

CHAPTER 1107
Street Design And Construction Standards

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CROSS REFERENCES

Construction of improvements - see Ohio R.C. 711.101

1107.01 GENERAL.

These Regulations shall control the manner in which the road system is arranged on the land to permit the safe, efficient, and orderly movement of traffic; to meet, but not exceed, the needs of the present and future population; to have a simple and logical pattern; to respect natural features and topography; and to present an attractive streetscape.

1107.02 CONFORMITY TO DEVELOPMENT PLANS AND ZONING.

No subdivision shall be approved unless the area to be subdivided from an existing street on the Official Thoroughfare Map, such street is an existing state, county, city, or township highway, road or a street shown upon a plat approved by the Planning Commission and recorded in the County Recorder's office. Such street or highway must be suitably improved as required by these Regulations or guaranteed, with a performance bond, to be improved as required by these Regulations. In addition, no final plat of land within an existing zoning district shall be approved unless it conforms with requirements of the zoning district.

1107.03 OFFICIAL STREET DESIGN STANDARDS.

(a) Design standards and required improvements to streets and roads are contained in Table 4-1. Construction design criteria of these streets are to be determined by the City Engineer when such streets abut or cross the proposed subdivision. Certain improvements may be waived upon recommendation of the City Engineer and after review and approval by the Planning Commission. In all cases, right-of-way dedications shall be required for streets leading to new subdivisions.

(b) When developing along one side of an existing street or roadway included in the Official Thoroughfare Plan, the subdivider shall be responsible for construction or replacement of the entire existing pavement, in accordance with the requirements of the City Engineer.

Type of Street	Right-of-Way Widths	Pavement Width (inside of curb measurements)
Arterial Highway/Major Thoroughfare	100'	36' plus 12' for each additional lane
Secondary/Collector Streets	80'	30'
Minor/Local Streets	60'	30'
Alleys	25'	20'
Cul-de-sacs	60'	30'
Private Access Road (serving 3-6 lots)	30'	18' (20' if waterline installed)
Private Streets (serving more than 6 lots)	30'	24' with curbs and gutters

1107.04 STREET NAMES.

Street name signs or numbers of a type in use throughout the City shall be erected by the subdivider at all intersections. Names of new streets shall not duplicate or nearly duplicate those of existing or platted streets, irrespective of the use of the suffix "street", "avenue", "circle", "boulevard", "drive", etc., and shall be displayed at each street intersection with street signs of the type established by the City. When a new street is a direct extension of an existing street, the name shall remain the same. Sign color shall conform with City requirements. Street names shall be subject to the approval of the Planning Commission. The subdivider is responsible for the cost of purchasing and installing all signage.

1107.05 STREET AND CIRCULATION SYSTEM DESIGN.

(a) The arrangement, character, extent, and location of all streets shall conform to the thoroughfare plan of the City; such streets shall be considered in their relation to existing and planned streets, topographic conditions, public convenience and safety, and in their relation to the proposed uses of land to be served by such streets. The Planning Commission reserves the right to disapprove any street plan which does not represent good design or does not insure continuity of the existing street system.

(b) The street system shall be designed to serve the need of the neighborhood and to discourage through traffic in the interior of such subdivision. Residential driveway access shall not be permitted onto principal arterials. Major subdivisions shall be designed to discourage residential driveway access onto major arterial and collector streets by using access roads. Minimizing driveway access points or curb cuts by using access roads shall be encouraged.

