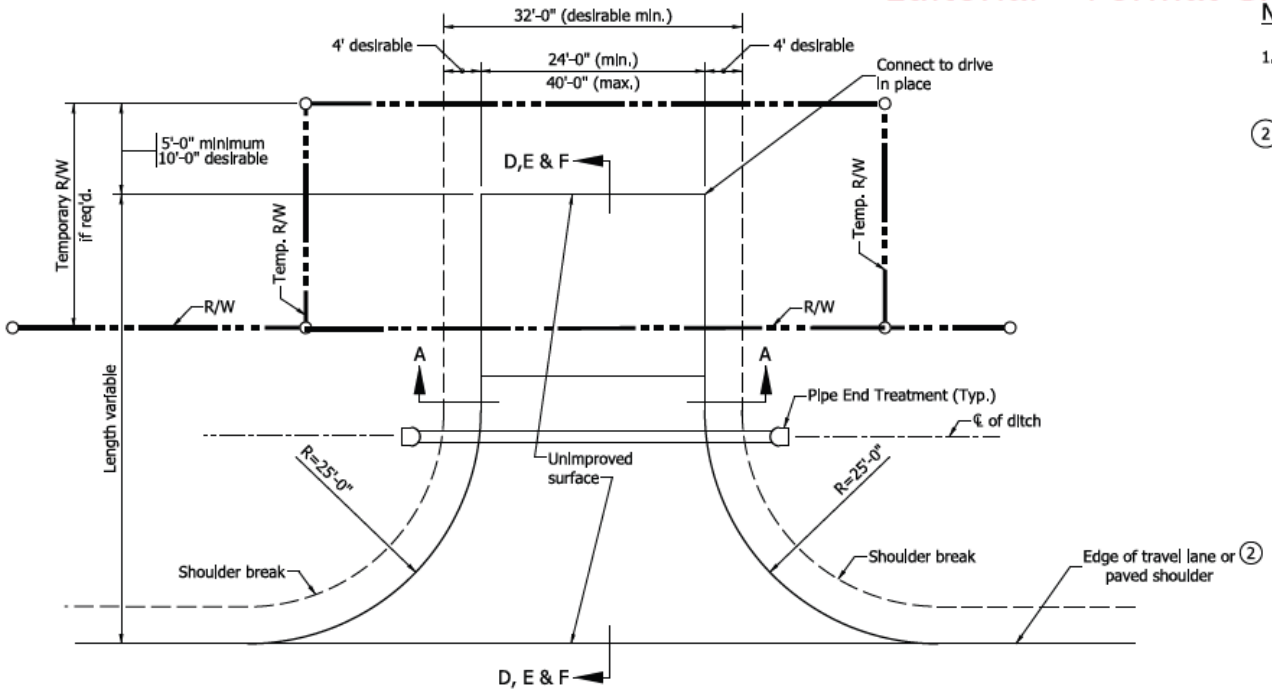
5/29/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

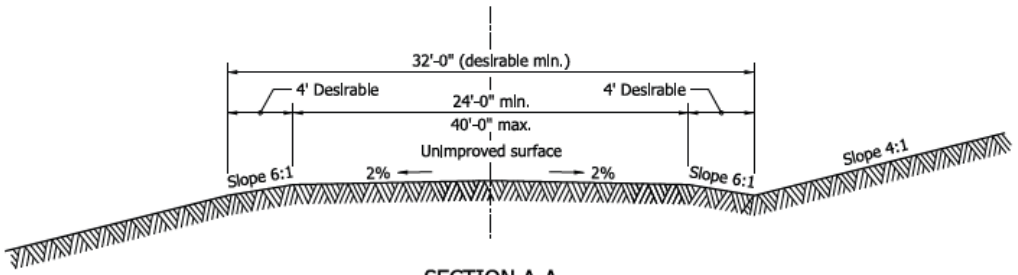
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-06 CLASS V DRIVE (FIELD ENTRANCE) (WITH MARKUPS)

Editorial - Format Changes Only



PLAN VIEW



SECTION A-A

NOTES:

1. See Standard Drawing E 610-DRIV-11 for sections D-D, E-E, and F-F.

(2) Where the shoulder is earth or aggregate or the paved width is less than 8'-0", the drive radii shall be tangent to the edge of the travel lane. Where the paved shoulder width is 8'-0" or more, the drive radii shall be tangent to the edge of the paved shoulder.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS V DRIVE
(FIELD ENTRANCE)

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-06

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

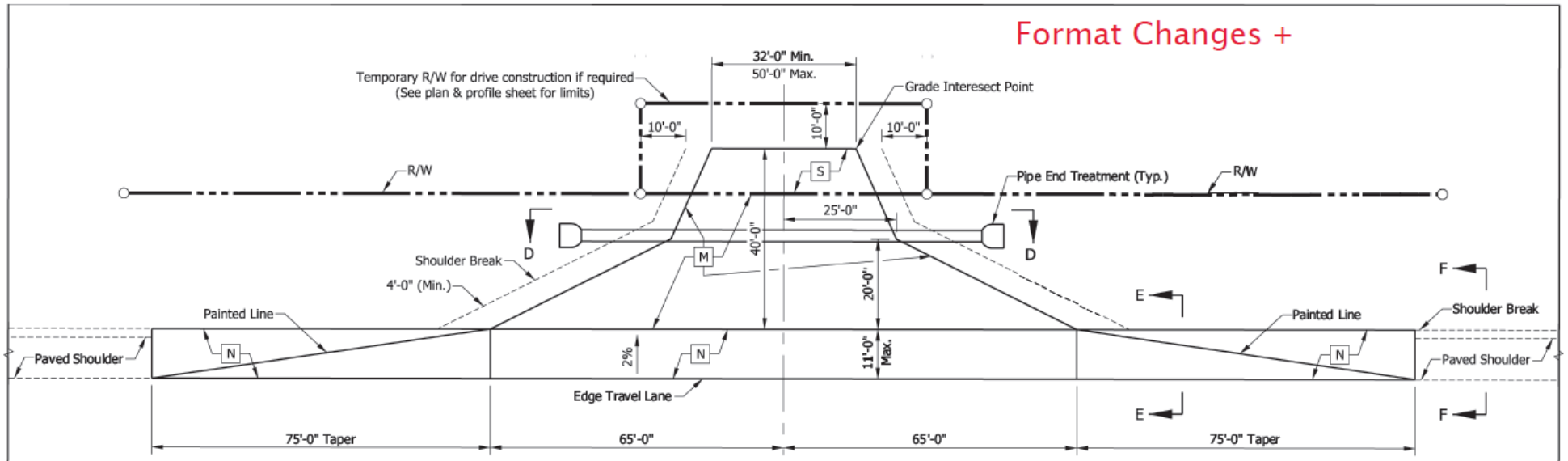
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

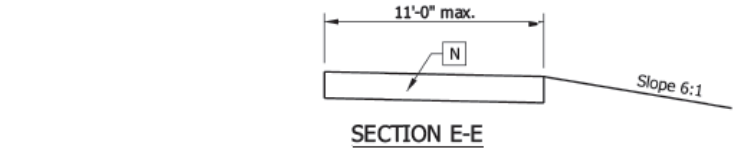
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-07 CLASS VI DRIVE (INDUSTRIAL) (WITH MARKUPS)

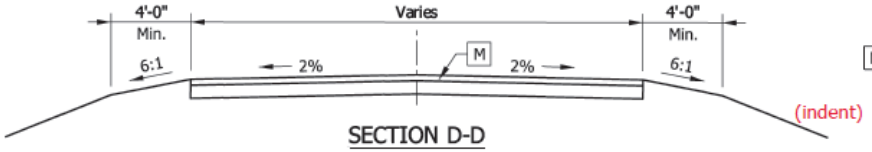
Format Changes +



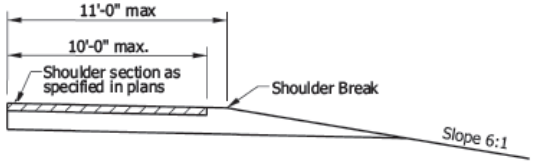
PLAN VIEW



SECTION E-E



SECTION D-D



SECTION F-F

NOTES: (move to upper right)

1. See Standard Drawing E 610-DRIV-12 for drive approach grades.
2. Class VI Drive accommodates a WB-67 (IDV) design vehicle with a 45'-0" turning radius.
3. For PCCP Drives see Standard Drawing E 610-DRIV-14 for joint placement details.

LEGEND (move below new Notes location)

M For ≤ 400 Trucks per day
HMA for Approaches, Type B, consisting of
165 lbs/syd HMA Surface, Type B, on
275 lbs/syd HMA Intermediate, Type B on
660 lbs/syd HMA Base, Type B on
Subgrade Treatment Type II (6 in. Coarse Aggregate No.53), on
Geogrid, Type ~~1B~~ IB
or
PCCP for Approaches, 9 in., on
Dense Graded Subbase, 6 in., on
Geogrid, Type ~~1B~~, on IB
Subgrade Treatment Type II (6 in. Coarse Aggregate No.53)

N The greater thickness of either the drive M or the paved shoulder section.

S For type and thickness equivalent to surface in place, see plans.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VI DRIVE
(INDUSTRIAL)

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-07

ELIZABETH N. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

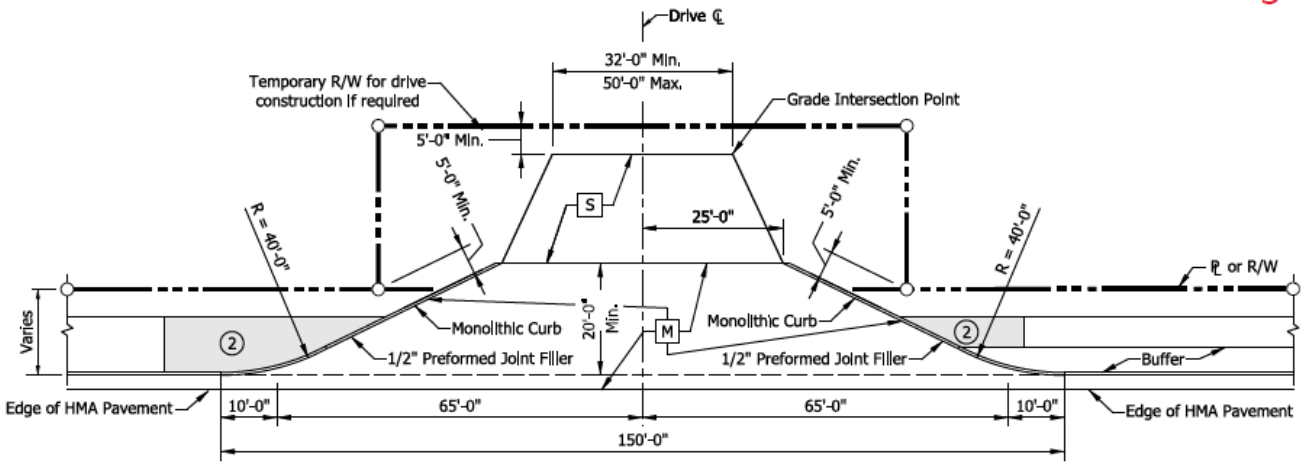
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

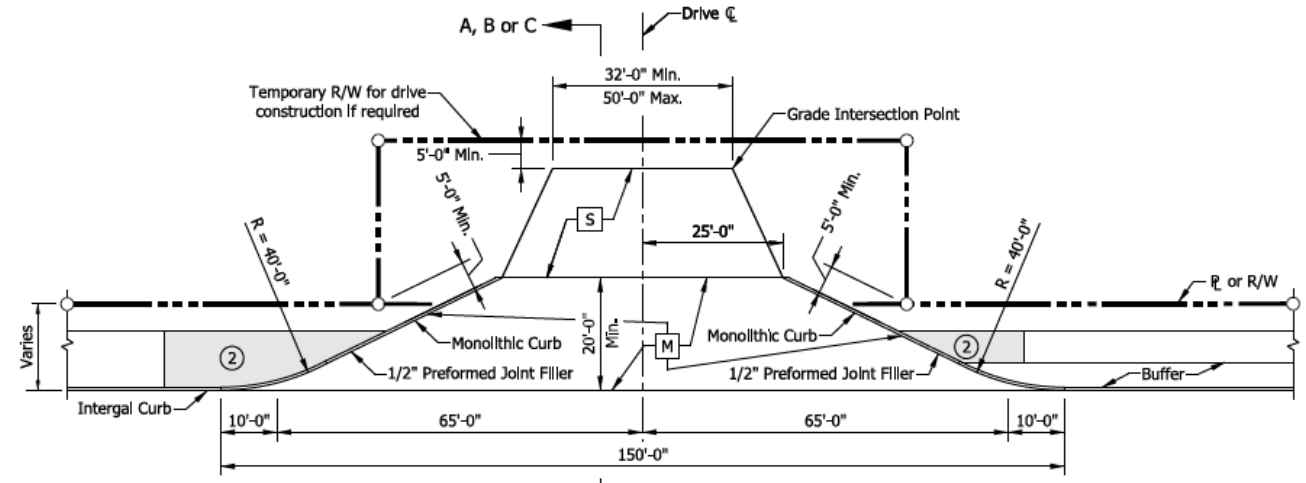
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-08 CLASS VII DRIVE (INDUSTRIAL) (WITH MARKUPS)

Format Changes +



PLAN VIEW
CONCRETE CURB & GUTTER



PLAN VIEW
INTEGRAL CONCRETE CURB

NOTES:

1. See Standard Drawing E 610-DRIV-12 for Sections A-A, B-B and C-C.
2. See Standard Drawing E 604-SDWK-03 sidewalk driveway crossing details.
3. See Standard Drawing E 610-DRIV-14 for joint placement, monolithic curb, and concrete curb and gutter details.

LEGEND

M For ≤ 400 Trucks per day
HMA for Approaches, Type B,
(indent) 165 lbs/syd HMA Surface, Type B, on
275 lbs/syd HMA Intermediate, Type B, on
660 lbs/syd HMA Base, Type B, on
Subgrade Treatment Type II (6 In. Coarse Aggregate No.53) on
Geogrid, Type ~~1~~B IB
or
PCCP for Approaches, 9 In., on
Dense Graded Subbase, 6 In., on
Geogrid, Type ~~1~~B, on IB
Subgrade Treatment Type II (6 In. Coarse Aggregate No. 53)

S For type and thickness equivalent to surface in place, see plans.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VII DRIVE
(INDUSTRIAL)

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-08

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

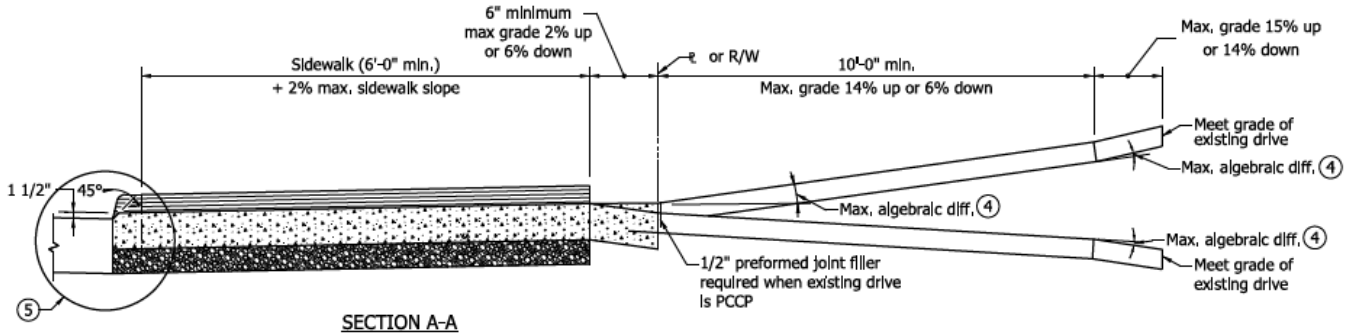
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

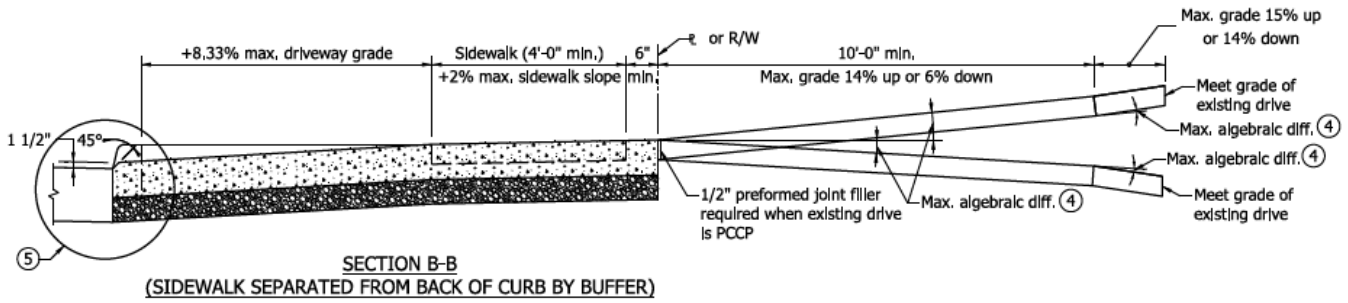
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-09 CLASS I AND CLASS III DRIVE APPROACH GRADES (WITH MARKUPS)

Editorial - Format Changes Only



SECTION A-A
(SIDEWALK ABUTS BACKFACE OF CURB)



SECTION B-B
(SIDEWALK SEPARATED FROM BACK OF CURB BY BUFFER)

NOTES:

1. See Standard Drawing E 610-DRIV-02 Class I Drive pavement section.
2. See Standard Drawing E 610-DRIV-04 Class III Drive pavement section.
3. See Standard Drawing E 604-SDWK-03 for sidewalk driveway crossing details.

(4) The maximum algebraic difference in grades shall not exceed 8% for crested grade nor 12% for sagged grade

(5) See Standard Drawing E 610-DRIV-14 joint placement, monolithic curb, and concrete curb and gutter details.

LEGEND

= Curb ramp or sidewalk elevation transition.

= PCCP

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I AND CLASS III DRIVE APPROACH GRADES

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-09

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/29/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

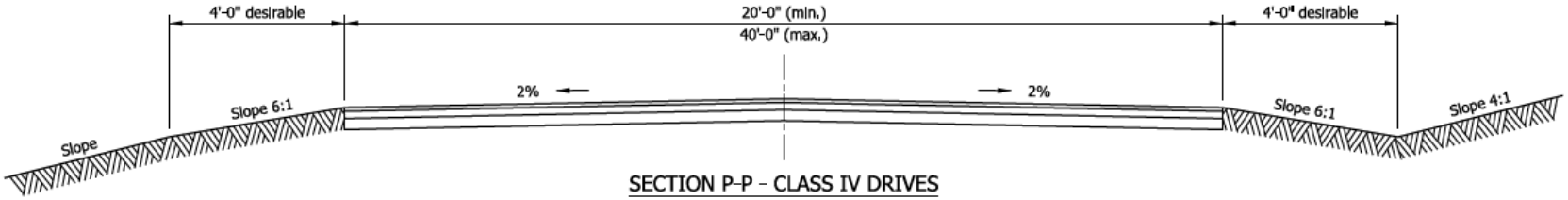
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-10 CLASS II AND CLASS IV DRIVE SECTIONS (WITH MARKUPS)

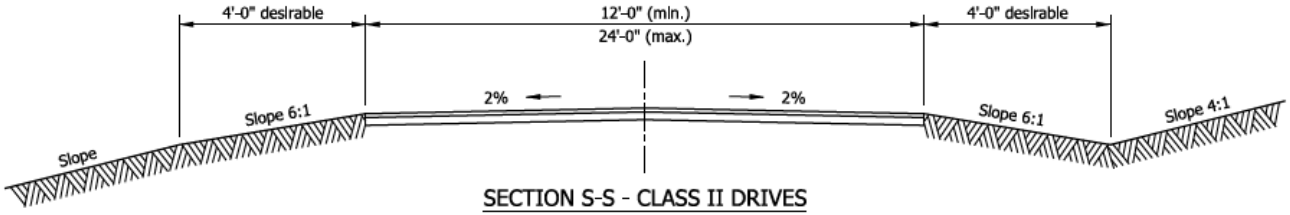
Editorial - Format Changes Only

NOTES:

1. See Standard Drawing E 610-DRIV-03 for Class II Drive details.
2. See Standard Drawing E 610-DRIV-05 for Class IV Drive details.



SECTION P-P - CLASS IV DRIVES



SECTION S-S - CLASS II DRIVES

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II AND CLASS IV DRIVE SECTIONS

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-10

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

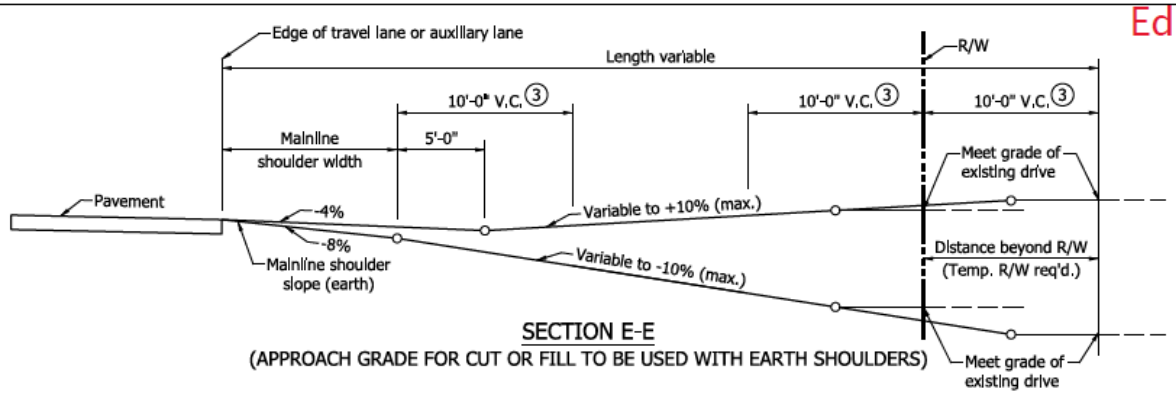
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

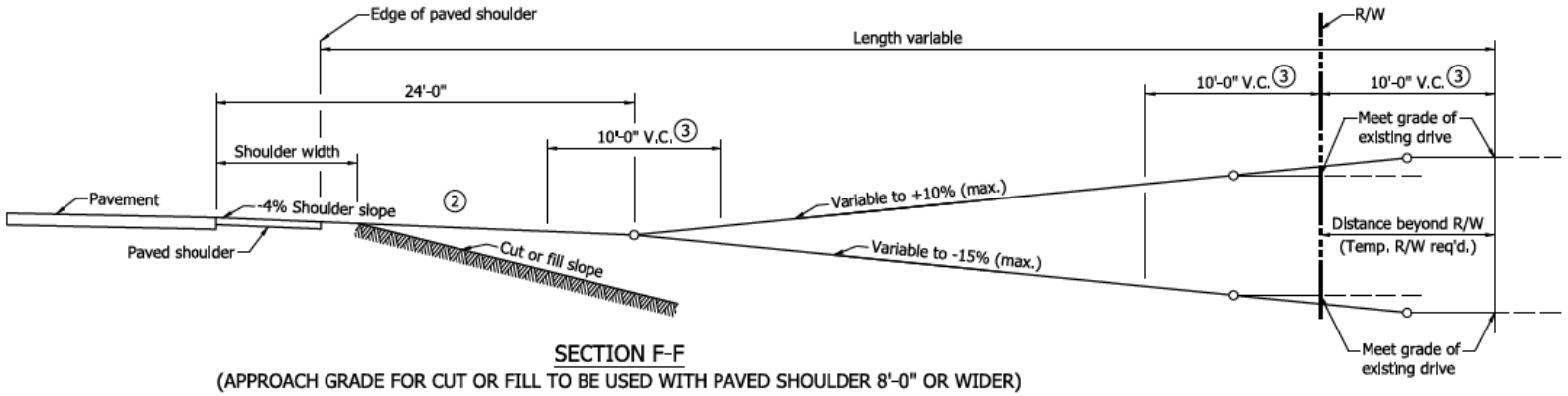
E 610-DRIV-11 CLASS II, IV & V DRIVE APPROACH GRADES (WITH MARKUPS)

Editorial - Format Changes Only



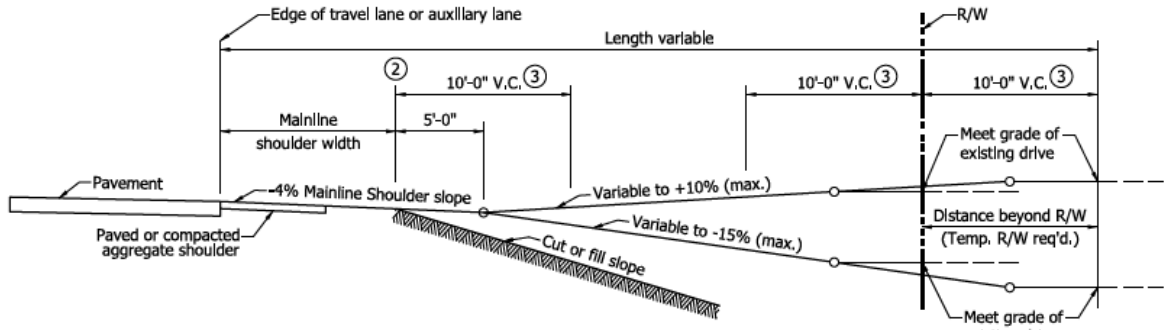
SECTION E-E

(APPROACH GRADE FOR CUT OR FILL TO BE USED WITH EARTH SHOULDERS)



SECTION F-F

(APPROACH GRADE FOR CUT OR FILL TO BE USED WITH PAVED SHOULDER 8'-0" OR WIDER)



SECTION D-D

(APPROACH GRADE FOR CUT OR FILL TO BE USED WITH LESS THAN 8'-0" WIDTH PAVED OR COMPACTED AGGREGATE SHOULDERS)

NOTES:

1. See Standard Drawing E 610-DRIV-03, -05 and -06 for location of Sections D-D, E-E and F-F.
2. Where physical restrictions limits the space available for the construction of a drive from a roadway in an embankment section, the downgrade breakpoint of the drive may begin at the edge of the shoulder without a crest vertical curve. The algebraic difference in grades shall not exceed 11%.
3. The maximum algebraic difference shall not exceed 11% for crested grade and 14% for sagged grades.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II, IV & V DRIVES
APPROACH GRADES

SEPTEMBER 2019 ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-11

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

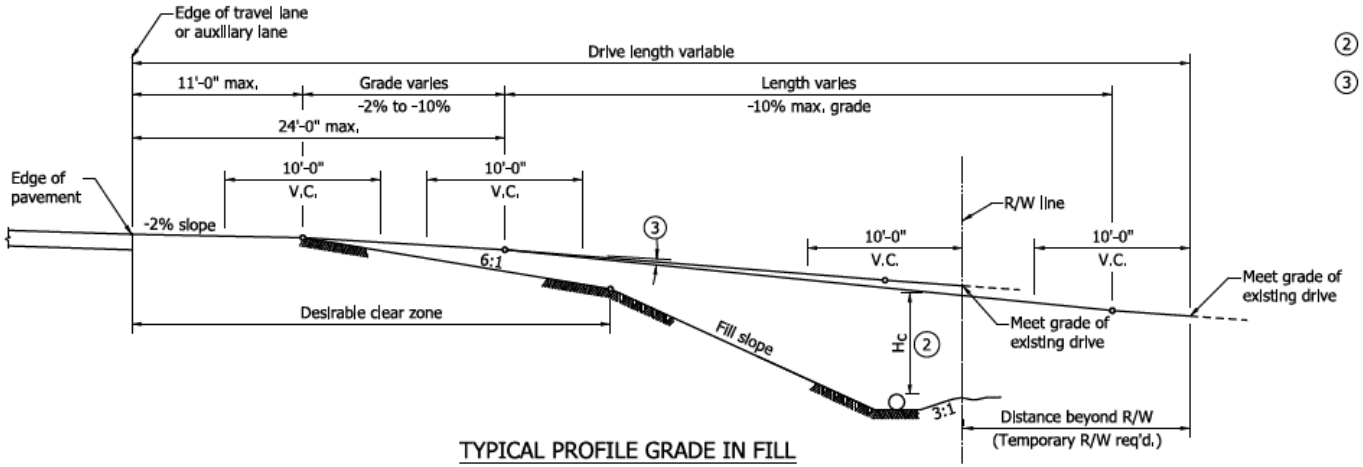
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-12 CLASS VI DRIVE APPROACH GRADES (WITH MARKUPS)

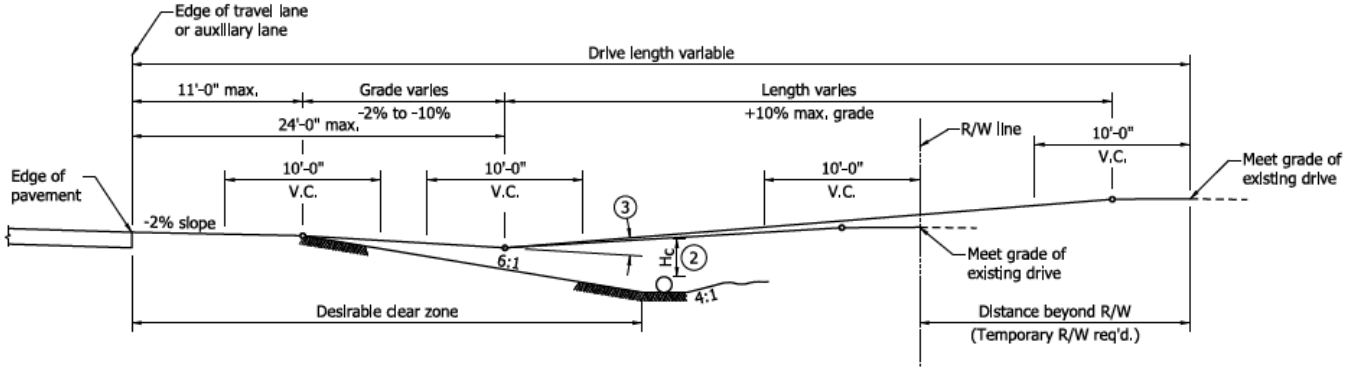
Editorial - Format Changes Only

NOTES:

1. See Standard Drawing E 610-DRIV-07 for plan and sections of Class VI Drive.
2. The earth cover shall be 1 ft or greater.
3. The maximum algebraic difference in grades shall not exceed 11% for crested grade and 14% for sagged grades.



TYPICAL PROFILE GRADE IN FILL



TYPICAL PROFILE GRADE IN CUT

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VI DRIVE APPROACH GRADES

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-12

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

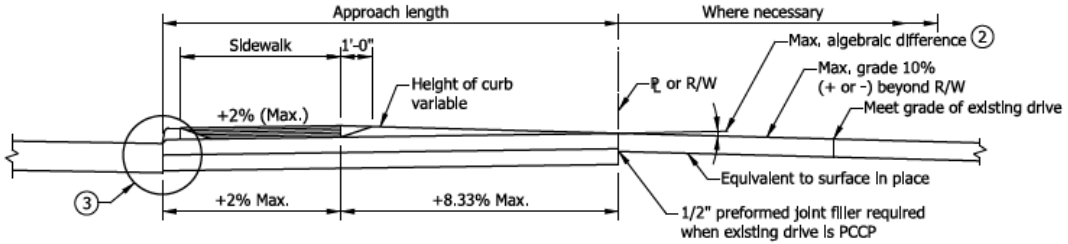
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

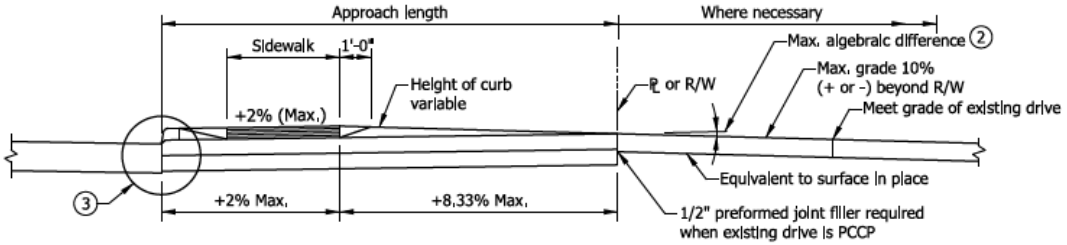
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-13 CLASS VII DRIVE APPROACH GRADES (WITH MARKUPS)

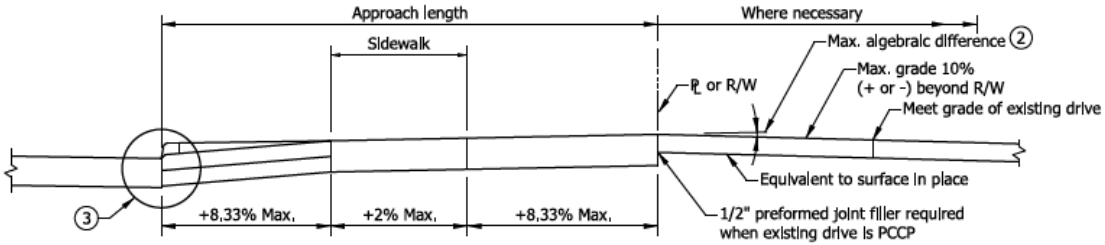
Editorial - Format Changes Only



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

1. See Standard Drawing E 610-DRIV-08 for plan of Class VII Drive.
② The maximum algebraic difference in grades shall not exceed 8% for crested grades and 12% for sagged grade.
③ See Standard Drawing E 610-DRIV-14 for joint placement, monolithic curb, and concrete curb and gutter details.

