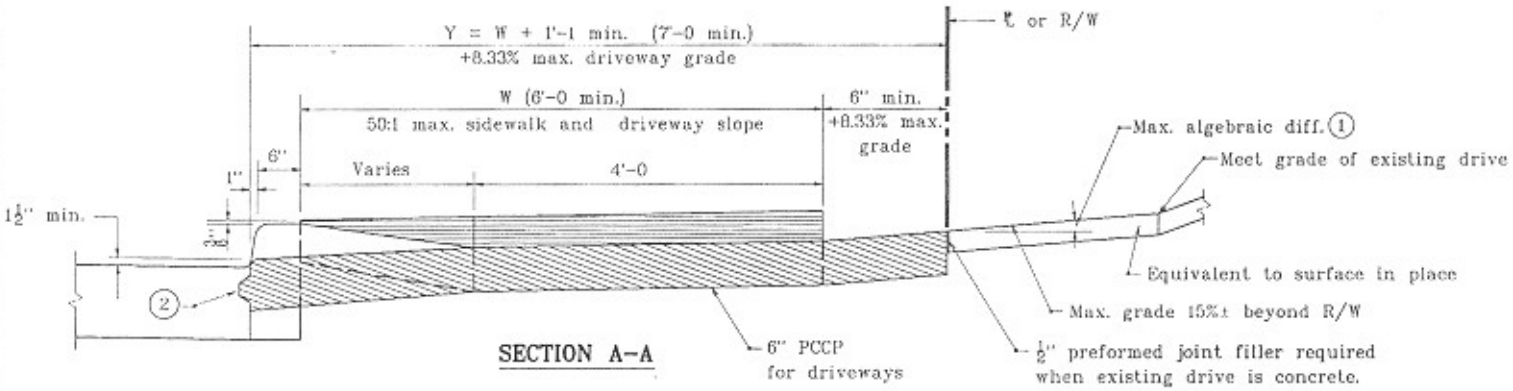
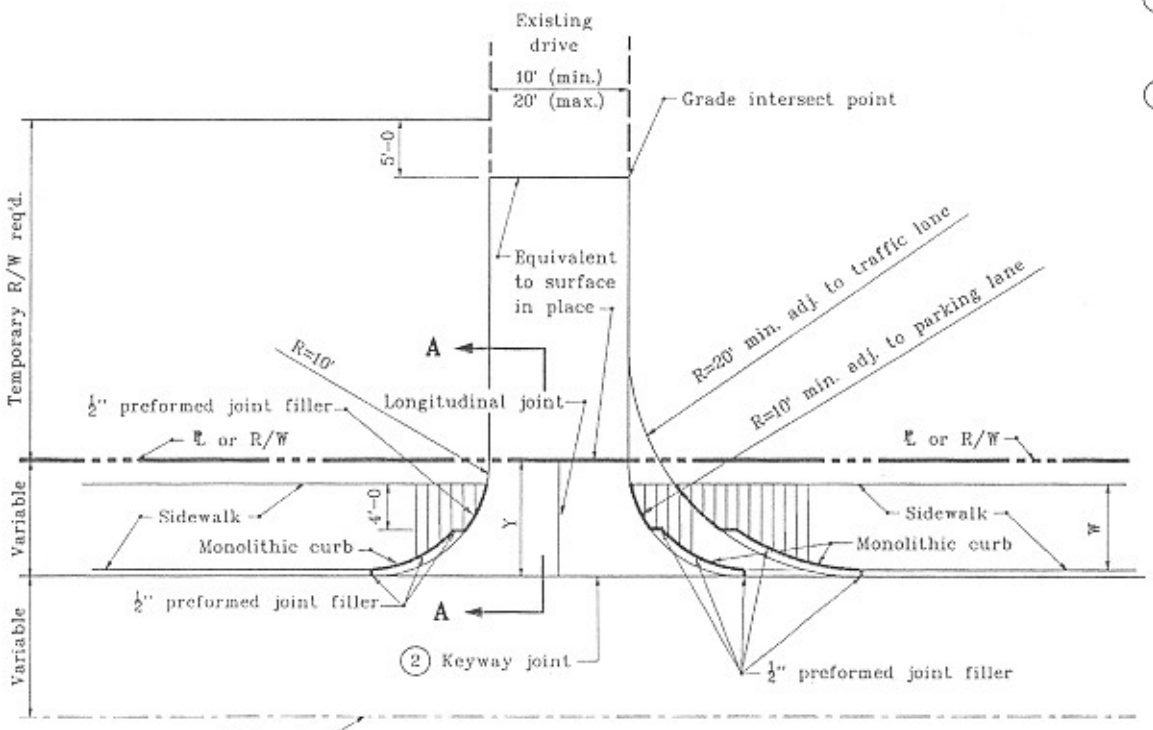


SECTION A-A



PLAN VIEW

NOTES:

1. The maximum algebraic difference in grades shall not exceed 8% for crest vertical curves, nor 12% for sag vertical curves.
2. See Standard Drawing E 610-DRIV-16 for keyway joint details.

LEGEND

W = Width of sidewalk

Y = Distance from front face of curb to ℄ or R/W

Curb ramp

Curb ramp view

Concrete pavement

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I DRIVE

SIDEWALK ADJACENT TO CURB

JANUARY 2000

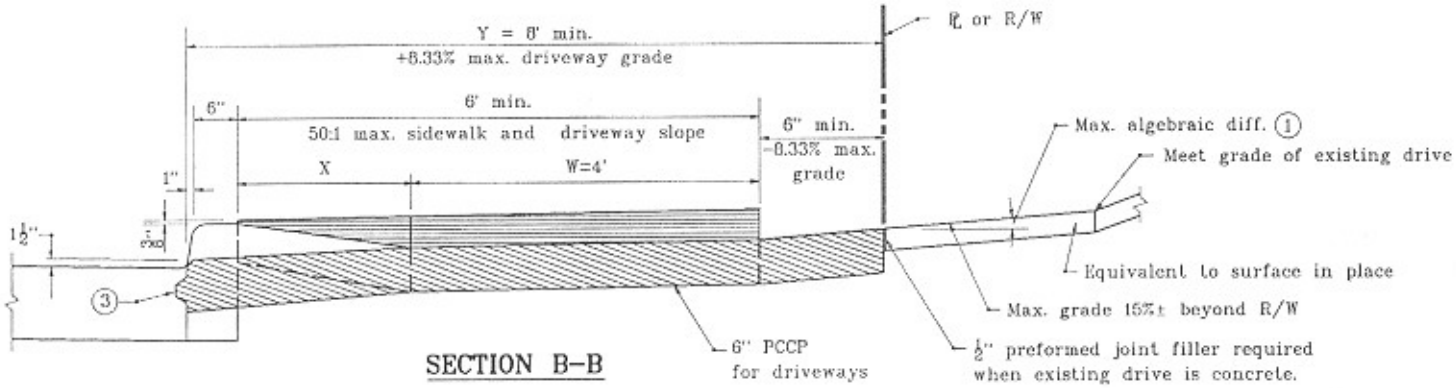
STANDARD DRAWING NO. **E 610-DRIV-01**

ANTHONY L. URENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

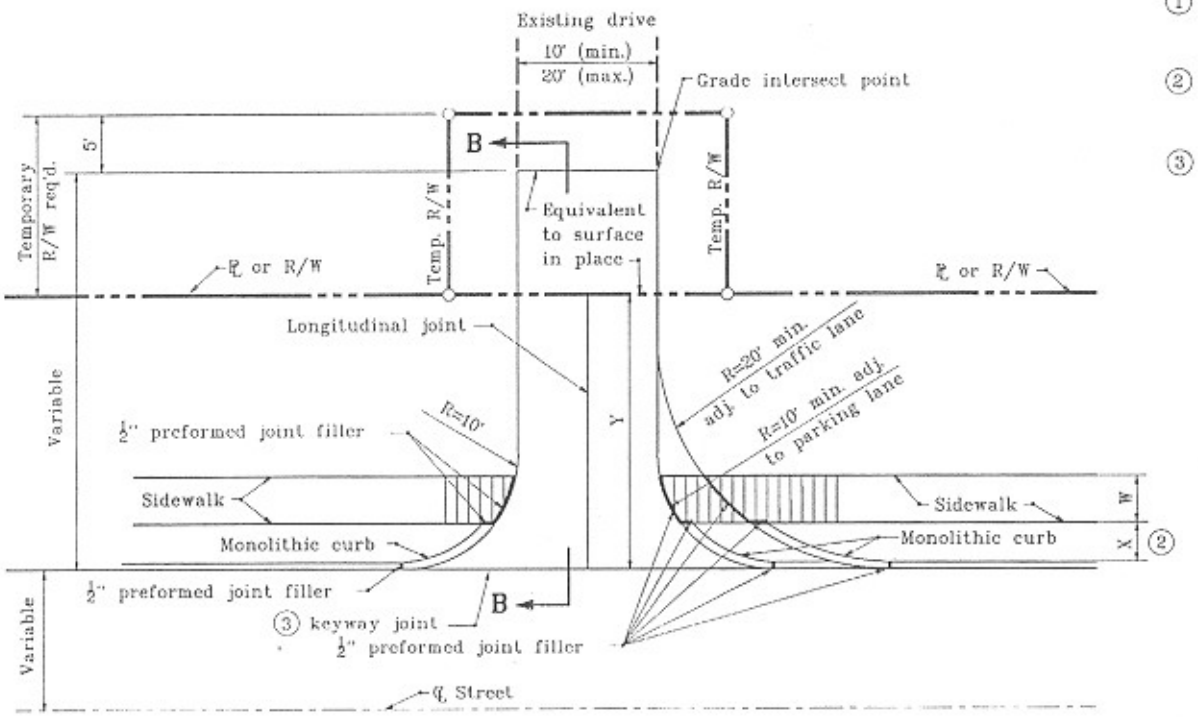
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Urenovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

/s/ Firoz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE



SECTION B–B



PLAN VIEW

X = 2' TO LESS THAN 6' FROM FACE OF CURB

NOTES :

① The maximum algebraic difference in grades shall not exceed 8% for crest vertical curves, nor 12% for sag vertical curves.

② The limits for X are based on a 6" curb height. For other curb heights, the limits for X shall be adjusted.

③ See Standard Drawing E 610-DRIV-16 for keyway joint details.

