

SECTION 22

PUBLIC STREETS & ALLEYS DESIGN STANDARDS & DETAILS

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22.1 General

The City and City Engineer shall issue final approval for the installation of all public streets. All streets shall be designed and installed in accordance with these Standards as well as applicable State and Federal regulations.

22.2 Street and Alley Design Criteria

A. General

All streets, intersections, driveways, curbs and sidewalks shall be designed and constructed in accordance with these Standards and in accordance with local ordinances, County requirements, and State and Federal regulations.

Where no Standards exist for a particular item of work, the latest edition of the Indiana Department of Transportation Standards and Standard Specifications shall apply. All new construction and replacement work shall be constructed in compliance with the latest versions of the U.S. Architectural and Transportation Barriers Compliance Board's ADA Standards/Guidelines and the Dept. of Justice's ADA Standards for accessible design.

B. Street Standards

The City of Monticello shall not approve any plat unless all streets shown on it shall be of sufficient width and proper grade and shall be so located as to accommodate the probable volume of traffic thereon, provide access of firefighting equipment to buildings, and provide a coordinated system of streets.

1. All streets and alleys to be accepted by the City of Monticello into their street and alley system shall be placed in a dedicated right-of-way. Said rights-of-way shall be under the exclusive control of the City of Monticello.
2. Local streets shall be so planned as to discourage through traffic.
3. Wherever there exists a dedicated or platted portion of a street or alley along a boundary of the tract being subdivided, the remainder of that street or alley, to the prescribed width, shall be platted within the proposed subdivision.
4. Half streets shall not be provided, except where it is essential to the reasonable development of the subdivision in conformity the other requirements of these regulations, or where it becomes necessary to acquire the remaining half by condemnation so it may be approved in the public interest

5. Cul-de-sacs shall not be longer than five hundred (500) feet, including a turnaround which shall be provided at the closed end with an outside curb radius of at least thirty-eight (38) feet and a right-of-way radius of not less than fifty (50) feet. The maximum grade of the turnaround portion of the cul-de-sac shall be five (5) percent.
6. Alleys shall not be provided in residential districts but shall be included in commercial and industrial areas where needed for loading and unloading or access purposes.
7. The minimum distance between centerlines of parallel or approximately parallel streets intersecting a cross street from opposite directions shall be one hundred twenty-five (125) feet unless it is an in-line street intersection.
8. Intersections of more than two (2) streets at one point shall be avoided.
9. Temporary dead-end streets may be permitted where the approved preliminary plat shows that the street will be extended to conform to the provisions of these Standards, or to provide access to adjacent property where deemed necessary by the City of Monticello to provide for an adequate flow of future traffic, provided the length of that dead-end street shall not be greater than four hundred twenty (420) feet. A circular right-of-way in excess of the required street right-of-way at the terminus of the temporary dead-end street shall not be required.
10. City of Monticello may increase right-of-way requirements if it determines an increase to be required due to anticipated traffic flow or if drainage easements should reasonably parallel those thoroughfares.
11. Paving widths, and curb specifications, if curbs are required to be installed, shall be determined by the City of Monticello based upon factors, among others, of the overall design concept of the proposed subdivision, traffic patterns and densities, the availability of on or off-street parking, and those standards as adopted by the State and Local authorities. Minimum standards shall be in accordance with **Table 22-1**.
12. Subgrades may be stabilized by optional methods; however, the Developer/Contractor's Engineer shall first obtain the services of a licensed geotechnical engineer or geologist to recommend such a method. In any event, soil stabilization must be acceptable to the City prior to acceptance of the design.