LEGEND

= Curb Ramp or Sidewalk Elevation Transition

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VII DRIVE
APPROACH GRADES

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-13

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

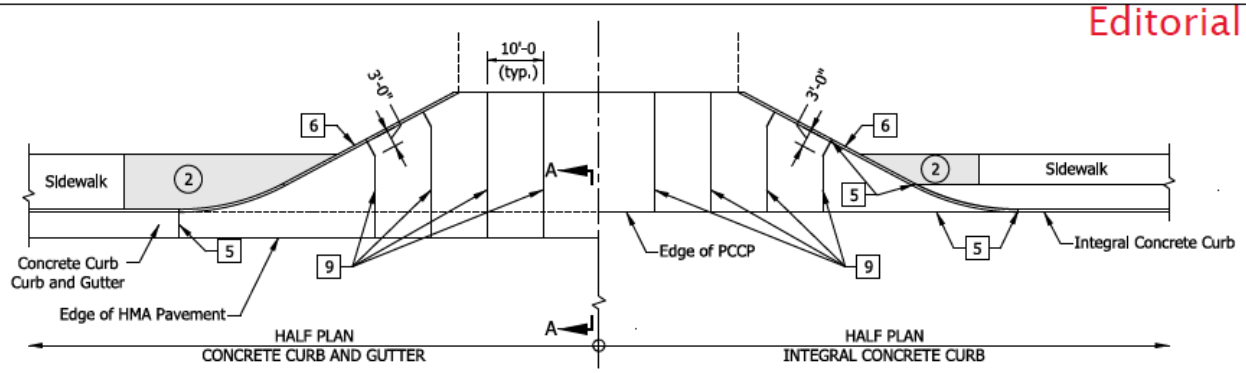
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

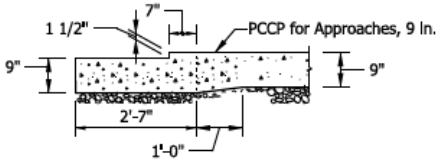
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-14 JOINT PLACEMENT, CORNER REINFORCING, MONOLITHIC CURB, AND CONCRETE CURB AND GUTTER DETAILS (WITH MARKUPS)

Editorial - Format Changes Only

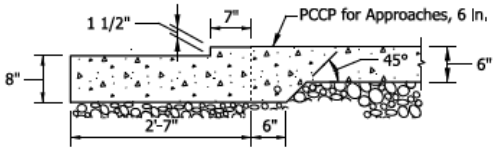


JOINT PLACEMENT DETAIL FOR PCCP DRIVES



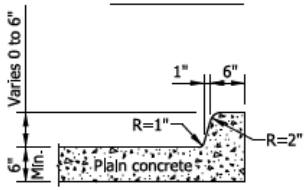
CLASS III AND CLASS VII DRIVE
CONCRETE CURB AND GUTTER DETAIL

SECTION A-A

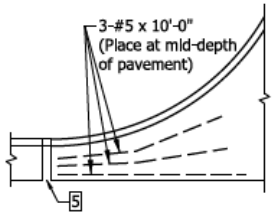


CLASS I DRIVE
CONCRETE CURB AND GUTTER DETAIL

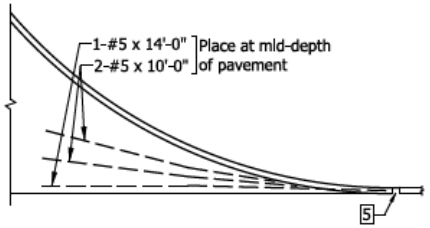
SECTION A-A



MONOLITHIC CURB 6

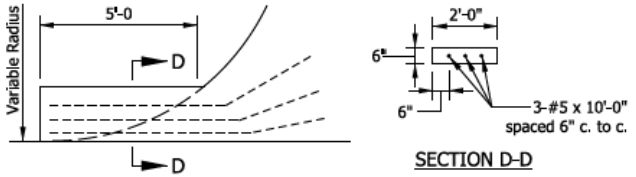


CONCRETE CURB AND GUTTER



INTEGRAL CONCRETE CURB

TYPICAL CORNER REINFORCING FOR CLASS I DRIVE



SECTION D-D

TYPICAL CORNER REINFORCING FOR CLASS II DRIVE

NOTES:

1. See Standard Drawing series E 503-CCPJ for joint details.
2. See Standard Drawing E 604-SDWK-03 sidewalk driveway crossing details.

LEGEND

5 1/2" Preformed Joint Filler
6 Monolithic Curb
9 Longitudinal Joint

INDIANA DEPARTMENT OF TRANSPORTATION

JOINT PLACEMENT, CORNER REINFORCING, MONOLITHIC CURB, AND CONCRETE CURB AND GUTTER DETAILS

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-14

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/29/2019
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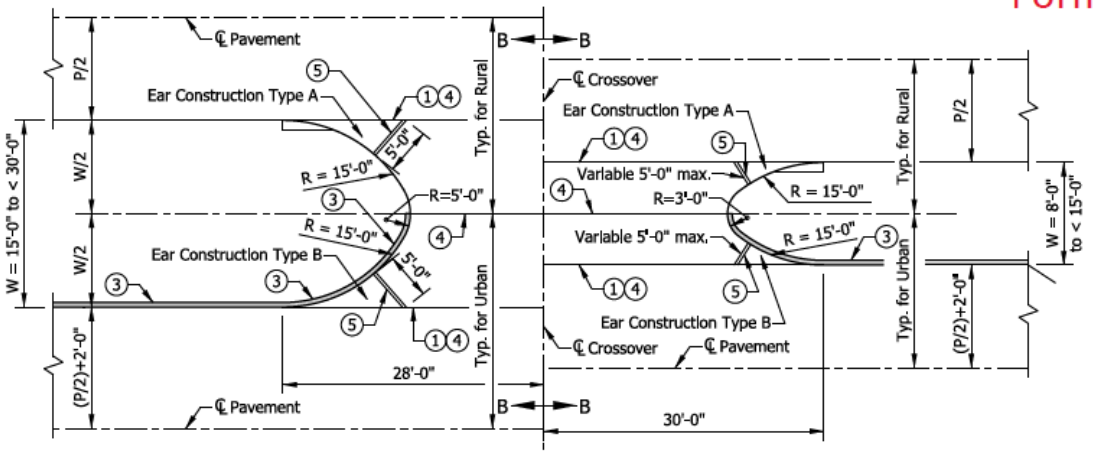
6/5/2019
CHIEF ENGINEER DATE

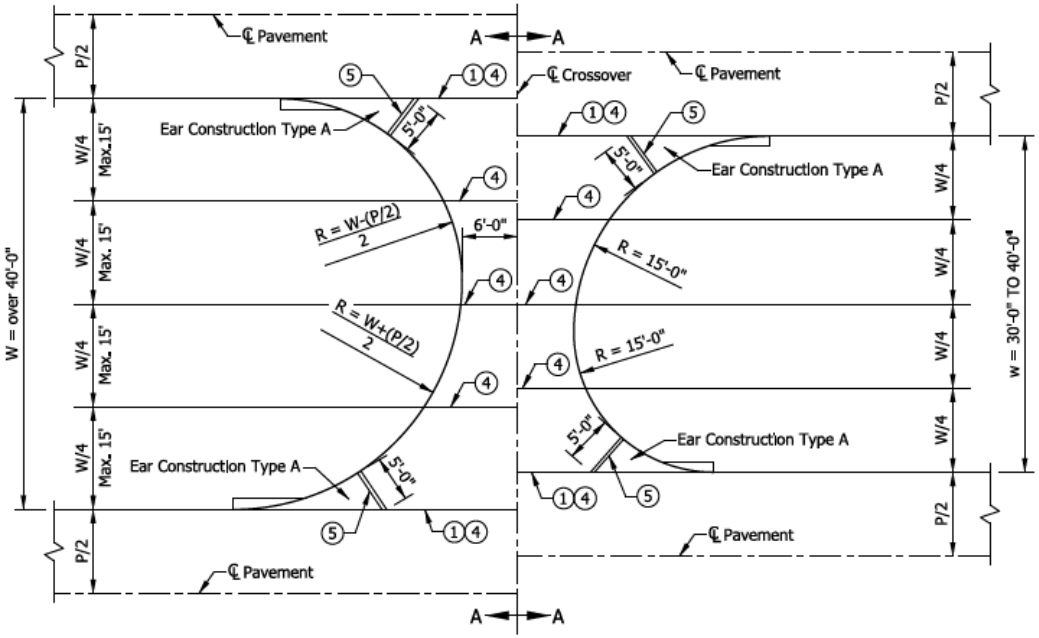
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-15 PRIVATE DRIVE CROSSOVER PLANS (WITH MARKUPS)

Format Changes +



PRIVATE DRIVE CROSSOVER PLAN FOR W = 8'-0" to less than 30'-0"



PRIVATE DRIVE CROSSOVER PLAN FOR W = 30'-0" to over 40'-0"

NOTES:

1. Thickened edge
2. See Standard Drawings;
   E 605-ERCN-01 for Ear Construction Type "A" and Type "B" details.
   E 610-DRIV-16 for sections A-A and B-B
3. See Standard Drawing E 605-CCIN-01 for Integral Concrete Curb details.
4. Longitudinal Joint, see Standard Drawing series E 503-CCPJ for joint details.
5. 1" Preformed Joint Filler.
6. See Standard Drawing E 610-DRIV-16 for sections A-A and B-B for PCCP and HMA pavement.

LEGEND

P/2 = Width of travel lane

W = Width of median

INDIANA DEPARTMENT OF TRANSPORTATION

PRIVATE DRIVE CROSSOVER PLANS

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-15

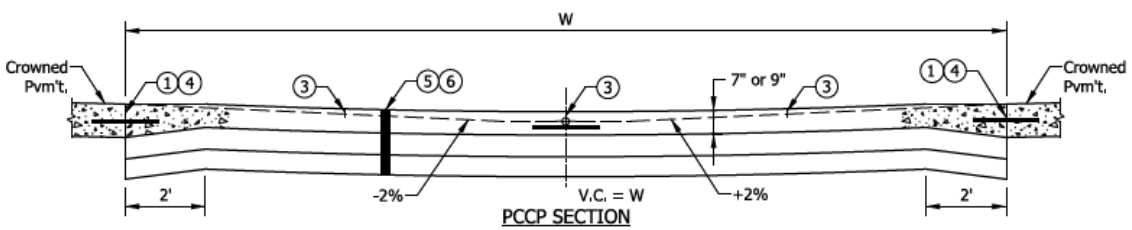
ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER 5/1/2019 DATE

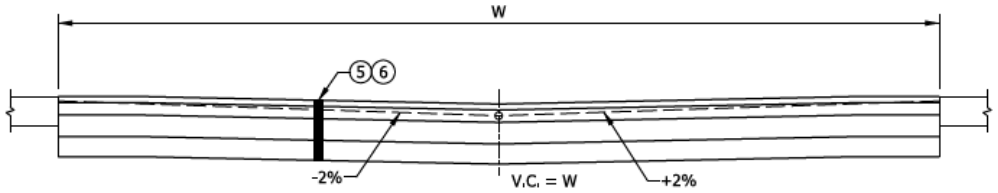
CHIEF ENGINEER 6/5/2019 DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-16 PRIVATE AND COMMERCIAL DRIVE CROSSOVER SECTIONS (WITH MARKUPS)



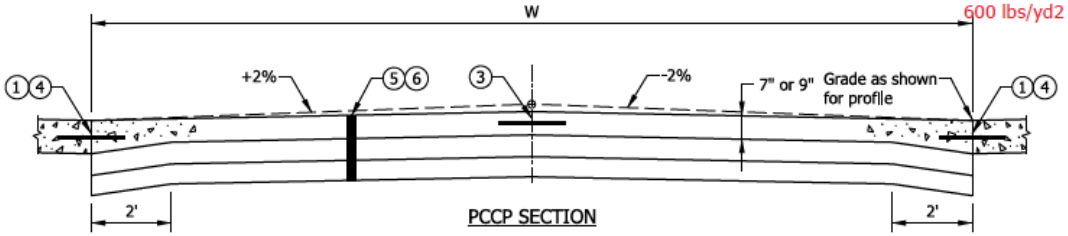
PCCP SECTION



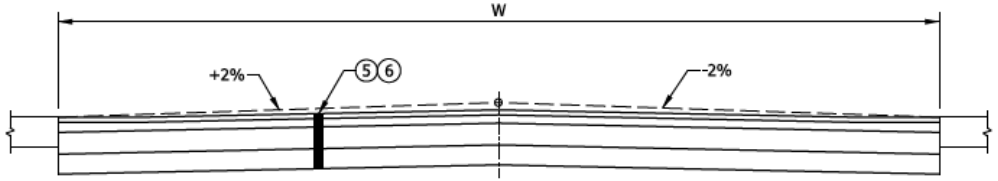
HMA SECTION

SECTION A-A

SECTION TO BE USED WITH CROWN PAVEMENT



PCCP SECTION



HMA SECTION

SECTION B-B

SECTION TO BE USED WITH 3-IN. TILTED PAVEMENT

NOTES:

1. Thickened edge to be same thickness as mainline pavement.
2. See Standard Drawings E 610-DRIV-15 and E 610-DRIV-17 for location of Sections A-A and B-B.
3. Contraction Joint Type D-1. See Standard Drawing series E 503-CCPJ for details, and Standard Drawing E 610-DRIV-14 for spacing.
4. Longitudinal Joint, see Standard Drawing series E 503-CCPJ for joint details.
5. Private Drive Crossover shall be constructed of HMA or PCCP as shown on the plans, unless otherwise directed.
   For AADTT ≤ 50
   HMA for Approaches, Type B, consisting of
   165 lbs/yd² HMA Surface Type B on
   275 lbs/yd² HMA Intermediate, Type B on
   6" Compacted Aggregate, No. 53 on
   Subgrade Treatment, Type II (6 in. Coarse Aggregate, No. 53)
   or
   PCCP for Approaches, ~~7~~ 6 in. on
   Dense Graded Subbase, 6 in., on
   Subgrade Treatment Type II (6 in. Coarse Aggregate, No. 53)
6. Commercial Drive Crossover shall be constructed of HMA or PCCP as shown on the plans, unless otherwise directed.
   For AADTT ~~≤ 50~~ 400
   HMA for Approaches, Type B, consisting of
   600 lbs/yd2 HMA Base, Type B on
   165 lbs/yd² HMA Surface Type B on
   275 lbs/yd² HMA Intermediate, Type B on
   6" Compacted Aggregate, No. 53 on
   Subgrade Treatment, Type II (6 in. Coarse Aggregate, No. 53) on
   Geogrid Type IC
   or
   PCCP for Approaches, 9 in. on
   Dense Graded Subbase, 6 in., on
   Subgrade Treatment Type II (6 in. Coarse Aggregate, No. 53) on
   Geogrid Type IB

INDIANA DEPARTMENT OF TRANSPORTATION

PRIVATE AND COMMERCIAL DRIVE CROSSOVER SECTIONS

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-16

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

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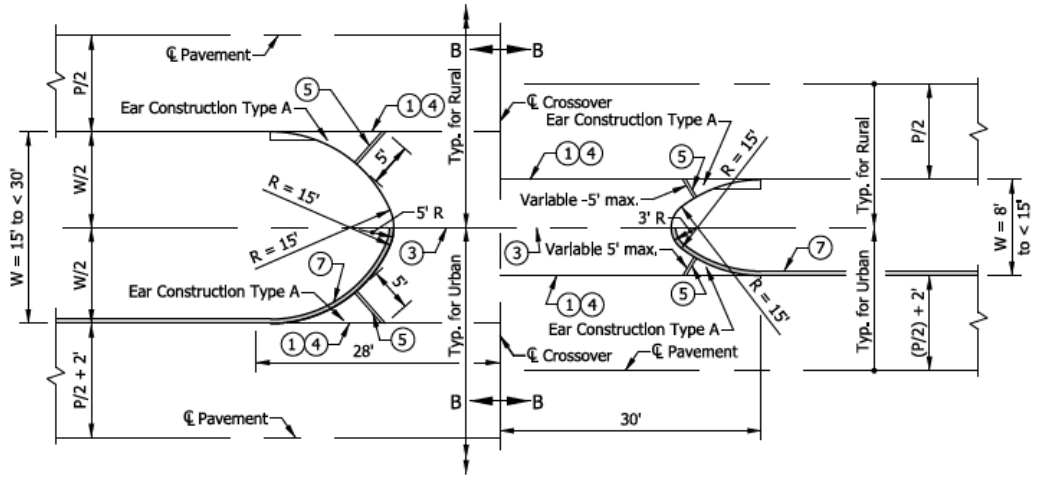
CHIEF ENGINEER DATE

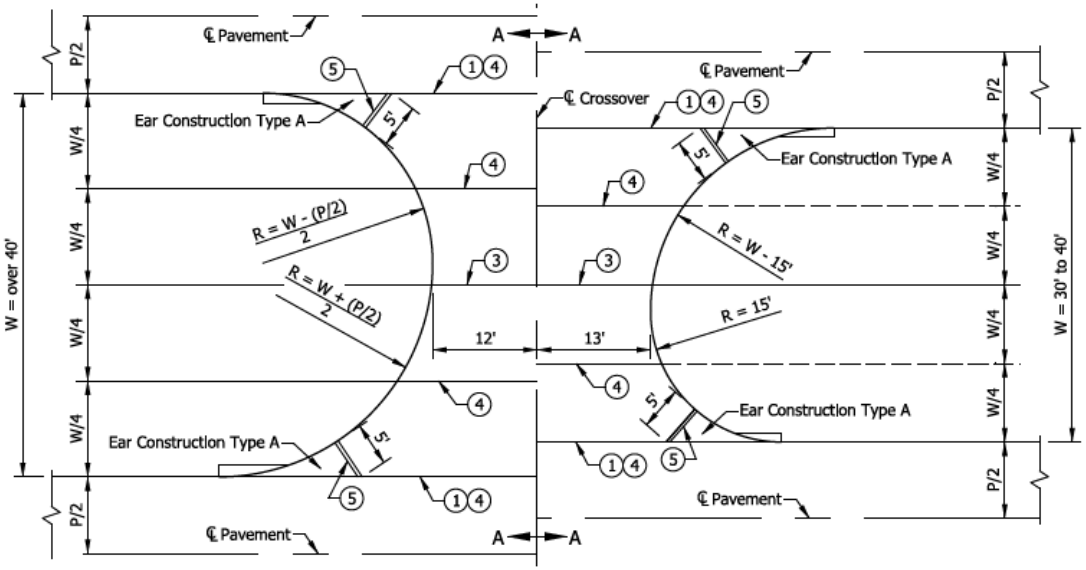
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-17 COMMERCIAL DRIVE CROSSOVER PLANS (WITH MARKUPS)

Format Changes +



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
2. See Standard Drawings E 605-ERCN-01 for Ear Construction for Type "A" and Type "B" details.
3. Contraction Joint, Type D-1, see Standard Drawing series E 503-CCPJ for joint details.
4. Longitudinal joint, see Standard Drawing series E 503-CCPJ for joint details.
5. 1" Preformed Joint Filler.
6. Grades for the commercial drive crossover shall be the same as for private drive crossover. See Standard Drawing E 610-DRIV-16 for sections A-A and B-B for PCCP and HMA pavement.
7. See Standard Drawing E 605-CCIN-01 for Integral Concrete Curb details.

LEGEND
P/2 = Width of travel lane

W = Width of median

INDIANA DEPARTMENT OF TRANSPORTATION

COMMERCIAL DRIVE CROSSOVER PLANS

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-17

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

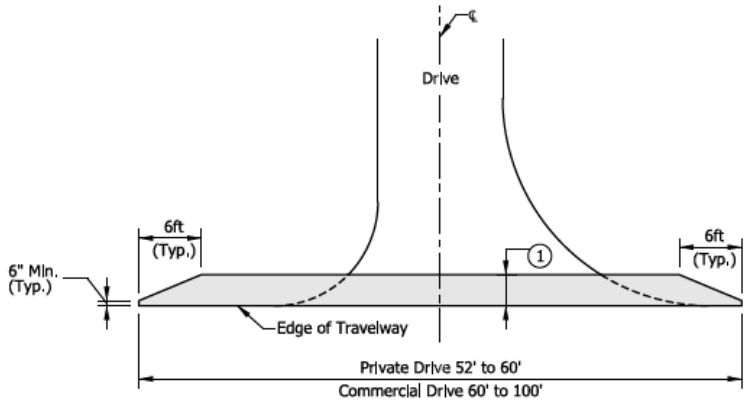
5/1/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

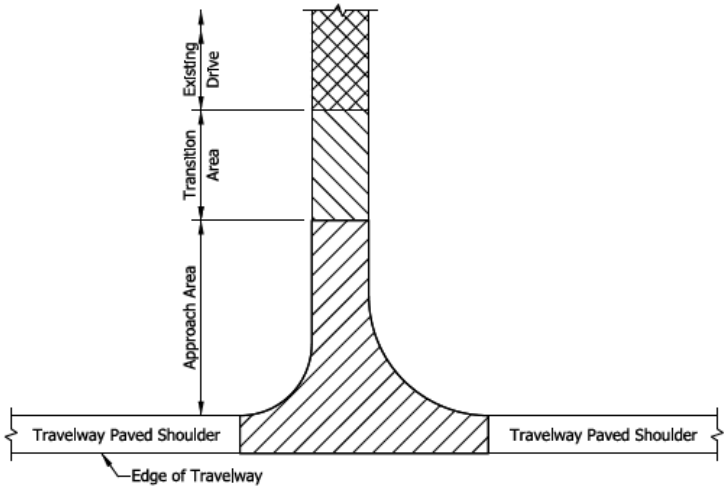
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-18 PAVEMENT WEDGE AND PAY LIMITS FOR CLASS II, IV, AND VI DRIVES (WITH MARKUPS)

Editorial - Format Changes Only



PAVEMENT WEDGE PLAN VIEW



PAY LIMITS FOR CLASS II, IV, AND VI DRIVES

NOTES:

1. 3 ft or wider as necessary to feather to existing grade.
2. Pavement wedge to be centered on centerline of drive.
3. The pay limits shown herein generally apply to Class II, IV, and VI Drives.
4. Approach Area - HMA for Approaches or PCCP for Approaches. This area typically extends from the edge of an 8 foot or wider paved travelway shoulder to the right of way or property line or within a few feet of the right of way or property line where the new drive meets the grade of the existing drive, depending on the site-specific conditions. Where the travelway paved shoulder width is less than 8 feet, this area will be measured from the edge of travelway.
5. Transition Area – an equivalent pavement section to the existing drive. This area typically extends from the right of way or property line to a point on the property owner's drive where the new drive grade can match the existing drive grade.

LEGEND

Drive area to be treated with HMA for Approaches

INDIANA DEPARTMENT OF TRANSPORTATION

PAVEMENT WEDGE AND PAY LIMITS FOR CLASS II, IV, AND VI DRIVES

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-DRIV-18

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/29/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-01 DRIVES INDEX AND GENERAL NOTES (DRAFT)

INDEX	
SHEET NO.	SUBJECT
1	Drives Index and General Notes
2	Class I Drive (Residential) Plan
3	Class II Drive (Residential) Plan
4	Class III Drive (Commercial) Plan
5	Class IV Drive (Commercial) Plan
6	Class V Drive (Field Entrance) Plan and Section
7	Class VI Drive (Industrial) Plan and Section
8	Class VII Drive (Industrial) Plan
9	Class I and Class III Drives Approach Grades
10	Class II and Class IV Drives Sections
11	Class II, IV & V Drives Approach Grades
12	Class VI Drive Approach Grades
13	Class VII Drive Approach Grades
14	Joint Placement, Corner Reinforcing, Monolithic Curb, and Concrete Curb and Gutter Details
15	Private Drive Crossover Plans
16	Private and Commercial Drive Crossover Sections
17	Commercial Drive Crossover Plans
18	Pavement Wedge and Pay Limits for Class II, IV and VII Drives

GENERAL NOTES:

1. 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.

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

3. The minimum driveway pavement sections for Class III, IV, VI and VII Drives have been designed for an average annual daily truck traffic (AADTT) 400, Truck Class 4 and above. If the AADTT is greater than 400 per day, the required pavement section shall be as shown elsewhere on the plans.

4. For Class III, IV, VI and VII Drives, if length of the driveway is more than 15 feet, then D-1 contraction joints are required in transverse direction. Spacing shall be 1/2 the length of the driveway or 15 feet maximum.

5. Embankment slopes within the mainline clear zone for new construction/reconstruction projects or within the obstruction-free zone for 3R projects should be as shown in the table on Standard Drawing E 610-PRAP-01. Outside the clear zone or the obstruction-free zone, the embankment slopes should desirably be 4:1 but not steeper than 3:1.

INDIANA DEPARTMENT OF TRANSPORTATION

DRIVES
INDEX AND GENERAL NOTES

SEPTEMBER 2026

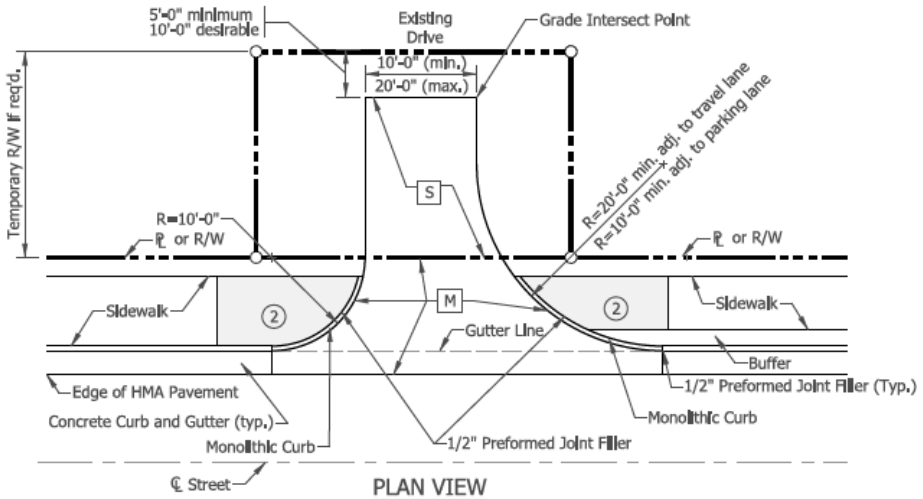
STANDARD DRAWING NO. E 610-DRIV-01

DESIGN STANDARDS ENGINEER DATE

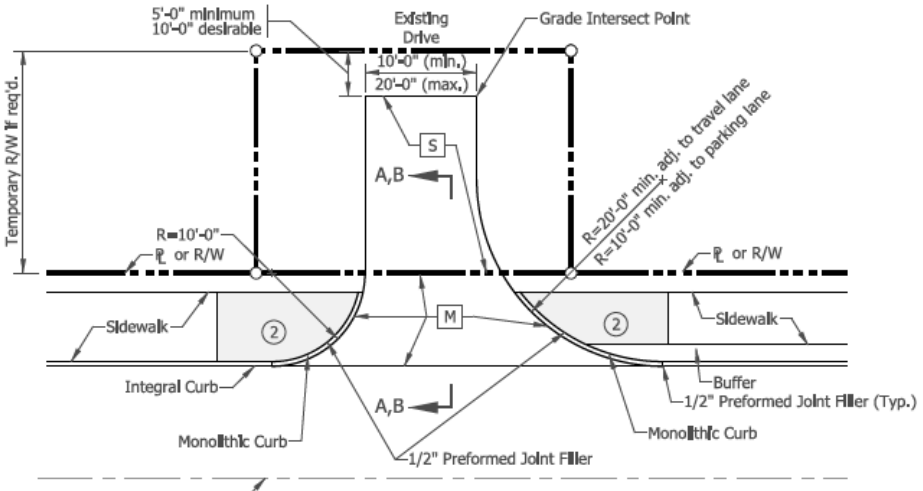
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-02 CLASS I DRIVE (RESIDENTIAL) (DRAFT)



PLAN VIEW
CONCRETE CURB AND GUTTER



PLAN VIEW
INTEGRAL CONCRETE CURB

NOTES:

1. See Standard Drawing series E 610-DRIV-14 for joint placement, corner reinforcing, monolithic curb, and concrete curb and gutter details.
2. See Standard Drawing E 604-SDWK-03 sidewalk driveway crossing details.
3. See Standard Drawing E 610-DRIV-09 for Sections A-A and B-B.

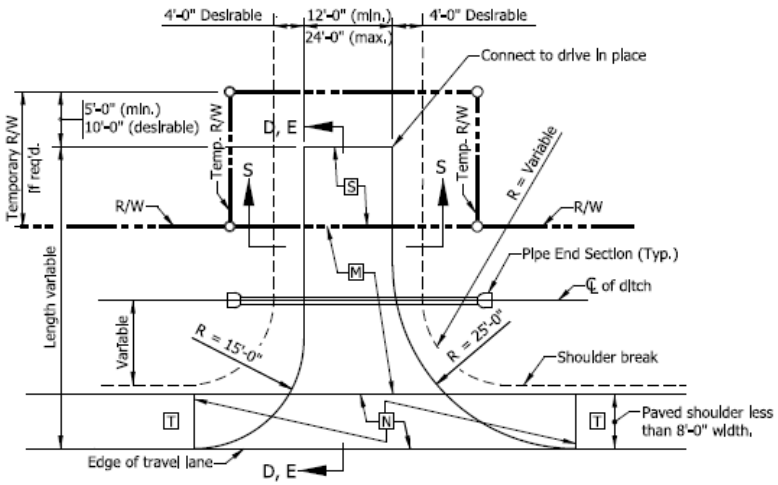
LEGEND

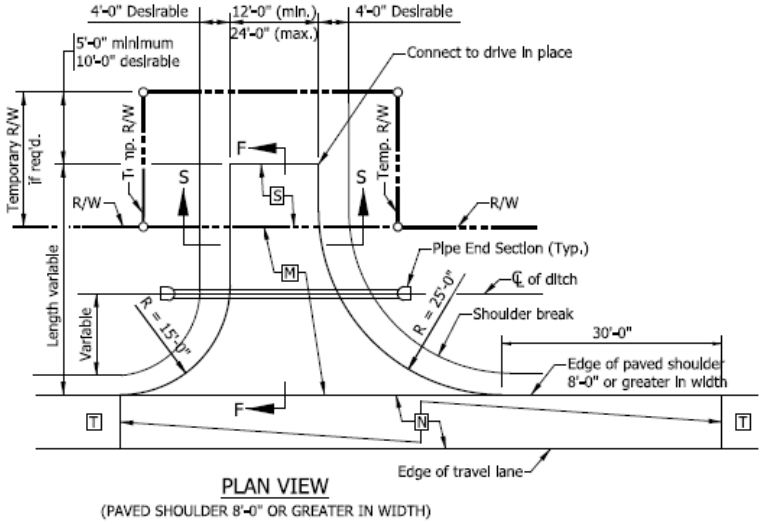
- M: PCCP for Approaches, 6 In., on Dense Graded Subbase, 6 In., on Subgrade Treatment Type II (6 In. Coarse Aggregate No. 53)
- S: For type and thickness equivalent to surface in place, see plans.
- Sidewalk Elevation Transition

INDIANA DEPARTMENT OF TRANSPORTATION	
CLASS I DRIVE (RESIDENTIAL) SEPTEMBER 2026	
STANDARD DRAWING NO. E 610-DRIV-02	
	DESIGN STANDARDS ENGINEER DATE CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-03 CLASS II DRIVE (RESIDENTIAL) (DRAFT)





NOTES:

1. See Standard Drawing E 610-DRIV-10 for Section S-S.
2. See Standard Drawing E 610-DRIV-11 for Sections D-D, E-E, and F-F for approach grades.
3. The radii for PCCP Class II drives shall be constructed using corner reinforcement as detailed in Standard Drawing E 610-DRIV-14.
4. For PCCP Drives see Standard Drawing E 610-DRIV-14 for joint placement details.