LEGEND

W = Width of sidewalk

X = Distance between back face of curb and sidewalk

Y = Distance from front face of curb to ℄ or R/W

Curb ramp

Curb ramp view.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I DRIVE
SIDEWALK NOT ADJACENT TO CURB

JANUARY 2000

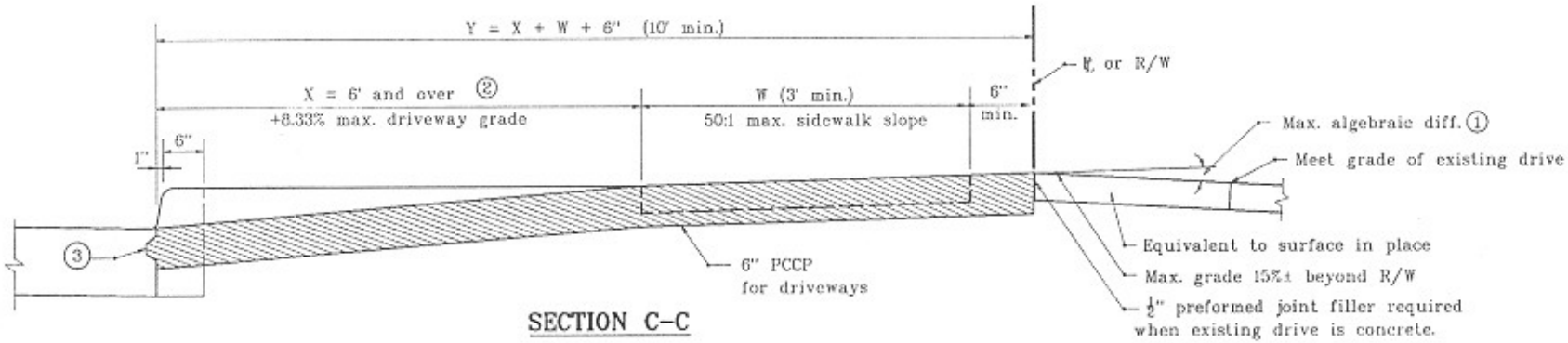
STANDARD DRAWING NO. **E 610-DRIV-02**

ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

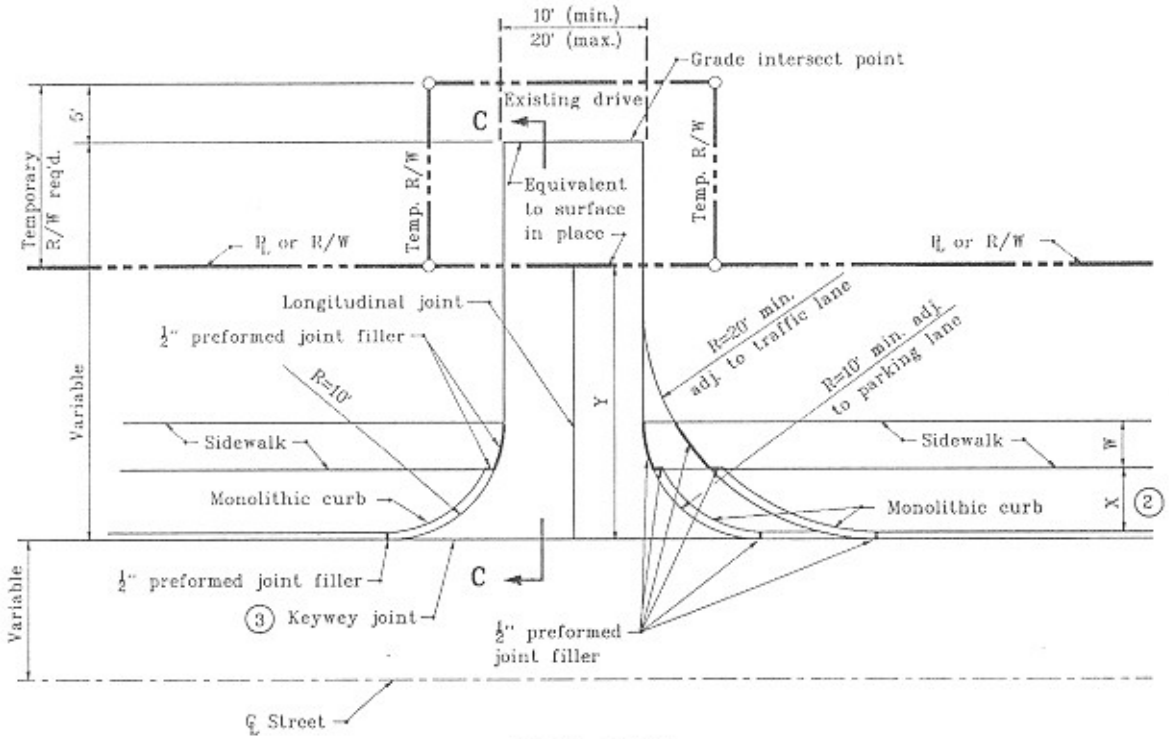
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE



SECTION C–C



PLAN VIEW

X = 6' AND OVER FROM FACE OF CURB

NOTES :

① The maximum algebraic difference in grades shall not exceed 8% for crest vertical curves, nor 12% for sag vertical curves.

② The limits for X are based on a 6" curb height. For other curb heights, the limits for X shall be adjusted.

③ See Standard Drawing E 610-DRIV-16 for keyway construction joint details.

LEGEND

W = Width of sidewalk

X = Distance between back face of curb and sidewalk

Y = Distance from front face of curb to ℄ or R/W

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS I DRIVE
SIDEWALK NOT ADJACENT TO CURB

JANUARY 2000

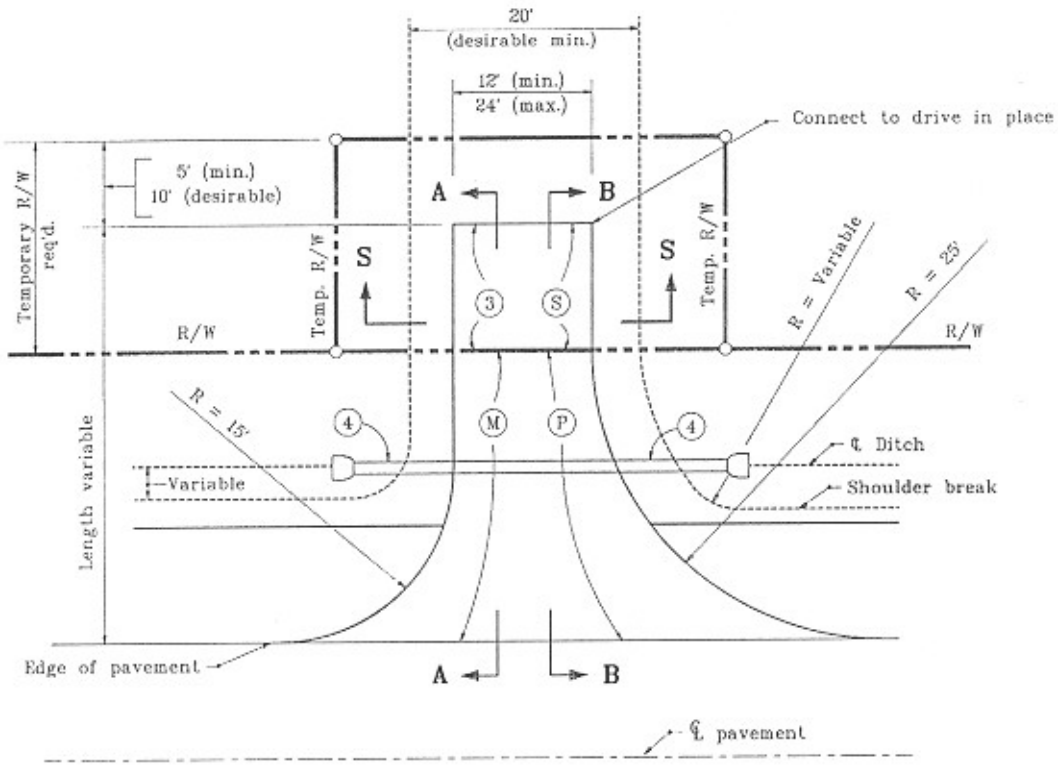
STANDARD DRAWING NO. **E 610-DRIV-03**

ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

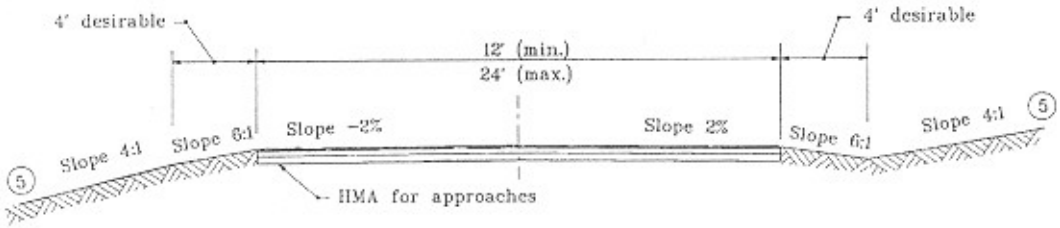
/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE



PLAN VIEW

USED FOR RESIDENCES, BARNS, PRIVATE GARAGES, ETC.



SECTION S–S

NOTES :

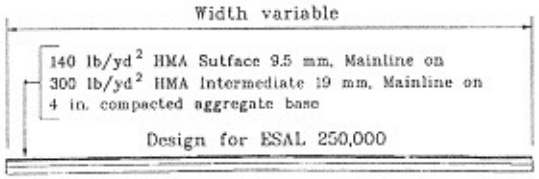
1. The driveway detailed on this sheet shall be used under the following conditions:
   - the mainline shoulder is paved and is less than 8 ft in width
   - the mainline shoulder is not paved
2. If the driveway surface is unimproved cross section as for driveway Class V can be used in place of Section S–S, see Drawing E 610-DRIV-11 for details.
3. See Standard Drawing E 610-DRIV-07 for General Notes.
4. See Standard Drawing E 610-DRIV-06 for Sections A–A and B–B.

LEGEND

(M) Limits of HMA for approaches

(P) Limits of compacted aggregate base

(S) Equivalent to surface in place



HMA FOR APPROACHES

TYPICAL SECTION

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II DRIVE

JANUARY 2000

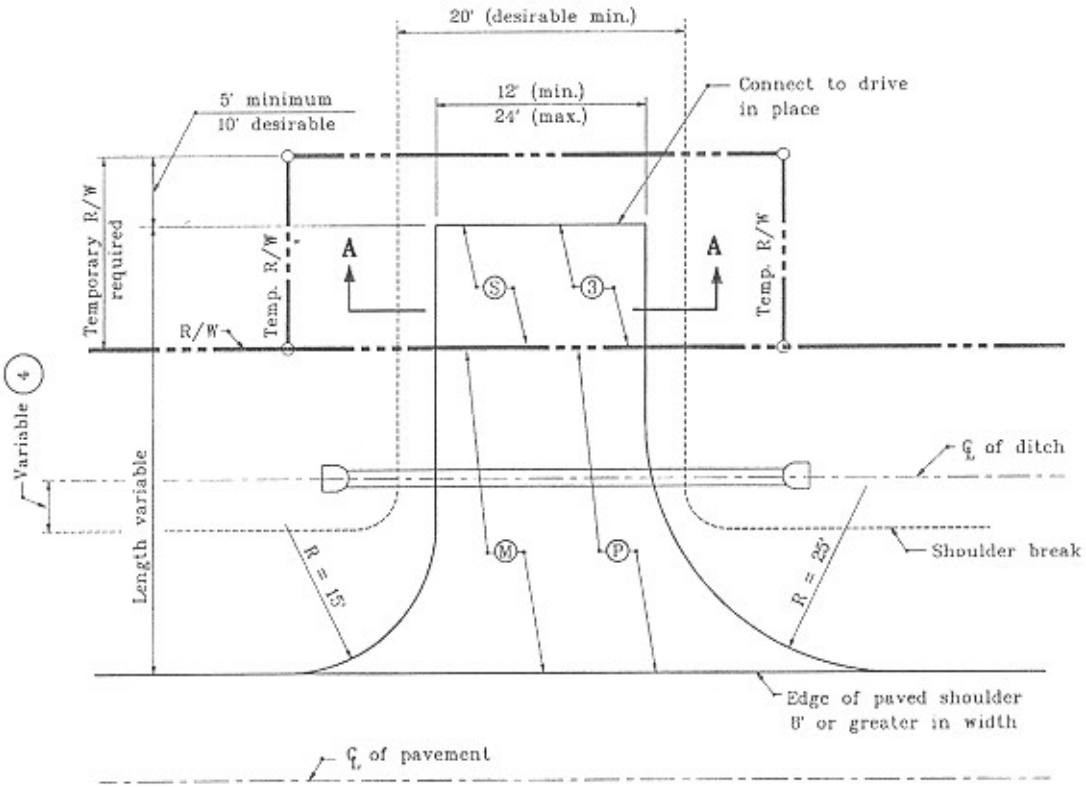
STANDARD DRAWING NO. **E 610–DRIV–04**

ANTHONY L. UREMOVICH REGISTERED No. 19095 STATE OF INDIANA PROFESSIONAL ENGINEER

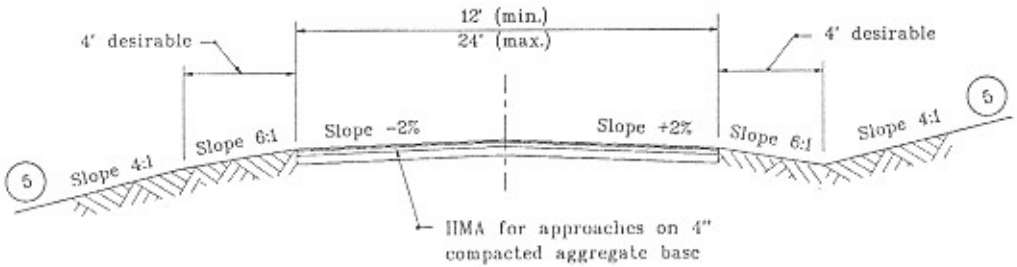
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE



PLAN VIEW



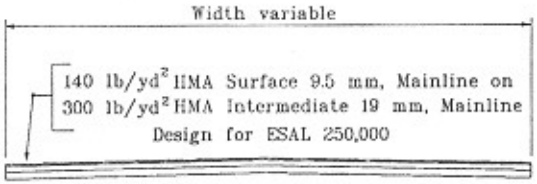
CROSS SECTION A–A

NOTES :

1. The driveway detailed on this sheet shall be used when the mainline shoulder is paved and 8' or greater in width.
2. See Standard Drawing E 610-DRIV-07 for General Notes.
3. See Standard Drawing E 610-DRIV-07 for approach grades with paved shoulder.