**Table 22-1
Minimum Standards for Street Design**

Design Item	Street Classification			
	Alley	Minor/ Local	Secondary/ Collector	Primary/ Arterial
Horizontal Elements				
Pavement Width	18'	24'	30'	36'
Right-of-Way	30'	50'	60'	60'
Cul-de-Sac Curb Radius	N/A	38'	N/A	N/A
Cul-de-Sac Right-of-Way Radius	N/A	50'	N/A	N/A
Normal Crown	¼" per ft.	¼" per ft.	¼" per ft.	¼" per ft.
Maximum Longitudinal Grades	7%	7%	5%	5%
Minimum Longitudinal Grades	0.5%	0.5%	0.5%	0.5%
Design Speeds (Miles Per Hour)	20 MPH	20 MPH	30 MPH	35 MPH
Horizontal Curve Radius	150'	150'	200'	200'
Tangent Between Reversed Curves	150'	125'	125'	125'
Curb Return Radius	20'	25'	25'	30'
Minimum Angle of Intersection	75°	75°	75°	75°
Minimum Street Jog	150'	150'	150'	150'
Width of Sidewalks	5'	5'	5'	5'
Width of Drives		10'	N/A	N/A
Vertical Elements				
Stopping Sight Distance	125'	125'	200'	300'
Min. Length of Vertical Curve	[11]	[2]	[2]	[2]
Concrete Pavement ^[3]				
a. Compacted Stone, #53	6"	6"	7"	8"
Bituminous Pavement ^[12]				
a. H.A.C. Surface, #11LV or #12LV	1.5"	1.5"	1.5"	1.5"
b. H.A.C. Binder, #9LV or #11LV	3"	3"	2½"	2½"
c. H.A.C. Base, #5LV	—	—	4"	6"
d. Compacted Stone, #53 ^[13]	10"	10"	8"	8"
Concrete Curb	N/A	Straight	Straight	Straight

[1] Use AASHTO Formula based upon algebraic difference and by design speed. Minimum 40' required.

[2] Engineer shall confirm pavement design using AASHTO Guide to Design of Pavement Structures, latest edition.

[3] May be reduced to 6" in trench construction limits where granular or better backfill is used.

C. Storm Drainage Standards

1. If the area proposed to be platted is located with regard to an adequate public storm sewer system so that storm sewers can be provided, then adequate lateral and connecting installations to it from all portions of that area proposed to be platted shall be constructed and installed in accordance with the plans and specifications submitted by the Developer/Contractor.
2. If the area proposed to be platted is not located with regard to an adequate public storm sewer system, then all open ditches within the area proposed to be platted shall be graded and all pipes, culverts, intersectional drains, drop inlets, bridges, headwalls, and similar or related installations necessary to provide adequate surface water drainage of that area proposed to be platted, shall be designed, constructed and installed in accordance with these Standards and the plans and specifications submitted by the applicant.
3. Drainage ditches or channels shall have a minimum gradient of 0.25 percent. This shall also apply to paved channels.
4. Streets not having curb and gutter, if approved by City, shall provide the following:
 - a. Side ditch swales measuring a minimum of eighteen (18) inches deep from the edge of the pavement with side slopes no steeper than 3:1 and at a point five (5) feet inside the right-of-way line.
 - b. A minimum twelve (12) inch diameter culvert pipe at all driveways. Culverts to be sized according to amount of storm water flow. All culverts shall be corrugated metal pipe. Any exceptions must be approved, in writing, by the City or City Engineer.
 - c. Culverts under the roadway as required and shown on the street improvement plans. Culverts to be sized by the Developer/Contractor through his Engineer and approved by the City according to amount of storm water flow (12-inch diameter minimum). All culverts shall extend at least five (5) feet beyond either edge of the paved roadway.
 - d. Relief of side ditches and swales along roadway through the use of off-street retention basins or existing County drainage channels. Storm water retention using the roadside ditches will not be accepted.
 - e. The Developer/Contractor shall provide an adequate storm water sewer system whenever the evidence available to the City indicates the natural surface drainage is inadequate. When the surface drainage is adequate, easement for such drainage shall be provided

D. Sidewalk Standards

Concrete sidewalks shall be installed along both sides of each newly constructed street unless a waiver is obtained from the City on a case-by-case basis. Generally, the sidewalks shall be constructed one (1) foot from the property line of lots and at intersections along that line as extended.