LEGEND

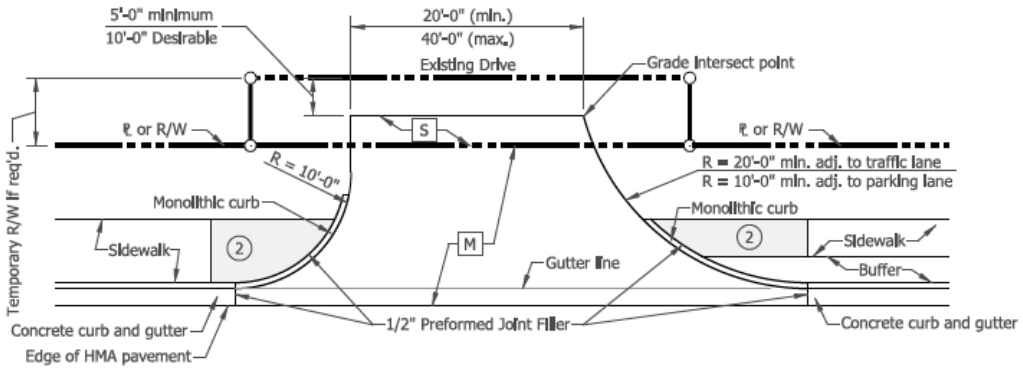
[M] HMA for Approaches, Type B, consisting of;
165 lbs/syd HMA Surface, Type B, on
275 lbs/syd HMA Intermediate, Type B, on
6" Compacted Aggregate No. 53, on
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53)
or
PCCP for Approaches, 6 in., on
Dense Graded Subbase, 6 in., on
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53)

[N] The greater thickness of either the drive [M] or the paved shoulder [T] section.

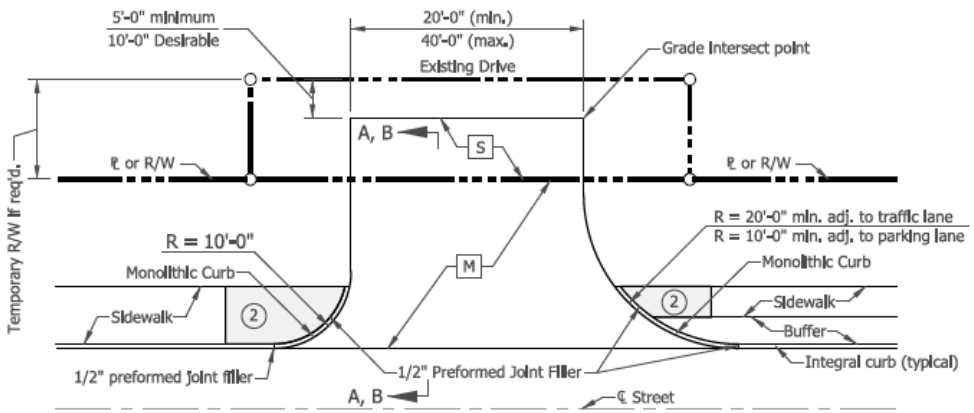
[S] For type and thickness equivalent to surface in place, see plans.

[T] Plan shoulder section.

INDIANA DEPARTMENT OF TRANSPORTATION	
CLASS II DRIVE (RESIDENTIAL) SEPTEMBER 2026	
STANDARD DRAWING NO. E 610-DRIV-03	
	DESIGN STANDARDS ENGINEER DATE CHIEF ENGINEER DATE



PLAN VIEW
CONCRETE CURB AND GUTTER



PLAN VIEW
INTEGRAL CONCRETE CURB

NOTES:

1. See Standard Drawing E 610-DRIV-09 for Section A-A, and Section B-B.
2. See Standard Drawing E 604-SDWK-03 for sidewalk driveway crossing details.
3. See Standard Drawing E 610-DRIV-14 for joint placement, monolithic curb, and concrete curb and gutter details.

LEGEND

AADTT ≤ 400

M PCCP for Approaches, 9 in., on Dense Graded Subbase, 6 in., on Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53), on Geogrid Type IB

S For type and thickness equivalent to surface in place, see plans.

Sidewalk elevation transitions.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS III DRIVE
(COMMERCIAL)

SEPTEMBER 2026

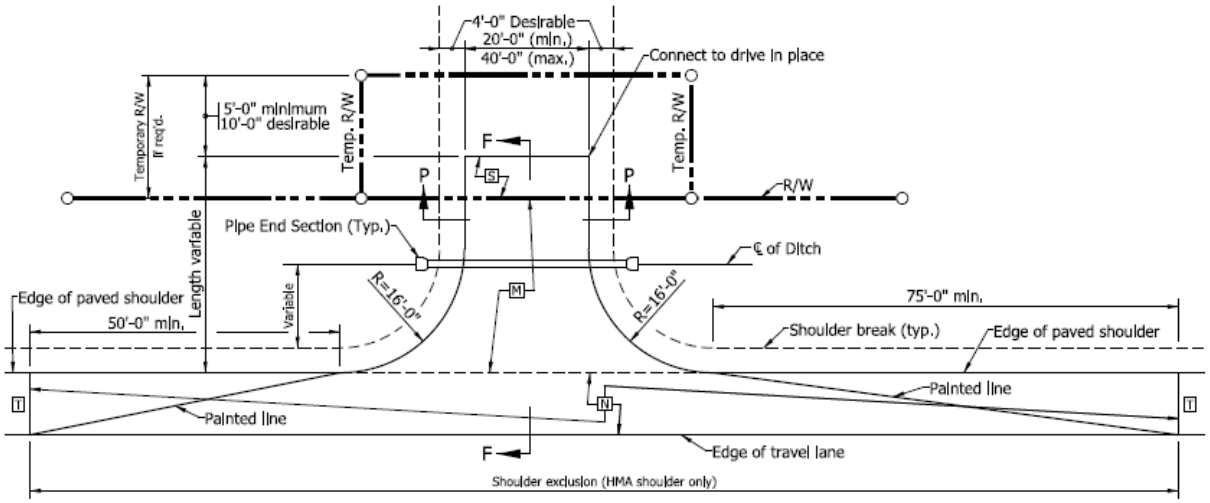
STANDARD DRAWING NO. E 610-DRIV-04

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

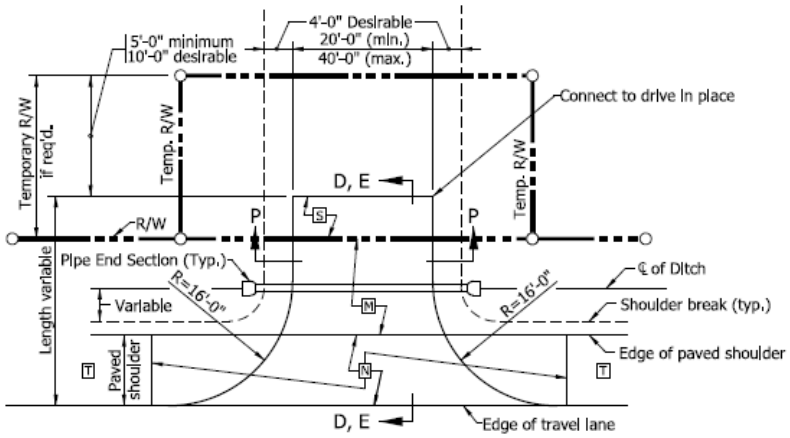
REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-05 CLASS IV DRIVE (COMMERCIAL)



PLAN VIEW

(PAVED SHOULDER 8'-0" FEET OR GREATER IN WIDTH)



PLAN VIEW

(PAVED SHOULDER LESS THAN 8'-0" IN WIDTH OR UNPAVED SHOULDER)

NOTES:

1. See Standard Drawing E 610-DRIV-11 for Sections D-D, E-E and F-F.
2. See Standard Drawing E 610-DRIV-10 for Section P-P.
3. For PCCP Drives, see Standard Drawing E 610-DRIV-14 for joint placement details.

LEGEND

AADTT ≤ 400

[M] HMA for Approaches, Type B, consisting of:
165 lbs/syd HMA Surface, Type B, on
275 lbs/syd HMA Intermediate, Type B, on
660 lbs/syd HMA Base, Type B, on
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53), on
Geogrid, Type IB
or
PCCP for Approaches, 9 in., on
Dense Graded Subbase, 6 in., on
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53) on
Geogrid Type IB

[N] The greater thickness of either the drive [M] or the paved shoulder [T] section.

[S] For type and thickness equivalent to surface in place, see plans.

[T] Plan shoulder section.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS IV DRIVE
(COMMERCIAL)

SEPTEMBER 2026

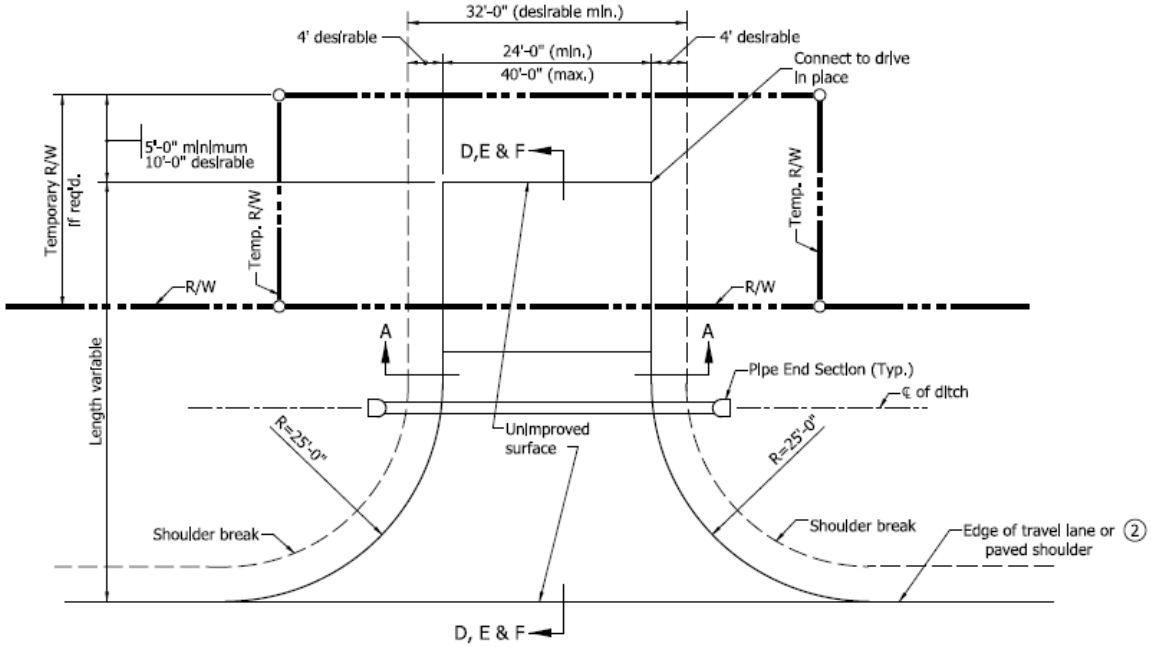
STANDARD DRAWING NO. E 610-DRIV-05

DESIGN STANDARDS ENGINEER DATE

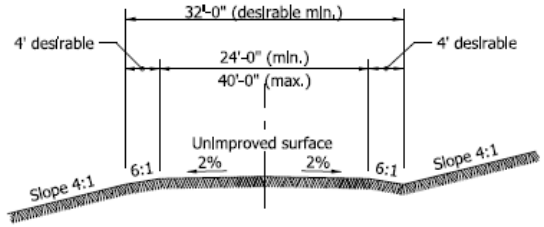
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-06 CLASS V DRIVE (FIELD ENTRANCE) (DRAFT)



PLAN VIEW



SECTION A-A

NOTES:

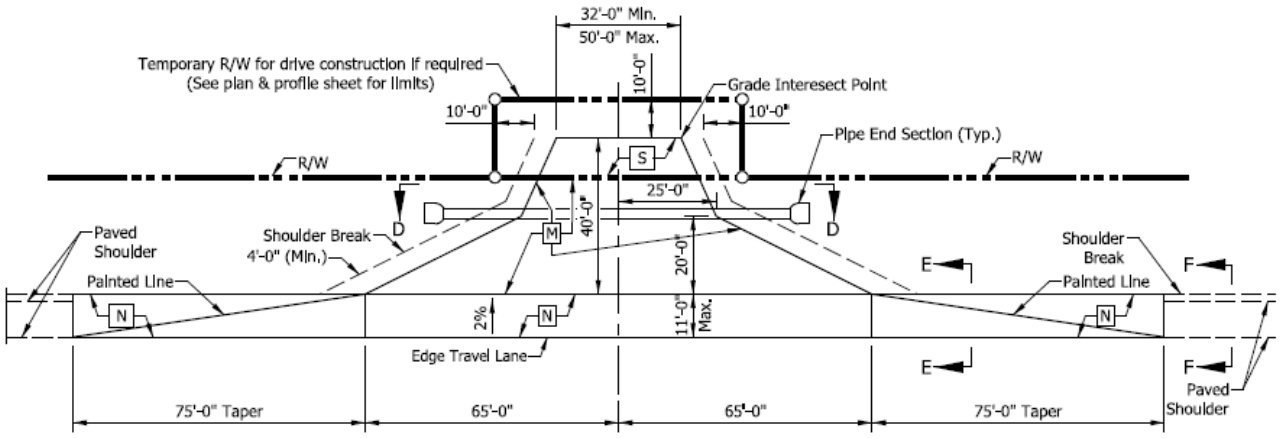
1. See Standard Drawing E 610-DRIV-11 for Sections D-D, E-E and F-F.

(2) Where the shoulder is earth or aggregate or the paved width is less than 8'-0", the drive radii shall be tangent to the edge of the travel lane, Where the paved shoulder width is 8'-0" or more, the drive radii shall be tangent to the edge of the paved shoulder.

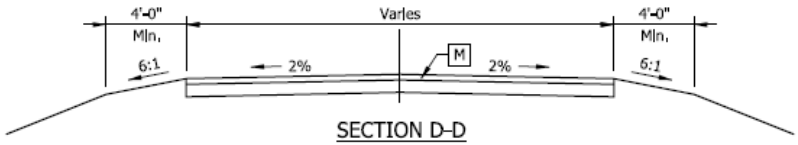
INDIANA DEPARTMENT OF TRANSPORTATION	
CLASS V DRIVE (FIELD ENTRANCE) SEPTEMBER 2026	
STANDARD DRAWING NO. E 610-DRIV-06	
	DESIGN STANDARDS ENGINEER DATE CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

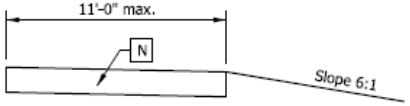
E 610-DRIV-07 CLASS VI DRIVE (INDUSTRIAL) (DRAFT)



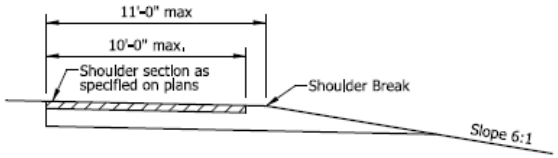
PLAN VIEW



SECTION D-D



SECTION E-E



SECTION F-F

NOTES:

1. See Standard Drawing E 610-DRIV-12 for drive approach grades.
2. Class VI Drive accommodates a WB-67 (IDV) design vehicle with a 45'-0" turning radius.
3. For PCCP Drives, see Standard Drawing E 610-DRIV-14 for joint placement details.

LEGEND

AADTT ≤ 400

[M] HMA for Approaches, Type B, consisting of;
165 lbs/syd HMA Surface, Type B, on
275 lbs/syd HMA Intermediate, Type B, on
660 lbs/syd HMA Base, Type B, on
Subgrade Treatment Type II (6 In. Coarse Aggregate No. 53), on
Geogrid, Type IB
or
PCCP for Approaches, 9 In., on
Dense Graded Subbase, 6 In., on
Subgrade Treatment Type II (6 In. Coarse Aggregate No. 53), on
Geogrid Type IB

[N] The greater thickness of either the drive [M] or the paved shoulder section.

[S] For type and thickness equivalent to surface in place, see plans.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VI DRIVE
(INDUSTRIAL)

SEPTEMBER 2026

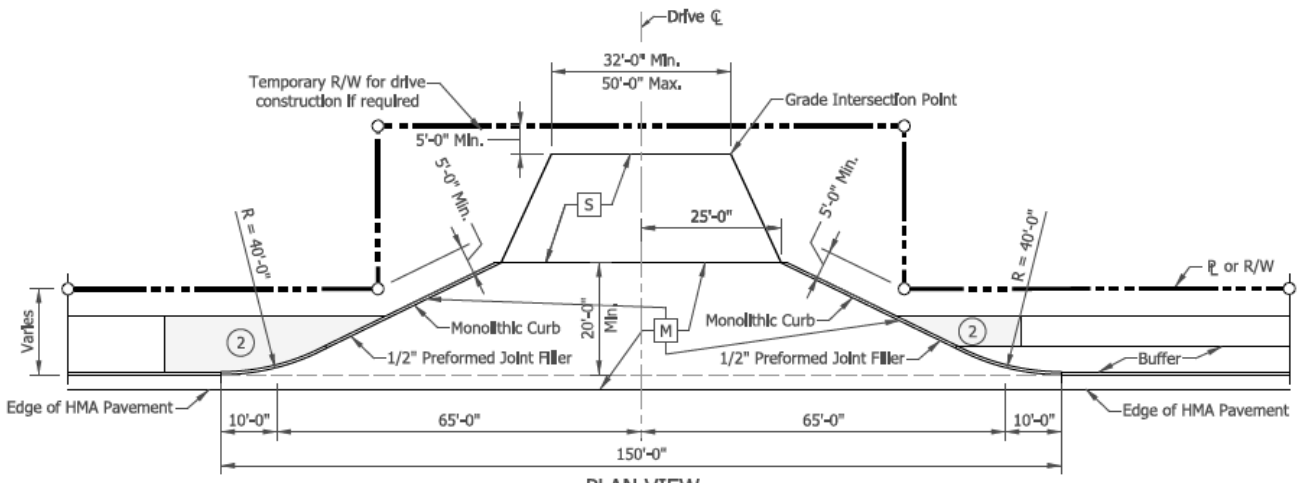
STANDARD DRAWING NO. E 610-DRIV-07

DESIGN STANDARDS ENGINEER DATE

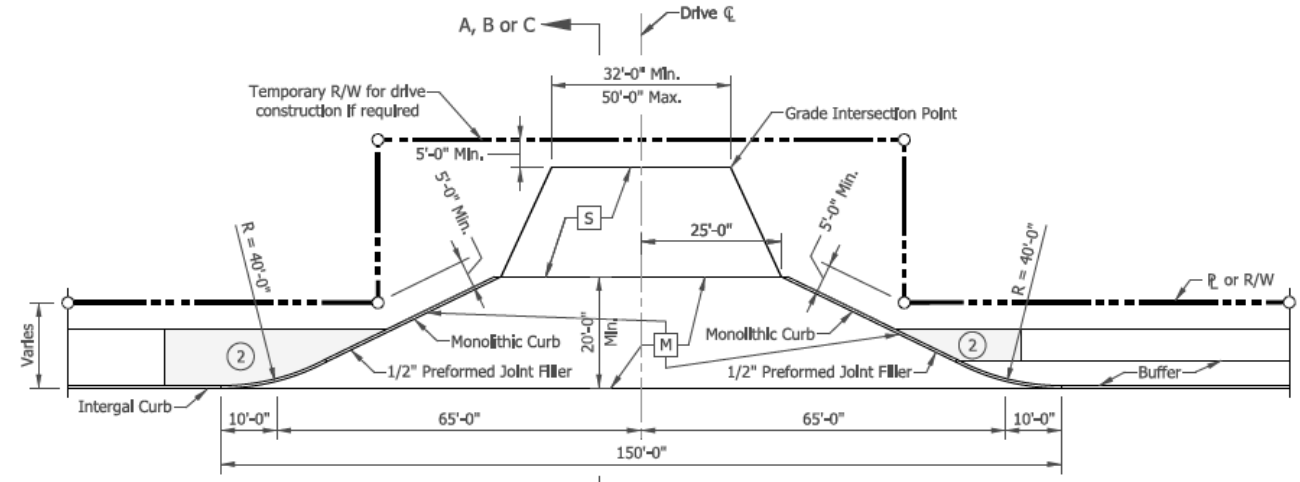
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-08 CLASS VII DRIVE (INDUSTRIAL) (DRAFT)



PLAN VIEW
CONCRETE CURB & GUTTER



PLAN VIEW
INTEGRAL CONCRETE CURB

NOTES:

1. See Standard Drawing E 610-DRIV-12 for Sections A-A, B-B and C-C.
2. See Standard Drawing E 604-SDWK-03 sidewalk driveway crossing details.
3. See Standard Drawing E 610-DRIV-14 for joint placement, monolithic curb, and concrete curb and gutter details.

LEGEND

AADTT ≤ 400

M HMA for Approaches, Type B, consisting of:
165 lbs/syd HMA Surface, Type B, on
275 lbs/syd HMA Intermediate, Type B, on
660 lbs/syd HMA Base, Type B, on
Subgrade Treatment Type II (6 in. Coarse Aggregate No.53) on
Geogrid, Type IB
or
PCCP for Approaches, 9 in., on
Dense Graded Subbase, 6 in., on
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53), on
Geogrid, Type IB

S For type and thickness equivalent to surface in place, see plans.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VII DRIVE
(INDUSTRIAL)

SEPTEMBER 2026

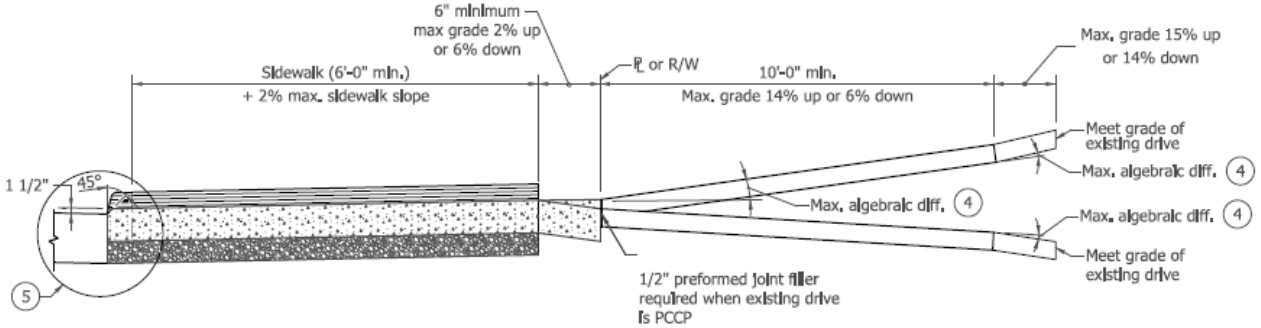
STANDARD DRAWING NO. E 610-DRIV-08

DESIGN STANDARDS ENGINEER DATE

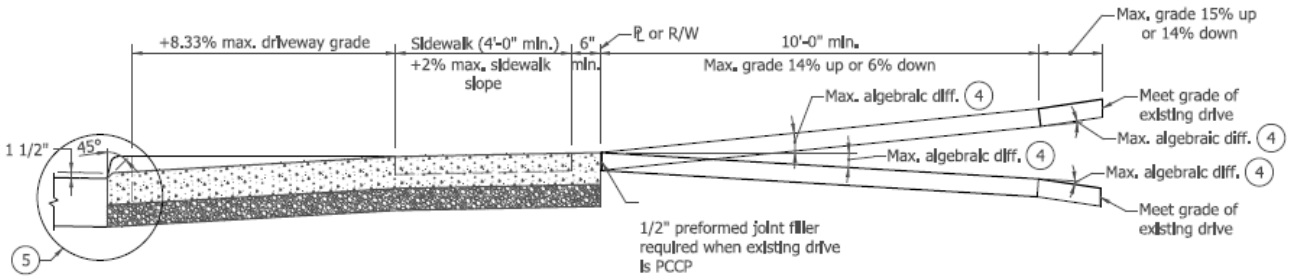
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-09 CLASS I AND CLASS III DRIVE APPROACH GRADES (DRAFT)



SECTION A-A
(SIDEWALK ABUTS BACKFACE OF CURB)



SECTION B-B
(SIDEWALK SEPARATED FROM BACK OF CURB BY BUFFER)

NOTES:

1. See Standard Drawing E 610-DRIV-02 for Class I Drive pavement section.
2. See Standard Drawing E 610-DRIV-04 for Class III Drive pavement section.
3. See Standard Drawing E 604-SDWK-03 for sidewalk driveway crossing details.

(4) The maximum algebraic difference in grades shall not exceed 8% for crested grade nor 12% for sagged grade.

(5) See Standard Drawing E 610-DRIV-14 for joint placement, monolithic curb, and concrete curb and gutter details.

LEGEND

▬ = Curb ramp or sidewalk elevation transition.

▪ = PCCP

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I AND CLASS III DRIVE APPROACH GRADES

SEPTEMBER 2026

STANDARD DRAWING NO. E 610-DRIV-09

DESIGN STANDARDS ENGINEER DATE

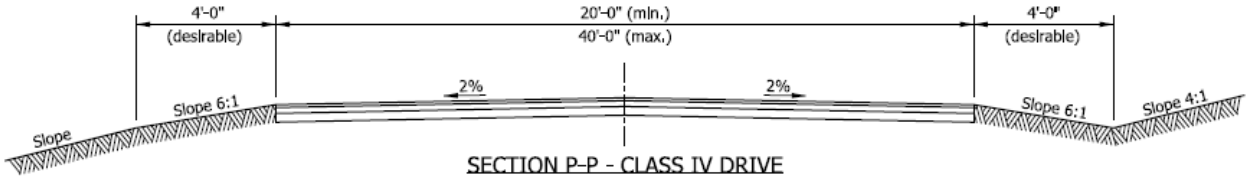
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

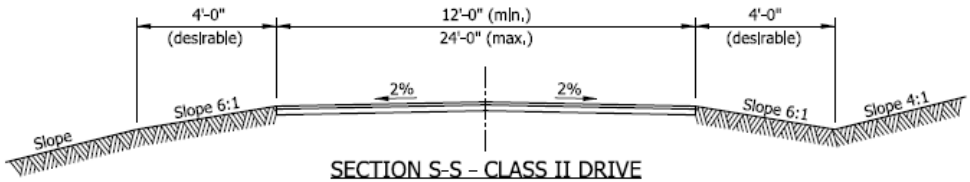
E 610-DRIV-10 CLASS II AND CLASS IV DRIVE SECTIONS (DRAFT)

NOTES:

1. See Standard Drawing E 610-DRIV-03 for Class II Drive details.
2. See Standard Drawing E 610-DRIV-05 for Class IV Drive details.