LEGEND

- (M) Limits of HMA for approaches
- (P) Limits of compacted aggregate base
- (S) Equivalent to surface in place



HMA FOR APPROACHES

TYPICAL SECTION

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II DRIVE

SEPTEMBER 2000

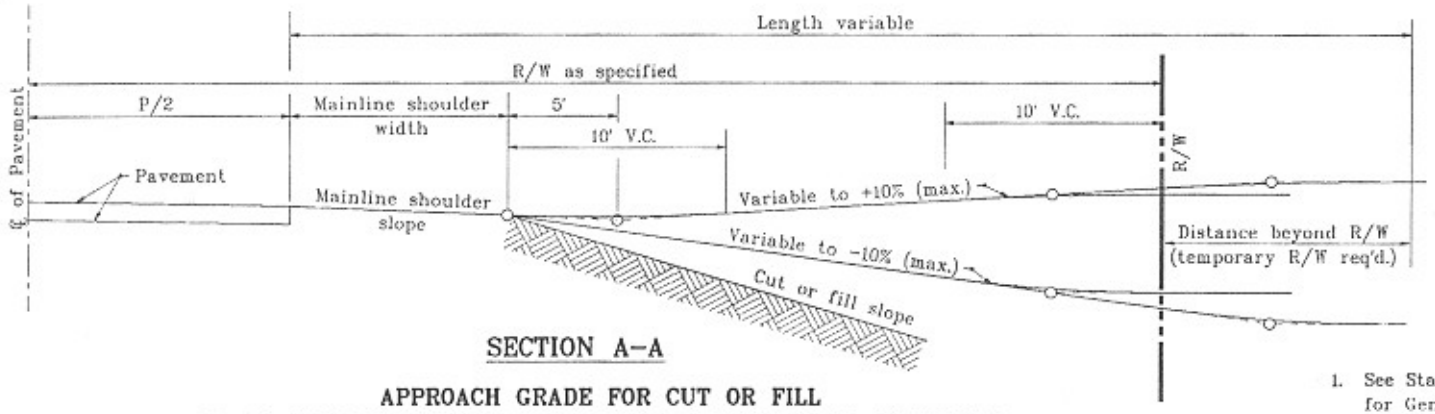
STANDARD DRAWING NO. **E 610-DRIV-05**

ANTHONY L. DREMOVICH REGISTERED No. 19095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Anthony L. Dremovich 9-01-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 9-01-00
CHIEF HIGHWAY ENGINEER DATE

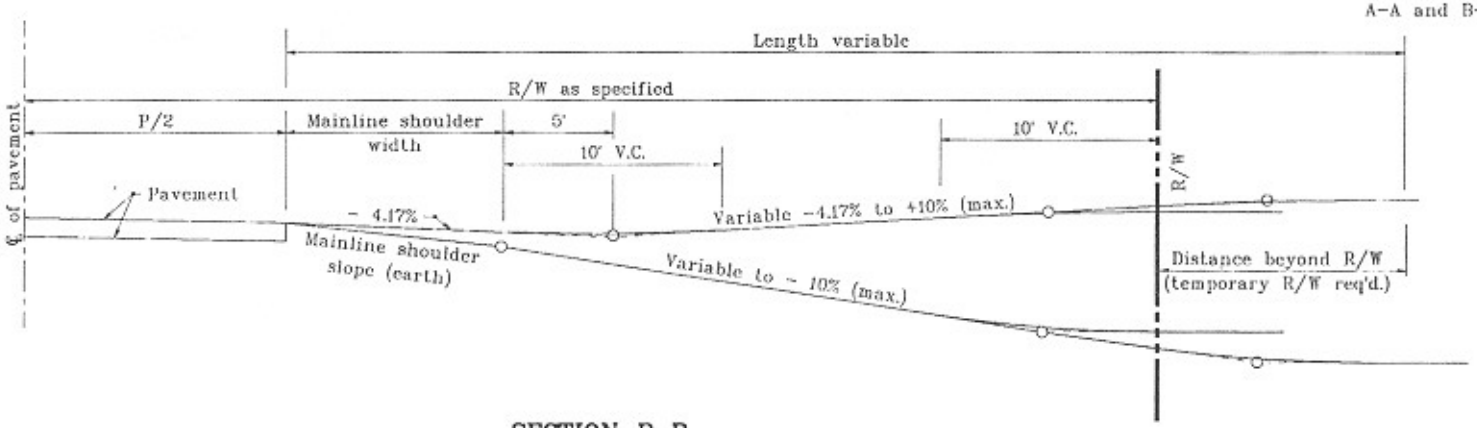


SECTION A-A

APPROACH GRADE FOR CUT OR FILL
TO BE USED WITH PAVED OR COMPACTED AGGREGATE SHOULDERS

NOTES :

1. See Standard Drawing E 610-DRIV-07 for General Notes.
2. See Standard Drawings E 610-DRIV-04, -09 and -11 for location of Sections A-A and B-B.



SECTION B-B

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

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II, IV, & V DRIVES
APPROACH GRADES

JANUARY 2000

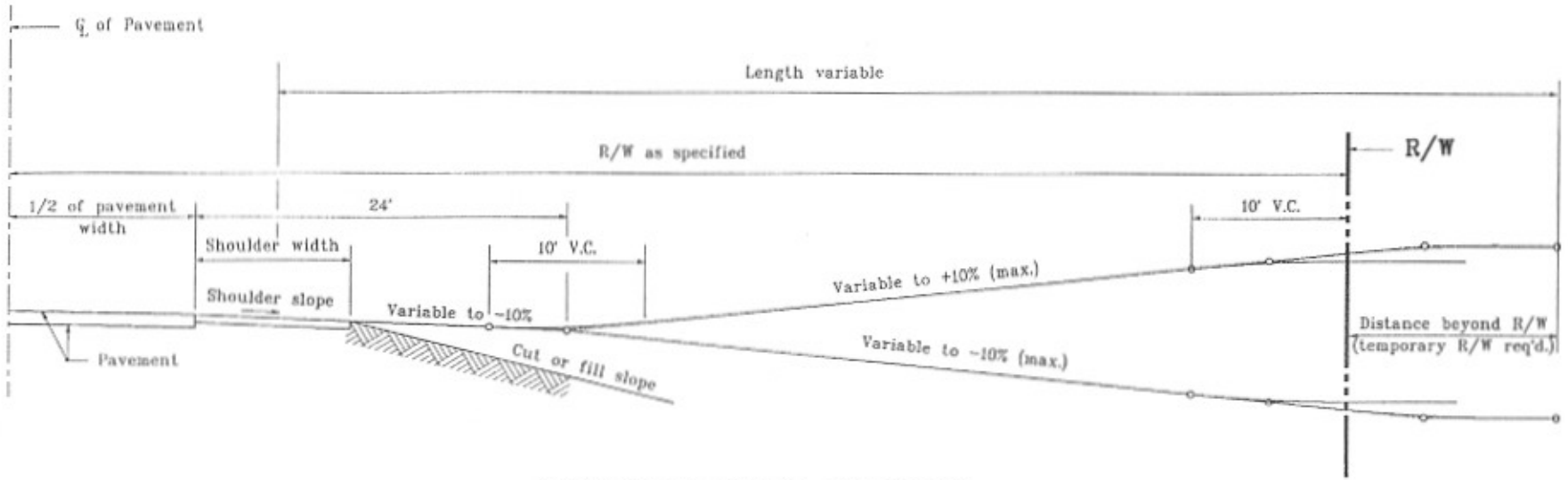
STANDARD DRAWING NO. **E 610-DRIV-06**

ANTHONY L. DREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Anthony L. Dremovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



APPROACH GRADE FOR CUT OR FILL TO BE USED WITH PAVED SHOULDER

GENERAL NOTES :

1. These notes are for the drawings E 610-DRIV-04, -05, -06, -09, -10 and -11.
2. If a concrete approach is designed for a class II or class IV drive, the radii shall be constructed using car construction type C as detailed on Standard Drawing E 605-ERCN-02.
3. 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.
4. Driveway culverts which cannot be located outside the clear zone shall have an appropriate load carrying grated end section at both ends of the culvert.
5. Driveway embankment slope within the clear zone for a road functionally classified as follows shall be:
   a.) 6:1 for an arterial or a high speed (over 40 mph design speed) collector.
   b.) 4:1 for a local road or a low speed (40 mph or lower design speed) collector.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS II, IV, & V DRIVES APPROACH GRADES