Concrete sidewalks shall be a minimum of five (5) feet wide and four (4) inches thick with a minimum of four (4) inches of compacted aggregate. At driveway crossings, the pavement shall be a minimum of six (6) inches thick with eight (8) inches of compacted aggregate. Sidewalks shall not have a cross slope of greater than two (2) percent (1/4":1') and driveways shall be adjusted to match the cross slope of the sidewalk. Concrete materials, aggregate base, and reinforcing wire fabric, along with installation requirements, shall conform to the latest INDOT Standards and Specifications.

Ramps for the handicapped shall be ADA compliant in that they will be constructed in the curb, gutter and sidewalk construction at all intersections and as required by and in conformance with all local, state, and federal laws.

E. Drive Entrance Standards

1. General

Drive entrances shall be classified as residential or commercial which shall meet the following minimum standards. All driveway entrances/approaches shall be constructed concrete from the edge of the existing street pavement to the right-of-way line. Care shall be taken to provide a smooth transition where the end of the drive abuts the edges of the existing road.

All drive entrances, whether classified as residential or commercial, shall have the concrete surface in place, from the edge of the existing street pavement to the right-of-way line and shall be equipped with wire reinforcement prior to the issuance of a Certificate of Occupancy for any structure constructed on the parcel of land.

2. Residential Drives

Residential drives shall be designed and constructed on minor (local) streets only and shall be a minimum of ten (10) feet in width. Drive shall be flared or radiused to the street. Minimum drive width at the street shall be eighteen (18) feet. Radius (if used) of the drive entrance shall be ten (10) feet. Drive entrance shall be a maximum of ten (10) percent slope at the streets. The slope at the sidewalk (if provided) shall be one quarter (1/4) inch per foot. Curbs, if provided, shall be depressed at the full width of the entrance.

3. Commercial Drives

Commercial drives shall be designed and constructed on secondary (collector) streets and primary (arterial) streets as approved by the City. Commercial drives shall be a minimum of twenty-four (24) feet in width with ten (10) foot minimum radius approach at the street. Drive entrance shall be a maximum of ten (10) percent slope at the street. Curbs shall be depressed at the full width of the entrance using a one (1) inch high "lip" curb and gutter section when straight curbs are used.

F. Curb Standards

Curb shall be either straight type or combined curb and gutter as stated herein or as approved by the City.

G. Street Identification

Street name signs as approved by the City shall be provided at each intersection by the Developer/Contractor. Signs shall be uniform of a design to match the current street signs in the City of Monticello.

H. Street Lighting

1. Streetlights are required in the City. The developer/designer shall submit a lighting plan which, as a minimum, shall include the following:

- a. A plan with typical cross sections showing buildings, landscaping, parking areas and the locations of all proposed exterior lighting fixtures, with designations of cutoff and/or shielded fixtures. The location of all service points(s), conduits, conduit types and depths, junction boxes, transformers, and conductor sizes and types shall also be shown.
- b. A description of the outdoor light fixtures which may include, but is not limited to manufacturer's catalog cuts, photometric report with light intensity distribution, drawings, and shielding information.
- c. Analysis and luminance level diagrams showing that the proposed installation conforms to the lighting level standards required by the City.

The lighting plan shall be approved by the City prior to ordering and/or installing any street lighting fixtures and/or equipment.

2. Unless streetlight fixtures of a particular period or architectural style are used, all new, repaired or replaced street lighting, whether public or private, shall utilize full cutoff, non-corrosive metal fixtures. If streetlight fixtures of a particular period or architectural style are use, then all such fixtures shall also be made of non-corrosive metal (unless a waiver is obtained from the City) and meet the Illuminating Engineering Society of North America (IESNA) criteria for cutoff fixtures.