SECTION P-P - CLASS IV DRIVE



SECTION S-S - CLASS II DRIVE

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II AND CLASS IV DRIVE SECTIONS

SEPTEMBER 2026

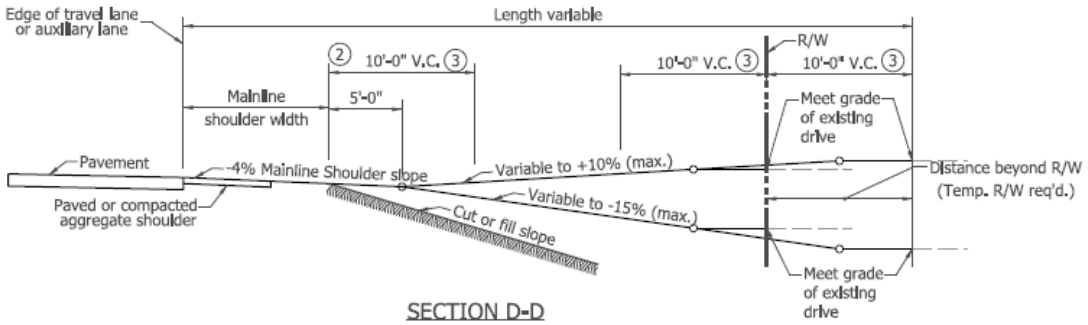
STANDARD DRAWING NO. E 610-DRIV-10

DESIGN STANDARDS ENGINEER DATE

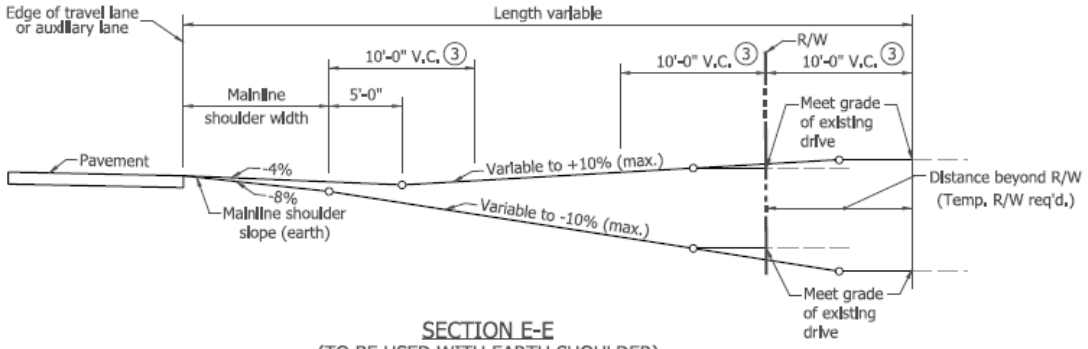
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

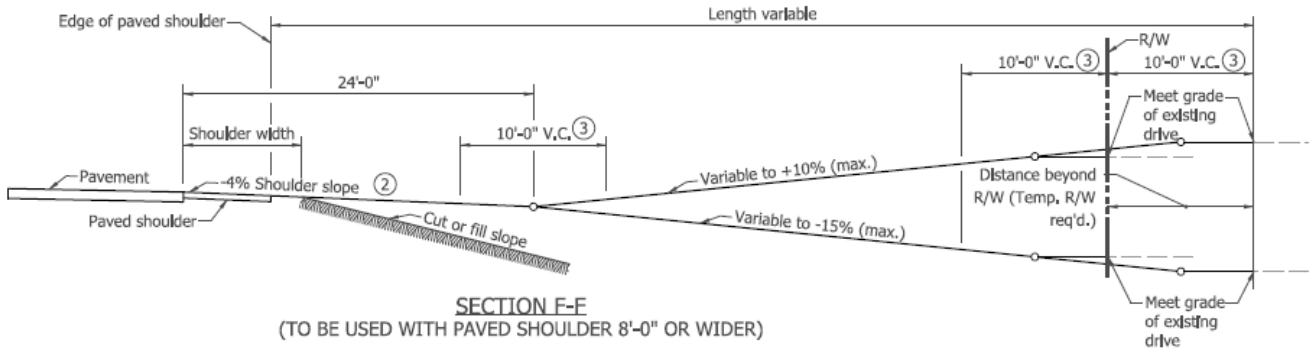
E 610-DRIV-11 CLASS II, IV & V DRIVE APPROACH GRADES (DRAFT)



SECTION D-D
(TO BE USED WITH PAVED SHOULDER LESS THAN 8'-0" WIDE OR COMPACTED AGGREGATE SHOULDER)



SECTION E-E
(TO BE USED WITH EARTH SHOULDER)



SECTION F-F
(TO BE USED WITH PAVED SHOULDER 8'-0" OR WIDER)

NOTES:

1. See Standard Drawing E 610-DRIV-03, -05 and -06 for location of Sections D-D, E-E and F-F.
2. Where physical restrictions limits the space available for the construction of a drive from a roadway in an embankment section, the downgrade breakpoint of the drive may begin at the edge of the shoulder without a crest vertical curve. The algebraic difference in grades shall not exceed 11%.
3. The maximum algebraic difference in grades shall not exceed 11% for crested grade and 14% for sagged grades.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II, IV & V DRIVE APPROACH GRADES

SEPTEMBER 2026

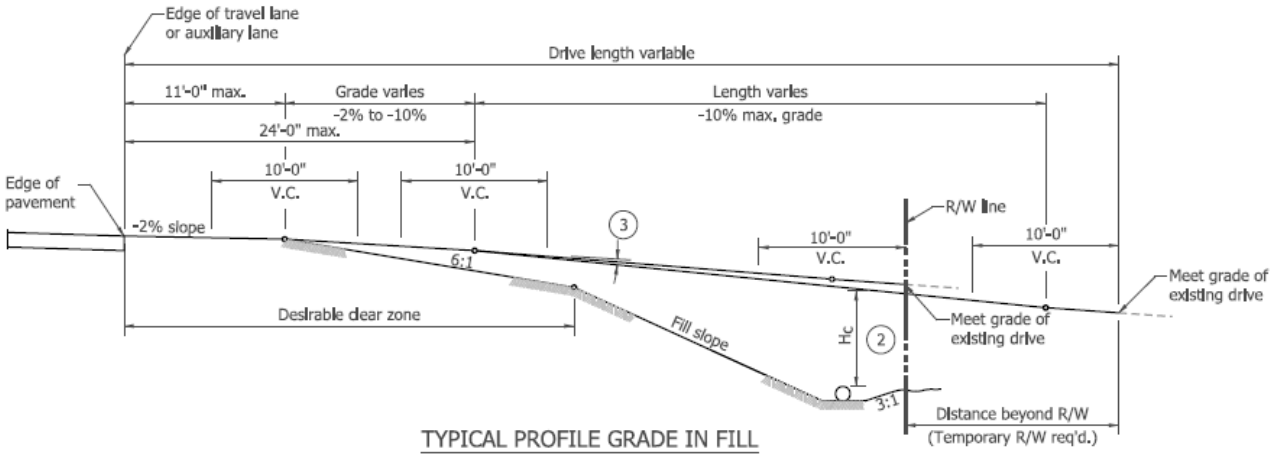
STANDARD DRAWING NO. E 610-DRIV-11

DESIGN STANDARDS ENGINEER DATE

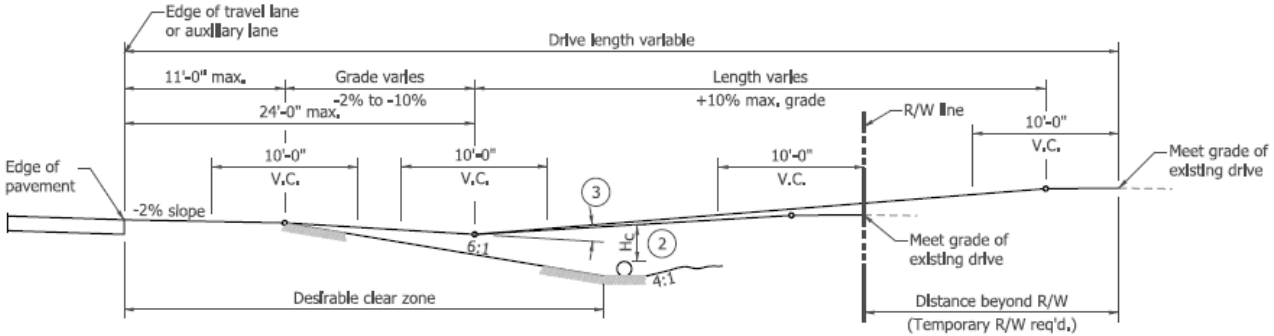
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-12 CLASS VI DRIVE APPROACH GRADES (DRAFT)



TYPICAL PROFILE GRADE IN FILL



TYPICAL PROFILE GRADE IN CUT

NOTES:

1. See Standard Drawing E 610-DRIV-07 for plan and sections of Class VI Drive.
2. The earth cover shall be 1 ft or greater.
3. The maximum algebraic difference in grades shall not exceed 11% for crested grade and 14% for sagged grades.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VI DRIVE
APPROACH GRADES

SEPTEMBER 2026

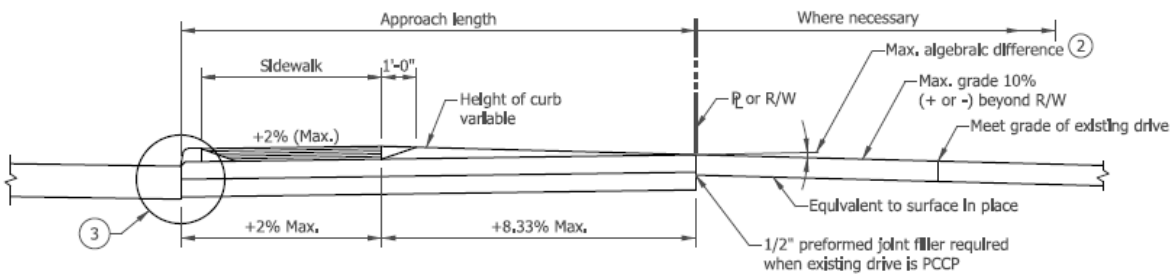
STANDARD DRAWING NO. E 610-DRIV-12

DESIGN STANDARDS ENGINEER DATE

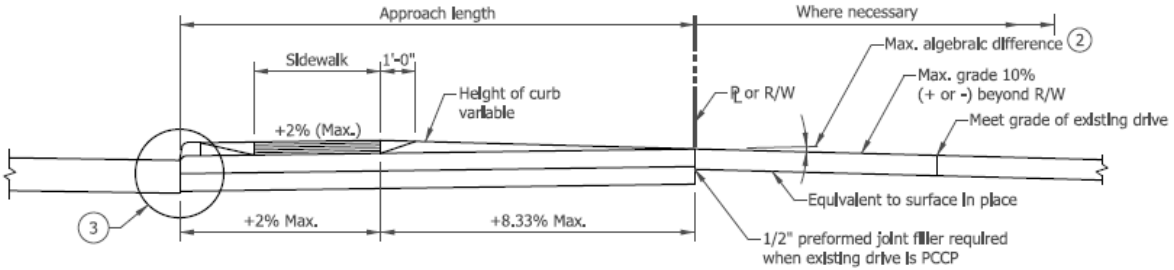
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

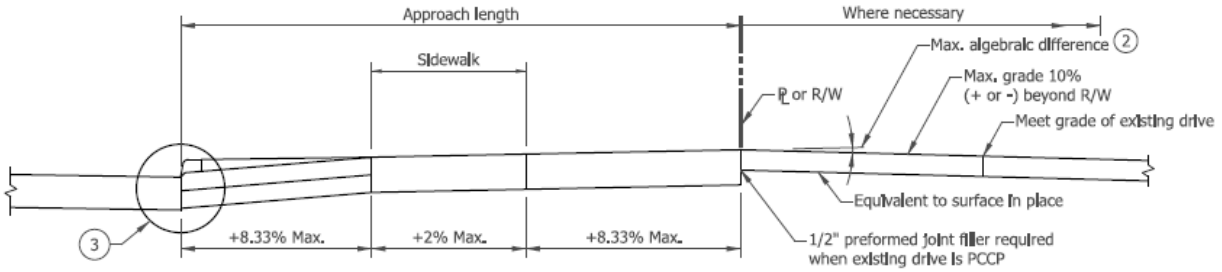
E 610-DRIV-13 CLASS VII DRIVE APPROACH GRADES (DRAFT)



SECTION A-A



SECTION B-B



SECTION C-C

NOTES:

1. See Standard Drawing E 610-DRIV-08 for Class VII Drive details.
2. The maximum algebraic difference in grades shall not exceed 8% for crested grades and 12% for sagged grade.
3. See Standard Drawing E 610-DRIV-14 for joint placement, monolithic curb, and concrete curb and gutter details.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VII DRIVE
APPROACH GRADES

SEPTEMBER 2026

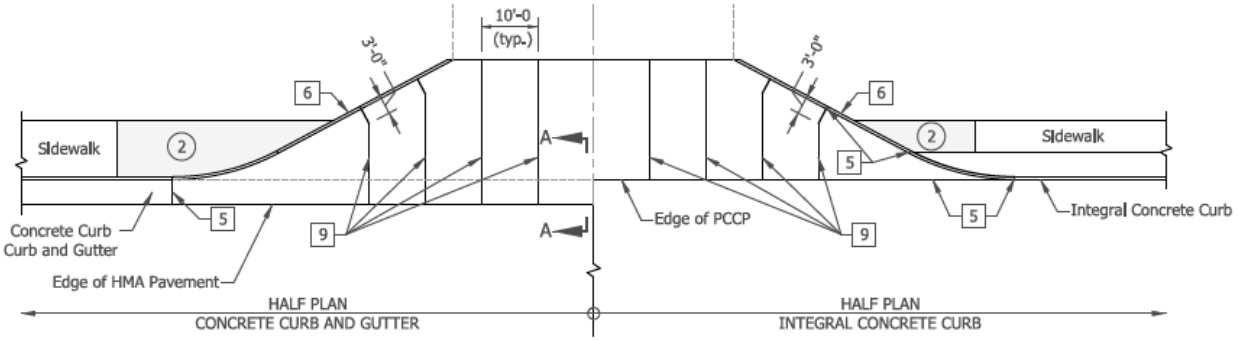
STANDARD DRAWING NO. E 610-DRIV-13

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

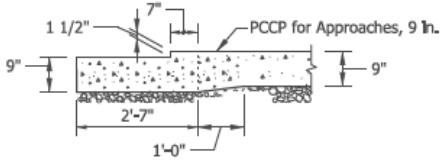
E 610-DRIV-14 JOINT PLACEMENT, CORNER REINFORCING, MONOLITHIC CURB, AND CONCRETE CURB AND GUTTER DETAILS (DRAFT)



JOINT PLACEMENT DETAIL FOR PCCP DRIVES

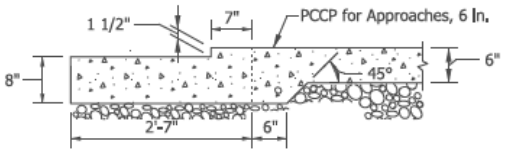
NOTES:

1. See Standard Drawing E 503-CCPJ for joint details.
2. See Standard Drawing E 604-SDWK-03 for sidewalk driveway crossing details.



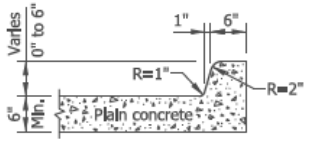
CLASS III AND CLASS VII DRIVE
CONCRETE CURB AND GUTTER DETAIL

SECTION A-A

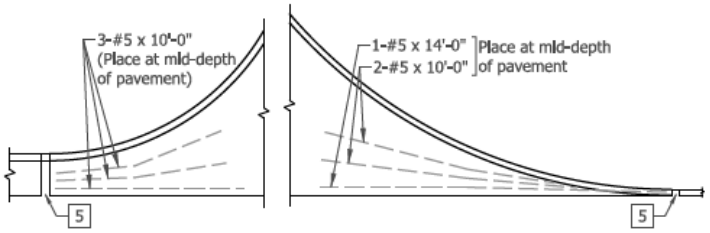


CLASS I DRIVE
CONCRETE CURB AND GUTTER DETAIL

SECTION A-A

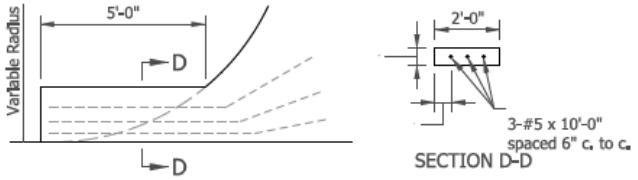


MONOLITHIC CURB



CONCRETE CURB AND GUTTER INTEGRAL CONCRETE CURB

TYPICAL CORNER REINFORCING FOR CLASS I DRIVE



TYPICAL CORNER REINFORCING FOR CLASS II DRIVE

LEGEND

- 5 1/2" Preformed Joint Filler
- 6 Monolithic Curb
- 9 Longitudinal Joint

INDIANA DEPARTMENT OF TRANSPORTATION

JOINT PLACEMENT, CORNER REINFORCING, MONOLITHIC CURB, AND CONCRETE CURB AND GUTTER DETAILS

SEPTEMBER 2026

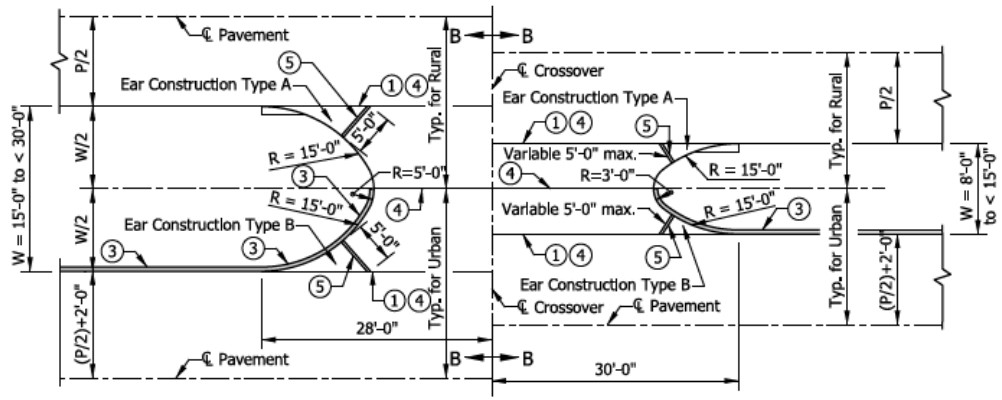
STANDARD DRAWING NO. E 610-DRIV-14

DESIGN STANDARDS ENGINEER DATE

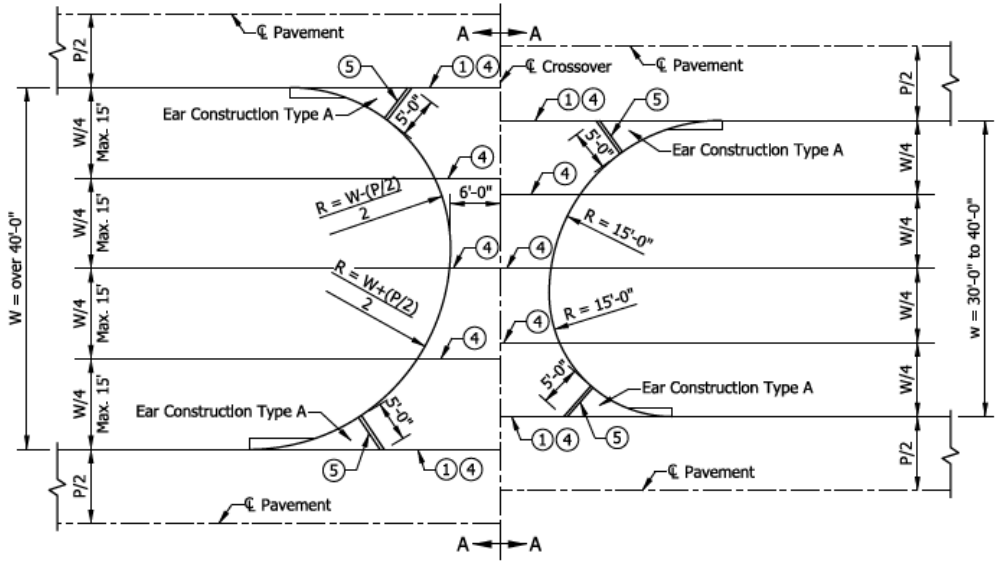
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-15 PRIVATE DRIVE CROSSOVER PLANS (DRAFT)



PRIVATE DRIVE CROSSOVER PLAN FOR W = 8'-0" to less than 30'-0"



PRIVATE DRIVE CROSSOVER PLAN FOR W = 30'-0" to over 40'-0"

NOTES:

1. Thickened edge
2. See Standard Drawings:
   E 605-ERCN-01 for Ear Construction Type "A" and Type "B" details.
   E 610-DRIV-16 for sections A-A and B-B.
3. See Standard Drawing E 605-CCIN-01 for Integral Concrete Curb details.
4. Longitudinal Joint, see Standard Drawing series E 503-CCPJ for joint details.
5. 1" Preformed Joint Filler.
6. See Standard Drawing E 610-DRIV-16 for sections A-A and B-B for PCCP AND HMA pavement.

LEGEND

P/2 = Width of travel lanes

W = Width of median

INDIANA DEPARTMENT OF TRANSPORTATION

PRIVATE DRIVE CROSSOVER PLANS

SEPTEMBER 2026

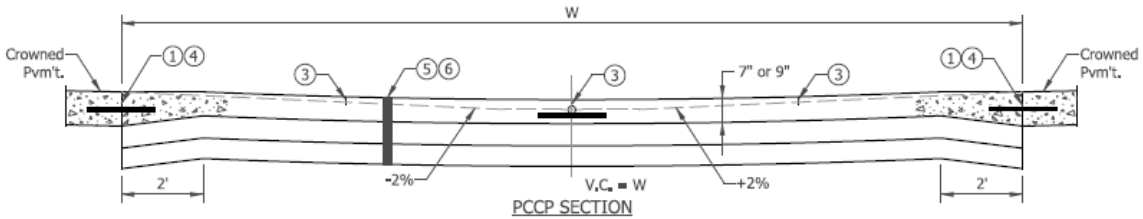
STANDARD DRAWING NO. E 610-DRIV-15

DESIGN STANDARDS ENGINEER DATE

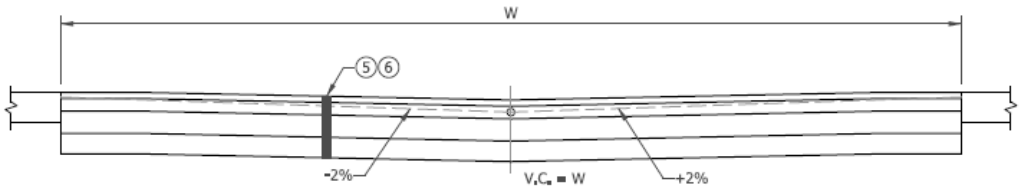
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-16 PRIVATE AND COMMERCIAL DRIVE CROSSOVER SECTIONS (DRAFT)



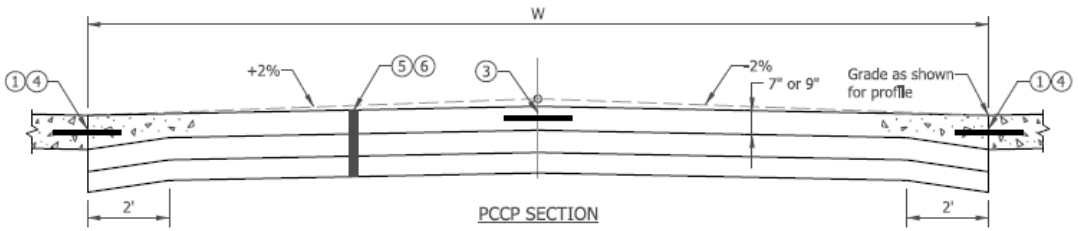
PCCP SECTION



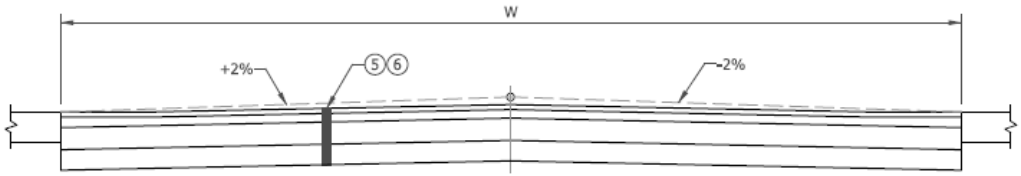
HMA SECTION

SECTION A-A

SECTION TO BE USED WITH CROWN PAVEMENT



PCCP SECTION



HMA SECTION

SECTION B-B

SECTION TO BE USED WITH 3-IN. TILTED PAVEMENT

NOTES:

(1) Thickened edge to be same thickness as mainline pavement.

2. See Standard Drawing E 610-DRIV-15 for location of sections A-A and B-B.

(3) Contraction Joint Type D-1. See Standard Drawing E 503-CCPJ-03 for details, and Standard Drawing E 610-DRIV-14 for spacing.

(4) Longitudinal Joint, see Standard Drawing series E 503-CCPJ for joint details.

(5) Private Drive Crossover shall be constructed of HMA or PCCP as shown on the plans, unless otherwise directed.
For AADTT ≤ 50
HMA for Approaches, Type B, consisting of:
165 lbs/yd² HMA Surface Type B on
275 lbs/yd² HMA Intermediate, Type B on
6" Compacted Aggregate, No. 53 on
Subgrade Treatment, Type II (6 in. Coarse Aggregate, No. 53)
or
PCCP for Approaches, 6 in., on
Dense Graded Subbase, 6 in., on
Subgrade Treatment Type II (6 in. Coarse Aggregate, No. 53)

(6) Commercial Drive Crossover shall be constructed of HMA or PCCP as shown on the plans, unless otherwise directed.
For AADTT ≤ 400
HMA for Approaches, Type B, consisting of:
165 lbs/yd² HMA Surface Type B on
275 lbs/yd² HMA Intermediate, Type B on
660 lbs/yd² HMA Base, Type B on
Subgrade Treatment, Type II (6 in. Coarse Aggregate, No. 53) on Geogrid Type IB
or
PCCP for Approaches, 9 in. on
Dense Graded Subbase, 6 in., on
Subgrade Treatment Type II (6 in. Coarse Aggregate, No. 53) on Geogrid Type IB

INDIANA DEPARTMENT OF TRANSPORTATION

PRIVATE AND COMMERCIAL DRIVE CROSSOVER SECTIONS

SEPTEMBER 2026

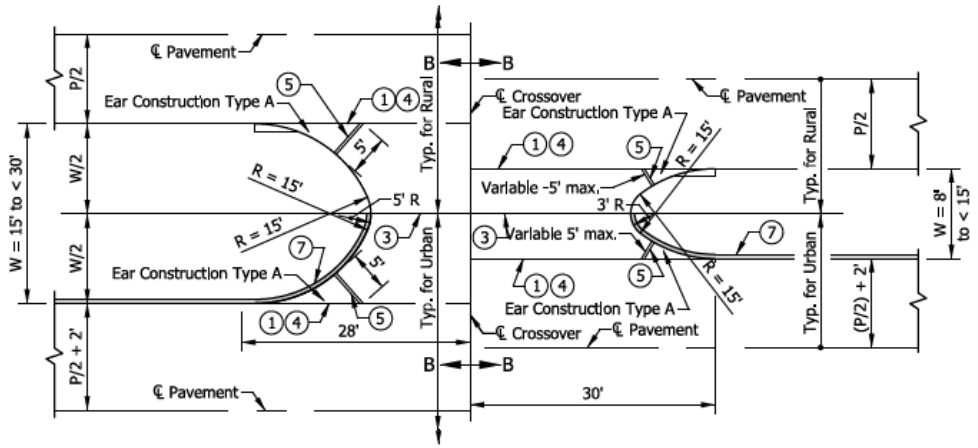
STANDARD DRAWING NO. E 610-DRIV-16

DESIGN STANDARDS ENGINEER DATE

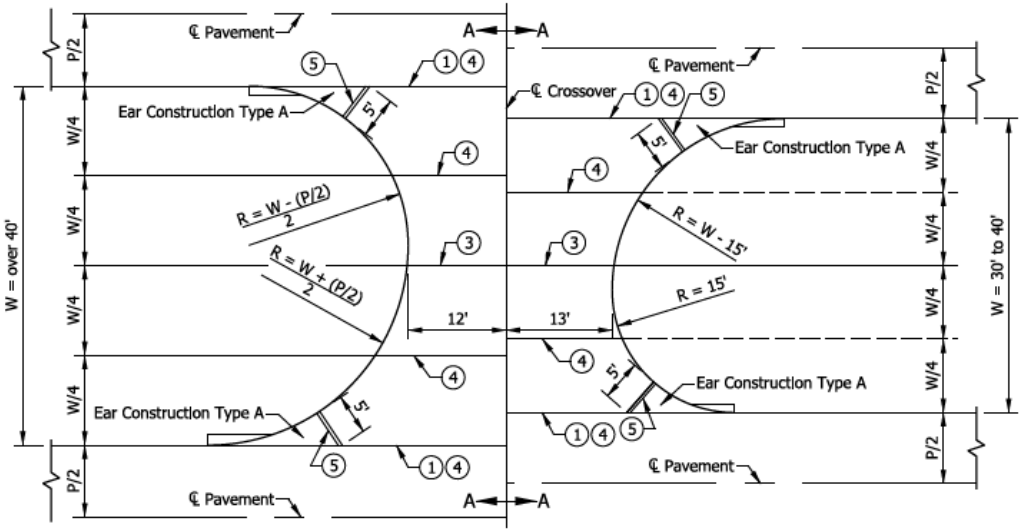
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-17 COMMERCIAL DRIVE CROSSOVER PLANS (DRAFT)



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.

2. See Standard Drawing:
E 605-ERCN-01 for Ear Construction for Type "A" and Type "B" details.

(3) Contraction Joint, Type D-1, see Standard Drawing series E 503-CCPJ for joint details.

(4) Longitudinal joint, see Standard Drawing series E 503-CCPJ for joint details.

(5) 1" Preformed Joint Filler.

6. Grades for commercial drive crossover shall be the same as for private drive crossover. See Standard Drawing E 610-DRIV-16 for sections A-A and B-B for PCCP and HMA pavement.

(7) See Standard Drawing E 605-CCIN-01 for Integral Concrete Curb details.

LEGEND

P/2 = Width of travel lanes

W = Width of median

INDIANA DEPARTMENT OF TRANSPORTATION

COMMERCIAL DRIVE CROSSOVER PLANS

SEPTEMBER 2026

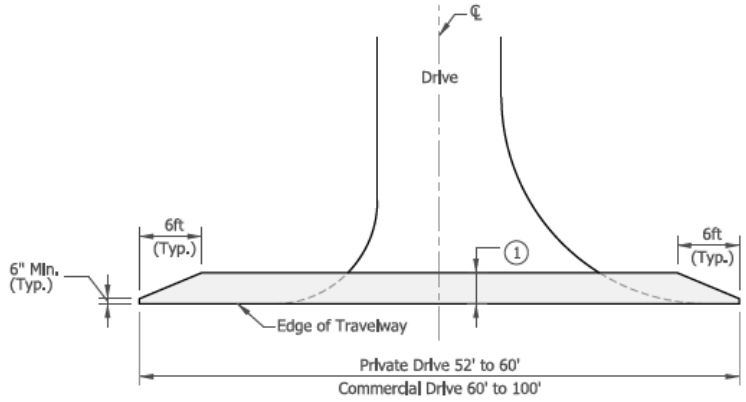
STANDARD DRAWING NO. E 610-DRIV-17

DESIGN STANDARDS ENGINEER DATE

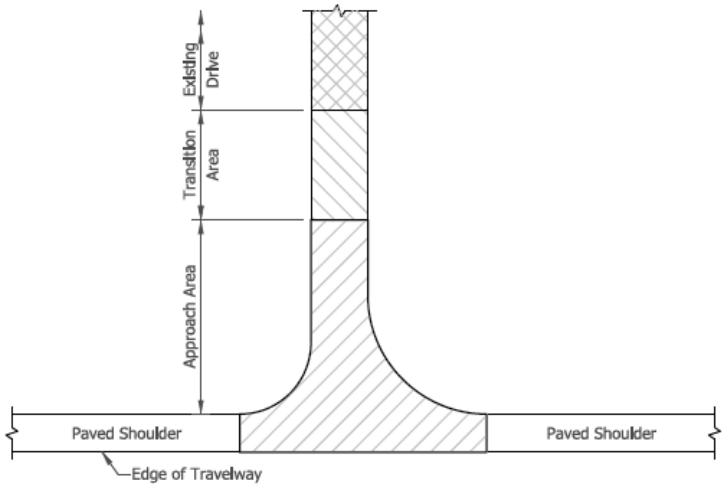
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-DRIV-18 PAVEMENT WEDGE AND PAY LIMITS FOR CLASS II, IV AND VI DRIVES (DRAFT)



PAVEMENT WEDGE PLAN VIEW



PAY LIMITS FOR CLASS II, IV, AND VI DRIVES

NOTES:

(1) 3 ft or wider as necessary to feather to existing grade.

2. Pavement wedge to be centered on centerline of drive.

3. The pay limits shown herein generally apply to Class II, IV, and VI Drives.

4. Approach Area - HMA for Approaches or PCCP for Approaches. This area typically extends from the edge of an 8 foot or wider paved shoulder to the right of way or property line or within a few feet of the right of way or property line where the new drive meets the grade of the existing drive, depending on the site-specific conditions. Where the paved shoulder width is less than 8 feet, this area will be measured from the edge of travelway.

5. Transition Area - an equivalent pavement section to the existing drive. This area typically extends from the right of way or property line to a point on the property owner's drive where the new drive grade can match the existing drive grade.

LEGEND

Drive area to be treated with HMA for Approaches

INDIANA DEPARTMENT OF TRANSPORTATION	
PAVEMENT WEDGE AND PAY LIMITS FOR CLASS II, IV AND VI DRIVES SEPTEMBER 2026	
STANDARD DRAWING NO. E 610-DRIV-18	
	DESIGN STANDARDS ENGINEER DATE CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-01 PUBLIC ROAD APPROACH INDEX AND GENERAL NOTES (WITH MARKUPS)

Editorial - Format Changes Only

INDEX	
SHEET NO.	SUBJECT
1	Public Road Approach Index and General Notes
2	Public Road Approach Type A
3	Public Road Approach Type B
4	Public Road Approach Type A & Type B Table Of Values
5	Public Road Approach Type C
6	Public Road Approach Type C Table Of Values
7	Public Road Approach Type D
8	Public Road Approach Type D Table Of Values
9	Public Road Approach Pay Limits Details
10	Street Or Alley Approach PCCP Or HMA Mainline Pavement
11	Public Road Approach Overlay Paving Transition

GENERAL NOTES:

1. Embankment slopes on either side of an approach or drive within the mainline clear zone for new construction/reconstruction projects or the obstruction free zone on 3R projects should conform to the following table:

DESIGN SPEED		High, ≥ 50 mph		Low, ≤ 45 mph
Design Year AADT		≥ 6000	< 6000	All
Multi-Lane Divided, All Functional Classes.	Incoming Slope	10:1	10:1	10:1
	Outgoing Slope	4:1	4:1	4:1
Multi-Lane Undivided, All Functional Classes.	Incoming Slope	10:1	6:1	6:1
	Outgoing Slope	4:1	4:1	4:1
2-Lane Arterial or Collector		6:1	6:1	4:1
2-Lane Local Road		4:1	4:1	4:1

Outside the clear zone or the obstruction free zone, the embankment slopes should desirably be 4:1 but not steeper than 3:1.

2. Cross culverts under the public road approach which cannot be located outside the mainline clear zone will require appropriate end treatments at each end as shown on the plans.

3. If the approach is to be constructed of PCCP, the details shall be as shown elsewhere in the plan for thickness, joint type, and location.