JANUARY 2000

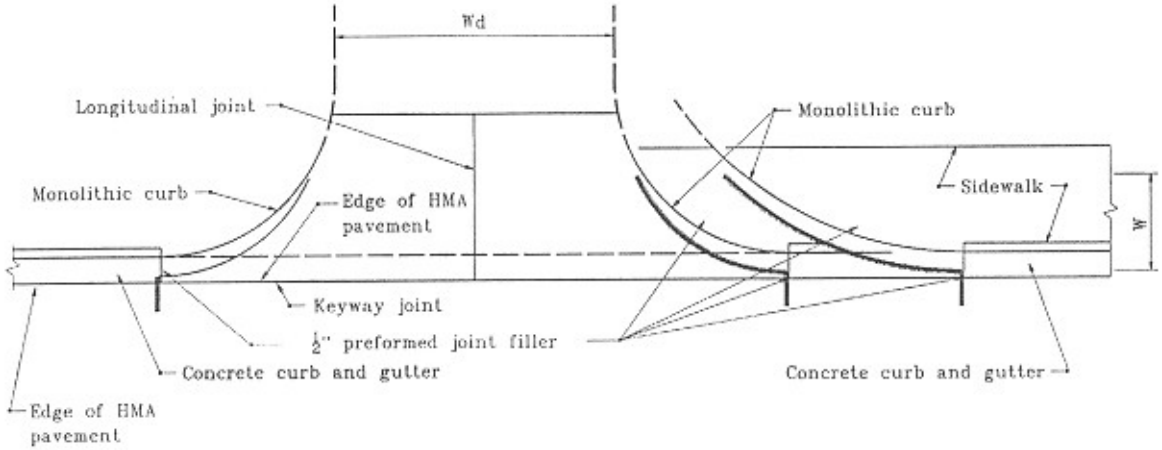
STANDARD DRAWING NO. **E 610-DRIV-07**

ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

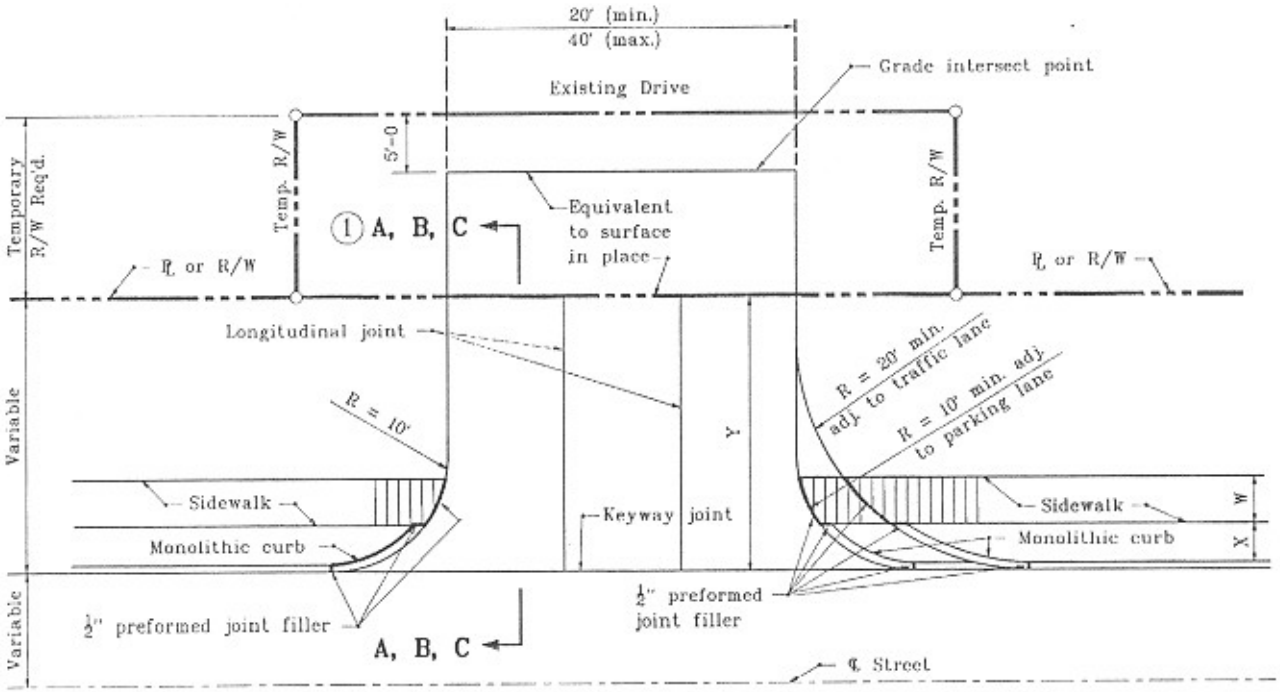
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



CONCRETE CURB & GUTTER CONNECTION FOR CLASS I & III DRIVES



PLAN VIEW – CLASS III DRIVE

NOTES :

① See Standard Drawing E 610-DRIV-01 for Section A-A. See Standard Drawing E 610-DRIV-02 for Section B-B. See Standard Drawing E 610-DRIV-03 for Section C-C.

2. For Class III drive, PCCP pavement for driveways shall be placed over 6 in. of compacted aggregate for base type O.

3. See Standard Drawing E 610-DRIV-10 for keyway joint detail.

4. See Standard Drawing E 610-DRIV-07 for General Notes.

LEGEND

W = Width of sidewalk

Wd = Driveway width

X = Distance between back face of curb and sidewalk

Y = Distance from front face of curb to ℄ or R/W

Curb ramp

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS III DRIVE

JANUARY 2000

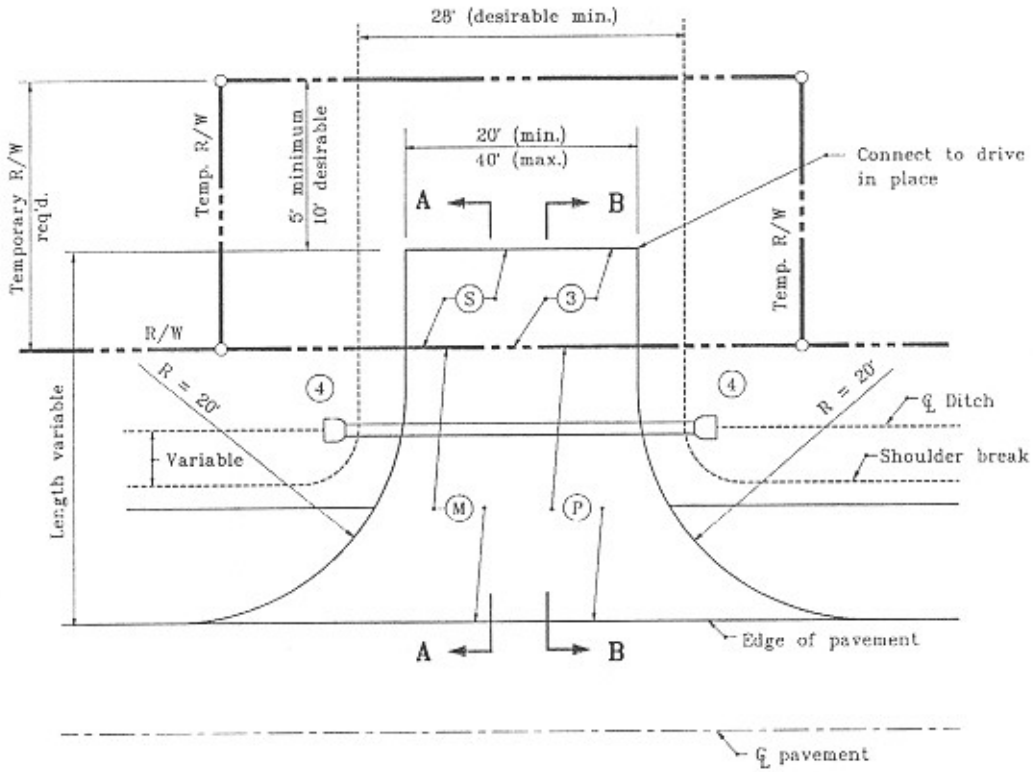
STANDARD DRAWING NO. **E 610-DRIV-08**

ANTHONY L. URENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

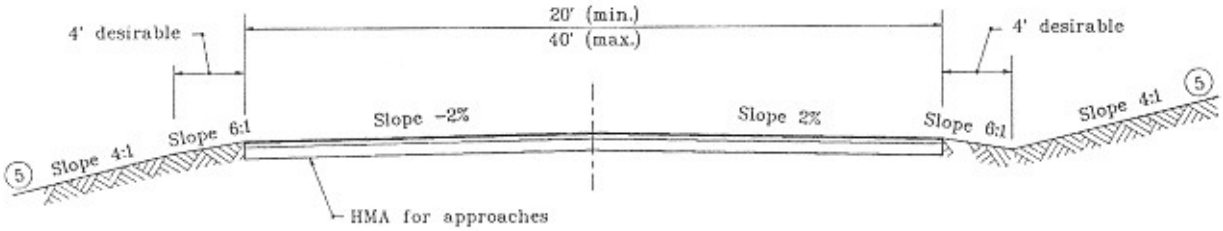
/s/ Anthony L. Urenovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE



PLAN VIEW

COMMERCIAL



CROSS SECTION

NOTES :

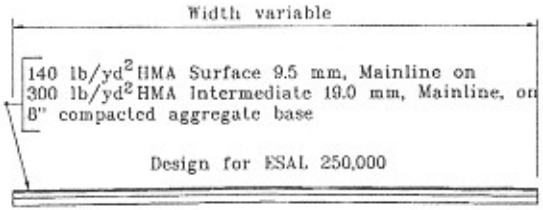
1. The driveway detailed on this sheet shall be used under the following conditions:
   - the mainline shoulder is paved and is less than 8 ft in with
   - the mainline shoulder is not paved
2. See Standard Drawing E 610-DRIV-07 for General Notes.
3. See Standard Drawing E 610-DRIV-06 for Sections A-A and B-B.

LEGEND

(M) Limits of HMA for approaches

(P) Limits of compacted aggregate base

(S) Equivalent to surface in place



HMA FOR APPROACHES

TYPICAL SECTION

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS IV DRIVE

JANUARY 2000

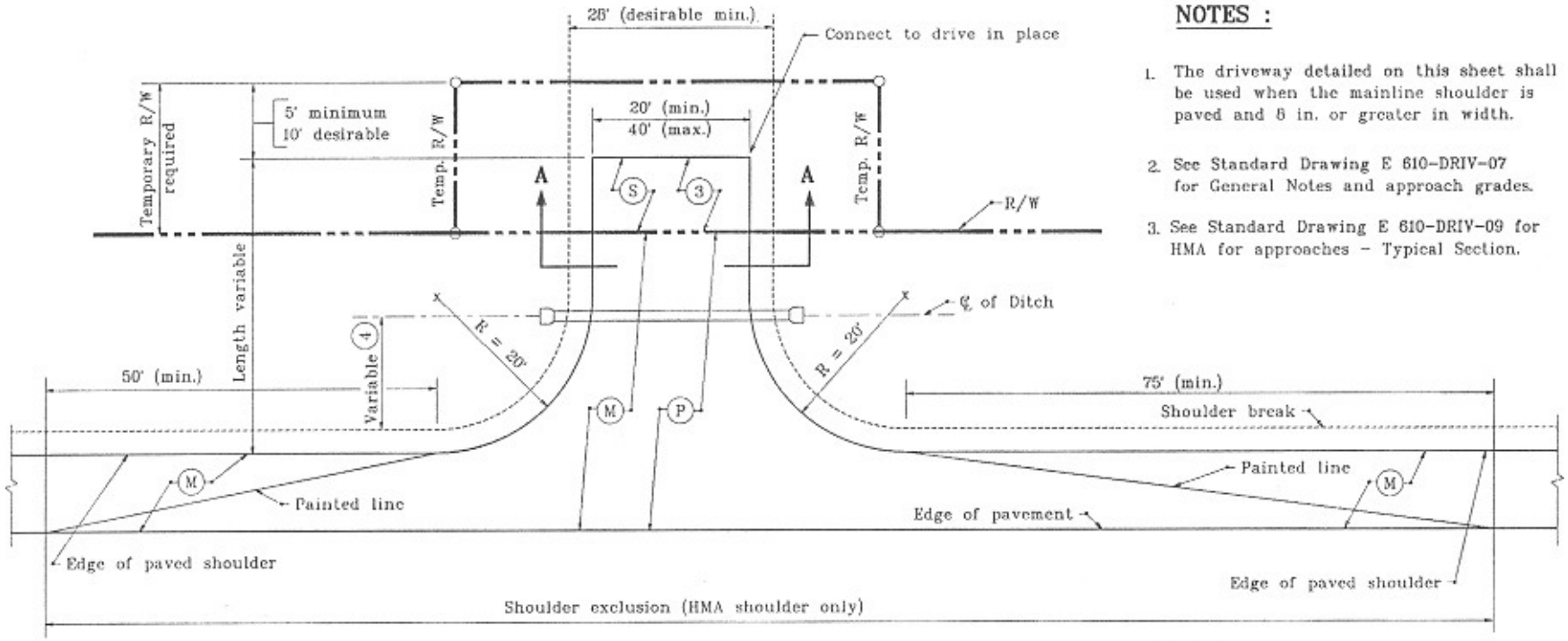
STANDARD DRAWING NO. **E 610-DRIV-09**

ANTHONY L. URENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Anthony L. Urenovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

/s/ Pirooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE



PLAN VIEW

NOTES :

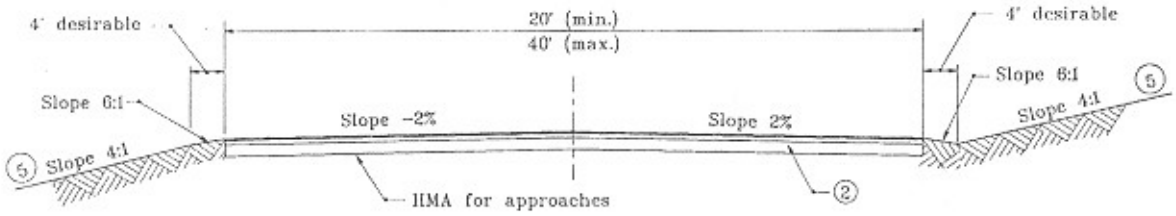
1. The driveway detailed on this sheet shall be used when the mainline shoulder is paved and 6 in. or greater in width.
2. See Standard Drawing E 610-DRIV-07 for General Notes and approach grades.
3. See Standard Drawing E 610-DRIV-09 for HMA for approaches - Typical Section.

