

**Town of Cicero/Cicero Area
Hamilton County, Indiana
Utility & Street Standards**

Section 4: Street Construction

Part 1: General

Part 2: General Design and Construction Standards

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Part 1: General

- 1.01 General Purposes
- 1.02 Rights-Of-Way Widths
- 1.03 Construction Plans and Specifications

PART 1: GENERAL

1.01 GENERAL PURPOSES

All improvements intended for public use, to be constructed within the Town of Cicero and/or Jackson Township must conform to these Standards according to the Town and Plan Commission requirements and shall conform to or exceed the Standards as set forth in the County Codes. Any areas outside the Town corporate limits shall conform to all additional applicable County requirements. Where requirements differ, the most stringent code shall govern. It is the Developer's responsibility to determine the most recent Standards that are required.

Construction within the Right-of-Way of the Indiana Department of Transportation shall be in strict accordance with the State of Indiana requirements. The Developer shall be responsible for obtaining the necessary permits.

The standards set forth in this Section are intended to be minimum standards. Variances from these standards may be considered by the Plan Commission upon written application to the Commission citing unusual conditions justifying changes based upon sound engineering practices. Proposed variances shall have been reviewed by Town Representatives before consideration by the Plan Commission. In addition, no deviations will be allowed outside the Town corporate limits unless approved in writing by the proper Hamilton County Officials.

All improvements shall be constructed to conform to the current Standard Specifications of the Indiana Department of Transportation (INDOT), referred to in this Code Section as "Standard Specifications", except where deviations are hereinafter allowed or variances granted.

1.02 RIGHTS-OF-WAY WIDTHS

All streets and roads shall have rights-of-way widths equal to or greater than the widths shown in the Standard Detail Drawings. Right-of-ways not within the Town of Cicero corporate limits shall be the more stringent of these or the Hamilton County Requirements.

1.03 CONSTRUCTION PLANS AND SPECIFICATIONS

All construction plans and specifications shall be prepared and certified in accordance with Indiana law by Professional Engineers or Land Surveyors licensed to practice in the State of Indiana. All road construction plans shall be prepared on 24" x 36" plan sheets. All plans shall include the Standards issued by the Hamilton County Surveyor and the Hamilton County Highway Department when applicable. All design shall be in accordance with these Standards. When not specifically addressed by these standards, the design shall be in accordance with the current AASHTO Policy on Geometric Design of Highways and Streets and other accepted design guides.

End of Part 1

**Town of Cicero/Cicero Area
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Section 4: Street Construction

Part 2: General Design and Construction Standards

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PART 2: GENERAL DESIGN AND CONSTRUCTION STANDARDS

2.01 SUBGRADES AND BACKFILL

Subgrades shall be prepared, after the installation of all underground utilities to be under the pavement in 6" lifts and compacted to 95% of standard Proctor Density with proper moisture control. Clay and silty-clay soil shall be compacted at a moisture content of -1% to +2% above optimum moisture to reduce future volume changes. Construction plans shall identify soil types and their locations in the project based on the Hamilton County Soils Survey and geotechnical investigation as necessary.

Trenches in the subgrade shall be backfilled with granular material compacted in lifts in conformance with Section 1 of these Standards or in accordance with Hamilton County and INDOT requirements. Use of alkaline material for stabilization shall be acceptable when certified by a professional engineer licensed in the State of Indiana and in accordance with INDOT standards. Complete design data shall be submitted for consideration.

Subgrades and backfilled excavations shall be inspected and tested by the Town and/or County's and/or INDOT's authorized representative and approved before pavements are constructed. Proof rolling, if required, shall be done with a rubber-tired roller. Unacceptable portions of the subgrade shall be corrected by the Contractor acceptable to all Governing Bodies.

2.02 STREET AND ROAD PAVEMENTS

Streets and roads shall be constructed in conformance with approved construction plans, and to equal or exceed the thicknesses and dimensions shown in the Standard Detail Drawings, except where verified soil or drainage conditions, variations in details, or other design factors justify changes in design according to the AASHTO Guide for Design of Pavement Structures (AASHTO Guide). Thicknesses and materials will be adequate to meet the AASHTO design parameters. Commercial driveways (located within the right of way) and auxiliary lanes shall be constructed to the equivalent thicknesses of the pavements they are added to or the entrances they are constructed to serve, whichever is greater.

Existing street pavements to be upgraded to applicable standards as parts of improvements to be accepted by the County and/or Town, will be tested and evaluated by the design professional to determine the condition, quality and amount of pavement and the condition of the subgrade. Existing pavements may be upgraded by augmenting the existing pavement structure if elevations and grades are compatible and if the resulting pavement meets the structural and geometric requirements of the Standard Detail Drawings; or the existing pavement materials, if suitable, may be incorporated into a new pavement structure.

2.03 SUBSURFACE DRAINS

Subsurface drains will be installed under the gutters as shown in the Standard Detail Drawings for all streets.

2.04 SITE CONDITIONS

Weather Limitations: Apply prime and tack coats when ambient temperature is above 50 deg. F (10 deg. C), and when temperature has not been below 35 deg. F (1 deg. C) for 12 hours immediately prior to application. Do not apply when base is wet or contains an excess of moisture.

Construct asphalt concrete surface course when atmospheric temperature is above 40 deg. F (4 deg. C), and when base is dry. Base course may be placed when air temperature is above 30 deg. F (-1 deg. C) and rising.

Grade Control: Establish and maintain required lines and elevations for proper drainage.

Contractors to wedge asphalt to drain.

2.05 FLEXIBLE PAVEMENTS

General: Use locally available materials and gradations which exhibit a satisfactory record of previous installations.

Base Course Aggregate: Sound, angular crushed stone, crushed gravel, or crushed slag, sand, stone or slag screenings.