TABLE A								
Design Speed (mph)	MINIMUM LENGTH OF RIGHT TURN LANE (excluding taper) , ft							
	Downgrade Slope in %				Upgrade Slope in %			
	6 to 5	4.99 to 4	3.99 to 3	2.99 to 0	0 to 2.99	3 to 3.99	4 to 4.99	5 to 6
40	435	410	385	320	320	290	275	260
45	520	495	465	385	385	350	330	310
50	590	560	525	435	435	395	370	350
55	650	615	580	480	480	435	410	385
60	720	680	640	530	530	480	455	425

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
INDEX AND GENERAL NOTES

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-PRAP-01

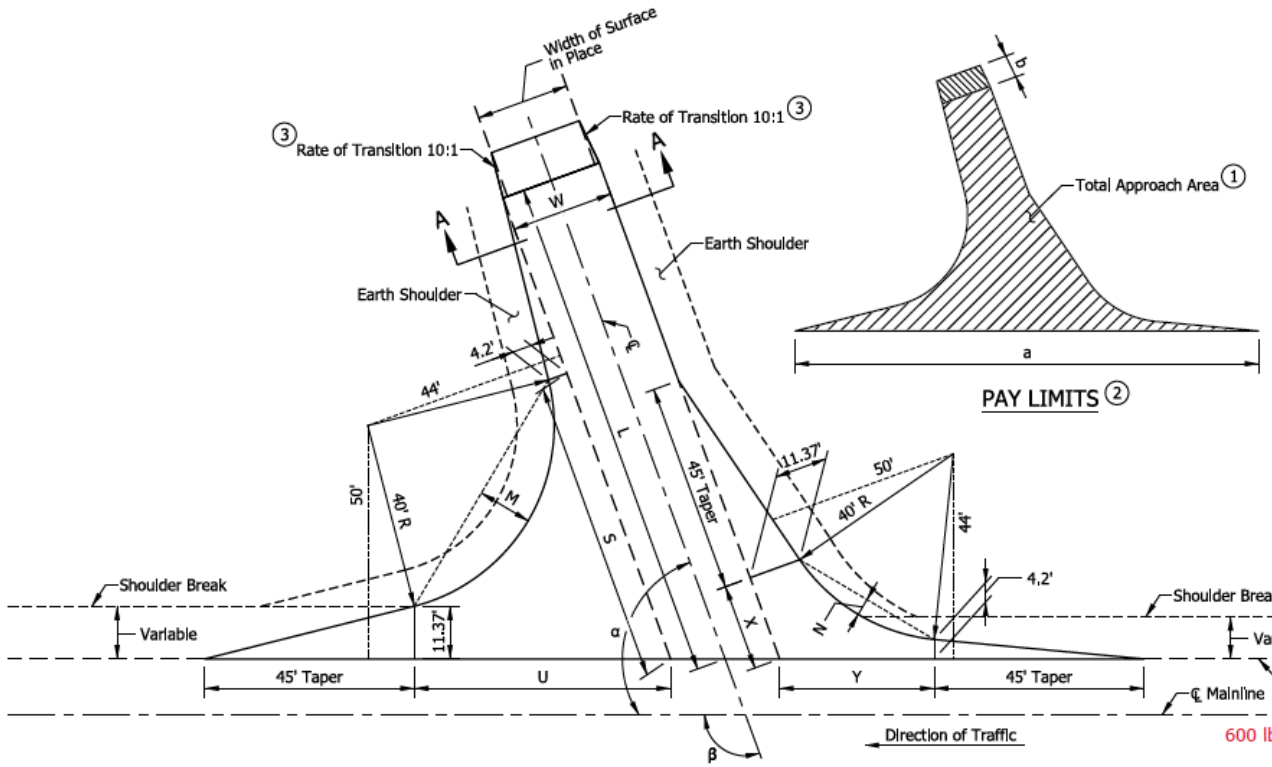
ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/2/2019
DESIGN STANDARDS ENGINEER DATE

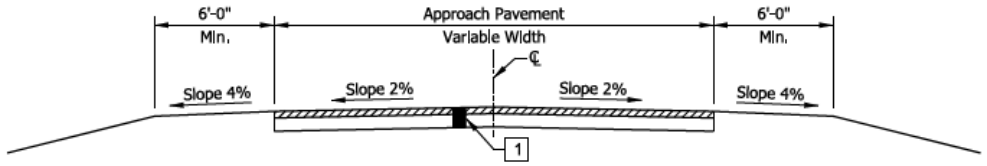
6/5/2019
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-02 PUBLIC ROAD APPROACH TYPE A (WITH MARKUPS)



PUBLIC ROAD APPROACH TYPE A



SECTION A-A MINIMUM PAVEMENT SECTION ④

PAY LIMITS ②

NOTES:

① See Standard Drawing E 610-PRAP-04 for Table of Values.

② See Table on Standard Drawing E 610-PRAP-09 for additional pay limits details.

③ If the existing pavement is asphalt, the transition area shall be the same section as the approach and will be included in the pay limits for HMA for Approaches.

④ If the AADTT (Trucks Class ~~IV~~ 4 and above) is greater than ~~50~~ 400 on the public road, the required pavement section shall be as shown elsewhere in the plans.

LEGEND AADTT ≤ 400

1 HMA for Approaches, Type B, consisting of: 165 lbs/syd HMA Surface, Type B, on 275 lbs/syd HMA Intermediate, Type B, on ~~6" Compacted Aggregate No. 53, on~~ 600 lbs/syd HMA Base, Type B on Subgrade Treatment Type II (6" Coarse Aggregate No. 53) on Geogrid Type IB (indent)

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH TYPE A

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-PRAP-02

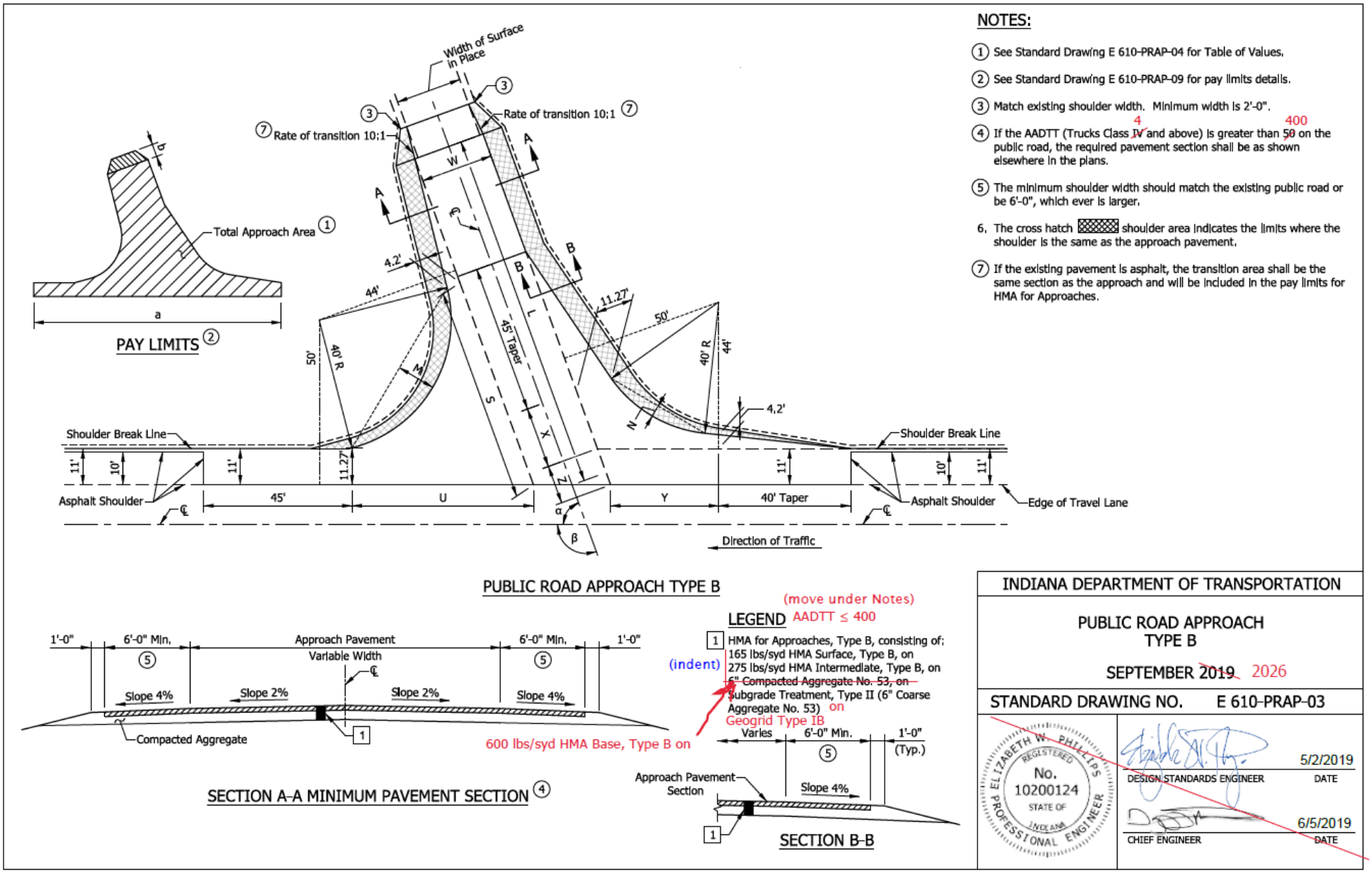
ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/2/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-03 PUBLIC ROAD APPROACH TYPE B (WITH MARKUPS)



NOTES:

1. See Standard Drawing E 610-PRAP-04 for Table of Values.
2. See Standard Drawing E 610-PRAP-09 for pay limits details.
3. Match existing shoulder width. Minimum width is 2'-0".
4. If the AADTT (Trucks Class IV and above) is greater than ~~50~~ 400 on the public road, the required pavement section shall be as shown elsewhere in the plans.
5. The minimum shoulder width should match the existing public road or be 6'-0", which ever is larger.
6. The cross hatch shoulder area indicates the limits where the shoulder is the same as the approach pavement.
7. If the existing pavement is asphalt, the transition area shall be the same section as the approach and will be included in the pay limits for HMA for Approaches.

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH TYPE B

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-PRAP-03

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/2/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-04 PUBLIC ROAD APPROACH TYPE A & TYPE B TABLE OF VALUES (WITH MARKUPS)

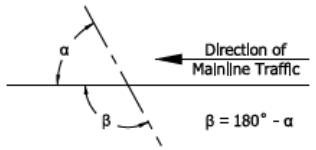
Editorial - Format Changes Only

β	L						Z	U	S	M	X	Y	N	TOTAL APPROACH AREA						β
	TYPE A			TYPE B										TYPE A			TYPE B			
	W=20	W=22	W=24	W=20	W=22	W=24								W=20	W=22	W=24	W=20	W=22	W=24	
(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(sys)	(sys)	(sys)	(sys)	(sys)	(sys)	(°)
110	108.87	109.23	109.60	108.87	109.23	109.60	11.71	55.02	65.23	11.66	18.63	33.20	3.72	531.19	556.20	584.87	645.05	670.14	695.38	110
109	107.48	107.82	108.17	107.48	107.82	108.17	11.63	53.75	64.04	11.42	19.32	33.74	3.86	524.90	549.63	574.51	639.55	664.28	689.15	109
108	106.12	106.45	106.77	106.12	106.45	106.77	11.57	52.51	62.88	11.19	20.02	34.28	4.02	518.88	543.25	567.78	634.32	658.70	683.22	108
107	104.80	105.10	105.41	104.80	105.10	105.41	11.50	51.30	61.74	10.94	20.72	34.84	4.17	513.11	537.15	561.32	629.37	653.40	677.37	107
106	103.50	103.79	104.48	103.50	103.79	104.08	11.44	50.11	60.64	10.70	21.44	35.40	4.33	507.60	531.30	555.13	624.67	648.37	672.20	106
105	102.24	102.51	102.77	102.24	102.51	102.77	11.39	48.95	59.56	10.46	22.16	35.98	4.49	502.33	525.70	549.20	620.23	643.61	667.10	105
104	101.00	101.25	101.50	101.00	102.25	101.50	11.34	47.81	58.51	10.23	22.88	36.56	4.65	497.30	520.35	543.52	616.04	639.10	662.26	104
103	99.79	100.02	100.25	99.79	100.02	100.25	11.29	46.70	57.48	9.99	23.62	37.16	4.81	492.50	515.24	538.06	612.10	634.83	657.68	103
102	98.60	98.81	99.02	98.60	98.81	99.02	11.25	45.81	56.48	9.76	24.36	37.77	4.98	487.92	510.35	532.88	608.39	630.82	653.34	102
101	97.44	97.63	97.83	97.44	97.63	97.83	11.21	44.54	55.49	9.54	25.10	38.39	5.15	483.57	505.69	527.91	604.91	627.04	649.25	101
100	96.30	96.47	96.65	96.30	96.47	96.65	11.17	43.50	54.54	9.31	25.86	39.02	5.35	479.42	501.26	523.16	601.66	623.49	645.40	100
99	95.18	95.34	95.50	95.18	95.34	95.50	11.14	42.47	53.60	9.09	26.63	39.66	5.50	475.49	497.03	518.64	598.63	620.17	641.78	99
98	94.09	94.23	94.37	94.09	94.23	94.37	11.11	41.46	52.68	8.87	27.41	40.31	5.68	471.77	493.02	514.34	595.83	617.08	638.39	98
97	93.10	93.13	93.26	93.01	93.13	93.26	11.08	40.47	51.78	8.65	28.19	40.98	5.86	468.25	489.22	510.24	593.24	614.21	635.23	97
96	91.96	92.06	92.17	91.96	92.06	92.17	11.06	39.50	50.90	8.44	28.99	41.66	6.04	464.93	485.62	506.36	590.86	611.56	632.29	96
95	90.92	91.01	91.10	90.92	91.01	91.10	11.04	38.64	50.04	8.22	29.79	42.35	6.22	461.80	482.21	502.68	588.70	609.12	629.58	95
94	89.90	89.97	90.04	89.90	89.97	90.04	11.03	37.60	49.20	8.01	30.61	43.05	6.41	458.87	479.02	499.20	586.74	606.89	627.07	94
93	88.90	88.96	89.01	88.90	88.96	89.01	11.02	36.68	48.38	7.80	31.44	43.77	6.60	456.12	476.01	495.91	584.99	604.88	624.79	93
92	87.92	87.96	87.99	87.92	87.96	87.99	11.01	35.77	47.57	7.60	32.28	44.50	6.80	453.57	473.19	492.83	583.45	603.07	622.71	92
91	86.96	86.97	86.99	88.96	88.94	88.93	11.00	34.88	46.78	7.39	33.14	45.24	6.99	451.20	470.56	489.94	586.57	606.29	626.01	91
90	86.00	86.00	86.00	90.00	90.00	90.00	11.00	34.00	46.00	7.19	34.00	46.00	7.19	449.01	468.12	487.23	589.85	609.85	629.85	90
89	85.07	85.05	85.04	91.06	91.07	91.09	11.00	33.14	45.24	6.99	34.88	46.78	7.39	447.01	465.87	484.72	593.33	613.61	633.90	89
88	84.15	84.12	84.08	92.13	92.16	92.20	11.01	32.28	44.50	6.80	35.77	47.57	7.60	445.18	463.80	482.40	597.03	617.58	638.16	88
87	83.24	83.19	83.14	93.22	93.27	93.33	11.02	31.44	43.77	6.60	36.68	48.38	7.80	443.54	461.91	480.26	600.93	621.77	642.64	87
86	83.30	83.37	83.44	94.33	94.40	94.47	11.03	30.61	43.05	6.41	37.60	49.20	8.01	444.20	462.79	481.60	605.04	626.18	647.34	86
85	84.42	84.51	84.59	95.46	95.55	95.64	11.04	29.79	42.35	6.22	38.64	50.04	8.22	447.35	466.32	485.34	609.37	630.80	652.27	85
84	85.55	85.65	85.76	96.61	96.72	96.82	11.06	28.99	41.66	6.04	39.50	50.90	8.44	450.69	469.96	489.27	613.92	635.65	657.42	84
83	86.70	86.82	86.94	97.78	97.90	98.03	11.08	28.19	40.98	5.86	40.47	51.78	8.65	454.22	473.79	493.41	618.70	640.72	662.81	83
82	87.87	88.01	88.15	98.97	99.11	99.26	11.11	27.41	40.31	5.68	41.46	52.68	8.87	457.95	477.82	497.75	623.70	646.03	668.43	82
81	89.05	89.21	89.37	100.19	100.35	100.51	11.14	26.63	39.66	5.50	42.47	53.60	9.09	461.88	482.05	502.30	628.93	651.58	674.30	81
80	90.26	90.44	90.61	101.43	101.61	101.78	11.17	25.86	39.02	5.35	43.50	54.54	9.31	466.00	486.49	507.06	634.40	657.37	680.42	80
79	91.49	91.68	91.88	102.69	102.89	103.08	11.21	25.10	38.39	5.15	44.54	55.49	9.54	470.34	491.15	512.04	640.11	663.40	686.78	79
78	92.74	92.95	93.16	103.96	104.20	104.41	11.25	24.36	37.77	4.98	45.61	56.48	9.76	474.89	496.02	517.24	646.07	669.69	693.41	78
77	94.01	94.24	94.47	105.30	105.53	105.76	11.29	23.62	37.16	4.81	46.70	57.48	9.99	479.66	501.11	522.67	652.78	676.24	700.31	77
76	95.31	95.56	95.81	106.64	106.89	107.14	11.34	22.88	36.56	4.65	47.81	58.51	10.23	484.65	506.44	528.34	658.75	683.06	707.48	76
75	96.63	96.90	97.17	108.02	108.29	108.55	11.39	22.16	35.98	4.49	48.95	59.56	10.46	489.87	511.99	534.24	665.50	690.16	714.94	75
74	97.98	98.26	98.55	109.42	109.71	110.00	11.44	21.44	35.40	4.33	50.11	60.64	10.70	495.32	517.79	540.39	672.52	697.54	722.68	74
73	99.36	99.66	99.97	110.86	111.16	111.47	11.50	20.72	34.84	4.17	51.30	61.74	10.94	501.01	523.84	546.80	679.82	705.21	730.72	73
72	100.76	101.08	101.41	112.33	112.65	112.98	11.57	20.02	34.28	4.02	52.51	62.88	11.18	506.96	530.14	553.47	687.42	713.18	739.08	72
71	102.20	102.54	102.88	113.83	114.17	114.52	11.63	19.32	33.74	3.86	53.75	64.04	11.42	513.16	536.71	560.42	695.32	721.46	747.75	71
70	103.66	104.03	104.39	115.37	115.73	116.10	11.71	18.63	33.20	3.72	55.02	65.23	11.66	519.62	543.55	567.64	703.54	730.07	756.76	70

LEGEND:

α = ANGLE OF TURN
The angle through which a vehicle travels on the public road approach toward making a right hand turn. It is measured from the tangent on which a vehicle approaches the intersecting road to the corresponding tangent on the intersecting road to which the vehicle turns.

β = INTERSECTION CONTROL ANGLE



NOTES:

1. See Standard Drawing E 610-PRAP-02 for Public Road Approach Type A.
2. See Standard Drawing E 610-PRAP-03 for Public Road Approach Type B.
3. If intersection control angle is less than 70° or greater than 110° a special design will be required.

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
TYPE A & TYPE B
TABLE OF VALUES
SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-PRAP-04

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

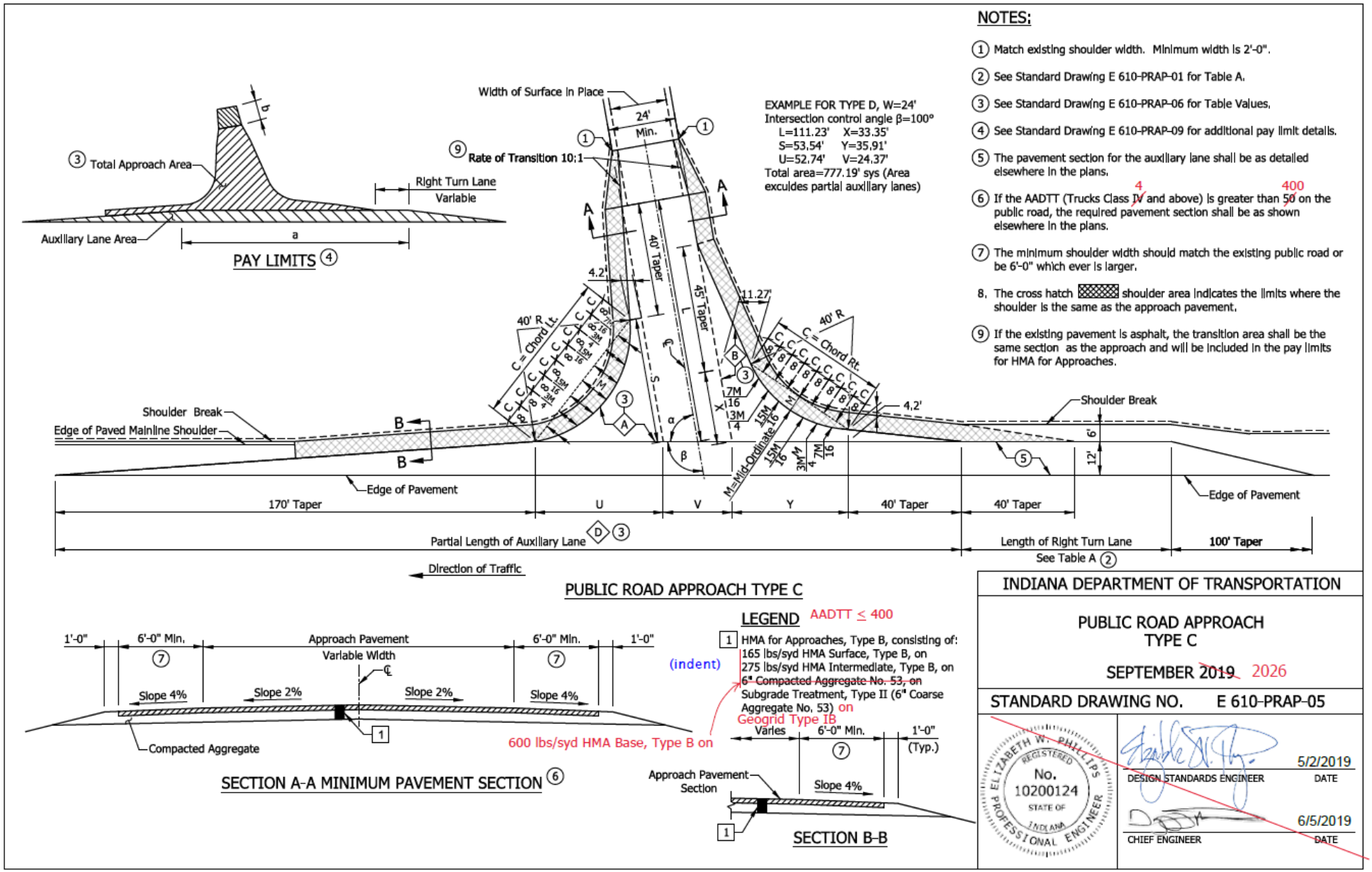
5/2/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

Item No. 3 (2026 SS) (contd.)
Mr. Dave
Date: 9/18/25

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP- 05 PUBLIC ROAD APPROACH TYPE C (WITH MARKUPS)



REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-06 PUBLIC ROAD APPROACH TYPE C TABLE OF VALUES (WITH MARKUPS)

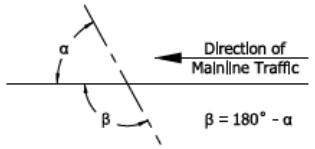
Editorial - Format Changes Only

β	L	S	U	X	Y	V	Shoulder Gap	Chord		M		Approach Areas			Auxiliary Lane Part. Area	β
								Lt.	Rt.	Lt.	Rt.	Ⓐ	Ⓑ	Total	Ⓓ	
(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(sys)	(sys)	(sys)	(sys)	(°)
110	99.29	54.29	58.51	18.86	33.10	25.54	327.15	61.27	33.78	14.28	3.74	115.63	86.31	466.70	322.87	110
109	99.74	53.17	57.44	19.56	33.64	25.38	326.46	60.82	34.41	14.01	3.89	112.05	88.00	465.28	321.94	109
108	95.97	52.07	56.39	20.26	34.18	25.24	325.81	60.36	35.04	13.75	4.04	108.60	89.73	454.24	321.08	108
107	94.66	50.99	55.37	20.96	34.74	25.10	325.21	59.90	35.66	13.49	4.19	105.27	91.50	449.20	320.27	107
106	93.38	49.94	54.38	21.68	35.30	24.97	324.65	59.44	36.29	13.23	4.35	102.05	93.32	444.39	319.53	106
105	92.13	48.92	53.41	22.40	35.88	24.85	324.13	58.97	36.91	12.97	4.51	98.94	95.17	439.79	318.84	105
104	90.90	47.91	52.46	23.31	36.46	24.73	323.66	58.49	37.52	12.71	4.67	95.89	97.11	435.44	318.21	104
103	89.70	46.93	51.53	23.86	37.06	24.63	323.22	58.01	38.14	12.46	4.84	93.00	99.00	431.22	317.63	103
102	88.51	45.96	50.63	24.60	37.66	24.54	322.83	57.53	38.75	12.21	5.01	91.44	101.00	427.22	317.11	102
101	87.35	45.02	49.74	25.35	38.28	24.45	322.48	57.04	39.36	11.96	5.18	87.44	103.11	423.56	316.63	101
100	86.21	44.09	48.88	26.11	38.91	24.37	322.16	56.55	39.97	11.71	5.35	84.89	105.22	419.89	316.21	100
99	85.09	43.19	48.03	26.88	39.55	24.30	321.88	56.06	40.57	11.46	5.53	82.33	107.33	416.56	315.85	99
98	83.98	42.30	47.20	27.66	40.21	24.24	321.65	55.56	41.17	11.22	5.70	79.89	109.56	413.33	315.53	98
97	82.90	41.42	46.39	28.45	40.87	24.18	321.44	55.05	41.77	10.98	5.88	77.44	111.78	410.33	315.26	97
96	81.83	40.57	45.60	29.24	41.55	24.13	321.28	54.54	42.36	10.74	6.07	75.22	114.11	407.56	315.04	96
95	80.77	39.72	44.82	30.05	42.24	24.09	321.15	54.03	42.95	10.50	6.25	73.00	116.44	404.89	314.87	95
94	79.74	38.90	44.06	30.87	42.94	24.06	321.06	53.51	43.54	10.27	6.44	70.78	118.89	402.33	314.75	94
93	78.71	38.08	43.32	31.70	43.66	24.03	321.01	52.99	44.12	10.03	6.63	68.67	121.44	400.11	314.68	93
92	77.12	37.28	42.58	32.54	44.39	24.01	320.99	52.47	44.70	9.80	6.83	66.67	124.00	396.33	314.65	92
91	78.19	36.50	41.87	33.40	45.13	24.00	321.01	51.94	45.28	9.58	7.02	64.78	126.67	399.89	314.67	91
90	79.26	35.72	41.16	34.26	45.89	24.00	321.06	51.41	45.86	9.35	7.22	62.89	129.44	403.56	314.75	90
89	80.35	34.96	40.48	35.14	46.67	24.00	321.15	50.87	46.43	9.13	7.42	61.00	132.22	407.44	314.86	89
88	81.46	34.21	39.80	36.04	47.46	24.01	321.27	50.33	46.99	8.91	7.63	59.22	135.11	411.56	315.03	88
87	82.58	33.47	39.13	36.95	48.27	24.03	321.44	49.78	47.56	8.69	7.83	57.44	138.00	415.67	315.25	87
86	83.71	32.75	38.48	37.87	49.09	24.06	321.63	49.24	48.11	8.47	8.04	55.78	141.00	420.11	315.51	86
85	84.86	32.03	37.84	38.81	49.93	24.09	321.87	48.68	48.67	8.26	8.25	54.22	144.11	424.67	315.82	85
84	86.03	31.32	37.21	39.77	50.79	24.13	322.14	48.13	49.22	8.05	8.47	52.67	147.44	429.44	316.18	84
83	87.22	30.62	36.60	40.74	51.67	24.18	322.45	47.57	49.77	7.84	8.68	51.11	150.67	434.44	316.60	83
82	88.42	29.93	35.39	41.73	53.48	24.30	322.79	47.00	50.32	7.63	8.90	49.67	154.11	439.47	317.06	82
81	89.64	29.26	35.39	42.74	53.48	24.30	323.18	46.44	50.86	7.43	9.12	48.22	157.56	444.78	317.57	81
80	90.89	28.58	34.81	43.77	54.42	24.37	323.60	45.87	51.39	7.23	9.35	46.78	161.22	450.33	318.13	80
79	92.15	27.92	34.23	44.82	55.38	24.45	324.06	45.29	51.93	7.03	9.57	45.56	164.89	456.11	318.75	79
78	93.44	27.27	33.67	45.89	56.36	24.54	324.56	44.72	52.46	6.83	9.80	44.22	168.67	462.11	319.42	78
77	94.75	26.62	33.11	46.98	57.37	24.63	325.11	44.14	52.98	6.64	10.03	42.89	172.67	468.22	320.14	77
76	96.09	25.98	32.56	48.09	58.39	24.73	325.69	43.55	53.50	6.45	10.26	41.78	176.78	474.67	320.92	76
75	97.45	25.35	32.02	49.23	59.45	24.85	326.32	42.97	54.02	6.26	10.50	40.56	180.89	481.22	321.76	75
74	98.83	24.72	31.50	50.39	60.52	24.97	326.99	42.37	54.53	6.07	10.73	39.44	185.22	488.11	322.65	74
73	100.25	24.10	30.98	51.58	61.63	25.10	327.70	41.78	55.04	5.89	10.97	38.22	189.67	495.22	323.60	73
72	101.70	23.49	30.46	52.80	62.76	25.24	328.46	41.18	55.55	5.71	11.21	37.11	194.22	502.56	324.61	72
71	103.17	22.88	29.96	54.04	63.92	25.38	329.27	40.58	56.05	5.53	11.46	36.11	199.00	510.18	325.69	71
70	104.68	22.28	29.46	55.31	65.12	25.54	330.12	39.98	56.54	5.35	11.70	35.11	203.89	518.11	326.83	70

LEGEND:

α = ANGLE OF TURN
The angle through which a vehicle travels on the public road approach toward making a right hand turn. It is measured from the tangent on which a vehicle approaches the intersecting road to the corresponding tangent on the intersecting road to which the vehicle turns.

β = INTERSECTION CONTROL ANGLE



NOTES:

1. See Standard Drawing E 610-PRAP-05 for Public Road Approach Type C.
2. If intersection control angle is less than 70° or greater than 110° a special design will be required.