1107.06 PRIVATE STREETS CLASSIFICATION AND DESIGN STANDARDS.

A private street, other than an access road, shall only be permitted as part of a planned unit development approved pursuant to the applicable zoning regulations. (See Table 4.1). The maximum number of units which may be served by the private street shall be determined pursuant to the procedures for planned unit development approval. The private street shall conform to the following standards:

- (a) The construction of private streets, access roads and driveways shall conform to the typical sections on file with the City Engineer. The City utilizes the construction standards and Subdivision Rules and Regulations of the Hamilton County Engineer's Office.
- (b) The private street shall be maintained as part of a maintenance agreement which shall be recorded and shall be the responsibility of a homeowners association or condominium association.
- (c) No private street shall serve as a through street to other neighborhoods or subdivisions.
- (d) Private streets, driveways and access roads shall comply with all applicable specifications of the City Engineer.
- (e) Parking shall be prohibited on private streets unless adequate width is provided.
- (f) City may accept private streets as dedicated City public streets only if they meet the construction specifications of the City.

1107.07 STREET VACATION.

The Planning Commission shall not recommend the vacation of any street dedicated to and accepted by the public if such vacation will adversely affect the proper functioning of the existing street system or any future street plan prepared by, or approved by, the Planning Commission. The procedure to vacate a street or alley may be found in Ohio Revised Code Section 5553.01.

1107.08 RIGHTS-OF-WAY.

Please see Table 4.1 for a breakdown of right-of-way widths by street type.

- (a) The right-of-way shall be measured from lot line to lot line and shall be sufficiently wide to contain the cartway, curbs, sidewalks, utilities, graded areas and shade trees, if required.
- (b) The right-of-way of a new street that is a continuation of an existing street shall in no case be continued at a width less than that of the existing street.
- (c) The right-of-way for roads shall be in accordance with the major thoroughfare plan, and shall provide for future development.

1107.09 SPECIAL STREET TYPES.

The following requirements shall apply to special street types:

- (a) One Way Streets. One-way streets are permitted in new subdivisions if the Planning Commission determines that such streets are properly integrated with the existing and proposed street system in the area.
- (b) Permanent dead-end streets shall not be permitted. Temporary dead-end streets shall be permitted only as a segment of a continuing street plan subject to extension into undeveloped acreage. Temporary dead-end streets shall extend to the boundary of such undeveloped acreage and shall be provided with an interim turnaround satisfactory to the City Engineer and Planning Commission in design. The Planning Commission shall reserve the right to limit the length of such a dead-end street based on principles of proper planning, and the Planning Commission may require a street along the boundary between a proposed subdivision and the undeveloped acreage to provide for future development.
- (c) Cul-de-sac streets shall not exceed a length of one thousand (1,000) feet measured to the center of the radius of the turnaround. The terminus shall be circular with a minimum right-of-way radius of fifty (50) feet measured from a point on the street centerline.
- (d) The dedication of new half-streets shall not be permitted. If a parcel to be subdivided exists adjacent to a dedicated or platted and recorded half-width street or alley, the other half-width of such street or alley falling within the proposed subdivision shall be platted, provided that in the opinion of the Planning Commission such right-of-way is necessary for the proper development of the area.
- (e) Where a subdivision adjoins an arterial street, a marginal access street shall be designed to control access from lots fronting on it. Points of access to the arterial street shall be spaced at a minimum of thirteen hundred twenty (1320) feet. A planting strip having a minimum width of twenty (20) feet shall be provided between the pavement of the marginal access street. The minimum width of the marginal access right-of-way shall be fifty (50) feet. In addition, the Planning Commission may also require the provision of buffer planting strips, the platting of loop streets or cul de-sacs connected to such parallel streets, or any combination thereof.
- (f) Easements or reserve strips controlling access to streets shall be prohibited except where deemed necessary by the Planning Commission and where their control is definitely placed with the County.
- (g) In subdividing land along existing streets or roads and within a proposed subdivision, provisions for the dedication of land for one or more access streets to undeveloped land not fronting on an existing street or road shall be incorporated. Said access streets shall be spaced not less than eight hundred (800) feet, nor more than one thousand four hundred (1,400) feet apart.
- (h) Alleys may be approved in residential subdivisions when justified by subdivision street design, to provide vehicular access to parking areas. Alleys may be approved in commercial and industrial subdivisions if no other provisions can be made for adequate service access. The minimum pavement widths for alleys shall be twenty (20) feet and they shall be dedicated to the public. Alley intersections, sharp changes in alignment, and dead-ends shall not be permitted.

