

Article 6 Drive Approaches, Active Transportation Facilities, & Lawn Extensions

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I. Driveway Approaches, Curb Cuts, and Openings

A. Design

1. General

- a) Adoption of Standards by Reference
- b) ADA/PROWAG shall be followed for all street designs.
- c) AASHTO and NACTO design guidelines shall be followed for all street designs.
- d) Where work is performed in the DDA boundary see also Appendix D: Street Design Manual.
- e) Definitions of “approach,” “curb cut,” and “opening” as used herein shall be as defined in the most current version of City Code, [Chapter 55 \(Unified Development Code\), Article VIII \(Definitions\)](#).
- f) All approaches, curb cuts, and openings to public streets or rights-of-way are subject to City Code, [Chapter 55 \(Unified Development Code\), Article IV \(Development Standards\), Sections 5.21.1 \(Applicability\) and 5.21.2 \(Curb Cuts and Driveway Approaches\)](#).
- g) Dimensions for driveway approaches, curb cuts, and openings shall match approved site plan dimensions if part of a site planned Private Development Project.
- h) Plans shall include spot elevations on both sides of drive approaches at the right-of-way line, sidewalk ramp/sidewalk crossing, beginning of return curb, and end of return curb. Additional spot elevations are required at the midpoint of the drive approach for each location listed above.

2. Location of Driveway Approaches and Openings

- a) Location of all driveway approaches and openings are subject to the review and approval by the PSAA.

- b) No opening serving a single family or two-family use shall be closer than 15 feet to the right-of-way line of an intersecting street or extension of the street right-of-way of a street ending at the intersection, provided that no part of any approach shall encroach on any intersection turning area.
 - c) In general, for all other uses, no opening shall be closer than 50 feet to the right-of-way line of an intersecting street or extension of the street right-of-way of a street ending at the intersection, provided that no part of any approach shall encroach on any intersection turning area.
 - d) In general, no opening shall be closer than 10 feet from the right-of-way line of an intersecting alley.
 - e) No opening shall be closer than 5 feet to the adjacent property line. No approach shall be so constructed that any part of same extends in front of property belonging to another person unless both property owners sign a joint application for a permit.
 - f) No opening shall be closer than 10 feet to another opening, with the exception of openings for existing driveways on residential property. If the minimum 10 feet separation between openings cannot be met, then access management shall be evaluated such that the two drive approaches do not negatively impact safety.
 - g) All openings and driveway approaches shall be so located as to provide adequate vertical and horizontal sight distances for safe access to the street in accordance with the design standards for sight distance per Article 5, Section I.B. (Design Criteria for New Public Streets) of these Standards.
3. Allowable Opening Widths, Curb Cut Widths, and Turning Radii
- a) Minimum and maximum allowable opening and curb cut widths and allowable turning radii shall conform to Table A of this Article.

Table A Permitted Driveway Approach Opening Widths, Curb Cut Widths, and Radii					
Use	Minimum Opening Width	Maximum Opening Width	Maximum Curb Cut Width	Minimum Turning Radius: Type M Opening	Maximum Turning Radius: Type M Opening
Single or Two Family	10'	22'	42'	5'	10'
All Other Uses: 2 Way	22'	30'	60'	5'	15'
All Other Uses: 1 Way	11'	20'	50'	5'	15'
Note: See Article 12 (Standard Details), SD-DS-2 and SD-DS-3 of these Standards for modifications to radii for Type M Modified and Type L Openings.					

- b) Upon a finding that transportation conditions would otherwise cause unnecessary congestion or practical difficulties, the PSAA may permit one driveway approach on each abutting street to be channelized with a separating island a minimum of 10 feet in width to create separate entrance and exit lanes, provided that the total of both lanes shall not exceed the maximum permitted opening width.

4. Driveway Approach Type

- a) On streets with mountable curb, driveway approaches shall be Type L as shown in Article 12 (Standard Details), SD-DS-3 (Type L Drive Approach for Streets with Mountable Curb) of these Standards.
- b) On asphalt streets with barrier curb, driveway approaches shall be Type M as shown in Article 12 (Standard Details), SD-DS-1 (Type M Drive Approach for Asphalt Streets with Barrier Curb) of these Standards.
- c) On concrete streets with barrier curb, driveway approaches shall be Type M modified as shown in Article 12 (Standard Details), SD-DS-2 (Modified M Drive Approach for Concrete Streets with Barrier Curb) of these Standards.

5. Angle of Approach

- a) The centerline of the driveway approach shall be perpendicular to the street centerline unless otherwise approved by the PSAA.

6. Slope

- a) Driveway approaches shall be sloped from the right-of-way line toward the street unless otherwise approved by the PSAA.
- b) Slope from right-of-way line to street edge of sidewalk shall be a maximum grade of 2% per ADA/PROWAG.
- c) Slope from street edge of sidewalk to gutter pan shall be between 3% and 13%. Deviations from this standard range may be approved by the PSAA where topographic or other restraints exist.