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
TYPE C
TABLE OF VALUES
SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-PRAP-06

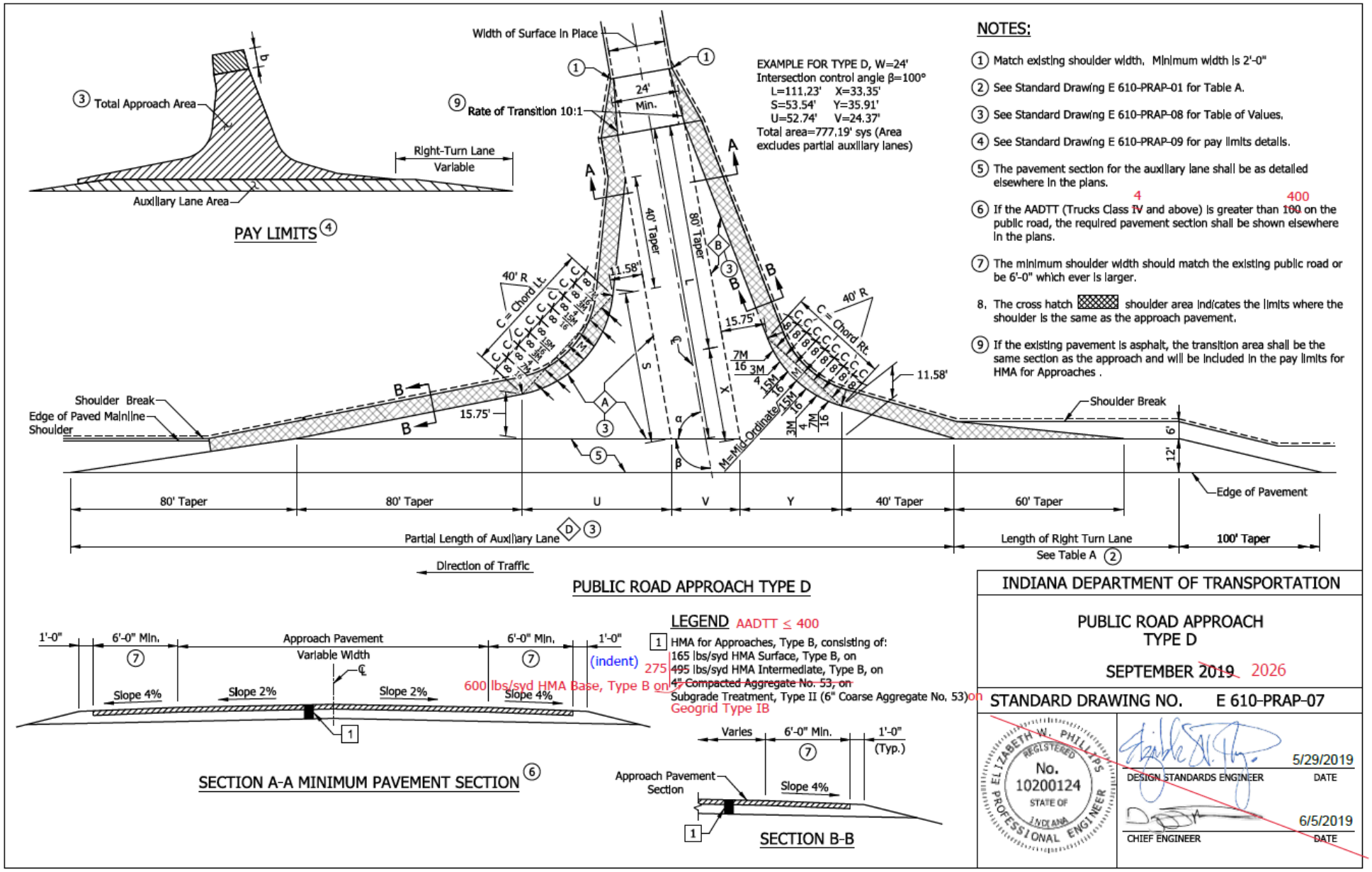
ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/2/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-07 PUBLIC ROAD APPROACH TYPE D (WITH MARKUPS)



NOTES:

1. Match existing shoulder width. Minimum width is 2'-0"
2. See Standard Drawing E 610-PRAP-01 for Table A.
3. See Standard Drawing E 610-PRAP-08 for Table of Values.
4. See Standard Drawing E 610-PRAP-09 for pay limits details.
5. The pavement section for the auxiliary lane shall be as detailed elsewhere in the plans.
6. If the AADTT (Trucks Class ~~IV~~ 4 and above) is greater than ~~100~~ 400 on the public road, the required pavement section shall be shown elsewhere in the plans.
7. The minimum shoulder width should match the existing public road or be 6'-0" which ever is larger.
8. The cross hatch shoulder area indicates the limits where the shoulder is the same as the approach pavement.
9. If the existing pavement is asphalt, the transition area shall be the same section as the approach and will be included in the pay limits for HMA for Approaches .

LEGEND AADTT ≤ 400

1 HMA for Approaches, Type B, consisting of:
165 lbs/syd HMA Surface, Type B, on
~~495~~ 275 lbs/syd HMA Intermediate, Type B, on
~~4" Compacted Aggregate No. 53, on~~ 600 lbs/syd HMA Base, Type B on
Subgrade Treatment, Type II (6" Coarse Aggregate No. 53) on Geogrid Type IB

(indent)

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH TYPE D

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-PRAP-07

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/29/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-08 PUBLIC ROAD APPROACH TYPE D TABLE OF VALUES (WITH MARKUPS)

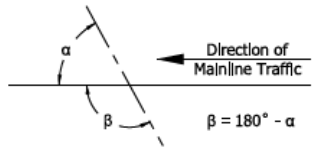
Editorial - Format Changes Only

β	L	S	U	X	Y	V	Shoulder Gap	Chord		M		Approach Areas			Auxiliary Lane Part. Area	β
								Lt.	Rt.	Lt.	Rt.	Ⓐ	Ⓑ	Total	Ⓓ	
(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(sys)	(sys)	(sys)	(sys)	(°)
110	109.97	65.61	65.50	25.46	29.21	25.54	320.25	52.66	29.14	9.98	2.75	335.88	174.50	803.64	373.67	110
109	108.40	64.26	64.09	26.22	29.83	25.38	319.31	52.34	29.79	9.75	2.88	329.40	176.97	795.42	372.41	109
108	106.85	62.98	62.72	26.97	30.46	25.24	318.41	51.81	30.43	9.52	3.01	323.11	179.49	787.55	371.22	108
107	105.35	61.68	61.37	27.74	31.11	25.10	317.57	51.27	31.08	9.30	3.14	317.01	182.07	780.00	370.10	107
106	105.08	60.43	60.06	28.52	31.76	24.97	316.78	50.73	31.72	9.07	3.28	311.08	184.70	775.99	369.04	106
105	106.08	59.22	58.77	29.30	32.42	24.85	316.04	50.19	32.36	8.85	3.42	305.33	187.38	775.60	368.06	105
104	107.10	58.03	57.52	30.09	33.10	24.73	315.35	49.65	33.00	8.63	3.56	299.74	190.12	775.45	367.13	104
103	108.12	56.87	56.28	30.89	33.78	24.63	314.70	49.10	33.63	8.42	3.71	294.31	192.92	775.54	366.26	103
102	109.15	55.74	55.08	31.70	34.48	24.54	314.10	48.54	34.26	8.21	3.85	289.03	195.78	775.87	365.46	102
101	110.18	54.63	53.90	32.52	35.19	24.45	313.54	47.99	34.89	8.00	4.01	283.89	198.70	776.42	364.72	101
100	111.23	53.54	52.74	33.35	35.91	24.37	313.02	47.43	35.52	7.79	4.16	278.90	201.68	777.19	364.03	100
99	112.28	52.48	51.61	34.18	36.65	24.30	312.55	46.86	36.14	7.58	4.32	274.04	204.73	778.19	363.40	99
98	113.35	51.45	50.49	35.03	37.39	24.24	312.12	46.30	36.77	7.38	4.47	269.31	207.85	779.42	362.83	98
97	114.42	50.43	49.40	35.89	38.15	24.18	311.73	45.72	37.38	7.18	4.64	264.70	211.04	780.86	362.31	97
96	115.51	49.44	48.33	36.77	38.93	24.13	311.39	45.15	38.00	6.98	4.80	260.21	214.31	782.53	361.85	96
95	116.60	48.46	47.27	37.65	39.71	24.09	311.08	44.57	38.61	6.78	4.97	255.84	217.65	784.42	361.44	95
94	117.71	47.51	46.24	38.55	40.52	24.06	310.82	43.99	39.22	6.59	5.14	251.58	221.01	786.54	361.09	94
93	118.83	46.57	45.22	39.46	41.33	24.03	310.59	43.41	39.83	6.40	5.31	247.43	224.56	788.87	360.79	93
92	119.96	45.66	44.22	40.38	42.17	24.01	310.40	42.82	40.43	6.21	5.48	243.38	228.15	791.43	360.54	92
91	121.11	44.76	43.24	41.32	43.01	24.00	310.26	42.23	41.03	6.03	5.66	239.43	231.82	794.21	360.34	91
90	122.27	43.88	42.27	42.27	43.88	24.00	310.15	41.63	41.63	5.84	5.84	235.58	235.58	797.21	360.20	90
89	123.45	43.01	41.32	43.24	44.76	24.00	310.08	41.03	42.23	5.66	6.03	231.82	239.43	800.44	360.11	89
88	124.64	42.17	40.38	44.22	45.66	24.01	310.06	40.43	42.82	5.48	6.21	228.15	243.38	803.90	360.07	88
87	125.85	41.33	39.46	45.22	46.57	24.03	310.07	39.83	43.41	5.31	6.40	224.56	247.38	807.60	360.09	87
86	127.08	40.52	38.55	46.24	47.51	24.06	310.12	39.22	43.99	5.14	6.59	221.06	251.56	811.52	360.16	86
85	128.32	39.71	37.65	47.27	48.46	24.09	310.21	38.61	44.57	4.97	6.78	217.65	255.84	815.69	360.28	85
84	129.59	38.93	36.77	48.33	49.44	24.13	310.34	38.00	45.15	4.80	6.98	214.31	260.21	820.09	360.45	84
83	130.87	38.15	35.89	49.40	50.43	24.18	310.51	37.38	45.72	4.64	7.18	211.04	264.70	824.74	360.67	83
82	132.18	37.39	35.03	50.49	51.45	24.24	310.72	36.77	46.30	4.47	7.38	207.85	269.31	829.64	360.95	82
81	133.51	36.65	34.18	51.61	52.48	24.30	310.97	36.14	46.86	4.32	7.58	204.73	274.04	834.79	361.29	81
80	134.86	35.91	33.35	52.74	53.54	24.37	311.26	35.52	47.43	4.16	7.79	201.68	278.90	840.20	361.68	80
79	136.23	35.19	32.52	53.90	54.63	24.45	311.59	34.89	47.99	4.01	8.00	198.70	283.89	845.87	362.12	79
78	137.63	34.48	31.70	55.08	55.74	24.54	311.97	34.26	48.54	3.85	8.21	195.78	289.03	851.82	362.63	78
77	139.06	33.78	30.89	56.28	56.87	24.63	312.39	33.63	49.10	3.71	8.42	192.92	294.31	858.04	363.19	77
76	140.51	33.10	30.09	57.52	58.03	24.73	312.85	33.00	49.65	3.56	8.63	190.12	299.74	864.55	363.80	76
75	141.99	32.42	29.30	58.77	59.22	24.85	313.36	32.36	50.19	3.42	8.85	187.38	305.33	871.35	364.48	75
74	143.50	31.76	28.52	60.06	60.43	24.97	313.92	31.72	50.73	3.28	9.07	184.70	311.08	878.44	365.22	74
73	145.04	31.11	27.74	61.37	61.68	25.10	313.92	31.08	51.27	3.14	9.30	182.07	317.01	885.85	366.02	73
72	146.61	30.46	26.97	62.72	62.96	25.24	315.17	30.43	51.81	3.01	9.52	179.49	323.11	893.57	366.89	72
71	148.22	29.83	26.22	64.09	64.26	25.38	315.86	29.79	52.34	2.88	9.75	176.97	329.40	901.63	367.82	71
70	149.87	29.21	25.46	65.50	65.61	25.54	316.61	29.14	52.86	2.75	9.99	174.50	335.88	910.02	368.81	70

LEGEND:

α = ANGLE OF TURN
The angle through which a vehicle travels on the public road approach toward making a right hand turn. It is measured from the tangent on which a vehicle approaches the intersecting road to the corresponding tangent on the intersecting road to which the vehicle turns.

β = INTERSECTION CONTROL ANGLE



NOTES:

1. See Standard Drawing E 610-PRAP-07 for Public Road Approach Type D.
2. If intersection control angle is less than 70° or greater than 110° a special design will be required.

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
TYPE D
TABLE OF VALUES
SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-PRAP-08

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/2/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-09 PUBLIC ROAD APPROACH PAY LIMIT DETAILS (WITH MARKUPS)

Format Changes +

NOTES:

1. The pay limits shown hereon generally apply to Types A, B, C and D Public Road Approaches as shown on Standard Drawings E 610-PRAP-02, - 03, -05 and -07 respectively.

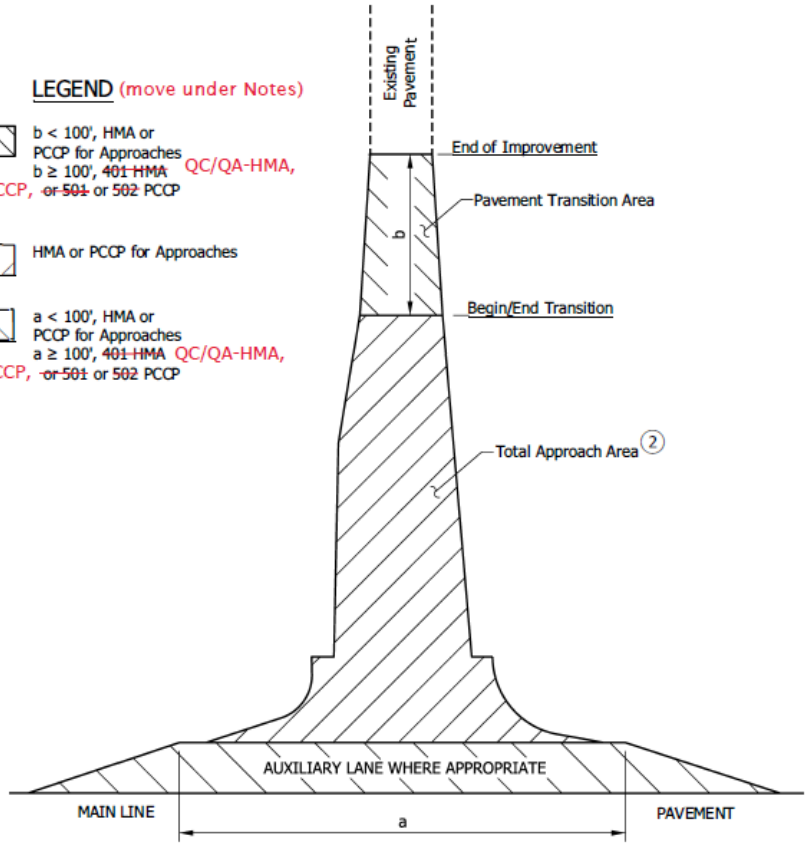
(2) See Tables of Values on Standard Drawings E 610 PRAP-04, -06, and -08.

LEGEND (move under Notes)

b < 100', HMA or PCCP for Approaches
b ≥ 100', ~~401 HMA~~ QC/QA-HMA, QC/QA-PCCP, ~~or 501~~ or ~~502~~ PCCP

HMA or PCCP for Approaches

a < 100', HMA or PCCP for Approaches
a ≥ 100', ~~401 HMA~~ QC/QA-HMA, QC/QA-PCCP, ~~or 501~~ or ~~502~~ PCCP



INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
PAY LIMIT DETAILS

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-PRAP-09

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/2/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
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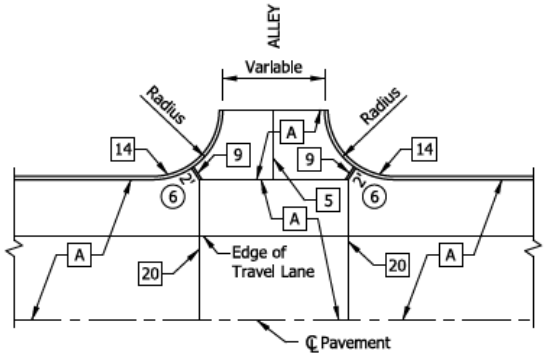
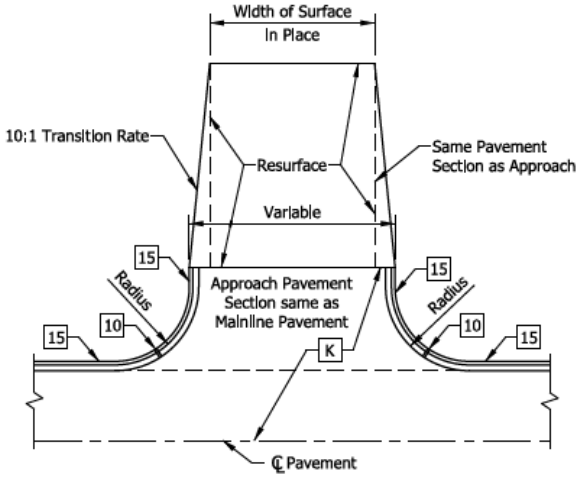
REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-10 STREET OR ALLEY APPROACH PCCP OR HMA MAINLINE PAVEMENT (WITH MARKUPS)

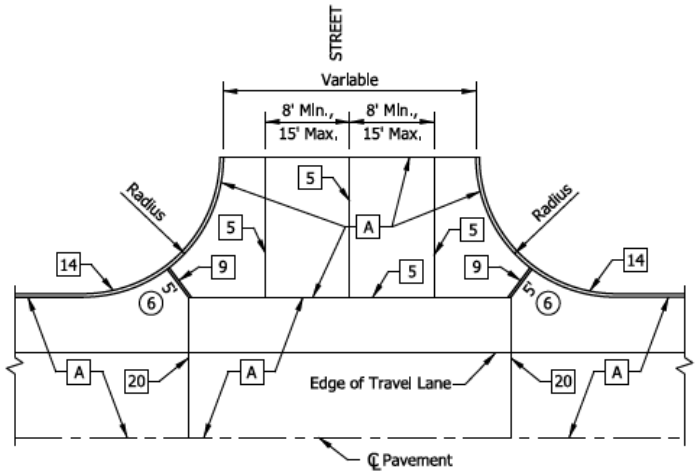
Editorial - Format Changes Only



ALLEY APPROACH
WITH PCCP MAINLINE PAVEMENT



STREET OR ALLEY APPROACH
WITH HMA MAINLINE PAVEMENT



STREET APPROACH
WITH PCCP MAINLINE PAVEMENT

NOTES:

1. Radii of 25' at minor cross streets shall be provided where space permits.
2. Radii of 30' or more at major cross streets where WB-15 trucks and or buses turn repeatedly.
3. Radii of 40' or more at major cross streets shall be provided where WB-40 trucks and buses repeatedly turn.
4. Provide radii of 60' or more at the intersection of two State or U.S. highways and streets servicing heavy industrial areas requiring repeated turns by the Indiana Design Vehicle.
5. Radius of 10' min. to 20' min. for alley approaches shall be provided where space permits.
6. Ear Construction Type B. See Standard Drawing E 605-ERCN-02
7. For Approaches with PCCP Pavement, see Standard Drawing series E 503-CCPJ for joint details.
8. For PCCP Approaches, if length of approach is more than 15 Feet, then the D-1 Contraction Joints are required in the transverse direction. Spacing shall be 1/2 the length of the approach or 15 Feet max.

LEGEND

- A PCCP
- K HMA Pavement
- 5 Longitudinal Joint
- 9 1" Preformed Joint Filler
- 10 1/2" Preformed Joint Filler
- 14 Integral Concrete Curb
- 15 Combined Curb and Gutter
- 20 Contraction Joint

INDIANA DEPARTMENT OF TRANSPORTATION

STREET OR ALLEY APPROACH
PCCP OR HMA MAINLINE PAVEMENT

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-PRAP-10

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/2/2019
DESIGN STANDARDS ENGINEER DATE

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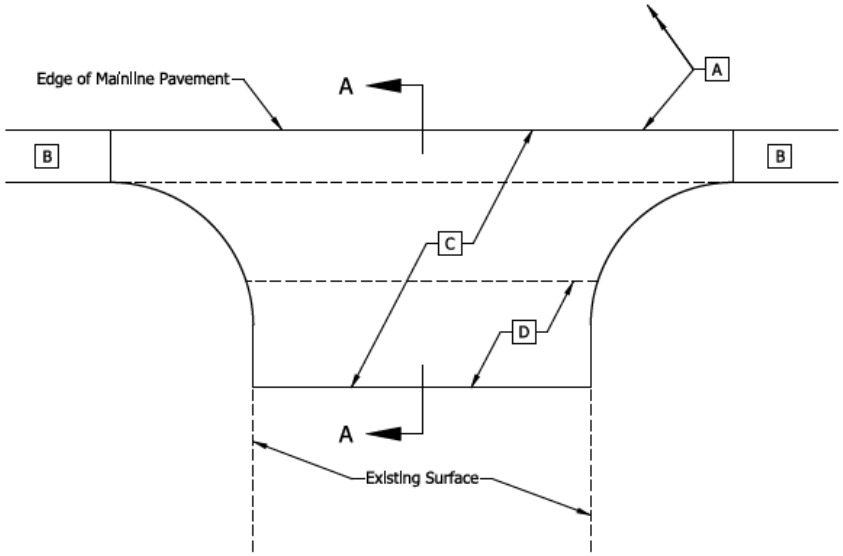
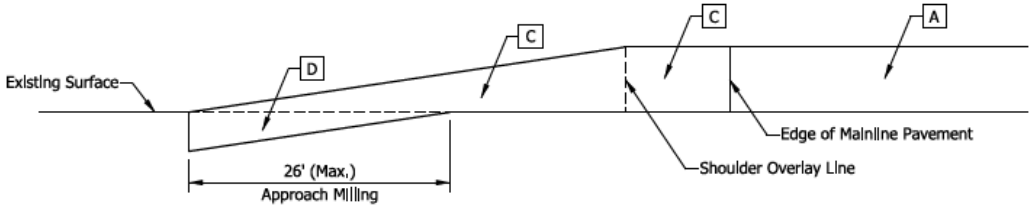
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-11 PUBLIC ROAD APPROACH OVERLAY PAVING TRANSITION (WITH MARKUPS)

Editorial - Format Changes Only





SECTION A-A

LEGEND

A	Typical HMA Overlay, Mainline
B	Typical HMA Overlay, Shoulder
C	HMA for Approaches
D	Approach Milling

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
OVERLAY PAVING TRANSITION

SEPTEMBER ~~2019~~ 2026

STANDARD DRAWING NO. E 610-PRAP-11

ELIZABETH W. PHILLIPS REGISTERED No. 10200124 STATE OF INDIANA PROFESSIONAL ENGINEER

5/2/2019
DESIGN STANDARDS ENGINEER DATE

6/5/2019
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-01 PUBLIC ROAD APPROACH INDEX SHEET AND GENERAL NOTES (DRAFT)

INDEX

GENERAL NOTES:

1. Embankment slopes on either side of an approach or drive within the mainline clear zone for new construction/reconstruction projects or the obstruction free zone on 3R projects should conform to the following table:

DESIGN SPEED		≥ 50 mph		≤ 45 (mph)
Design Year AADT		≥ 6000	< 6000	All
Multi-Lane Divided, All Functional Classes	Incoming Slope	10:1	10:1	10:1
	Outgoing Slope	4:1	4:1	4:1
Multi-Lane Undivided, All Functional Classes	Incoming Slope	10:1	6:1	6:1
	Outgoing Slope	4:1	4:1	4:1
2-Lane Arterial or Collector		6:1	6:1	4:1
2-Lane Local Road		4:1	4:1	4:1

Outside the clear zone or the obstruction free zone, the embankment slopes should desirably be 4:1 but not steeper than 3:1.

2. Cross culverts under the public road approach which cannot be located outside the mainline clear zone will require appropriate end treatments at each end as shown on the plans.

3. If the approach is to be constructed of PCCP, the details shall be as shown elsewhere in the plan for thickness, joint type, and location.

TABLE A

Design Speed (mph)	MINIMUM LENGTH OF RIGHT TURN LANE (excluding taper) , ft							
	Downgrade Slope in %				Upgrade Slope in %			
	6 to 5	4.99 to 4	3.99 to 3	2.99 to 0	0 to 2.99	3 to 3.99	4 to 4.99	5 to 6
40	435	410	385	320	320	290	275	260
45	520	495	465	385	385	350	330	310
50	590	560	525	435	435	395	370	350
55	650	615	580	480	480	435	410	385
60	720	680	640	530	530	480	455	425

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
INDEX SHEET AND GENERAL NOTES

SEPTEMBER 2026

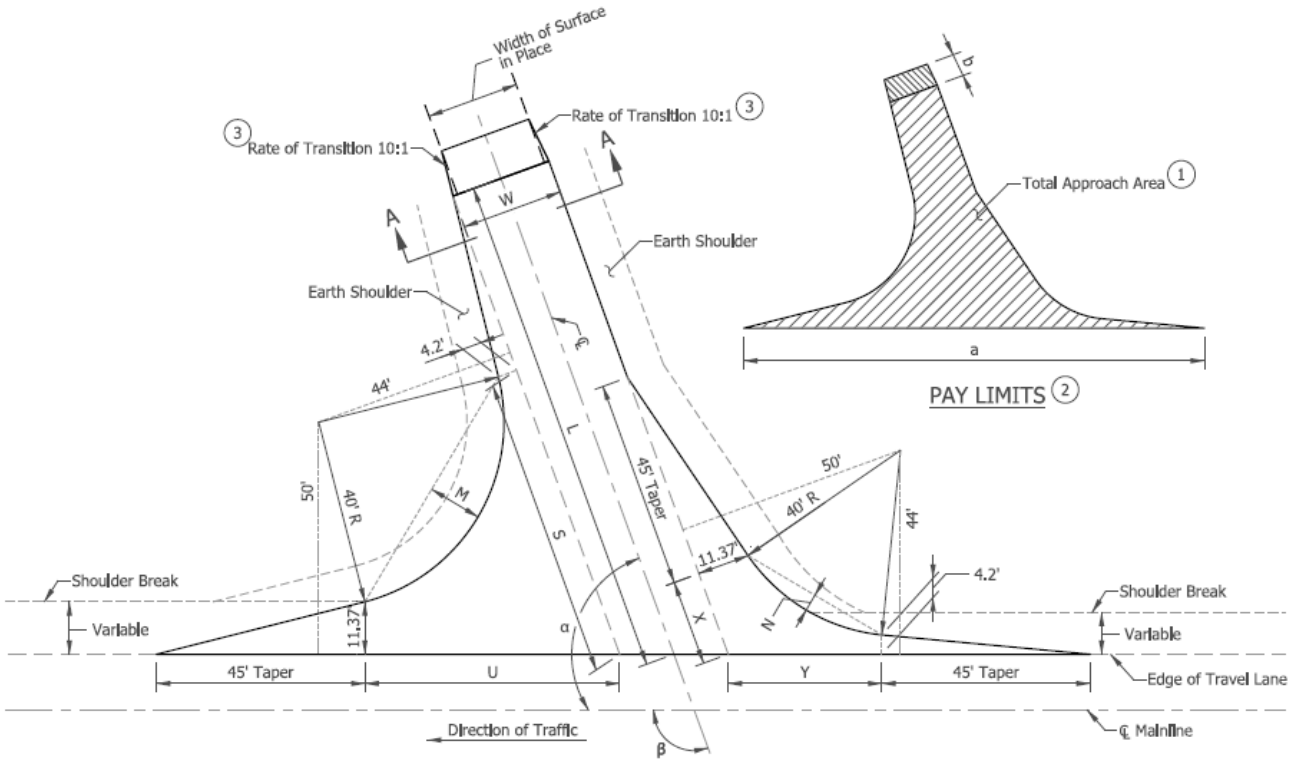
STANDARD DRAWING NO. E 610-PRAP-01

XX/XX/20XX
DESIGN STANDARDS ENGINEER DATE

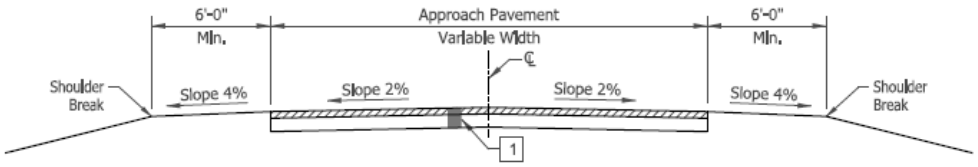
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-02 PUBLIC ROAD APPROACH TYPE A (DRAFT)



PUBLIC ROAD APPROACH TYPE A



SECTION A-A MINIMUM PAVEMENT SECTION (4)

PAY LIMITS (2)

NOTES:

1 See Standard Drawing E 610-PRAP-04 for Table of Values.

2 See Table on Standard Drawing E 610-PRAP-09 for additional pay limits details.

3 If the existing pavement is asphalt, the transition area shall be the same section as the approach and will be included in the pay limits for HMA for Approaches.

4 If the AADTT (Trucks Class 4 and above) is greater than 400 on the public road, the required pavement section shall be as shown elsewhere in the plans.

LEGEND

[1] AADTT ≤ 400
HMA for Approaches, Type B, consisting of:
165 lbs/syd HMA Surface, Type B, on
275 lbs/syd HMA Intermediate, Type B, on
660 lbs/syd HMA Base, Type B, on
Subgrade Treatment Type II (6" Coarse Aggregate No. 53) on Geogrid Type IB

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
TYPE A

SEPTEMBER 2026

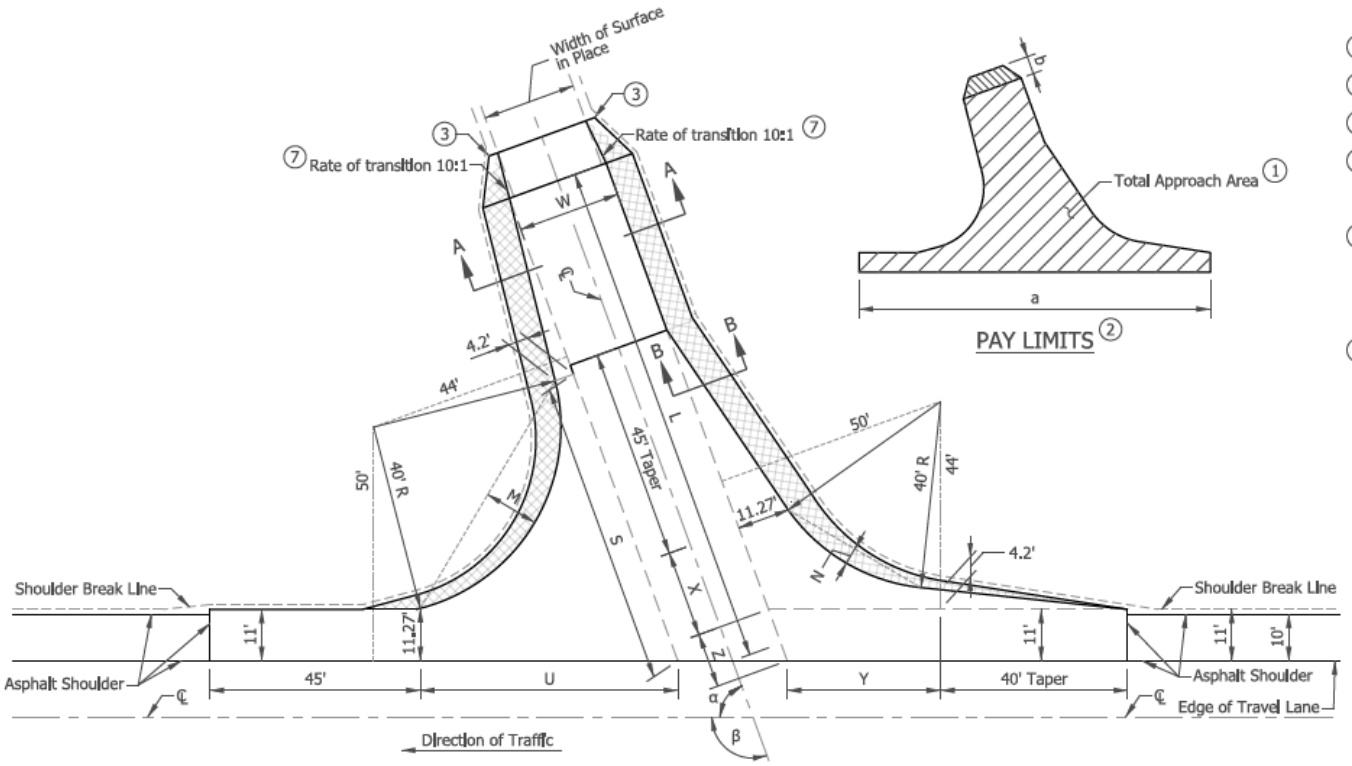
STANDARD DRAWING NO. E 610-PRAP-02

DESIGN STANDARDS ENGINEER DATE

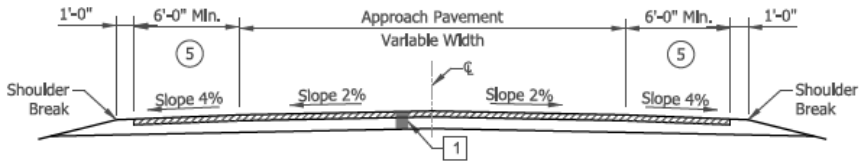
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

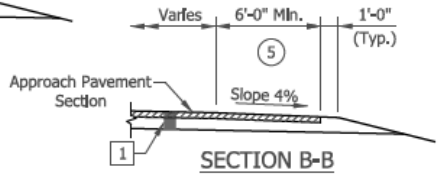
E 610-PRAP-03 PUBLIC ROAD APPROACH TYPE B (DRAFT)



PUBLIC ROAD APPROACH TYPE B



SECTION A-A MINIMUM PAVEMENT SECTION



SECTION B-B

NOTES:

1. See Standard Drawing E 610-PRAP-04 for Table of Values.
2. See Standard Drawing E 610-PRAP-09 for pay limits details.
3. Match existing shoulder width. Minimum width is 2'-0".
4. If the AADTT (Trucks Class 4 and above) is greater than 400 on the public road, the required pavement section shall be as shown elsewhere in the plans.
5. The minimum shoulder width should match the existing public road or be 6'-0", which ever is larger.
6. The cross hatch shoulder area indicates the limits where the shoulder is the same as the approach pavement.
7. If the existing pavement is asphalt, the transition area shall be the same section as the approach and will be included in the pay limits for HMA for Approaches.