1107.10 INTERSECTION DESIGN STANDARDS.

Subdivision street intersections, including connections to existing streets shall be located such that adequate sight distance is provided. The requirements for sight distance, are as specified in the Ohio Department of Transportation Location and Design Manual and A Policy on Geometric Design of Highways and Streets prepared by the American Association of State Highway and Transportation Officials (AASHTO). Refer to Standard Drawing No. 13 (in the appendix).

- (a) The plan for street improvements in the subdivisions shall show the stations and angles to all intersecting streets and turnarounds.
- (b) All intersecting streets shall have a minimum back of curb or edge of paving radius of thirty feet (30'), except that at intersection with (connections to) existing state or county roads, the radius shall be thirty-five feet (35') for residential subdivisions and fifty feet (50') for industrial subdivisions.
- (c) All proposed street termini should be in accordance with Hamilton County Engineer's Subdivision Rules and Regulations Subdivision Standard Drawing No. 7 (in the appendix).
- (d) The limits of all paving shall be clearly noted on all drawings. All streets shall be paved to the limits of the subdivision, or as shown on Hamilton County Engineer's Subdivision Rules and Regulations Subdivision Standard Drawing No. 7 (in the appendix).
- (e) For main thoroughfares, the minimum radius of curvature along the centerline shall be five hundred feet (500'); for important neighborhood streets, two hundred feet (200'); for minor streets, one hundred feet (100'). All horizontal curves shall be identified by listing complete curve data of said curves. Each Point of Curvature (PC) and Point of Tangency (PT) shall be properly stationed.

1107.11 STREETS FOR COMMERCIAL SUBDIVISIONS.

Streets serving business developments and accessory parking areas shall be planned to connect with arterial streets so as not to generate traffic on local streets. The intersection of driveways from parking areas with arterial or collector streets shall be located so as to cause the least possible interference with traffic movement on the streets, and shall be located not less than one hundred (100) feet from the intersection of an arterial or collector street with any other street, and shall be spaced not less than two hundred (200) feet from each other. The Planning Commission may require marginal access streets to provide maximum safety and convenience.

1107.12 STREETS FOR INDUSTRIAL SUBDIVISIONS.

Collector streets for industrial subdivisions shall be planned to serve industrial areas exclusively and shall connect with arterial streets so that no industrial traffic will be directed into any residential streets. The intersections of service streets from parking areas, with arterial or collector streets shall not be less than one hundred (100) feet from the intersections of the arterial or collector street with any other street. Streets shall be planned to be extended to the boundaries of any adjoining land planned for industry, except if severe physical conditions prevent this or if the Planning Commission finds such extension is not in accord with the approved plan of the area.

1107.13 STREET PROFILES AND GRADES.

(a) All proposed grades shall be the centerline grades of the respective streets and shall be indicated in complete detail in profiles and referenced to the stationing shown on the plan.

(b) The maximum grades shall not exceed six percent (6%) for main and secondary thoroughfares, or twelve percent (12%) for minor local service streets. The minimum grade of all streets shall be one percent (1%). Grades across intersections shall not be in excess of four percent (4%) except at the discretion of the City Engineer.

(c) In street cul-de-sacs the maximum profile grade shall not exceed four percent (4%) and the minimum profile grade shall not be less than one and two-tenths percent (1.2%).

(d) All changes in grade shall be connected by vertical curves of minimum length equal to fifteen (15) times the algebraic difference in rate of grade for thoroughfares, and one-half (1/2) this minimum length for minor or local service streets. The Point of Vertical Curvature (PVC) and the Point of Vertical Tangency (PVT) of all vertical curves shall be stationed and elevations shall be shown at least every twenty-five feet (25') within the limits of vertical curves.

(e) The profile grade for streets shall be maintained a minimum of one-foot (1') above the base flood elevation for areas included in Section 3.2 of the Flood Damage Prevention Regulations of the Hamilton County Department of Public Works.