LEGEND

(M) Limits of HMA for approaches

(P) Limits of compacted aggregate base

(S) Equivalent to surface in place



SECTION A-A

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS IV DRIVE

JANUARY 2000

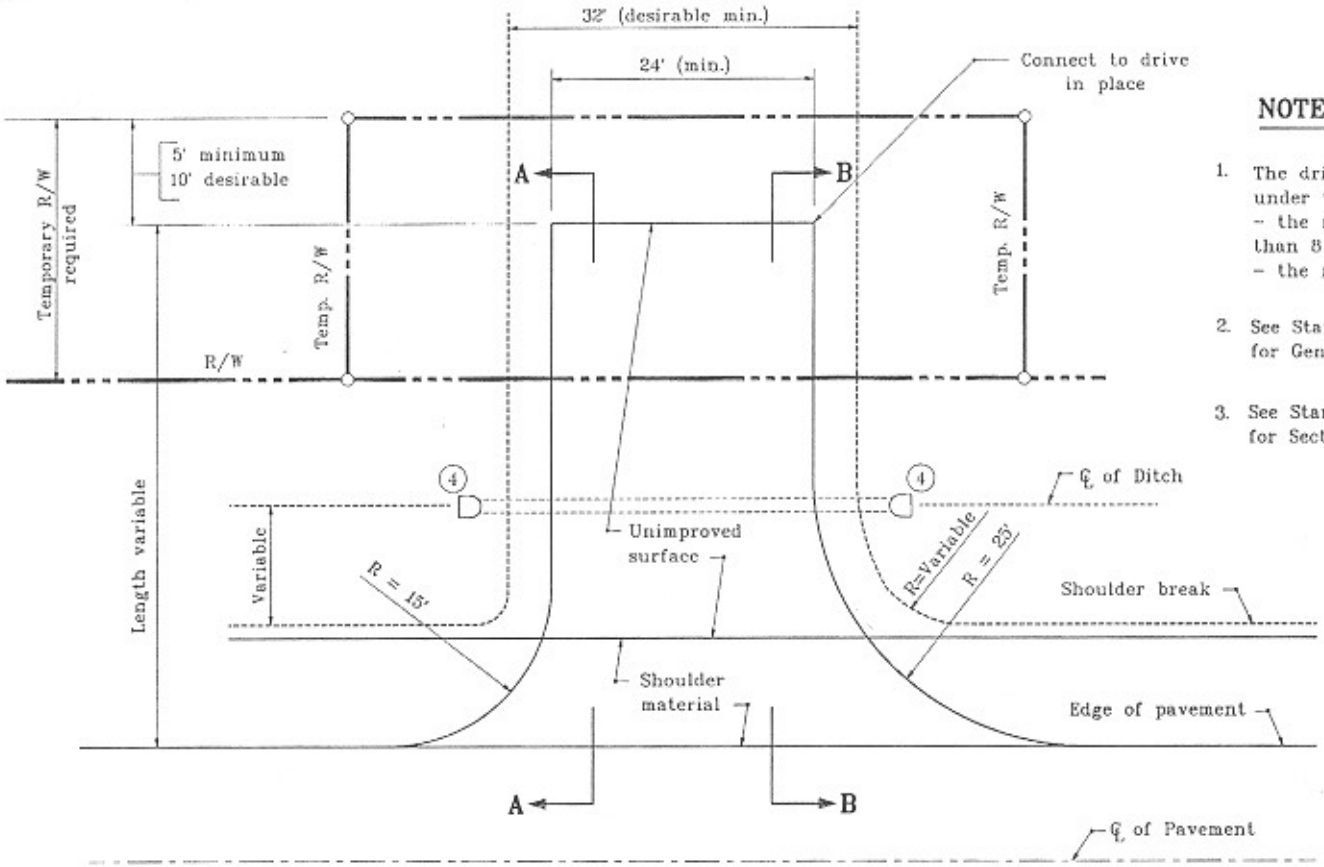
STANDARD DRAWING NO. **E 610-DRIV-10**

ANTHONY L. DREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Anthony L. Dremovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

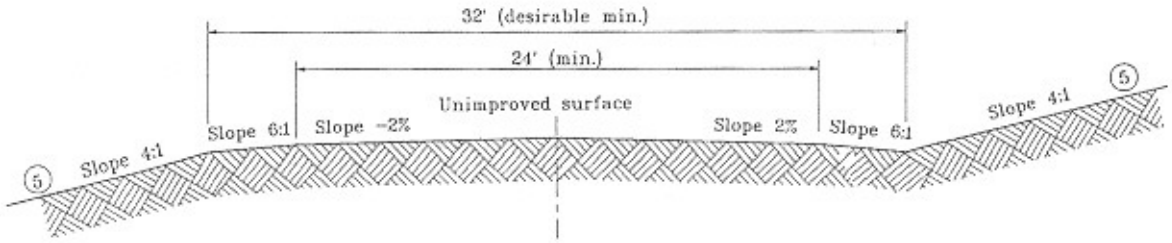
/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE



PLAN VIEW

NOTES :

1. The driveway detailed on this sheet shall be used under the following conditions:
   - the mainline shoulder is paved and is less than 8 ft in width
   - the mainline shoulder is not paved
2. See Standard Drawing E 610-DRIV-07 for General Notes.
3. See Standard Drawing E 610-DRIV-06 for Sections A-A and B-B.



CROSS SECTION

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS V DRIVE
FIELD ENTRANCE

SEPTEMBER 2000

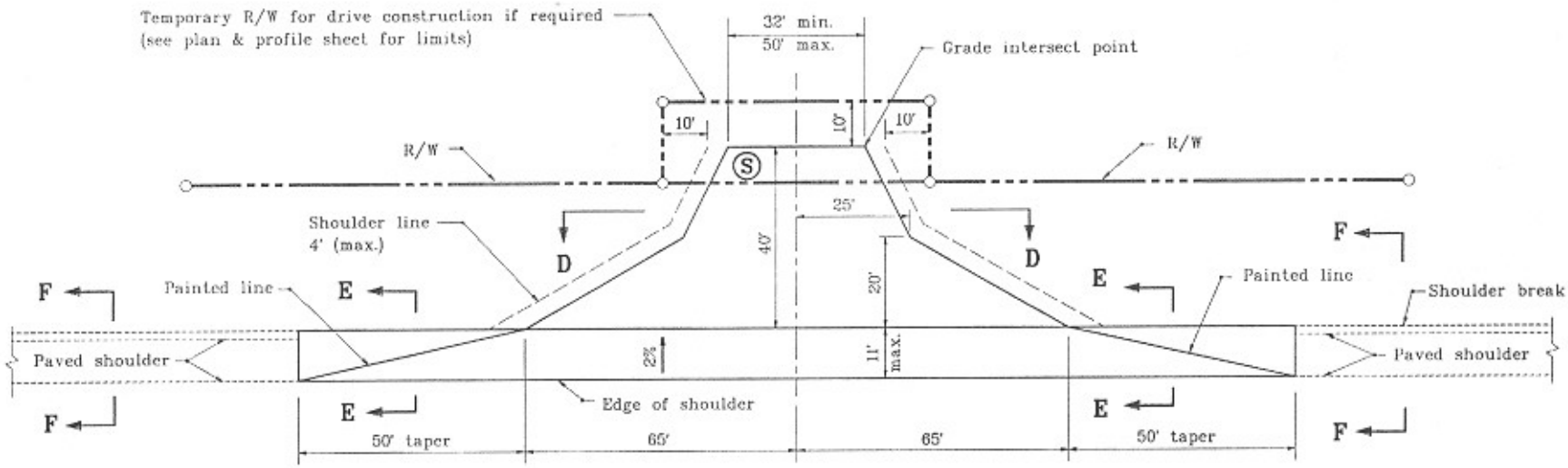
STANDARD DRAWING NO. **E 610-DRIV-11**

ANTHONY L. URENOVITCH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

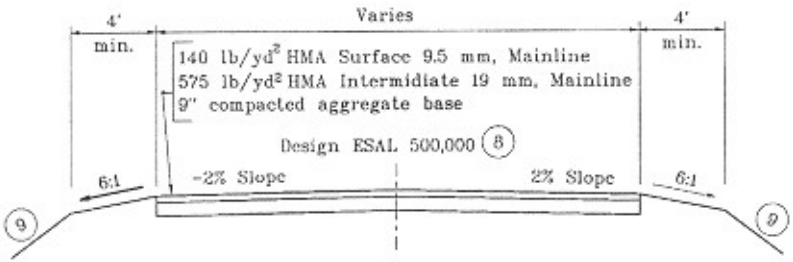
/s/ Anthony L. Urenovich 9-01-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoz Zandi 9-01-00
CHIEF HIGHWAY ENGINEER DATE

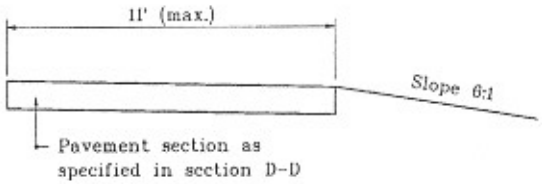


CLASS VI DRIVE – PLAN

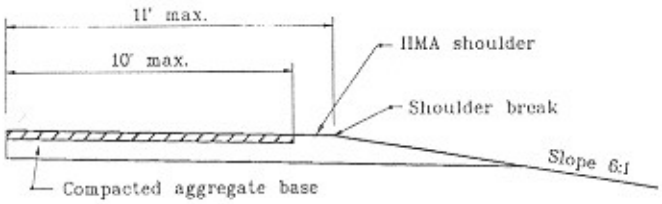
COMMERCIAL



SECTION D–D



SECTION E–E



SECTION F–F

NOTES :

1. The Class VI Drive is designed to accomodate a WB-65 (IDV) design vehicle with a 45 ft turning radius.
   This drive shall be specified at truck stops and entrances to heavy industrial property.
2. See Standard Drawing E 610-DRIV-13 for profile grades.
3. See Standard Drawing E 610-DRIV-14 for General Notes and Legend.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VI DRIVE
PLAN AND SECTIONS

JANUARY 2000

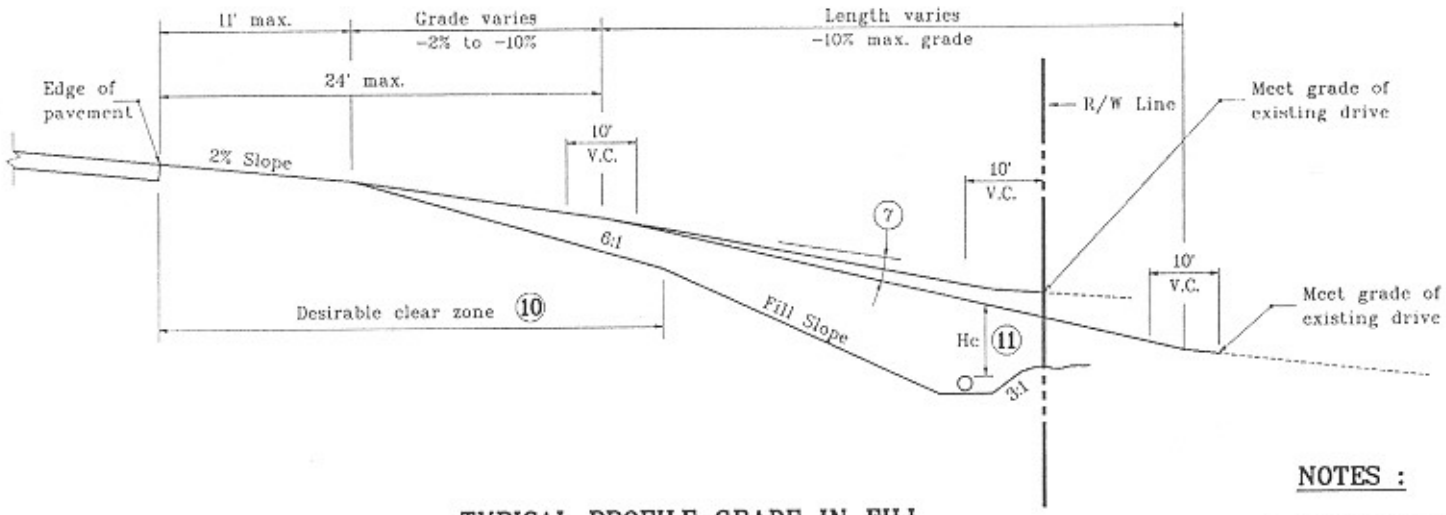
STANDARD DRAWING NO. **E 610-DRIV-12**

ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich — DESIGN STANDARDS ENGINEER — 1-03-00 DATE