3. There are two City approved options for lighting poles:
 - a. The larger shall be twenty-five (25) feet in length with a twenty (20) inch diameter. The pole shall be a taper fluted aluminum tube with 0.188" wall alloy 6063-T6 with sixteen (16) flutes, and 0.14/ft taper. There shall be a Duplex GFCI receptacle with in-use cover 2'-6" from the base. The larger pole option also requires a receptacle seven (7) feet from the top of the pole. See Figure PS-30 for reference.
 - b. The smaller pole option shall be fourteen (14) feet in length with a seventeen (17) inch diameter. The pole shall be a tapered fluted aluminum tube of 0.125" wall alloy, 6063-T6 with sixteen (16) fluted, 0.11"/ft taper. There shall be a Duplex GFCI receptacle with in-use cover two (2) feet from the base. See Figure PS-31 for reference.
 - c. At the base of either pole option, there shall be a cast aluminum decorative pedestal base, alloy 256-T6, with door and stainless-steel screws. The base of either pole option shall consist of a decorative pedestal with door and stainless-steel screws. The adaptor connecting either pole to the light shall have a cast alum adaptor with 2 1/2" diameter Sch. 40 Alum pipe tenon three (3) inch in length.
3. INDOT lighting specifications and standards shall be applied to all streets, alleys, rights-of-way, and thoroughfares in the City. Installations shall be made in full compliance and accord with all applicable local, state, and federal codes and standards including, but not limited to, the National Electric Code, the National Electrical Safety Code, IOSHA, and INDOT Standards and Specifications.

22.3 Easements

A. General

The easements shall be exclusively under the discretion and control of the City. Ingress and egress shall be available to the City's crew at all times. No utility companies are allowed to use the easements for installation of their utility lines without the expressed written permission of the City. All plan sheets shall clearly identify the easement and the location of all other proposed utilities. The horizontal and vertical plans shall identify all utilities proposed to cross the easement.

B. Easement Standards

Easements for utilities shall be platted. Those easements shall have a minimum width of fifteen (15) feet, unless water and sewer are located, or are to be located in the future, within the easement in which case it shall be a minimum of twenty (20) feet. See **Section 4.3** for further requirements. Where located along interior lines, one-half (1/2) the width should be taken from each lot.

If a subdivision is traversed by a watercourse, the sub divider shall provide a storm water easement or drainage right-of-way as required by I.C. 36-9-27.

Where paths and trails are proposed, they shall not exceed fifteen (15) feet in width and shall be so designed and constructed as to result in the least removal and disruption of trees and shrubs and the minimum impairment of natural beauty.

All utility easements as described on the face of the plat shall be kept free of all permanent structures and the removal of any obstructions such as structures, trees, shrubbery, fences, or other installations thereon, whether temporary or permanent, by the City, shall in no way obligate the City for damages, or to restore the obstruction in its original form.

C. Right-of-Way Plan Sheet

1. Geographic location map showing the extent of the project and including where applicable:
 - a. Directional North Arrow and Scale;
 - b. County;
 - c. Civil Township;
 - d. Section, Township and Range Identification;
 - e. Subdivision Names, Recording Information and Lot Numbers;
 - f. Highway, Road and Street Identification;
 - g. Rivers, Creeks and Named Ditches;
 - h. Assigned Parcel Numbers Arranged in Ascending, Numerical Order from the Project Beginning to End; and
 - i. List of Apparent Owners (last deed of record) by Assigned Parcel Numbers.

2. In addition to the above, there should be sufficient information on the design drawings to properly correlate with the right-of-way plan sheet; i.e., property lines, subdivision information, parcel number or name, width of right-of-way, permanent or temporary and special conditions; for example, structures, trees, shrubs to be removed or replaced, sodding, riprap, etc.