(f) Wherever a proposed street is an extension of a previously constructed street which is not part of the proposed subdivision, profile grades shall be developed for at least the last two hundred feet (200') of the existing street which will abut the new extension. This is to insure a smooth transition of pavement, gutters and sidewalks. Particular attention shall be given to any pavement overlays that would affect the proposed improvement. Details of connections shall be shown on the Commissions plans.

1107.14 DRIVEWAYS.

(a) A private driveway may be used to provide vehicular access to no more than four single family detached dwelling units. The Planning Commission may require passing lanes, turnarounds, and overhead and width clearances as necessary to accommodate fire and emergency vehicles. A homeowner's association shall be formed to provide for the long term maintenance of any private access way. Common driveways shall have a maintenance agreement acceptable to the Planning Commission. Any driveway serving more than four (4) single-family dwelling units shall be considered a street and shall be designed and constructed according to these Regulations.

(b) Access roads or vehicular ways within subdivisions containing single-family attached dwelling units or multi-family dwellings shall be considered streets and designed and constructed according to these Regulations.

(c) A driveway permit or letter indicating the access point as approved shall be obtained from the office of the Engineer or Ohio Department of Transportation. Proof of such permit shall be submitted with the final plat, or plat dedication shall include a statement requiring all lot owners to apply for a driveway permit prior to development.

(d) When adequate frontage is available on a nonlimited access highway, two driveways to a property used for a single purpose may be permitted.

(e) Driveways shall have a maximum grade of (15) percent. Driveways and curb cuts shall be located not less than three (3) feet from the side lot line. Curb cuts for straight curbs and the flare for rolled curbs shall be three (3) feet wider than the driveway on each side. The subdivider or developer shall place the approved drainage structures under intersecting driveways when required. Driveways shall be designed so as to drain onto the roadside ditch and not onto the roadway surface.

(f) A two car driveway is required for new single family dwellings.

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL
Minimum Width	10	15	20
Maximum Width	25	40	40
Turn Radius Minimum	10	15	25
Turn Radius Maximum	25	50	50
Minimum Angle of Intersection	45	45	45

* The minimum width of commercial driveways is intended to apply to one-way operation. In high-pedestrian activity areas, such as in a business district or in the same block with an auditorium, school or library, the maximum basic width should be 30 feet. The width is intended to be measured along the right-of-way line. The maximum radius for major generator driveways should be much higher than the values shown. Minimum acute angle is measured from edge of pavement, and generally based on one-way operation. For two-way driveways, and in high pedestrian activity areas, the minimum angle should be 70 degrees.

1107.15 SIDEWALKS AND GRADED AREAS.

(a) Sidewalks shall be required in all subdivisions. Where the average lot line frontage is 100 feet or less, sidewalks will be required on both sides of the street.

(b) In conventional developments, sidewalks shall be placed in the right-of-way, parallel to the street, unless an exception has been permitted to preserve topographical or natural features or to provide visual interest, or unless the applicant shows that an alternative pedestrian system provides safe and convenient circulation. In commercial areas, sidewalks may abut the curb.

(c) Pedestrian-way easements ten (10) feet wide may be required by the Planning Commission through the center of blocks to provide circulation or access to schools, playgrounds, shopping, or other community facilities.

(d) Sidewalks shall measure four (4) feet in width; wider widths may be necessary near pedestrian generators and employment centers. Where sidewalks abut the curb and parked cars overhang the sidewalk, widths shall be five (5) feet. The width of graded areas shall be the same as for sidewalks.

(e) Sidewalks and graded areas shall be constructed according to the specifications set forth in these Regulations.

(f) Public sidewalks shall be required for industrial lots, subject to the approval of the Planning Commission.