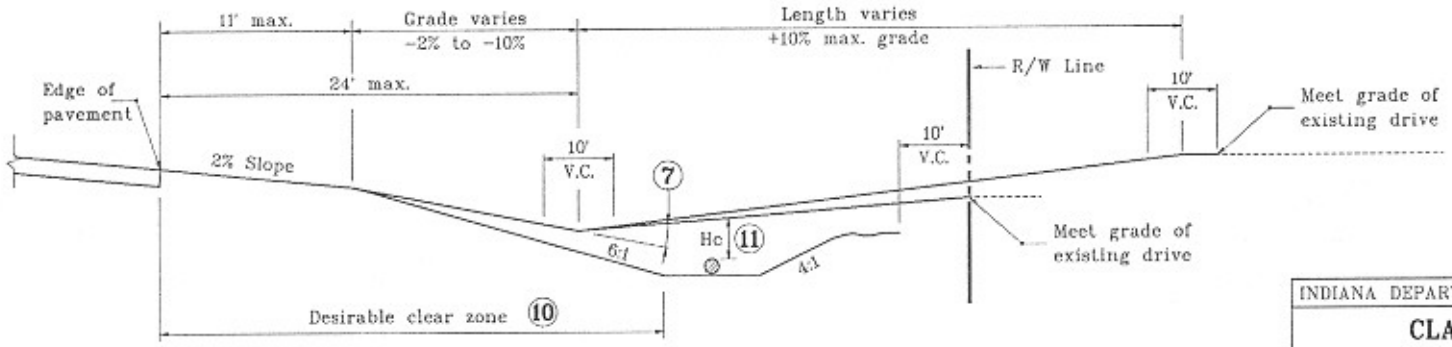
/s/ Firoos Zandi — CHIEF HIGHWAY ENGINEER — 1-03-00 DATE



TYPICAL PROFILE GRADE IN FILL

NOTES :

1. See Standard Drawing E 610-DRIV-12 for plan and sections of Class VI drive.
2. See Standard Drawing E 610-DRIV-14 for General Notes.



TYPICAL PROFILE GRADE IN CUT

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VI DRIVE
TYPICAL PROFILE GRADES
JANUARY 2000

STANDARD DRAWING NO. **E 610-DRIV-13**

ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE

GENERAL NOTES :

1. These notes are for Standard Drawing E 610-DRIV-12, -13, -15, -16.

2. The class VI and VII drives are designed to accomodate a WB-65 (IDV) design vehicle with a 45 ft turning radius.

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

(8) The minimum driveway pavement section has been designed for 200 trucks per day. If the truck traffic count is greater than 200 per day, the required pavement section shall be as shown elsewhere on the plans.

(9) Driveway embankment slopes within the clear zone for a road functionally classified as follows shall be :
6 : 1 for an arterial or a high speed (over 40 mph design speed) collector.
4 : 1 for a local road or a low speed (40 mph or lower design speed) collector.

(10) Driveway culverts which cannot be located outside the clear zone shall require grated box end sections at both ends.

(11) Hc - earth cover over culvert or pipe shall be 1 ft or greater.

(12) Curb ramp type G, as shown on Standard Drawing E 604-SWCR-09, shall be used when sidewalk is adjacent to curb.

(13) When X is equal to or greater than 2 ft but less than 5 ft, curb ramp type H as shown on Standard Drawing E 604-SWCR-09 shall be used.

(14) When X is equal to or greater than 5 ft, no curb ramp is required.

LEGEND

(3) Longitudinal joint

(4) Keyway joint

(5) ½ in. preformed joint filler

(6) Monolithic curb

(F) Concrete sidewalk

(S) For type and thicknes equivalent to surface in place, see plans.

(U) Concrete curb ramp

X = Distance between face of curb and sidewalk

W = Width of sidewalk

Cement Concrete Pavement for Driveways

Curb ramp

Curb ramp view

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VI AND VII DRIVES
GENERAL NOTES AND LEGEND
JANUARY 2000

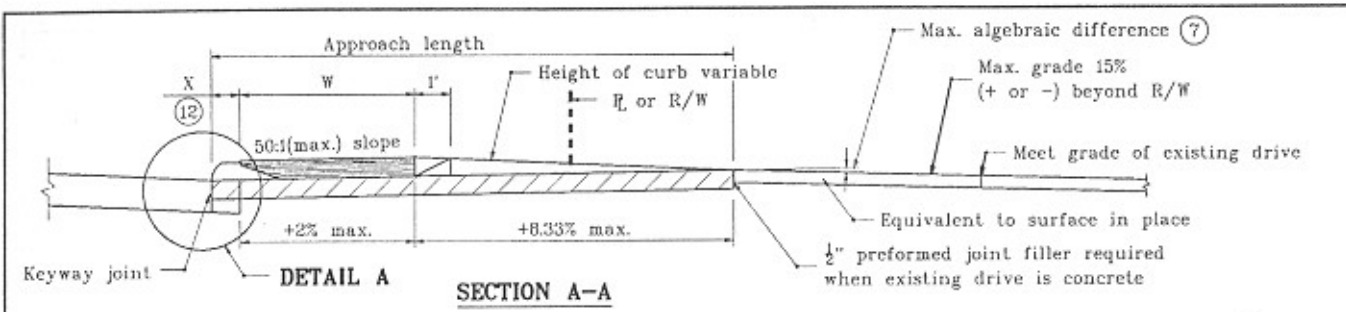
STANDARD DRAWING NO. **E 610-DRIV-14**

ANTHONY L. UREMOVICH REGISTERED No. 19095 STATE OF INDIANA PROFESSIONAL ENGINEER

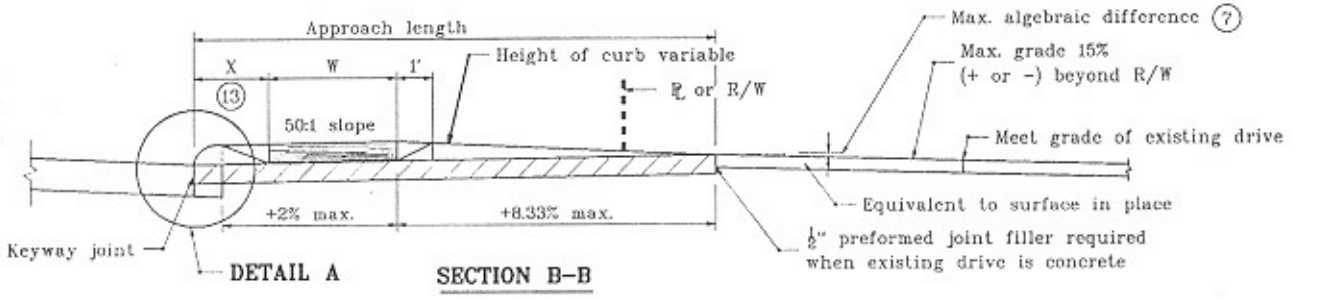
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

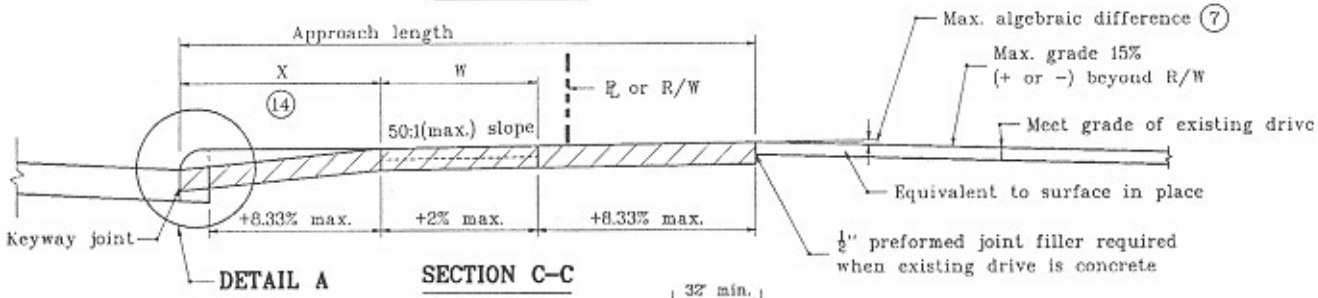
/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



SECTION A–A



SECTION B–B



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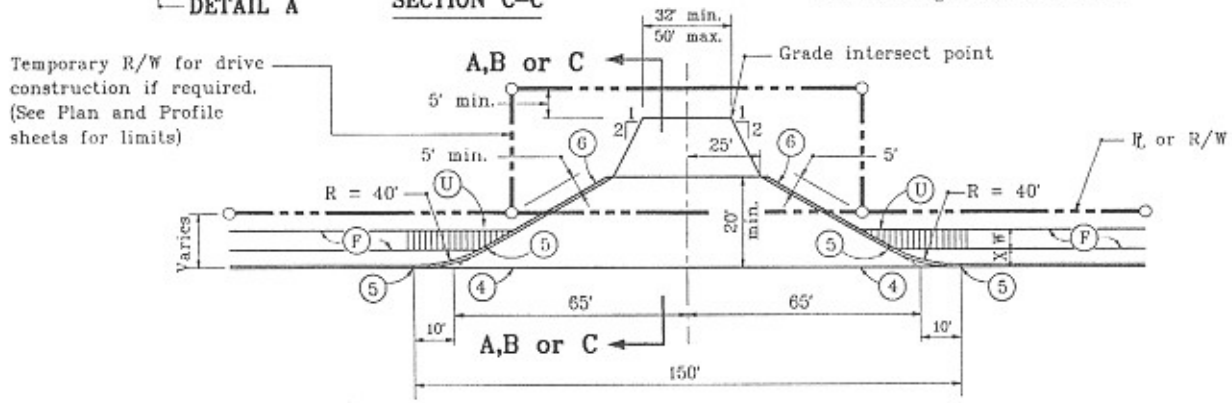


CLASS VII DRIVE (COMMERCIAL)

NOTES :

1. The Class VII drive shall be specified at truck stops and entrances to heavy industrial property.
2. All Class VII drives shall be concrete to at least the Right-of-Way line with minimum length 20'.
3. See Standard Drawing E 610-DRIV-16 for keyway joint shown in Detail A and for joint placement and corner reinforcement.
4. See Standard Drawing E 610-DRIV-14 for General Notes and Legend.