7. Drainage of Driveway Approaches

- a) Provisions shall be made to ensure that, in the determination of the PSAA, excessive quantities of stormwater do not drain across the driveway approach from the site into the public right-of-way. All stormwater management shall comply with [City Code, Chapter 55 \(Unified Development Code\), Section 5.22 \(Stormwater Management and Soil Erosion\)](#).
- b) These provisions shall be subject to the approval of the PSAA and may include inlet structures at the back of the public right-of-way or grading of the driveway approach onto the site away from the right-of-way.

B. Materials

- 1. Minimum requirements for single family residential or two-family concrete approaches shall be 6-inch thick, non-reinforced MDOT Grade 3500 concrete in conformance with [MDOT Standard Specifications for Construction](#), (hereafter MDOT Specifications in this Article), Section 1004 (Concrete Mixtures) on a 6-inch base of MDOT Class II granular material or MDOT 21 AA dense-graded aggregate in conformance with MDOT Specifications, Section 902 (Aggregates). An existing compacted aggregate base may be utilized where approved by the PSAA.

2. Minimum requirements for driveway approaches for all other uses shall be 8-inch thick non-reinforced MDOT Grade 3500 concrete in conformance with MDOT Specifications, Section 1004 (Concrete Mixtures) on a 6-inch base of MDOT Class II granular material or MDOT 21 AA dense-graded aggregate in conformance with MDOT Specifications, Section 902 (Aggregates). An existing compacted aggregate base may be utilized where approved by the PSAA.
3. The PSAA may require the use of MDOT Grade P-NC concrete in conformance with MDOT Specifications, Section 1006 (Patching, Repair, and Overlay Mixtures) where deemed necessary.
4. Asphalt approaches are not permissible unless approved in writing by the PSAA. In such cases, minimum requirement shall be 3 inches of MDOT 13A or MDOT EL hot mix asphalt placed in two lifts on a base of MDOT 21AA dense-graded aggregate in conformance with MDOT Specifications, Section 902 (Aggregates). Minimum base thickness shall be 6 inches for single family or duplex use and 8 inches for all other uses.
5. Approaches on gravel roads shall be MDOT 22A or MDOT 23A dense-graded aggregate in conformance with MDOT Specifications, Section 902 (Aggregates). Minimum depth of aggregate shall be 6 inches for single family or two-family and 8 inches for all other uses.
6. For Type M approaches, epoxy-coated No. 4 reinforcement bars shall be required in curb and gutter section per Article 12 (Standard Details), SD-DS-1 (Type M Drive Approach for Asphalt Streets with Barrier Curb) of these Standards.

II. Sidewalks and Sidewalk Ramps

A. Design

1. Sidewalks within the DDA shall conform to Article 12 (Standard Details), SD-DDA-1 through SD-DDA-8 of these Standards. Sidewalk cross-section outside the DDA shall conform to Standard Detail SD-DS-5 (Sidewalk Cross Section) of these Standards.
2. Plans
 - a) Plans shall indicate spot elevations where private sidewalk intersects public sidewalk, on the front and back edge of the sidewalk. Where a private walk intersects the public sidewalk, a turning space (level landing) is required on the public walk. Spot elevations are required at all corners of a turning space.

3. Requirement to Install Sidewalks

- a) For new commercial, office, industrial, and site planned residential developments, the installation of sidewalk shall be required.
- b) For new single-family and two-family homes on gravel streets, sidewalk shall not be required.
- c) For new single-family and two-family homes on paved streets:
 - (1) If the parcel is adjacent to a parcel with existing sidewalk, (i.e., the new sidewalk would extend an existing sidewalk) OR more than 50% of the frontage on the block contain sidewalks, the installation of sidewalk shall be required.
 - (2) If there are no existing segments of sidewalk on adjacent parcels AND fewer than 50% of the frontage on the block contain sidewalks, the installation of sidewalk will be encouraged where practical, but not required.
 - (3) The PSAA may waive the sidewalk installation requirement in situations where the sidewalk would be considered unsafe or present an undue burden to the property owner (e.g., extensive grading requirements, construction of large retaining walls, etc.).

4. Location

- a) Sidewalks outside of the DDA shall be located such that the outside edge is positioned 1 foot inside the right-of-way line. The PSAA may, in their sole discretion, approve a variation to this requirement if the PSAA determines that the requirement is technically infeasible; or that the variation will provide a substantial public benefit, such as protection of landmark trees, substantially beneficial slopes or grading, or substantially reduced maintenance costs and that any curve in the sidewalk has a minimum 15-foot radius and the minimum lawn extension width is 3 feet.

5. Sidewalk ramps

- a) Sidewalk ramps shall be constructed at street intersections as directed by the PSAA and shall comply with the requirements of [MDOT Standard Plan/Special Detail R-28](#) (Curb Ramp and Detectable Warning Details).

6. Required Sidewalk Width

- a) Sidewalks outside the DDA shall be a minimum of 5 feet wide. The PSAA may, in their sole discretion, approve a variation to this requirement if the PSAA determines that the requirement is technically infeasible or that the variation will provide a substantial public benefit.
- b) The standard width shall be increased to a minimum of 8 feet where sidewalk must be placed against back of curb on all streets.