1107.16 STREET AND WALKWAY LIGHTING.

The Planning Commission shall require the subdivider to install streetlights, in accordance with standards and specifications of the City/County Engineer, with consultation provided by the local electric utility company, in each residential subdivision which contains a majority of lots with an individual lot width of one hundred (100) feet or less at the front property line. Such lights shall be located at each street intersection within the subdivision and at other locations deemed necessary by the Engineer. Streetlights shall be designed, with appropriate lamps and reflectors, to minimize light pollution.

1107.17 MONUMENTS, MARKERS, AND PINS.

(a) Monuments, markers, and pins shall be set in accordance with the requirements of Section 711.03 of the Ohio Revised Code.

(b) Monuments. There shall be three (3) monuments placed on the boundaries of all subdivisions, two (2) of which shall be on a straight line, not less than three hundred feet (300') long. Should none of the straight boundary lines be three hundred feet (300') in length, the longest straight line shall have monuments at its extremities.

(c) Subdivisions having more than thirty (30) lots shall have an additional monument for each additional twenty (20) lots or fraction thereof. These monuments shall be located on the Record Plat and certified by the registered surveyor responsible for placing same.

(d) All monuments and pins shall be identified on the final plat and shall be in place at the time the streets and other improvements are inspected for acceptance by the City Engineer.

1107.18 CULVERTS AND BRIDGES.

(a) Where natural drainage channels intersect any street right-of-way, it shall be the responsibility of the subdivider to have satisfactory bridges and/or culverts constructed. Where culverts are required, minimum requirements shall be observed as follows:

- (1) All culverts shall extend through the right-of-way. The cover over the culvert and its capacity shall be determined by the developer's professional engineer and approved by the City Engineer. The minimum diameter of the culvert pipe shall be twelve (12) inches. Depending on the existing drainage conditions, head walls may be required. Where driveway culverts are wholly or partially in the street right-of-way, they shall have a minimum length of twenty (20) feet and minimum diameter of twelve (12) inches. The driveway culverts shall be laid so as to maintain the flow lines of the ditch or gutter.

1107.19 STREET IMPROVEMENTS.

All streets and thoroughfares shall be graded to their full width, including side slopes, and improved in conformance with the standards given or referred to in these Regulations. These standards are considered minimum and are subject to change where deemed necessary. All materials and construction procedures shall be in accordance with the current Construction and Materials Specifications of the State of Ohio Department of Transportation or the specifications on file in the City Engineer's office and Hamilton County Department of Public Works, whichever are more stringent.

1107.20 STREET WIDTH.

Minimum street pavement widths shall conform to the standards of these Regulations. (See Table 4.1) Where pavement widths greater than those specified are deemed necessary by the City Engineer and approved by the Planning Commission, the Developer shall bear the extra cost of providing the width beyond the requirements of these Regulations.

1107.21 STREET SUBGRADE.

(a) The subgrade shall be free of sod, vegetative or organic matter, soft clay, and objectionable materials for a depth of at least two (2) feet below the finish surface.

(b) The subgrade shall be properly rolled, shaped, and compacted in accordance with the State of Ohio Department of Transportation Specifications. All soft areas shall be removed and replaced with suitable material to achieve the required approval. Backfills over sewers, culverts and underground utilities in the roadway shall also meet the specifications in ODOT's Construction and Material Specifications.

(c) Subbase grade tolerance shall be no more than one (1) inch in sixteen (16) feet, and shall be subject to the approval of the City/County Engineer.

(d) Where granular subbase is not a part of the pavement design, and rock, shale or coal is encountered, the subgrade shall be excavated to a depth of 2 feet below the surface of the subgrade for the cross section width of the roadway between points 1 foot beyond the shoulders. The additional excavation shall be filled with suitable embankment material.

(e) Where granular subbase is a part of the pavement design, and rock, shale or coal is encountered, the subgrade shall be excavated to a depth of 18 inches below the subbase for the cross section width of the roadway between points 1 foot beyond the shoulders. The additional excavation shall be filled with suitable embankment material.

(f) Approval of the sub-grade must be obtained from the City/County Engineer prior to the application of the base course.