INDIANA DEPARTMENT OF TRANSPORTATION

CLASS VII DRIVE
PLAN AND PROFILE GRADE
JANUARY 2000

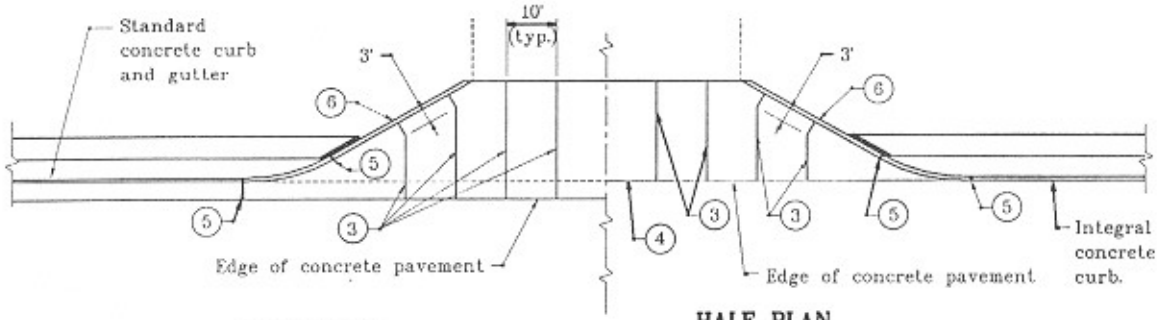
STANDARD DRAWING NO. **E 610-DRIV-15**

ANTHONY L. URENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

/s/ Anthony L. Urenovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

/s/ Firooz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE

DESIGN STANDARDS ENGINEER



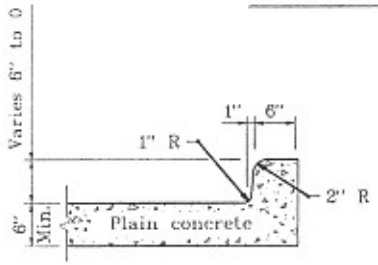
HALF PLAN
STANDARD COMBINED CURB & GUTTER

HALF PLAN
INTEGRAL CONCRETE CURB

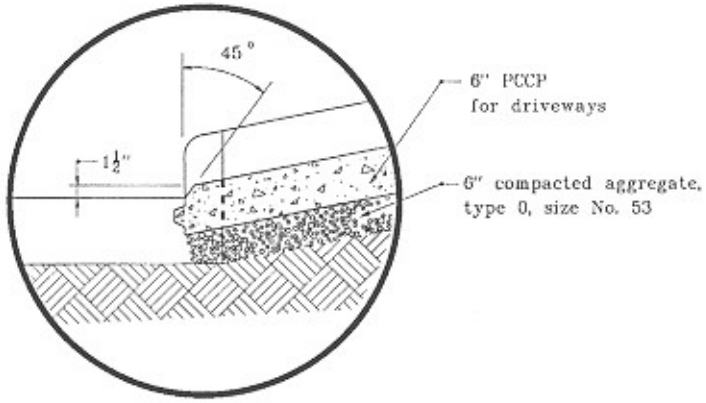
JOINT PLACEMENT DETAIL

NOTES :

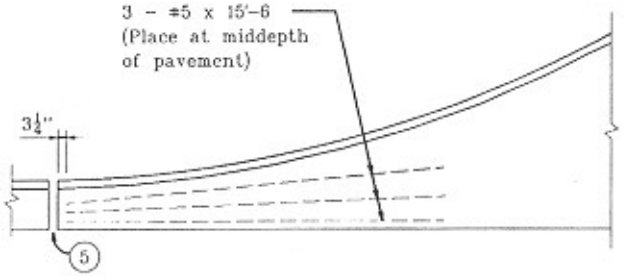
1. See Standard Drawing E 610-DRIV-15 for plan and profiles of Class VII drive.
2. See Standard Drawing E 610-DRIV-14 for General Notes and Legend.
3. DETAIL A - shows keyway construction joint in detail. For location see Drawing E 610-DRIV-15.



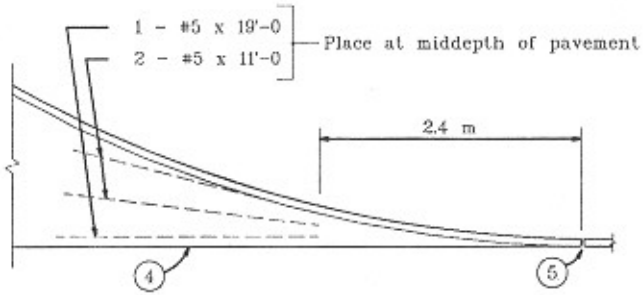
MONOLITHIC CURB (6)



DETAIL A



COMBINED CURB & GUTTER



INTEGRAL CONCRETE CURB

TYPICAL CORNER REINFORCING

INDIANA DEPARTMENT OF TRANSPORTATION

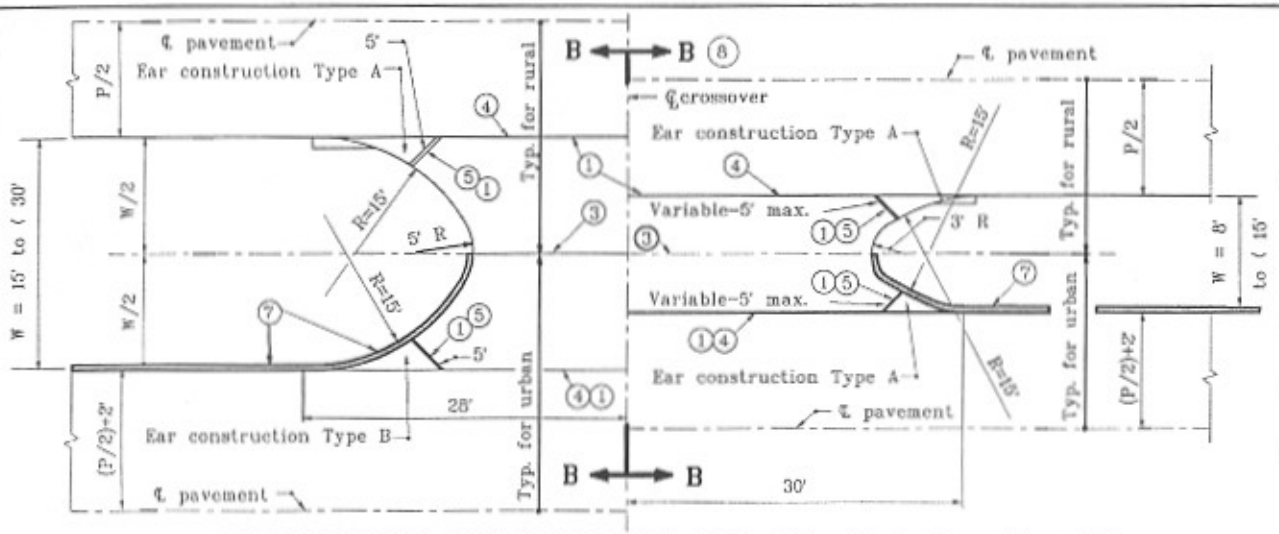
CLASS VII DRIVE
JOINT PLACEMENT AND CORNERS
JANUARY 2000

STANDARD DRAWING NO. **E 610-DRIV-16**

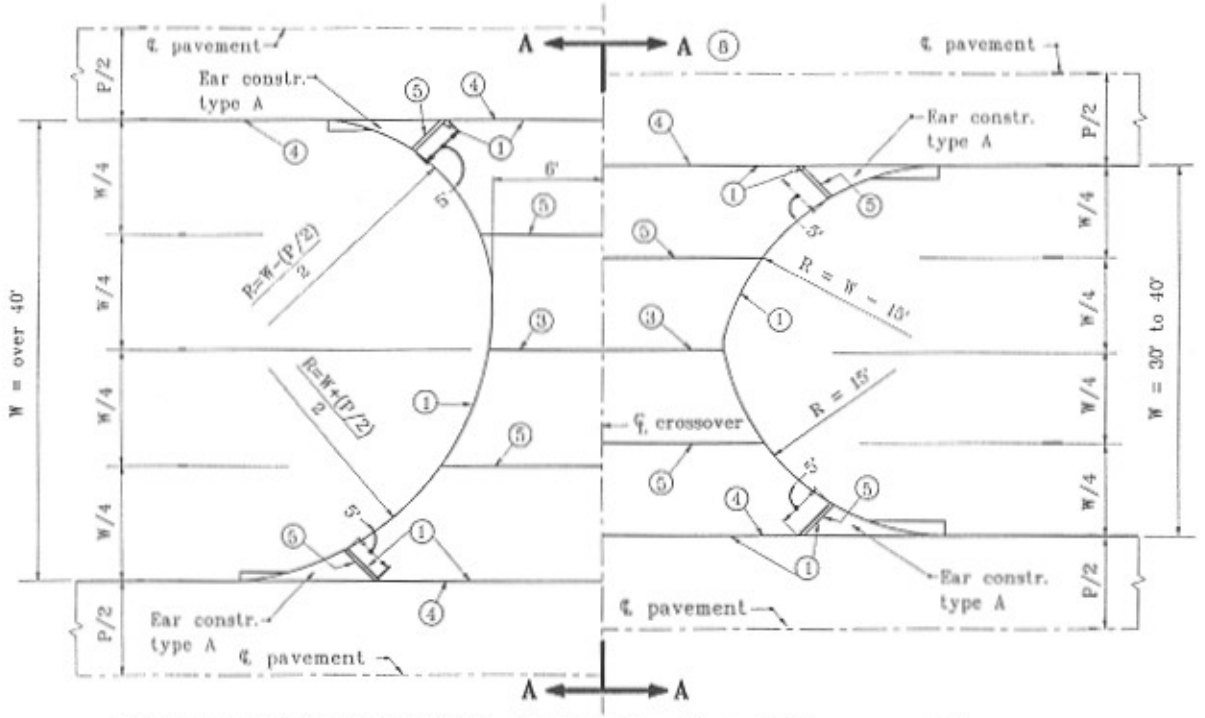
ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE



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



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

NOTES :

1. Thickened edge
2. See Standard Drawings:
   E 605-ERCN-01 for TYPE "A" ear construction
   E 605-ERCN-02 for TYPE "B" ear construction
   E 610-DRIV-17 for sections A-A and B-B
3. Contraction joint type D-1, see Standard Drawing E 503-CCPJ-01 for details.
4. Keyway construction joint, see Standard Drawing E 610-DRIV-16 for details.
5. 1" preformed joint filler
6. Private drive crossover shall be constructed of a flexible section unless otherwise directed by the engineer.
7. Intergral concrete curb, see Standard Drawing E 605-CCIN-01 for details.
8. For cross sections A-A and B-B see Standard Drawing E 610-DRIV-18.