LEGEND

1 AADTT ≤ 400
HMA for Approaches, Type B, consisting of:
165 lbs/syd HMA Surface, Type B, on
275 lbs/syd HMA Intermediate, Type B, on
660 lbs/syd HMA Base, Type B, on
Subgrade Treatment Type II (6" Coarse Aggregate No. 53) on Geogrid Type IB

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
TYPE B

SEPTEMBER 2026

STANDARD DRAWING NO. E 610-PRAP-03

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-04 PUBLIC ROAD APPROACH TYPE A & TYPE B TABLE OF VALUES (DRAFT)

β	L						Z	U	S	M	X	Y	N	TOTAL APPROACH AREA						β
	TYPE A			TYPE B										TYPE A			TYPE B			
	W=20	W=22	W=24	W=20	W=22	W=24								W=20	W=22	W=24	W=20	W=22	W=24	
(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(sys)	(sys)	(sys)	(sys)	(sys)	(sys)	(°)
110	108.87	109.23	109.60	108.87	109.23	109.60	11.71	55.02	65.23	11.66	18.63	33.20	3.72	531.19	556.20	584.87	645.05	670.14	695.38	110
109	107.48	107.82	108.17	107.48	107.82	108.17	11.63	53.75	64.04	11.42	19.32	33.74	3.86	524.90	549.63	574.51	639.55	664.28	689.15	109
108	106.12	106.45	106.77	106.12	106.45	106.77	11.57	52.51	62.88	11.19	20.02	34.28	4.02	518.88	543.25	567.78	634.32	658.70	683.22	108
107	104.80	105.10	105.41	104.80	105.10	105.41	11.50	51.30	61.74	10.94	20.72	34.84	4.17	513.11	537.15	561.32	629.37	653.40	677.37	107
106	103.50	103.79	104.48	103.50	103.79	104.08	11.44	50.11	60.64	10.70	21.44	35.40	4.33	507.60	531.30	555.13	624.67	648.37	672.20	106
105	102.24	102.51	102.77	102.24	102.51	102.77	11.39	48.95	59.56	10.46	22.16	35.98	4.49	502.33	525.70	549.20	620.23	643.61	667.10	105
104	101.00	101.25	101.50	101.00	102.25	101.50	11.34	47.81	58.51	10.23	22.88	36.56	4.65	497.30	520.35	543.52	616.04	639.10	662.26	104
103	99.79	100.02	100.25	99.79	100.02	100.25	11.29	46.70	57.48	9.99	23.62	37.16	4.81	492.50	515.24	538.06	612.10	634.83	657.68	103
102	98.60	98.81	99.02	98.60	98.81	99.02	11.25	45.81	56.48	9.76	24.36	37.77	4.98	487.92	510.35	532.88	608.39	630.82	653.34	102
101	97.44	97.63	97.83	97.44	97.63	97.83	11.21	44.54	55.49	9.54	25.10	38.39	5.15	483.57	505.69	527.91	604.91	627.04	649.25	101
100	96.30	96.47	96.65	96.30	96.47	96.65	11.17	43.50	54.54	9.31	25.86	39.02	5.35	479.42	501.26	523.16	601.66	623.49	645.40	100
99	95.18	95.34	95.50	95.18	95.34	95.50	11.14	42.47	53.60	9.09	26.63	39.66	5.50	475.49	497.03	518.64	598.63	620.17	641.78	99
98	94.09	94.23	94.37	94.09	94.23	94.37	11.11	41.46	52.68	8.87	27.41	40.31	5.68	471.77	493.02	514.34	595.83	617.08	638.39	98
97	93.10	93.13	93.26	93.01	93.13	93.26	11.08	40.47	51.78	8.65	28.19	40.98	5.86	468.25	489.22	510.24	593.24	614.21	635.23	97
96	91.96	92.06	92.17	91.96	92.06	92.17	11.06	39.50	50.90	8.44	28.99	41.66	6.04	464.93	485.62	506.36	590.86	611.56	632.29	96
95	90.92	91.01	91.10	90.92	91.01	91.10	11.04	38.64	50.04	8.22	29.79	42.35	6.22	461.80	482.21	502.68	588.70	609.12	629.58	95
94	89.90	89.97	90.04	89.90	89.97	90.04	11.03	37.60	49.20	8.01	30.61	43.05	6.41	458.87	479.02	499.20	586.74	606.89	627.07	94
93	88.90	88.96	89.01	88.90	88.96	89.01	11.02	36.68	48.38	7.80	31.44	43.77	6.60	456.12	476.01	495.91	584.99	604.88	624.79	93
92	87.92	87.96	87.99	87.92	87.96	87.99	11.01	35.77	47.57	7.60	32.28	44.50	6.80	453.57	473.19	492.83	583.45	603.07	622.71	92
91	86.96	86.97	86.99	88.96	88.94	88.93	11.00	34.88	46.78	7.39	33.14	45.24	6.99	451.20	470.56	489.94	586.57	606.29	626.01	91
90	86.00	86.00	86.00	90.00	90.00	90.00	11.00	34.00	46.00	7.19	34.00	46.00	7.19	449.01	468.12	487.23	589.85	609.85	629.85	90
89	85.07	85.05	85.04	91.06	91.07	91.09	11.00	33.14	45.24	6.99	34.88	46.78	7.39	447.01	465.87	484.72	593.33	613.61	633.90	89
88	84.15	84.12	84.08	92.13	92.16	92.20	11.01	32.28	44.50	6.80	35.77	47.57	7.60	445.18	463.80	482.40	597.03	617.58	638.16	88
87	83.24	83.19	83.14	93.22	93.27	93.33	11.02	31.44	43.77	6.60	36.68	48.38	7.80	443.54	461.91	480.26	600.93	621.77	642.64	87
86	83.30	83.37	83.44	94.33	94.40	94.47	11.03	30.61	43.05	6.41	37.60	49.20	8.01	444.20	462.79	481.60	605.04	626.18	647.34	86
85	84.42	84.51	84.59	95.46	95.55	95.64	11.04	29.79	42.35	6.22	38.64	50.04	8.22	447.35	466.32	485.34	609.37	630.80	652.27	85
84	85.55	85.65	85.76	96.61	96.72	96.82	11.06	28.99	41.66	6.04	39.50	50.90	8.44	450.69	469.96	489.27	613.92	635.65	657.42	84
83	86.70	86.82	86.94	97.78	97.90	98.03	11.08	28.19	40.98	5.86	40.47	51.78	8.65	454.22	473.79	493.41	618.70	640.72	662.81	83
82	87.87	88.01	88.15	98.97	99.11	99.26	11.11	27.41	40.31	5.68	41.46	52.68	8.87	457.95	477.82	497.75	623.70	646.03	668.43	82
81	89.05	89.21	89.37	100.19	100.35	100.51	11.14	26.63	39.66	5.50	42.47	53.60	9.09	461.88	482.05	502.30	628.93	651.58	674.30	81
80	90.26	90.44	90.61	101.43	101.61	101.78	11.17	25.86	39.02	5.35	43.50	54.54	9.31	466.00	486.49	507.06	634.40	657.37	680.42	80
79	91.49	91.68	91.88	102.69	102.89	103.08	11.21	25.10	38.39	5.15	44.54	55.49	9.54	470.34	491.15	512.04	640.11	663.40	686.78	79
78	92.74	92.95	93.16	103.96	104.20	104.41	11.25	24.36	37.77	4.98	45.61	56.48	9.76	474.89	496.02	517.24	646.07	669.69	693.41	78
77	94.01	94.24	94.47	105.30	105.53	105.76	11.29	23.62	37.16	4.81	46.70	57.48	9.99	479.66	501.11	522.67	652.78	676.24	700.31	77
76	95.31	95.56	95.81	106.64	106.89	107.14	11.34	22.88	36.56	4.65	47.81	58.51	10.23	484.65	506.44	528.34	658.75	683.06	707.48	76
75	96.63	96.90	97.17	108.02	108.29	108.55	11.39	22.16	35.98	4.49	48.95	59.56	10.46	489.87	511.99	534.24	665.50	690.16	714.94	75
74	97.98	98.26	98.55	109.42	109.71	110.00	11.44	21.44	35.40	4.33	50.11	60.64	10.70	495.32	517.79	540.39	672.52	697.54	722.68	74
73	99.36	99.66	99.97	110.86	111.16	111.47	11.50	20.72	34.84	4.17	51.30	61.74	10.94	501.01	523.84	546.80	679.82	705.21	730.72	73
72	100.76	101.08	101.41	112.33	112.65	112.98	11.57	20.02	34.28	4.02	52.51	62.88	11.18	506.96	530.14	553.47	687.42	713.18	739.08	72
71	102.20	102.54	102.88	113.83	114.17	114.52	11.63	19.32	33.74	3.86	53.75	64.04	11.42	513.16	536.71	560.42	695.32	721.46	747.75	71
70	103.66	104.03	104.39	115.37	115.73	116.10	11.71	18.63	33.20	3.72	55.02	65.23	11.66	519.62	543.55	567.64	703.54	730.07	756.76	70

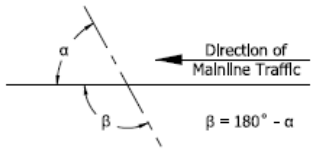
NOTES:

1. See Standard Drawing E 610-PRAP-02 for Public Road Approach Type A.
2. See Standard Drawing E 610-PRAP-03 for Public Road Approach Type B.
3. If intersection control angle is less than 70° or greater than 110° a special design will be required.

LEGEND:

α = ANGLE OF TURN
The angle through which a vehicle travels on the public road approach toward making a right hand turn. It is measured from the tangent on which a vehicle approaches the intersecting road to the corresponding tangent on the intersecting road to which the vehicle turns.

β = INTERSECTION CONTROL ANGLE



INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
TYPE A & TYPE B
TABLE OF VALUES
SEPTEMBER 2026

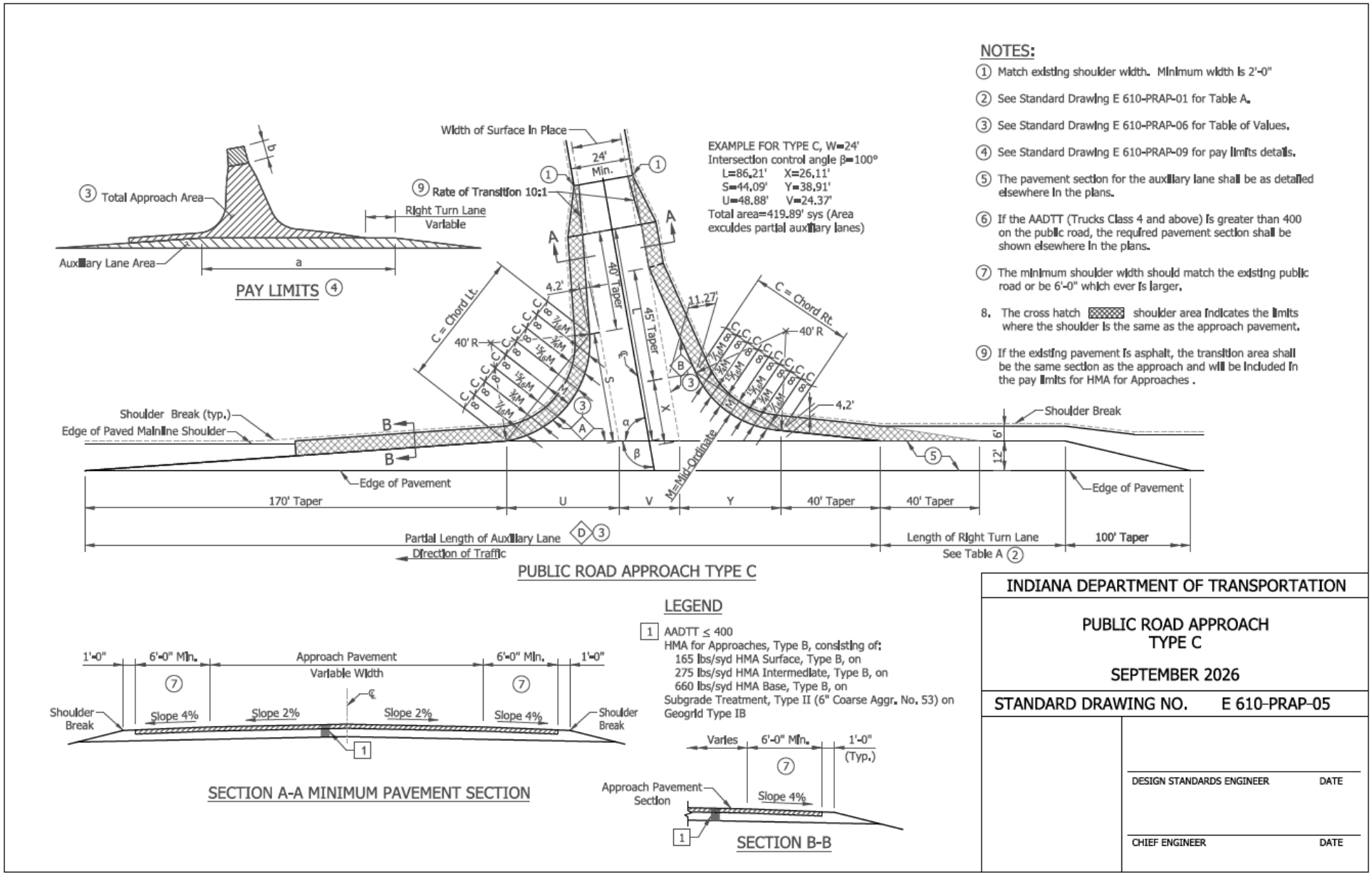
STANDARD DRAWING NO. E 610-PRAP-04

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-05 PUBLIC ROAD APPROACH TYPE C (DRAFT)



REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-06 PUBLIC ROAD APPROACH TYPE C TABLE OF VALUES (DRAFT)

β	L	S	U	X	Y	V	Shoulder Gap	Chord		M		Approach Areas			Auxiliary Lane Part. Area	β
								Lt.	Rt.	Lt.	Rt.	(A)	(B)	Total	(D)	
(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(sys)	(sys)	(sys)	(sys)	(°)
110	99,29	54,29	58,51	18,86	33,10	25,54	327,15	61,27	33,78	14,28	3,74	115,63	86,31	466,70	322,87	110
109	99,74	53,17	57,44	19,56	33,64	25,38	326,46	60,82	34,41	14,01	3,89	112,05	88,00	465,28	321,94	109
108	95.97	52.07	56.39	20.26	34.18	25.24	325.81	60.36	35.04	13.75	4.04	108.60	89.73	454.24	321.08	108
107	94,66	50,99	55,37	20,96	34,74	25,10	325,21	59,90	35,66	13,49	4,19	105,27	91,50	449,20	320,27	107
106	93,38	49,94	54,38	21,68	35,30	24,97	324,65	59,44	36,29	13,23	4,35	102,05	93,32	444,39	319,53	106
105	92.13	48.92	53.41	22.40	35.88	24.85	324.13	58.97	36.91	12.97	4.51	98.94	95.17	439.79	318.84	105
104	90,90	47,91	52,46	23,31	36,46	24,73	323,66	58,49	37,52	12,71	4,67	95,89	97,11	435,44	318,21	104
103	89.70	46.93	51.53	23.86	37.06	24.63	323.22	58.01	38.14	12.46	4.84	93.00	99.00	431.22	317.63	103
102	88.51	45.96	50.63	24.60	37.66	24.54	322.83	57.53	38.75	12.21	5.01	91.44	101.00	427.22	317.11	102
101	87,35	45,02	49,74	25,35	38,28	24,45	322,48	57,04	39,36	11,96	5,18	87,44	103,11	423,56	316,63	101
100	86.21	44.09	48.88	26.11	38.91	24.37	322.16	56.55	39.97	11.71	5.35	84.89	105.22	419.89	316.21	100
99	85.09	43.19	48.03	26.88	39.55	24.30	321.88	56.06	40.57	11.46	5.53	82.33	107.33	416.56	315.85	99
98	83,98	42,30	47,20	27,66	40,21	24,24	321,65	55,56	41,17	11,22	5,70	79,89	109,56	413,33	315,53	98
97	82.90	41.42	46.39	28.45	40.87	24.18	321.44	55.05	41.77	10.98	5.88	77.44	111.78	410.33	315.26	97
96	81.83	40.57	45.60	29.24	41.55	24.13	321.28	54.54	42.36	10.74	6.07	75.22	114.11	407.56	315.04	96
95	80,77	39,72	44,82	30,05	42,24	24,09	321,15	54,03	42,95	10,50	6,25	73,00	116,44	404,89	314,87	95
94	79.74	38.90	44.06	30.87	42.94	24.06	321.06	53.51	43.54	10.27	6.44	70.78	118.89	402.33	314.75	94
93	78.71	38.08	43.32	31.70	43.66	24.03	321.01	52.99	44.12	10.03	6.63	68.67	121.44	400.11	314.68	93
92	77,12	37,28	42,58	32,54	44,39	24,01	320,99	52,47	44,70	9,80	6,83	66,67	124,00	396,33	314,65	92
91	78.19	36.50	41.87	33.40	45.13	24.00	321.01	51.94	45.28	9.58	7.02	64.78	126.67	399.89	314.67	91
90	79,26	35,72	41,16	34,26	45,89	24,00	321,06	51,41	45,86	9,35	7,22	62,89	129,44	403,56	314,75	90
89	80,35	34,96	40,48	35,14	46,67	24,00	321,15	50,87	46,43	9,13	7,42	61,00	132,22	407,44	314,86	89
88	81.46	34,21	39,80	36,04	47,46	24,01	321.27	50,33	46,99	8,91	7,63	59,22	135,11	411,56	315,03	88
87	82,58	33,47	39,13	36,95	48,27	24,03	321,44	49,78	47,56	8,69	7,83	57,44	138,00	415,67	315,25	87
86	83.71	32.75	38.48	37.87	49.09	24.06	321.63	49.24	48.11	8.47	8.04	55.78	141.00	420.11	315.51	86
85	84,86	32,03	37,84	38,81	49,93	24,09	321,87	48,68	48,67	8,26	8,25	54,22	144,11	424,67	315,82	85
84	86.03	31,32	37.21	39.77	50.79	24.13	322.14	48.13	49.22	8.05	8.47	52.67	147.44	429.44	316.18	84
83	87,22	30,62	36,60	40,74	51,67	24,18	322,45	47,57	49,77	7,84	8,68	51,11	150,67	434,44	316,60	83
82	88,42	29,93	35,39	41,73	53,48	24,30	322,79	47,00	50,32	7,63	8,90	49,67	154,11	439,47	317,06	82
81	89,64	29,26	35,39	42,74	53,48	24,30	323,18	46,44	50,86	7,43	9,12	48,22	157,56	444,78	317,57	81
80	90.89	28.58	34.81	43.77	54.42	24.37	323.60	45.87	51.39	7.23	9.35	46.78	161.22	450.33	318.13	80
79	92,15	27,92	34,23	44,82	55,38	24,45	324,06	45,29	51,93	7,03	9,57	45,56	164,89	456,11	318,75	79
78	93,44	27,27	33,67	45,89	56,36	24,54	324,56	44,72	52,46	6,83	9,80	44,22	168,67	462,11	319,42	78
77	94.75	26,62	33.11	46.98	57.37	24.63	325.11	44.14	52.98	6.64	10.03	42.89	172.67	468.22	320.14	77
76	96,09	25,98	32,56	48,09	58,39	24,73	325,69	43,55	53,50	6,45	10,26	41,78	176,78	474,67	320,92	76
75	97,45	25,35	32,02	49,23	59,45	24,85	326,32	42,97	54,02	6,26	10,50	40,56	180,89	481,22	321,76	75
74	98,83	24,72	31,50	50,39	60,52	24,97	326,99	42,37	54,53	6,07	10,73	39,44	185,22	488,11	322,65	74
73	100,25	24,10	30,98	51,58	61,63	25,10	327,70	41,78	55,04	5,89	10,97	38,22	189,67	495,22	323,60	73
72	101.70	23.49	30.46	52.80	62.76	25.24	328.46	41.18	55.55	5.71	11.21	37.11	194.22	502.56	324.61	72
71	103,17	22,88	29,96	54,04	63,92	25,38	329,27	40,58	56,05	5,53	11,46	36,11	199,00	510,18	325,69	71
70	104,68	22,28	29,46	55,31	65,12	25,54	330,12	39,98	56,54	5,35	11,70	35,11	203,89	518,11	326,83	70

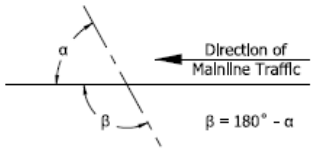
NOTES:

1. See Standard Drawing E 610-PRAP-05 for Public Road Approach Type C.
2. If intersection control angle is less than 70° or greater than 110° a special design will be required.

LEGEND:

α = ANGLE OF TURN
The angle through which a vehicle travels on the public road approach toward making a right hand turn. It is measured from the tangent on which a vehicle approaches the intersecting road to the corresponding tangent on the intersecting road to which the vehicle turns.

β = INTERSECTION CONTROL ANGLE



INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
TYPE C
TABLE OF VALUES
SEPTEMBER 2026

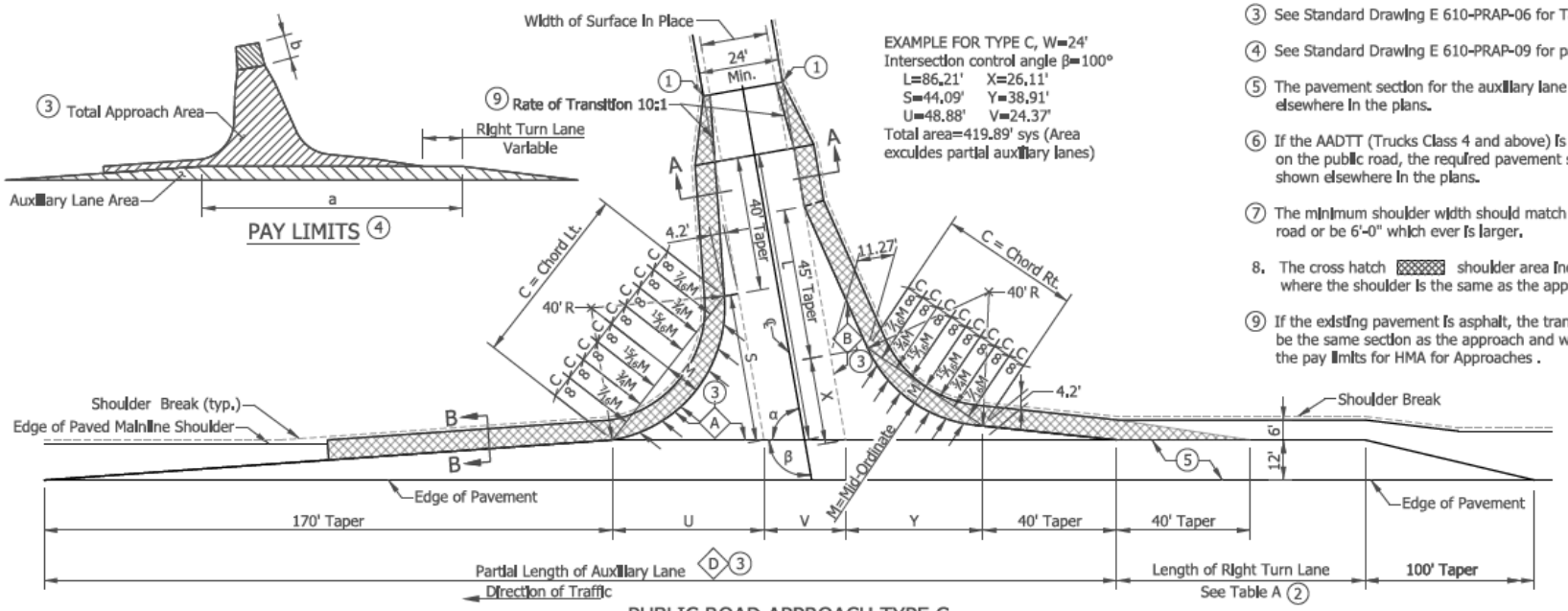
STANDARD DRAWING NO. E 610-PRAP-06

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

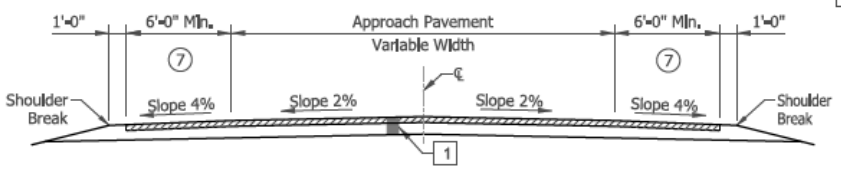
REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-07 PUBLIC ROAD APPROACH TYPE D (DRAFT)



NOTES:

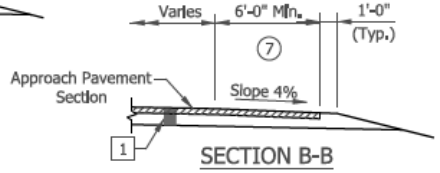
1. Match existing shoulder width. Minimum width is 2'-0"
2. See Standard Drawing E 610-PRAP-01 for Table A.
3. See Standard Drawing E 610-PRAP-06 for Table of Values.
4. See Standard Drawing E 610-PRAP-09 for pay limits details.
5. The pavement section for the auxiliary lane shall be as detailed elsewhere in the plans.
6. If the AADTT (Trucks Class 4 and above) is greater than 400 on the public road, the required pavement section shall be shown elsewhere in the plans.
7. The minimum shoulder width should match the existing public road or be 6'-0" which ever is larger.
8. The cross hatch ▨ shoulder area indicates the limits where the shoulder is the same as the approach pavement.
9. If the existing pavement is asphalt, the transition area shall be the same section as the approach and will be included in the pay limits for HMA for Approaches .



SECTION A-A MINIMUM PAVEMENT SECTION

LEGEND

1 AADTT ≤ 400
HMA for Approaches, Type B, consisting of:
165 lbs/syd HMA Surface, Type B, on
275 lbs/syd HMA Intermediate, Type B, on
660 lbs/syd HMA Base, Type B, on
Subgrade Treatment, Type II (6" Coarse Aggr. No. 53) on
Geogrid Type IB



SECTION B-B

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH TYPE D

SEPTEMBER 2026

STANDARD DRAWING NO. E 610-PRAP-07

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-08 PUBLIC ROAD APPROACH TYPE D TABLE OF VALUES (DRAFT)

β	L	S	U	X	Y	V	Shoulder Gap	Chord		M		Approach Areas			Auxiliary Lane Part. Area	β
								Lt.	Rt.	Lt.	Rt.	(A)	(B)	Total	(D)	
(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(sys)	(sys)	(sys)	(sys)	(°)
110	109.97	65.61	65.50	25.46	29.21	25.54	320.25	52.66	29.14	9.98	2.75	335.88	174.50	803.64	373.67	110
109	108.40	64.26	64.09	26.22	29.83	25.38	319.31	52.34	29.79	9.75	2.88	329.40	176.97	795.42	372.41	109
108	106.85	62.98	62.72	26.97	30.46	25.24	318.41	51.81	30.43	9.52	3.01	323.11	179.49	787.55	371.22	108
107	105.35	61.68	61.37	27.74	31.11	25.10	317.57	51.27	31.08	9.30	3.14	317.01	182.07	780.00	370.10	107
106	105.08	60.43	60.06	28.52	31.76	24.97	316.78	50.73	31.72	9.07	3.28	311.08	184.70	775.99	369.04	106
105	106.08	59.22	58.77	29.30	32.42	24.85	316.04	50.19	32.36	8.85	3.42	305.33	187.38	775.60	368.06	105
104	107.10	58.03	57.52	30.09	33.10	24.73	315.35	49.65	33.00	8.63	3.56	299.74	190.12	775.45	367.13	104
103	108.12	56.87	56.28	30.89	33.78	24.63	314.70	49.10	33.63	8.42	3.71	294.31	192.92	775.54	366.26	103
102	109.15	55.74	55.08	31.70	34.48	24.54	314.10	48.54	34.26	8.21	3.85	289.03	195.78	775.87	365.46	102
101	110.18	54.63	53.90	32.52	35.19	24.45	313.54	47.99	34.89	8.00	4.01	283.89	198.70	776.42	364.72	101
100	111.23	53.54	52.74	33.35	35.91	24.37	313.02	47.43	35.52	7.79	4.16	278.90	201.68	777.19	364.03	100
99	112.28	52.48	51.61	34.18	36.65	24.30	312.55	46.86	36.14	7.58	4.32	274.04	204.73	778.19	363.40	99
98	113.35	51.45	50.49	35.03	37.39	24.24	312.12	46.30	36.77	7.38	4.47	269.31	207.85	779.42	362.83	98
97	114.42	50.43	49.40	35.89	38.15	24.18	311.73	45.72	37.38	7.18	4.64	264.70	211.04	780.86	362.31	97
96	115.51	49.44	48.33	36.77	38.93	24.13	311.39	45.15	38.00	6.98	4.80	260.21	214.31	782.53	361.85	96
95	116.60	48.46	47.27	37.65	39.71	24.09	311.08	44.57	38.61	6.78	4.97	255.84	217.65	784.42	361.44	95
94	117.71	47.51	46.24	38.55	40.52	24.06	310.82	43.99	39.22	6.59	5.14	251.58	221.01	786.54	361.09	94
93	118.83	46.57	45.22	39.46	41.33	24.03	310.59	43.41	39.83	6.40	5.31	247.43	224.56	788.87	360.79	93
92	119.96	45.66	44.22	40.38	42.17	24.01	310.40	42.82	40.43	6.21	5.48	243.38	228.15	791.43	360.54	92
91	121.11	44.76	43.24	41.32	43.01	24.00	310.26	42.23	41.03	6.03	5.66	239.43	231.82	794.21	360.34	91
90	122.27	43.88	42.27	42.27	43.88	24.00	310.15	41.63	41.63	5.84	5.84	235.58	235.58	797.21	360.20	90
89	123.45	43.01	41.32	43.24	44.76	24.00	310.08	41.03	42.23	5.66	6.03	231.82	239.43	800.44	360.11	89
88	124.64	42.17	40.38	44.22	45.66	24.01	310.06	40.43	42.82	5.48	6.21	228.15	243.38	803.90	360.07	88
87	125.85	41.33	39.46	45.22	46.57	24.03	310.07	39.83	43.41	5.31	6.40	224.56	247.38	807.60	360.09	87
86	127.08	40.52	38.55	46.24	47.51	24.06	310.12	39.22	43.99	5.14	6.59	221.06	251.56	811.52	360.16	86
85	128.32	39.71	37.65	47.27	48.46	24.09	310.21	38.61	44.57	4.97	6.78	217.65	255.84	815.69	360.28	85
84	129.59	38.93	36.77	48.33	49.44	24.13	310.34	38.00	45.15	4.80	6.98	214.31	260.21	820.09	360.45	84
83	130.87	38.15	35.89	49.40	50.43	24.18	310.51	37.38	45.72	4.64	7.18	211.04	264.70	824.74	360.67	83
82	132.18	37.39	35.03	50.49	51.45	24.24	310.72	36.77	46.30	4.47	7.38	207.85	269.31	829.64	360.95	82
81	133.51	36.65	34.18	51.61	52.48	24.30	310.97	36.14	46.86	4.32	7.58	204.73	274.04	834.79	361.29	81
80	134.86	35.91	33.35	52.74	53.54	24.37	311.26	35.52	47.43	4.16	7.79	201.68	278.90	840.20	361.68	80
79	136.23	35.19	32.52	53.90	54.63	24.45	311.59	34.89	47.99	4.01	8.00	198.70	283.89	845.87	362.12	79
78	137.63	34.48	31.70	55.08	55.74	24.54	311.97	34.26	48.54	3.85	8.21	195.78	289.03	851.82	362.63	78
77	139.06	33.78	30.89	56.28	56.87	24.63	312.39	33.63	49.10	3.71	8.42	192.92	294.31	858.04	363.19	77
76	140.51	33.10	30.09	57.52	58.03	24.73	312.85	33.00	49.65	3.56	8.63	190.12	299.74	864.55	363.80	76
75	141.99	32.42	29.30	58.77	59.22	24.85	313.36	32.36	50.19	3.42	8.85	187.38	305.33	871.35	364.48	75
74	143.50	31.76	28.52	60.06	60.43	24.97	313.92	31.72	50.73	3.28	9.07	184.70	311.08	878.44	365.22	74
73	145.04	31.11	27.74	61.37	61.68	25.10	313.92	31.08	51.27	3.14	9.30	182.07	317.01	885.85	366.02	73
72	146.61	30.46	26.97	62.72	62.96	25.24	315.17	30.43	51.81	3.01	9.52	179.49	323.11	893.57	366.89	72
71	148.22	29.83	26.22	64.09	64.26	25.38	315.86	29.79	52.34	2.88	9.75	176.97	329.40	901.63	367.82	71
70	149.87	29.21	25.46	65.50	65.61	25.54	316.61	29.14	52.86	2.75	9.99	174.50	335.88	910.02	368.81	70

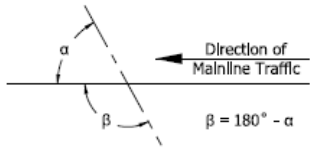
NOTES:

1. See Standard Drawing E 610-PRAP-07 for Public Road Approach Type D.
2. If intersection control angle is less than 70° or greater than 110° a special design will be required.