1107.22 STREET BASE COURSE.

The developer has the option of using any of the following base courses, based on recommendations of the City Engineer as to soil and traffic conditions: aggregate, bituminous aggregate, asphalt concrete, or equally suitable base course. Thickness shall be determined by the City Engineer, and approved by the Planning Commission, based upon the physical properties of the base course used and the physical properties of the roadbed.

1107.23 STREET SURFACE COURSE.

(a) Upon the expiration of the established maintenance period for the base course, the surface course shall be constructed using either asphalt concrete, bituminous mix or portland concrete cement. Specific material and thickness recommendations shall be determined by the City Engineer based upon traffic conditions.

(b) The Planning Commission may recommend to City Council that the surface course requirements be waived in cases where streets within a proposed subdivision plat connect to a public road whose surface is of lesser material than that required by these Regulations and where no specific plan, within two (2) years of approval of final plat, exists for upgrading said public road surface. Streets within the proposed subdivision shall meet or exceed the surface material of said public road. Waiver may not be granted where the proposed density meets or exceeds medium-low density residential as defined in these Regulations.

1107.24 PORTLAND CEMENT CONCRETE PAVEMENT.

If the subdivider elects to construct streets totally out of portland cement concrete or if such pavement is required by the City Engineer, thicknesses of six (6) inches for local and collector streets and seven (7) inches for arterial, commercial, and industrial streets shall be required, and shall meet the current Plain Portland Cement Concrete pavement specifications of the Ohio Department of Transportation. The Planning Commission may require pavements of greater thickness, upon the recommendation of the City Engineer, based upon his or her evaluation of the subgrade, traffic, and wheel load conditions.

1107.25 FULL-DEPTH ASPHALT PAVEMENT.

(a) If streets are to be constructed out of "full-depth" asphalt, an asphalt pavement in which asphalt-aggregate mixtures are used for all courses above the subgrade may be necessary. The City Engineer will determine pavement thicknesses. For local streets pavements may vary from four (4) to seven (7) inches depending upon subgrade conditions. For collector streets, pavements may vary from five (5) to nine (9) inches, and for arterial and industrial streets from six (6) to eleven (11) inches, depending upon the Engineer's recommendation.

1107.26 STREET CURBS AND GUTTERS.

(a) Curbs and gutters will be required to be constructed in all development projects.

(b) Where curbs exist on abutting properties, their extension shall be required throughout the proposed subdivision. Curbs and gutters shall be constructed in conformance with the current Construction and Material Specifications of the State of Ohio Department of Transportation and the City Engineer's Standards.

1107.27 OPEN DITCHES AND SLOPES.

Open ditch construction for roadside drainage shall be permitted in low density areas, and constructed according to Ohio Department of Transportation specifications. Minimum depth of ditches shall be two (2) feet below the edge of pavement, and one (1) foot minimum at top of hill and toe of bank. All ditches shall be protected against erosion. Curlex or approved equal shall be used in ditches up to 2.5%. Sod or Rip-Rap shall be used in the bottom and sides of ditches up to 5%, and tile or paved gutters shall be used in ditches over 5%.

1107.28 DRIVEWAYS.

Driveways should have a maximum grade of (15) percent. Driveways and curb cuts shall be located not less than three (3) feet from the side lot line. Curb cuts for straight curbs and the flare for rolled curbs shall be three (3) feet wider than the driveway on each side. The subdivider or developer shall place the approved drainage structures under intersecting roads, drives, lanes or property entrances and at other locations where required. Driveways shall be designed so as to drain into the roadside ditch and not into the roadway surface.

1107.29 STREET CONSTRUCTION STANDARDS.

Streets, including all improvements in subdivisions, shall be constructed in accordance with the Hamilton County Engineer's Subdivision Rules and Regulations, Ohio Department of Transportation Construction and Materials Specifications, including amendments thereto as modified by Standard Drawings Number 1, 2, 7, in the Appendix.