7. Slope

- a) Sidewalks shall have a minimum 1.0% and maximum 2.0% transverse grade and drain toward the street. Where this grade cannot be achieved at locations of new sidewalk meeting existing sidewalk a transitional section outside of these parameters may be used.
- b) The maximum allowed longitudinal grade for sidewalks shall be 5.0%. This shall not be exceeded unless the road grade is of a steeper grade, in which case the longitudinal sidewalk grade shall not exceed the road grade.

8. Joints

- a) Expansion and contraction joints shall be installed as shown in Article 12 (Standard Details), SD-DS-4 (Sidewalk and Curb & Gutter Joints) of these Standards.

B. Materials

- 1. Sidewalks outside the DDA and not crossing driveway approaches shall be minimum 4-inch thick MDOT Grade 3500 concrete in conformance with MDOT Specifications, Section 1004 (Concrete Mixtures) placed on a 4-inch base of MDOT Class II granular material or MDOT 21AA dense-graded aggregate in conformance with MDOT Specifications, Section 902 (Aggregates).
- 2. For replacement of existing sidewalk slabs, the concrete may be placed on native material provided that the material is stable and free of organic or other deleterious material.
- 3. For sidewalks crossing driveway approaches, concrete and bedding shall meet the requirements of Section I.B. (Materials) of this Article.

III. Shared Use Paths and Bike Facilities

A. Design and Location

1. General Requirements

- a) Shared use paths and bike facilities shall be in accordance with the City's Transportation Plan to achieve the bike route network as specified in the Transportation Plan.
- b) Shared use paths shall be located in a manner that best protects and saves trees and minimizes slopes.

2. Required Width and Easements

- a) Shared use paths shall be 10 feet minimum in width, or as required by PSAA.
- b) 2 foot wide shoulders shall be provided each side at a typical 6:1 maximum slope.
- c) Where a shared use path is located outside of the public right-of-way, and not within City property, permanent easements shall be provided. Easements shall be centered on the path and be a minimum of 30 feet in width. The PSAA may, in their sole discretion, approve a minimum easement width of 20 feet if the PSAA determines that the requirement is technically infeasible or there are exceptional circumstances.
- d) A dedicated street right-of-way or roadway easement may be used in whole or in part to satisfy easement requirements for shared use path easements when approved by the PSAA.

3. Barrier Free Access

- a) A shared use path must meet all ADA/PROWAG requirements for its entire length.
- b) Ramps shall be constructed at street intersections as directed by the PSAA and shall comply with the requirements of [MDOT Standard Plan/Special Detail R-28](#) (Curb Ramp and Detectable Warning Details).

4. Landscaping of Easement Area

- a) If the easement area of a shared use path is not naturally landscaped, it shall be topsoiled, seeded and mulched in accordance with Article 8 (Soil Erosion) of these Standards to establish a grass turf within the easement area.

B. Materials

1. Concrete shared use paths not crossing driveway approaches shall be minimum 4-inch thick MDOT Grade 3500 concrete in conformance with MDOT Specifications, Section 1004 (Concrete Mixtures) concrete placed on a 4-inch thick base of Class II granular material or 21AA dense-graded aggregate in conformance with MDOT Specifications, Section 902 (Aggregates).
2. For concrete shared use paths crossing driveway approaches, concrete and bedding shall meet the requirements of Section I.B. (Materials) of this Article.
3. For asphalt shared use paths, minimum requirement shall be 4 inches of MDOT 5EML hot mix asphalt placed in two lifts of 2 inches each on a base of 21AA dense-graded aggregate . Minimum base thickness shall be 8 inches.

IV. Lawn Extensions

A. Design

1. Within the DDA, facilities within the lawn extension, commonly known as the Amenity Zone, shall conform to Article 12 (Standard Details), SD-DDA-1 through SD-DDA-18 of these Standards as applicable. Outside the DDA, design of the lawn extension shall be per items IV.A.2 (Width) and IV.A.3 (Slope) of this Article.
2. Width
 - a) Standard lawn extension width shall be 11 feet or greater.
 - b) Minimum lawn extension width shall be 3 feet. A greater minimum width will be required by the PSAA on Arterial Streets.
3. Slope
 - a) The lawn extension shall be graded to drain toward the street.

- b) From the edge of a sidewalk or shared use path for a minimum of 1 foot, the lawn extension grade shall be 3%.
- c) The remaining lawn extension shall have a minimum grade of 3% and a maximum grade of 33%.

4. Retaining Walls within Lawn Extensions

- a) The construction of a retaining wall in a public right-of-way must be approved by the PSAA and a licensing agreement shall be required.
- b) Construction plans for the proposed retaining wall shall be prepared by a Professional Engineer licensed in the State of Michigan and submitted to the PSAA for review and approval.
- c) The PSAA may require specific materials (i.e., modular precast block) for any retaining wall to be placed in the right-of-way.

B. Materials

- 1. Allowable materials within the DDA shall conform to Article 12 (Standard Details), SD-DDA-1 through SD-DDA-18 of these Standards as applicable.
- 2. For all other locations, allowable materials in the lawn extension shall conform to Article 9 (Landscaping), Section III (Landscaping Vegetation in Public Rights-of-Way) of these Standards.