LEGEND:

α = ANGLE OF TURN
The angle through which a vehicle travels on the public road approach toward making a right hand turn. It is measured from the tangent on which a vehicle approaches the intersecting road to the corresponding tangent on the intersecting road to which the vehicle turns.

β = INTERSECTION CONTROL ANGLE



INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
TYPE D
TABLE OF VALUES
SEPTEMBER 2026

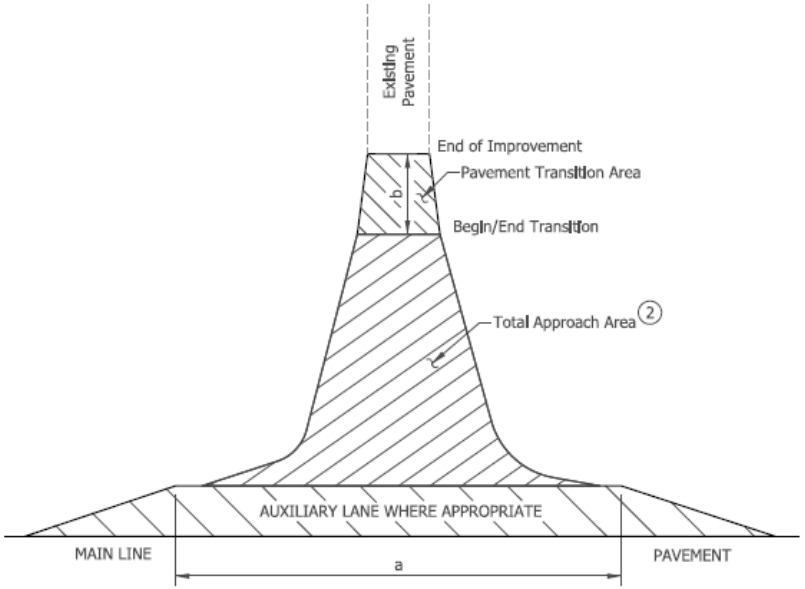
STANDARD DRAWING NO. E 610-PRAP-08

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-09 PUBLIC ROAD APPROACH PAY LIMIT DETAILS (DRAFT)



NOTES:

1. The pay limits shown hereon generally apply to Types A, B, C and D Public Road Approaches as shown on Standard Drawings E 610-PRAP-02, -03, -05 and -07 respectively.

② See Tables of Values on Standard Drawings E 610- PRAP-04, -06 and -08.

LEGEND

b < 100', HMA or PCCP for Approaches
b ≥ 100', QC/QA-HMA, QC/QA-PCCP or PCCP

HMA or PCCP for Approaches

a < 100', HMA or PCCP for Approaches
a ≥ 100', QC/QA-HMA, QC/QA-PCCP or PCCP

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
PAY LIMIT DETAILS

SEPTEMBER 2026

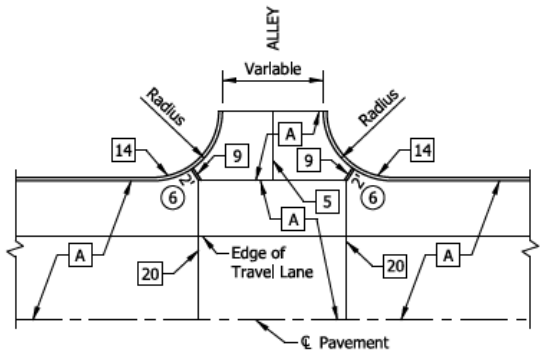
STANDARD DRAWING NO. E 610-PRAP-09

DESIGN STANDARDS ENGINEER DATE

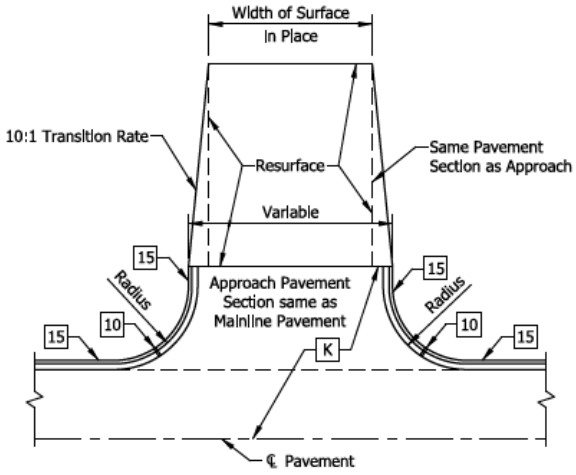
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

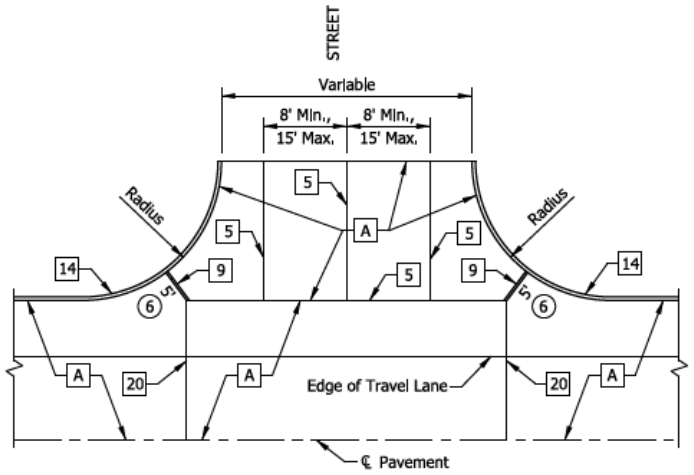
E 610-PRAP-10 STREET OR ALLEY APPROACH PCCP OR HMA MAINLINE PAVEMENT (DRAFT)



ALLEY APPROACH
WITH PCCP MAINLINE PAVEMENT



STREET OR ALLEY APPROACH
WITH HMA MAINLINE PAVEMENT



STREET APPROACH
WITH PCCP MAINLINE PAVEMENT

NOTES:

1. Radii of 25' at minor cross streets shall be provided where space permits.
2. Radii of 30' or more at major cross streets where WB-15 trucks and or buses turn repeatedly.
3. Radii of 40' or more at major cross streets shall be provided where WB-40 trucks and buses repeatedly turn.
4. Provide radii of 60' or more at the intersection of two State or U.S. highways and streets servicing heavy industrial areas requiring repeated turns by the Indiana Design Vehicle.
5. Radius of 10' min. to 20' min. for alley approaches shall be provided where space permits.
6. (6) Ear Construction Type B. See Standard Drawing E 605-ERCN-01.
7. For Approaches with PCCP Pavement, see Standard Drawing series E 503-CCPJ for joint details.
8. For PCCP Approaches, if approach length is more than 15 Feet, then the D-1 Contraction Joints are required in the transverse direction. Spacing shall be 1/2 the length of the approach or 15 Feet max.

LEGEND

A PCCP	10 1/2" Preformed Joint Filler
K HMA Pavement	14 Integral Concrete Curb
5 Longitudinal Joint	15 Combined Curb and Gutter
9 1" Preformed Joint Filler	20 Contraction Joint

INDIANA DEPARTMENT OF TRANSPORTATION

STREET OR ALLEY APPROACH
PCCP OR HMA
MAINLINE PAVEMENT
SEPTEMBER 2026

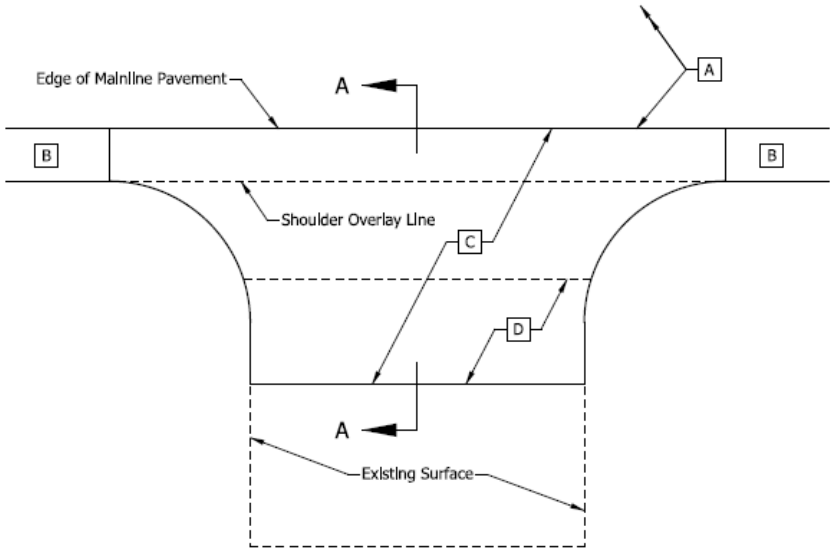
STANDARD DRAWING NO. E 610-PRAP-10

DESIGN STANDARDS ENGINEER DATE

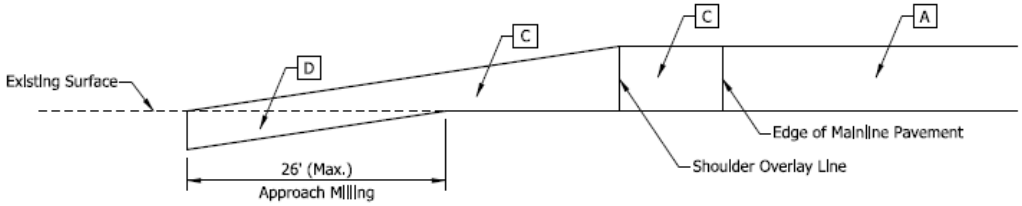
CHIEF ENGINEER DATE

REVISION TO THE STANDARD DRAWINGS

E 610-PRAP-11 PUBLIC ROAD APPROACH OVERLAY PAVING TRANSITION (DRAFT)



PLAN



SECTION A-A

LEGEND

- A Typical HMA Overlay, Mainline
- B Typical HMA Overlay, Shoulder
- C HMA for Approaches
- D Approach Milling

INDIANA DEPARTMENT OF TRANSPORTATION

PUBLIC ROAD APPROACH
OVERLAY PAVING TRANSITION

SEPTEMBER 2026

STANDARD DRAWING NO. E 610-PRAP-11

DESIGN STANDARDS ENGINEER DATE

CHIEF ENGINEER DATE

COMMENTS AND ACTION

E 610-DRIV series
E 610-PRAP series

DISCUSSION:

AGENDA

Motion: Second: Ayes: Nays: FHWA Approval:	**Action:** ___ Passed as Submitted ___ Passed as Revised ___ Withdrawn
2026 Standard Specifications Sections: 610 begin pg. 529. Recurring Special Provisions or Plan Details: NONE Standard Drawing affected: E 610-DRIV series E 610-PRAP series Design Manual Chapter: NONE GIFE Section: NONE	___ 2028 Standard Specifications ___ Revise Pay Items List ___ Notification to Designers if change is <u>not</u> addressed by RSP ___ Create RSP (No.___) Effective: ___ Revise RSP (No.___) Effective: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: ___ GIFE Update ___ Frequency Manual Update ___ AWP Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: Additional minor edit needed to the 914 seed specification. While several standard seed mixes were omitted from needing State Seed Commissioner review and approval, review is still required for non-standard seed mixes. This review is believed to be unnecessary.

PROPOSED SOLUTION: Delete the requirement that the State Seed Commissioner needs to review any seed mixes.

APPLICABLE STANDARD SPECIFICATIONS: 914.01

APPLICABLE STANDARD DRAWINGS: none

APPLICABLE DESIGN MANUAL SECTION: none

APPLICABLE SECTION OF GIFE: none

APPLICABLE RECURRING SPECIAL PROVISIONS: 914-M-070

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad hoc: Jessica McVay, Jim Reilman, Charles Smith

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:

IMPACT ANALYSIS (attach report):

Submitted By: Jim Reilman

Title: State Materials Engineer

Organization: INDOT

Phone Number: (317) 522-9692

Date: 8/28/25

AGENDA

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Approved Materials List? No
Will this proposal improve:

Construction costs? N/A
Construction time? N/A
Customer satisfaction? N/A
Congestion/travel time? N/A
Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? N/A

Will this item improve safety:

For motorists? N/A
For construction workers? N/A

Will this proposal improve quality for:

Construction procedures/processes? N/A
Asset preservation? N/A
Design process? N/A

Will this change provide the contractor more flexibility? N/A

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? N/A

Is this proposal needed for compliance with:

Federal or State regulations? No
AASHTO or other design code? No

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

AGENDA

(Note: Proposed changes shown for 2026 Standard Specifications and highlighted gray)

914-M-070 ROADSIDE DEVELOPMENT MATERIALS

(Adopted 07-17-25)

The Standard Specifications are revised as follows:

SECTION 914, BEGIN LINE 29, DELETE AND INSERT AS FOLLOWS:

914.04 Grass, Legume, and Forb Seed

Grass, legume, and ~~F~~*f*orb seed in the quantities and varieties required shall be furnished full-tagged and delivered in properly designated packages or bags as directed. Seeds shall be in accordance with the following requirements.

Native grass and forb seed shall be purchased from lots for which ~~test results are~~*a Report of Analysis is* provided *containing results for germination, noxious, and purity*. Testing will not be required for aquatic species. ~~When normal germination testing is not practical for forb species, a tetrazolium test shall be conducted to determine seed viability.~~

~~Seeds shall contain none of the prohibited noxious weeds listed in 360 IAC 1-1-5 or any that are listed in the Acts of the General Assembly of the State. Restricted noxious weed seed listed in 360 IAC 1-1-6 shall not exceed 0.25% by weight in accordance with IC 15-15-1-32~~*Seeds shall contain no regulated species listed or addressed in any Federal or State laws, local laws, ordinances, rules, regulations, orders, or decrees from bodies or tribunals having any jurisdiction or authority over the project*. Clover shall be free from dodder with no tolerance allowed.

Requirements noted above are minimum and trade allowances will not be allowed.

Seed shall be purchased from sources of supply that ~~have been accepted and reported by~~*hold an approved and accepted Indiana State Seed Permit from* the State Seed Commissioner, Purdue University, West Lafayette, Indiana~~, and found to be satisfactory~~.

~~Seed of native grasses~~*All seed lots* shall be tested by ~~the State Seed Commissioner or by an independent laboratory~~*a United States Department of Agriculture accredited seed laboratory or the Indiana State Seed Laboratory*. ~~Seed of forbs shall be tested by an independent laboratory.~~ Test results ~~by independent laboratories~~ shall be signed by *a Certified Seed Analyst or* a Registered Seed Technologist ~~and shall be submitted to the State Seed Commissioner~~. ~~This report is required before seed is installed.~~

Seed will be considered expired 15 months after the date it was tested. Expired seed shall not be installed. *If more than 15 months have elapsed since the seed was last tested, the Contractor may have the seed retested. If the seed is retested, the new germ date will be used, the 15-month window will be reset, and the germ date and germ percentage shall be updated on the label.* Each bag or container of seed shall have a printed tag or label providing all the information required by IC 15-15-1-32. Seed from bags with no labels, illegible labels, or with labels not providing all the required information will not be accepted.

AGENDA

The seed supplier shall provide an Other type certification in accordance with 916 that lists the seed lots used in the mixture and shall indicate that the seed mixture supplied meets the contract requirements for the specific contract that the particular seed mixture is supplied. ~~Also, as part of the certification, the seed supplier shall provide a copy of the State Seed Commissioner's letter for the seed mixture that shows that each seed lot has been tested and found to be satisfactory.~~ The specific test results for each seed lot shall also be attached to the certification. *Seed mixtures ~~R, U, P, Shade, Floodplain, Spring Summer Cover Crop, and Fall Cover Crop in accordance with 621.06,~~ do not need to be submitted to the State Seed Commissioner's office for approval.*

SECTION 914, BEGIN LINE 97, DELETE AND INSERT AS FOLLOWS:

~~For all other seed indicated to be used but not shown in the charts above, that seed shall be placed at the indicated rate and be 100% pure live seed~~*Seed shall be placed to achieve the prescribed pure live seed planting rate which may necessitate a greater bulk planting rate to be used.*

914.05 Mulch

(a) Mulch for Seeding

Mulch for seeding may consist of straw, excelsior mulch, wood cellulose fiber mulch, excelsior blanket, paper mat, or straw mat. ~~All mulch shall be reasonably free from primary noxious weeds in accordance with 914.04~~*Mulch materials shall contain no viable plant propagules.*

SECTION 914, BEGIN LINE 114, DELETE AND INSERT AS FOLLOWS:

2. Wood Cellulose Fiber

Wood cellulose fiber mulch shall be made from wood chip particles manufactured particularly for discharging uniformly on the ground surface when ~~disbursed~~*dispersed* by a hydraulic water sprayer. It shall remain in uniform suspension in water under agitation and blend with ~~grass~~ seed, and fertilizer when allowed, to form a homogeneous slurry. The mulch fibers shall intertwine physically to form a strong moisture holding mat on the ground surface. The mulch shall be heat processed to prevent germination or growth inhibiting factors. It shall be non-toxic and colored green. The percent of moisture content shall be determined in accordance with 621.14(c), except material containing more than 15% will be rejected. The ash content shall not exceed 1.5%. One hundred grams of oven dried material saturated in water, drained, and weighed shall hold a minimum of 1,000 grams of water.

SECTION 914, BEGIN LINE 194, DELETE AND INSERT AS FOLLOWS:

914.07 Sod

Sod shall consist of fibrous, well rooted, bluegrass, fescue, or other approved grass cut to a height of 2 to 3 in. Edges of sod shall be cut cleanly, either by hand or machine, to a uniform minimum thickness of 3/4 in. or more. The roots shall be exposed in the sod strip to allow the sod to be handled without undue tearing or breaking. The sod strip shall be of a uniform width of no less than 16 in. and no less than 2 ft in length. Sod shall be free from all ~~primary~~ noxious weeds in accordance with 914.04. Acceptance in the field before cutting shall not preclude rejection when delivered to the ~~work~~*project* if such contamination is found.

AGENDA

SECTION 914, BEGIN LINE 210, DELETE AND INSERT AS FOLLOWS:

914.08 Plant Materials

Nursery stock in accordance with IC 14-8-2-184 shall be provided from an IDNR-licensed nursery or nursery dealer located in the State of Indiana. The nursery or nursery dealer shall have an active nursery dealer license.

If ~~the plant material~~*a pay item* is shown on the Schedule of Pay Items as plant *or seedling*, the Contractor shall submit *a list indicating* its source of supply for each *of these* plant material*s* for approval prior to delivery to the project site. This ~~plant~~ list shall *include the name of the plant,* include the name of the source of supply*,* and the location where the plants were grown. A certification that the plants are available at this source, that the plants were grown at the prescribed location, and that there is a firm commitment for their purchase at the time of certification shall be provided. These procedures shall be followed for approval of alternate sources when the originally approved source is unable to furnish plants at the time when needed. Plants shall be in accordance with the requirements set out herein. Unless otherwise specified, all plant material shall be acquired from zones ~~4, 5, or 6~~ *5b, 6a, 6b, 7a, or 7b*. However, plant material shall be acquired from zones no further than ~~1/2~~*one* zone south of the zone in which the project is located.

Hardiness zones shall be determined from the *United States Department of Agriculture's* Plant Hardiness Zone Map~~, Miscellaneous Publications No. 1475, Agricultural Research Service, United States Department of Agriculture, published by the U. S. Government Printing Office, Washington, D.C~~. The Contractor shall have a copy of this map.

~~If the plant material is shown on the Schedule of Pay Items as seedlings, the Contractor shall choose a source which is shown on the QPL of Seeding Sources. The QPL will specify the sources that are currently on an immediate use basis. If the source is not on the QPL, then the same procedure shall be followed as stated above for plants to obtain approval.~~

(a) Quality of Plant Material

All plants shall be first class and representative of the normal species or varieties, true to type, and standard form. Unless otherwise specified, all plants shall be nursery grown stock that had been transplanted or ~~rootpruned~~*root pruned* two or more times according to the kind and size of plant. The root system shall be vigorous and well developed. The branch system shall be *normally* developed ~~normally~~. All plants shall be free from disfiguring knots, sun-scald, injuries, abrasions of the bark, dead or dry wood, broken terminal growth, or other objectionable disfigurements.

(b) Plant Names

Plants shall be true to name, following standard botanical and common nomenclature as ~~adopted by the American Joint Committee on Horticultural Nomenclature given in the current edition of Standardized Plant Names~~*listed in the United States Department of Agriculture's Plants Database*. All trees delivered shall be ~~tagged~~*labeled* legibly *in accordance* with ~~the names and sizes of the trees~~*312 IAC 18*.

SECTION 914, BEGIN LINE 263, DELETE AND INSERT AS FOLLOWS:

(d) Grading Standards

Grading of plants shall be in accordance with the American ~~Association of~~ Nursery ~~Horticultural Standards of the current ASNS,~~*& Landscape Association's American Standard for Nursery Stock,* ANSI Z-60.1*,* as revised herein and on the plans.

SECTION 914, BEGIN LINE 328, DELETE AS FOLLOWS:

Nursery stock may be inspected at the nursery before digging or shipping ~~and sealed with Department seals~~. If not inspected and sealed at the nursery, it shall be done at a final collecting point at or adjacent to the project and prior to planting, unless otherwise specified in writing. Notification shall be made a minimum of three days in advance of delivery of unsealed plants. Large quantities of small plant material such as shrubs, seedlings, vines, and groundcovers shall be sealed in a satisfactory manner. Sealing of plants shall not be considered as final acceptance and shall not waive the responsibility to furnish, plant, and maintain material that complies with the specifications.

SECTION 914, BEGIN LINE 382, DELETE AND INSERT AS FOLLOWS:

(c) ~~Tree Wound Dressing~~*Blank*

~~Dressing for treating tree wounds or cuts shall be either:~~

~~1. an approved black asphaltum base antiseptic paint;~~

~~2. an approved black paint consisting of Bordeaux Mixture, raw linseed oil, and lampblack; or~~

~~3. an approved black paint consisting of zinc oxide, raw linseed oil, and lampblack.~~

SECTION 914, BEGIN LINE 434, INSERT AS FOLLOWS:

No viable plant propagules shall be present in the filler material.

Filler particle size shall not be greater than 3 *in.* by 1/2 *in.* by 1/2 in. and shall be capable of staying within the sock.

AGENDA

COMMENTS AND ACTION

914-M-070 ROADSIDE DEVELOPMENT MATERIALS

DISCUSSION:

AGENDA

Motion: Second: Ayes: Nays: FHWA Approval:	**Action:** ___ Passed as Submitted ___ Passed as Revised ___ Withdrawn
2026 Standard Specifications Sections: 914.04 PG. 1121. Recurring Special Provisions or Plan Details: 914-M-070 ROADSIDE DEVELOPMENT MATERIALS Standard Drawing affected: NONE Design Manual Chapter: NONE GIFE Section: NONE	___ 2028 Standard Specifications ___ Revise Pay Items List ___ Notification to Designers if change is not addressed by RSP ___ Create RSP (No.___) Effective: ___ Revise RSP (No.___) Effective: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: ___ GIFE Update ___ Frequency Manual Update ___ AWP Update

PROPOSAL TO STANDARDS COMMITTEE

PROBLEM(S) ENCOUNTERED: There is confusion regarding the two materials, recycled concrete and reclaimed asphalt. The construction procedure was ambiguous.

PROPOSED SOLUTION: Simplify the construction procedure for the two materials, recycled concrete and reclaimed asphalt. Remove the word overburden, reduced the overburden, removed geotextile where it was not needed, and added some clarifying language.

APPLICABLE STANDARD SPECIFICATIONS: 203.18

APPLICABLE STANDARD DRAWING: None

APPLICABLE DESIGN MANUAL CHAPTER: None

APPLICABLE SECTION OF GIFE: Yes

APPLICABLE RECURRING SPECIAL PROVISION OR PLAN DETAILS: Yes

PAY ITEMS AFFECTED: None

APPLICABLE SUB-COMMITTEE ENDORSEMENT: Ad Hoc committee consisting of Nayyar Siddiki and Samuel Clawson

IF APPROVED AS RECURRING SPECIAL PROVISION OR PLAN DETAILS, PROPOSED BASIS FOR USE:

IMPACT ANALYSIS (attach report): Yes

Submitted By: Jim Reilman and Nayyar Siddiki

Title: State Materials Engineer

Division: Materials and Test

E-mail: Jreilman@INDOT.IN.GOV

Date: 8/22/2025

AGENDA

IMPACT ANALYSIS REPORT CHECKLIST

Explain the business case as to why this item should be presented to the Standards Committee for approval. Answer the following questions with Yes, No or N/A.

Does this item appear in any other specification sections? No
Will approval of this item affect the Qualified Products List (QPL)? No
Will this proposal improve:

- Construction costs? Yes
- Construction time? Yes
- Customer satisfaction? Yes
- Congestion/travel time? No
- Ride quality? N/A

Will this proposal reduce operational costs or maintenance effort? Yes

Will this item improve safety:

- For motorists? N/A
- For construction workers? N/A

Will this proposal improve quality for:

- Construction procedures/processes? Yes
- Asset preservation? N/A
- Design process? Yes

Will this change provide the contractor more flexibility? Yes

Will this proposal provide clarification for the Contractor and field personnel? Yes

Can this item improve/reduce the number of potential change orders? No

Is this proposal needed for compliance with:

- Federal or State regulations? N/A
- AASHTO or other design code? N/A

Is this item editorial? No

Provide any further information as to why this proposal should be placed on the Standards Committee meeting Agenda:

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(Note: Proposed changes shown highlighted gray)

The Standard Specifications are revised as follows:

SECTION 203, BEGIN LINE 761, DELETE AND INSERT AS FOLLOWS:

203.18 Embankment Construction

Embankment construction shall consist of constructing roadway embankments, including preparation of the areas upon which they are to be placed, the construction of dikes within or outside the right-of-way, the placing and compacting of approved material within roadway areas where unsuitable material has been removed, and the placing and compacting of embankment material in holes, pits, and other depressions within the roadway area. Only approved materials shall be used in the construction of embankment backfill. Recycled concrete pavement processed into coarse aggregate shall be from past documented Department projects. RAP shall be the product resulting from the cold milling or crushing of an existing HMA pavement. Rocks, broken concrete, RAP, or other solid materials shall not be placed in embankment areas where piling ~~and~~*, mechanically stabilized earth walls, soil nail walls, or* other foundations are to be placed or driven.

Recycled concrete pavement measuring 12 in. or less in all directions may be incorporated into the embankment. Reinforcement shall not protrude from the recycled concrete pavement aggregate. Construction of embankment shall be in accordance with 203.20(a). Each layer shall be choked with broken concrete aggregates and be compacted to the required stiffness or as directed. The final ~~30~~*12* in. of the embankment just below the subgrade shall be composed of material meeting the gradation requirements of coarse aggregate in accordance with 904.01, or B borrow in accordance with 904.06. Construction requirements shall be in accordance with 211.03. *Recycled concrete pavement shall not be used within 2 ft of the water table.*

~~Only RAP particles measuring 2 in. or less in all directions shall be incorporated into the top 30 in. of the embankment. When an underdrain is specified, the RAP embankment shall be terminated below the bottom of the underdrain and the rest of the embankment shall be constructed with the coarse aggregate. RAP particles incorporated anywhere in the embankment shall be 5 in. or less. RAP shall be constructed in accordance with 203.24.~~

~~When two sizes are used for one embankment, materials shall be separated with a layer of geotextile in accordance with 918.02(c), Type 2A. Geotextile used between recycled material lifts shall be included in the cost of the embankment pay item.~~

RAP particles measuring 2 in. or less in all directions may be incorporated in embankments. Compacted lift thickness for RAP shall not be greater than 6 in. when the embankment is 5 ft or less. Where the depth of the embankment exceeds 5 ft, the compacted lift thickness for RAP shall not be greater than 12 in. RAP shall only be used below the elevation of the pavement underdrains. RAP shall be constructed in accordance with 203.24.

Recycled concrete pavement processed into coarse aggregate and RAP shall not be mixed together or *mixed* with other materials. When two or more approved materials are allowed for one embankment, materials shall be separated with a layer of geotextile in accordance with 918.02(c),

Type 2A. Geotextile used between recycled material lifts shall be included in the cost of the embankment pay item.

~~Recycled concrete pavement processed into coarse aggregate or RAP shall only be used below the elevation of the pavement underdrains. Compacted lift thickness for RAP shall not be greater than 6 in. within the top 30 in. of the embankment. Where the depth of the embankment exceeds 5 ft, the compacted lift thickness for RAP shall not be greater than 12 in. Recycled concrete pavement and RAP shall not be used within 2 ft of the water table.~~

Proofrolling in accordance with 203.26 shall be performed over the entire grade at a maximum thickness of 5 ft of recycled concrete ~~or RAP~~*prior to the placement of the next lift.*

~~A geotextile in accordance with 918.02(c), Type 2B shall be placed in accordance with 214 prior to the placement of s~~Subgrade treatment Type IC or Type II in accordance with 207 ~~when~~*shall be constructed on* recycled concrete pavement processed into coarse aggregate or RAP ~~is used for embankment construction. Recycled concrete pavement processed into coarse aggregate or RAP shall not be used for embankment construction when subgrade Type I, Type IBC, or Type IBL is specified. Geotextile shall be placed completely covering the top of the embankment.~~ A minimum 24 in. soil encasement shall be constructed concurrently with the recycled concrete pavement processed into coarse aggregate or RAP lift. The soil encasement shall be suitable for vegetation growth and shall be constructed in accordance with 203.09.

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COMMENTS AND ACTION

203.18 Embankment Construction

DISCUSSION:

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Motion: Second: Ayes: Nays: FHWA Approval:	**Action:** ___ Passed as Submitted ___ Passed as Revised ___ Withdrawn
2026 Standard Specifications Sections: 203.18 pg. 169-170. Recurring Special Provisions or Plan Details: NONE Standard Drawing affected: NONE Design Manual Chapter: NONE GIFE Section: TBD	___ 2026 Standard Specifications ___ Revise Pay Items List ___ Notification to Designers if change is not addressed by RSP ___ Create RSP (No.___) Effective: ___ Revise RSP (No.___) Effective: ___ Standard Drawing Effective: ___ Create RPD (No. ___) Effective: ___ GIFE Update ___ Frequency Manual Update ___ SiteManager Update