D. Legal Description Sheets

The following shall be provided:

1. Parcel Number;
2. Project Number;
3. Project Name;
4. Identification as to permanent or temporary easement;
5. Separate descriptions on separate sheets are required where both permanent and temporary easements are to be taken;
6. Meets and bounds descriptions shall be clear, concise and complete with sufficient detail to positively establish from known and referenced points, monuments, lines, etc. Total area should be stated at end of description, in acres;
7. Descriptions of easements from platted subdivision lots, including strips off sides of lots should include name of subdivision and recording information for the subdivision as well as affected lot number(s). NOTE: These are usually small areas; therefore, area should be stated in square feet; and
8. Registered land surveyor's licensed in the State of Indiana, seal and signature.

E. Property Plats

1. Parcel Number;
2. Project Number;
3. Project Name;
4. County;
5. Civil Township;
6. Section;
7. Township;
8. Range;
9. Owner;
10. Permanent or Temporary Legends;
11. Permanent or Temporary Easement Areas;
12. Total area of property out of which easement is to be taken;
13. Drawn By;
14. Directional North Arrow;
15. Scale;

16. Unplatted properties: complete boundaries of property description out of which easements are to be taken, including properly identified referenced corners, P.O.B.'s, monuments, roads, bearings, distances, etc.;
17. Platted subdivisions: dimensions of lot(s) as well as the lot number(s) and including the subdivision name and recording information;
18. Easement boundaries, including regulated drain boundaries, as described in Item A. of this subsection, including referenced bearings, distances, etc., and identified as in legend; and
19. Registered land surveyor seal and signature.

22.4 Drafting Standards

A. General

These Standards have been established for the purpose of ensuring uniformity in the design and drafting techniques of projects to be submitted for review and acceptance.

1. All projects submitted, having more than two (2) sheets, shall have a title sheet which will include:
 - a. General Overall Area Map;
 - b. Vicinity Location Map;
 - c. A Site Plan Map Detailing the Project;
 - d. Name/Title of Project, including Section Number if applicable;
 - e. Owner and Engineer's Name; and
 - f. Professional Engineer's Seal and Signature.
2. All plan and profile sheets are to be certified and dated by a professional engineer of the State of Indiana.
3. All sheets are to be numbered, with total number of sheets included.
4. Include detail sheet(s)/specification sheet(s), as applicable.
5. Design drawings shall be twenty-four (24) inch by thirty-six (36) inch.

B. Scales

The following scales for drawings are required:

1. Plan and Profile: Variable; Not to Exceed 1"=50' Horizontal and

1"=5' Vertical. A scale of 1"=30' is preferred for street and alley plans.

2. Cross Sections: 1"=5' Horizontal and Vertical

C. Materials

Mylar type drafting film shall be used for all reproduction "originals" to be submitted as record drawings. They shall be of a quality suitable for blue-line printing.

D. Plan and Profile Sheets

1. General

- a. A North Arrow;
- b. The Scales Used;
- c. Project Name and Number, Sheet Number, Date Drawn, Date and Nature of Revisions;
- d. All topography in the area affected by construction;
- e. Right-of-Way lines; property lines and easements;
- f. Locations of benchmarks and their descriptions;
- g. Locations of all existing and proposed utilities in the project area; and
- h. Match lines shall be easily identifiable.

2. Street and Alley Drawings

All street and alley drawings shall include the following, as a minimum:

- a. Location, width, and name of all streets;
- b. Turn angles and distances to nearest established street(s);
- c. Radius and angle of intersection, tangent length, length of curve, P.C.'s and P.T.'s radii, internal angles, points and curvatures, tangent bearings, and lengths of all arcs;
- d. Cross sections, at 50 feet intervals, showing road grade, pavement section, curbs, and gutters;
- e. Plan and profile of all drainage structures;
- f. Types of materials used;
- g. Traffic control details; and
- h. Special construction details.

E. Record Drawings

All plans submitted as record ("as-built") drawings shall have all pertinent items shown on the plan view and properly scaled. This includes drives, sidewalks, manholes, hydrants, inlets, etc. All sheets shall have the phrase "as-built" or "record drawing" boldly printed on them with the date and shall be stamped and signed by a professional engineer registered in the State of Indiana.