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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.

4. For Class III, IV 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.
Plan View

Concrete Curb and Gutter

- 10'-0" (min.)
- 20'-0" (max.)
- R = 10'-0" min. adj. to traveling lane
- R = 10'-0" min. adj. to parking lane
- R = 10'-0" max. adj. to traveling lane
- Edge of HMA pavement
- Concrete Curb and Gutter (typ.)
- Buffer
- 1/2" Preformed Joint Filler (Typ.)
- Monolithic Curb
- Sidewalk
- Street

Plan View

Integral Concrete Curb

- 5'-0" minimum
- 10'-0" desirable
- 10'-0" (min.)
- 20'-0" (max.)
- R = 10'-0" min. adj. to traveling lane
- R = 10'-0" min. adj. to parking lane
- R = 10'-0" max. adj. to traveling lane
- Edge of HMA pavement
- Integral Curb
- 1/2" Preformed Joint Filler (Typ.)
- Monolithic Curb
- Sidewalk
- Street

Notes:
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)

Standard Drawing No. E 610-DRIV-02

September 2019
NOTES:

1. See Standard Drawing E 610-DRIV-10 for Section S-S.


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.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II DRIVE
(RESIDENTIAL)

SEPTEMBER 2019

STANDARD DRAWING NO.  E 610-DRIV-03

LEGEND

- HMA for Approaches, Type B
  165#/yd³ HMA Surface Type B on
  275#/yd³ HMA Intermediate Type B on
  6" Compacted Aggregate No. 53, on
  Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53)

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

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

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

- Plan shoulder section.
NOTES:
1. See Standard Drawing E 610-DRIV-09 for Section A-A, and Section B-B.

LEGEND

- **M**: PCPP for Approaches, 9 in., on Dense Graded Subbase, 6 in., on Geogrid Type 1B, on 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 III DRIVE**
(COMMERCIAL)

**SEPTEMBER 2019**

**STANDARD DRAWING NO.** E 610-DRIV-04

**DESIGN STANDARDS ENGINEER**

**CHIEF ENGINEER**

5/1/2019

6/5/2019
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, 165 lbs/syd HMA Surface, Type B, or PCCP for Approaches, 9 in., on
275 lbs/syd HMA Intermediate, Type B, or Geogrid Type 1B on
660 lbs/syd HMA Base, Type B, on
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53), on
Geogrid, Type 1B or
Geogrid Type 1B on
HMA for Approaches, Type B,
Subgrade Treatment Type II (6 in. Coarse Aggregate No. 53)

N  The greater thickness of either the drive or the paved shoulder 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
STANDARD DRAWING NO. E 610-DRIV-05

10200124
5/29/2019
DATE
STATE OF
DEREK D. PHELPS
DESIGN STANDARDS ENGINEER
6/5/2019
DATE
CHIEF ENGINEER
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.
NOTES:
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

M
For ≤ 400 Trucks per day
HMA for Approaches, Type B,
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
or
PCCP for Approaches, 9 in., on
Dense Graded Subbase, 6 in., on
Geogrid, Type 1B, on
Subgrade Treatment Type II (6 in. Coarse Aggregate No.53)

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

S
For type and thickness equivalent to surface in place, see plans.
NOTES:
1. See Standard Drawing E 610-DRIV-12 for Sections A-A, B-B and C-C.

**LEGEND**

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

**NOTES:**
- **For type and thickness equivalent to surface in place, see plans.**

**INFORMATION:**
- **Indicate on Construction Plans:**
  - **Temporary R/W for drive construction if required**
  - **Grade Intersection Point**
  - **1/2" Preformed Joint Filler**
  - **Monolithic Curb**
  - **Buffer**
  - **Edge of HMA Pavement**
  - **Intergal Curb**

**PLAN VIEW**

**CONCRETE CURB & GUTTER**

**PLAN VIEW**

**INTEGRAL CONCRETE CURB**
Max. grade 14% up or 6% down

10'-0" min.

1 1/2"

Max. grade 15% up
or R/W

Meet grade of existing drive

Max. algebraic diff. (4)

1/2" preformed joint filler required when existing drive is PCCP

SECTION A-A
(SIDEWALK ABUTS BACKFACE OF CURB)

45°

5

E 610-DRIV-09

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I AND CLASS III DRIVE
APPROACH GRADES

SEPTEMBER 2019

STANDARD DRAWING NO. E 610-DRIV-09

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.


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


LEGEND

= Curb ramp or sidewalk elevation transition.

= PCCP

5/29/2019

6/5/2019

5/29/2019

6/5/2019
SECTION P-P - CLASS IV DRIVES

SECTION S-S - CLASS II DRIVES

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 E-E**

(Approach Grade for Cut or Fill to Be Used with Earth Shoulders)

- Edge of travel lane or auxiliary lane
- Mainline shoulder width: 5'-0"
- Pavement
- Mainline shoulder slope (earth): -4%
- Shoulder slope: -4%
- Edge of paved shoulder
- Shoulder width
- Length variable
- 10'-0" V.C.

---

**SECTION F-F**

(Approach Grade for Cut or Fill to Be Used with Paved Shoulder 8'-0" or Wider)

- Edge of travel lane or auxiliary lane
- Mainline shoulder width: 5'-0"
- Pavement
- Mainline shoulder slope (earth): -4%
- Paved or compacted aggregate shoulder
- Length variable
- 10'-0" V.C.

---

**SECTION D-D**

(Approach Grade for Cut or Fill to Be Used with Less Than 8'-0" Width Paved or Compacted Aggregate Shoulders)

- Edge of travel lane or auxiliary lane
- Mainline shoulder width: 5'-0"
- Pavement
- Mainline shoulder slope (earth): -4%
- Length variable
- 10'-0" V.C.

---

**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.
TYPICAL PROFILE GRADE IN FILL

-2% slope

6:1

4:1

Fil slope

Desirable clear zone

Meet grade of existing drive

Distance beyond R/W

(Temporary R/W req'd.)

TYPICAL PROFILE GRADE IN CUT

-2% slope

6:1

4:1

Fil slope

Desirable clear zone

Meet grade of existing drive

Distance beyond R/W

(Temporary R/W req'd.)

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 GRADERS
SEPTEMBER 2019

STANDARD DRAWING NO. E 610-DRIV-12
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.

LEGEND

= Curb Ramp or Sidewalk Elevation Transition
PRIVATE DRIVE CROSSOVER PLAN FOR \( W = 8'-0" \) to less than 30'-0"

- **Ear Construction Type A**
- **Ear Construction Type B**
- **Pavement**
- **Crossover**

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

- **Ear Construction Type A**
- **Ear Construction Type B**
- **Pavement**
- **Crossover**

**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
4. Longitudinal Joint, see Standard Drawing series E 503-CCPJ for joint details.
5. 1" Preformed Joint Filler.
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.
4. Longitudinal Joint, see Standard Drawing series E 503-CCP3 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: 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 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:
   - HMA for Approaches, Type B: 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, 9 in. on Dense Graded Subbase, 6 in., on Subgrade Treatment Type II (6 in. Coarse Aggregate, No. 53)
COMMERCIAL DRIVE CROSSOVER PLAN FOR W = 8' to less than 30'

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.

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

INDIANA DEPARTMENT OF TRANSPORTATION
COMMERCIAL DRIVE CROSSOVER PLANS
SEPTEMBER 2019
STANDARD DRAWING NO. E 610-DRIV-17

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.
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.