INDIANA DEPARTMENT OF TRANSPORTATION

PRIVATE DRIVE CROSSOVERS PLANS

JANUARY 2000

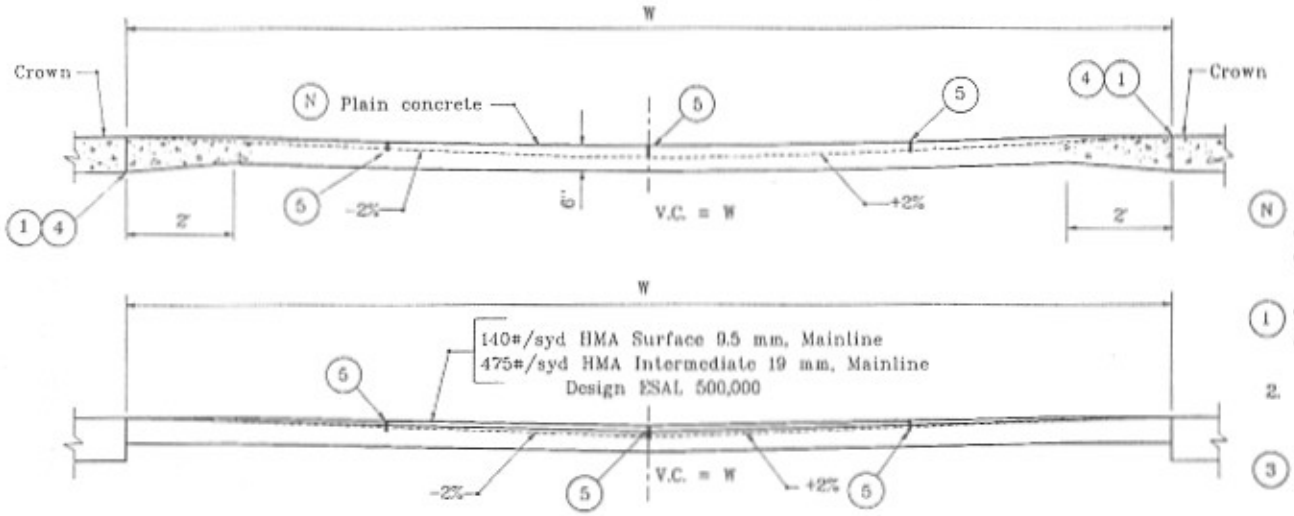
STANDARD DRAWING NO. **E 610-DRIV-17**

ANTHONY L. URENOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

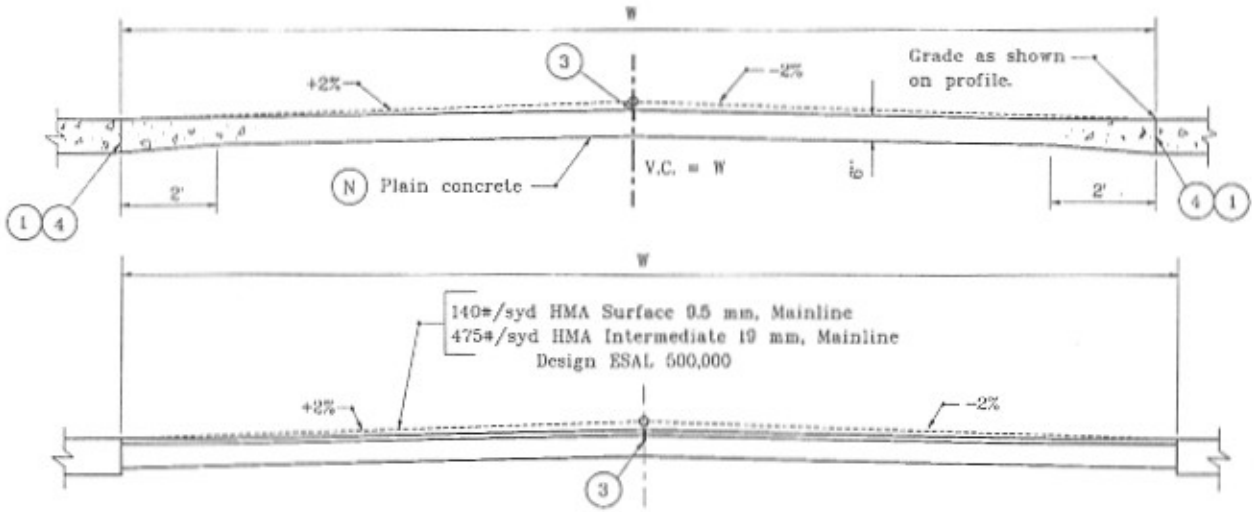
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Urenovich 1-03-00
DESIGN STANDARDS ENGINEER — DATE

/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER — DATE



SECTION A-A
TO BE USED WITH CROWN PAVEMENTS.



SECTION B-B
TO BE USED WITH 3 in. TILTED PAVEMENTS

NOTES :

(N) Private drive crossover shall be constructed of a flexible pavement unless otherwise directed by the Engineer.

(1) Thickened edge to the mainline thickness or 8" min. for plain concrete crossovers.

2. For location of cross sections see Standard Drawing E 610-DRIV-17.

(3) Contraction joint type D-1, see Standard Drawing E 501-CCPJ-06 for details.

(4) Keyway construction joint, see Standard Drawing E 610-DRIV-16 for details.

(5) 1" preformed joint filler

INDIANA DEPARTMENT OF TRANSPORTATION

PRIVATE DRIVE CROSSOVERS CROSS SECTIONS

JANUARY 2000

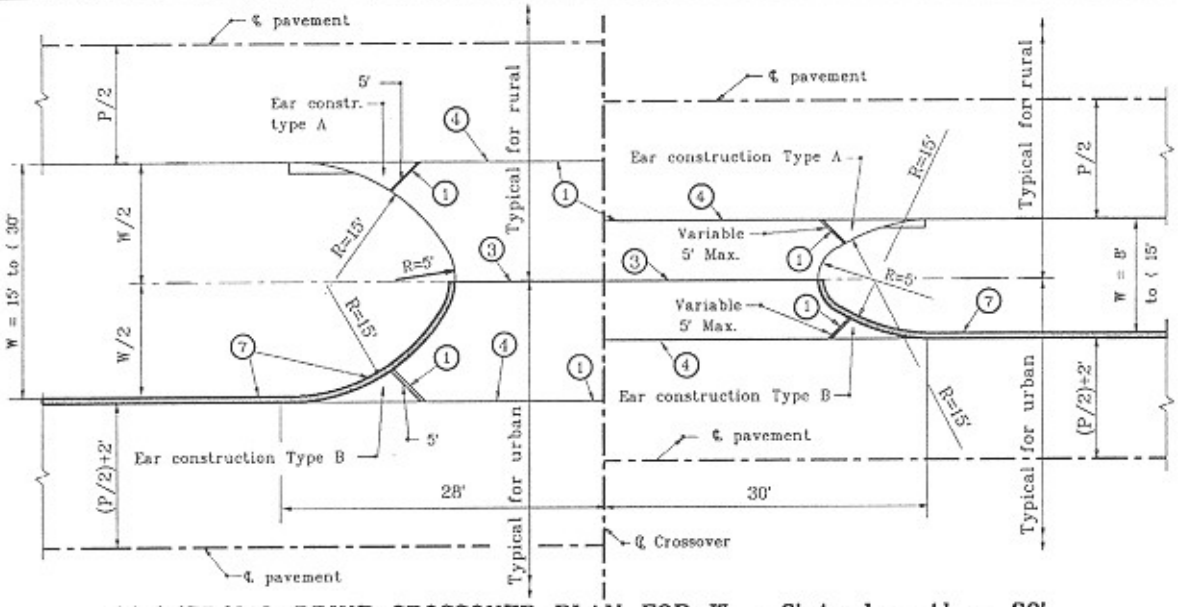
STANDARD DRAWING NO. **E 610-DRIV-18**

ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

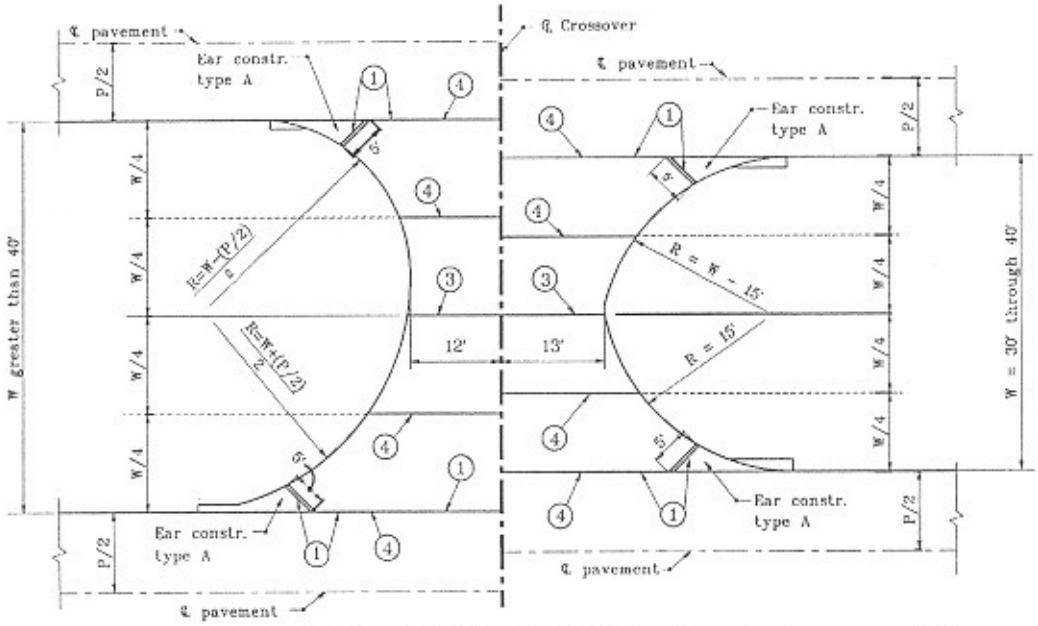
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



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 TYPE "A" ear construction
   E 605-ERCN-02 for TYPE "B" ear construction
3. Contraction joint type D-1, see Standard Drawing E 503-CCPJ-01 for details.
4. Keyway construction joint - see Drawing E 610-DRIV-16 for details.
6. Grade and cross section for commercial drive crossover shall be the same as for private drive crossover, except that the HMA Intermediate 19 mm, Mainline shall be 660#/syd.
   For cross sections see Standard Drawing E 610-DRIV-15.
7. Integral concrete curb, see Standard Drawing E 605-CCIN-01 for details.
8. Commercial drive crossover shall be constructed of a flexible section unless otherwise directed by the Engineer.

INDIANA DEPARTMENT OF TRANSPORTATION

COMMERCIAL DRIVE CROSSOVERS PLANS

JANUARY 2000

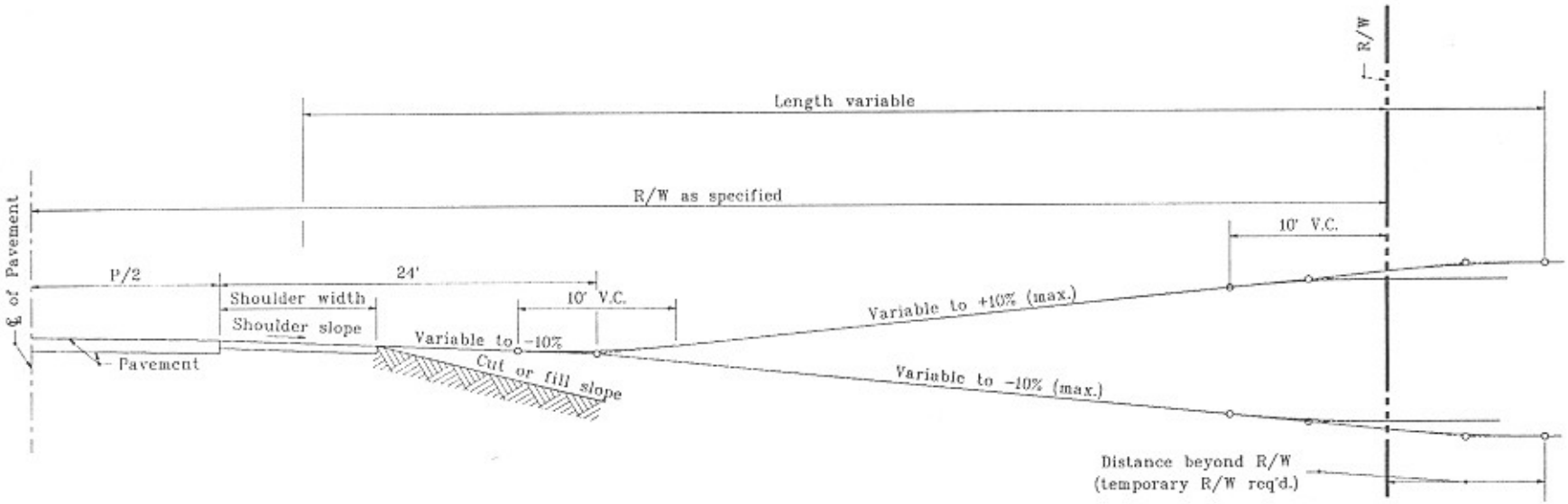
STANDARD DRAWING NO. **E 610-DRIV-19**

ANTHONY L. URENOVITCH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER

DESIGN STANDARDS ENGINEER

/s/ Anthony L. Urenovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoz Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE



APPROACH GRADE FOR CUT OR FILL
TO BE USED WITH PAVED SHOULDER

INDIANA DEPARTMENT OF TRANSPORTATION

APPROACH GRADE
CUT OR FILL
JANUARY 2000

STANDARD DRAWING NO. **E 610-DRIV-20**

ANTHONY L. UREMOVICH REGISTERED No. 18095 STATE OF INDIANA PROFESSIONAL ENGINEER
DESIGN STANDARDS ENGINEER

/s/ Anthony L. Uremovich 1-03-00
DESIGN STANDARDS ENGINEER DATE

/s/ Firoos Zandi 1-03-00
CHIEF HIGHWAY ENGINEER DATE