Surface Course Aggregate: Crushed stone, crushed gravel, crushed slag, and sharp-edged natural sand.

Lane Marking Paint: Chlorinated rubber-alkyd type, AASHTO M 248 (FS TT-P-115), Type III.

Asphalt-Aggregate Mixture: Provide plant-mixed, hot-laid asphalt-aggregate mixture complying with ASTM D 3515 and all applicable specifications of the Indiana Department of Transportation. Base coats shall be at least four (4) inches of HAC type 9 base, unless noted otherwise. Surface material shall be at least one (1) inch of HAC type II B surface.

Surface Preparation: Remove loose material from compacted subbase surface immediately before applying base coat. Proof roll prepared subbase surface to check for unstable areas and areas requiring additional compaction. Notify proper officials of unsatisfactory conditions. Do not begin paving work until deficient subbase areas have been corrected and approved.

Tack Coat: Apply to contact surfaces of previously constructed asphalt or portland cement concrete and surfaces abutting or projecting into asphalt concrete pavement. Distribute at rate of 0.05 to 0.15 gal. per sq. yd. of surface. Allow to dry at proper condition to receive paving. Exercise care in applying bituminous materials to avoid smearing of adjoining concrete surfaces. Remove and clean damaged surfaces.

Placing Mix: General: Place asphalt concrete mixture on prepared surface, spread and strike-off. Spread mixture at minimum temperature of 225 deg. F (107 deg. C). Place inaccessible and small areas by hand. Place each course to required grade, cross-section, and compacted thickness.

Paver Placing: Place in strips not less than 10' wide, unless otherwise acceptable to all Governing Bodies. After the first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete base course for a section before placing surface course.

Joints: Make joints between old and new pavements, or between successive days' work, to ensure continuous bond between adjoining work. Construct joints to have same texture, density and smoothness as other sections of asphalt concrete course. Clean contact surfaces and apply tack coat.

Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.

Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

Field Quality Control: General: Test in-place asphalt concrete courses for compliance with requirements for thickness and surface smoothness. Repair or remove and replace unacceptable paving as directed by Owner/Developer.

Thickness: In-place compacted thickness will not be acceptable if exceeding following allowable variation from required thickness:

Base Course: 1/2", plus or minus

Surface Course: 1/4", plus or minus

2.06 CONCRETE PAVEMENTS

Plain concrete pavements shall be constructed in accordance with these specifications and the Standard Drawing Details and INDOT requirements except that the concrete may be placed, consolidated and finished with equipment appropriate to the size of the project, or by hand methods if authorized by the reviewing agencies. Texturing will be by brooming or by a drag acceptable to the reviewing agencies. Joints will be designed and located to provide effective load transfer and crack control. The jointing pattern to be employed will be reviewed and approved by the reviewing agencies prior to the beginning of

paving.

2.07 CURBS AND GUTTERS

Concrete curbs and gutters or integral curbs conforming to the Standard Detail Drawings will be required on all subdivision streets except as otherwise allowed in this section. All areas within the corporate limits of the Town of Cicero shall be installed in accordance with these Standards. Joint locations shall conform to good engineering practice and shall be as shown on the plan sheets or as approved by the reviewing agencies prior to the beginning of construction.

To prevent undermining by water, curbs shall be promptly and carefully backfilled after application of curing protection, which shall take place immediately after slipforming or removal of forms. Backfill shall be compacted as soon as practical and maintained at an elevation slightly below the curb. As the backfill settles, it shall be regraded as often as necessary to keep it slightly below the curbs.

2.08 SIDEWALKS

Concrete sidewalks conforming to these specifications and/or to the Standard Drawing Details where applicable shall be constructed when required by the Plan Commission as indicated on approved plats. The covenants of the subdivision shall specify that the individual property Owner/Developer is responsible for installing and maintaining the walks adjoining his property and that the homeowners association shall be responsible for maintaining the walks in common areas. The Developer shall be responsible for installing the walks in rights of way adjacent to common areas and along existing roads before the streets are accepted by the appropriate agency. Sidewalks will have a minimum width of 5' in all locations. Wheelchair ramps will be included as required by the Town, the Plan Commission, and the Americans with Disabilities Act. The back edges of the walks shall be located a maximum of 1' inside the rights-of-way lines or located in a common area. Sidewalks shall be at least 4" thick, except where they are constructed across and in conjunction with residential driveways they shall be at least 6" thick, and where they are built across commercial driveways they shall be the same thickness as the driveways, but at least 6" thick. Sidewalks shall be placed on compacted subgrades. They shall be jointed by tooling or sawing to conform to the approved construction plans. Sidewalks shall be protected against drying and extreme temperatures immediately after texturing.

2.09 STORM DRAINAGE AND CULVERTS

Within subdivision streets' rights-of-way, surface water, sump pump discharge, and geothermal heat pump water discharge shall be carried away by enclosed storm drainage systems, not including subsurface drains, unless adequately sized and approved by the reviewing agencies. Downspouts shall not be discharged into any part of the enclosed

storm drainage system. Storm drainage pipes or systems, subsurface drains or sump pump outlets shall not discharge into roadside ditches or over curbs. All pipes, culverts, inlets, cleanouts and manholes shall be constructed in accordance with plans and specifications approved by all governmental agencies having jurisdiction over the project drainage. Systems shall be designed to prevent overtopping of curbs by a storm not exceeding the ten-year design storm.

Culverts and storm sewers shall be designed for peak flows from a ten year design storm in accordance with the Cicero Area Subdivision Control Ordinance and in accordance with the requirements of Hamilton County and Town Representatives, and installed to the approved elevations shown on approved construction plans. Culverts for local roads shall be designed such that the road shall not be overtopped by peak flows from a 25 year storm event. Other road classifications shall be designed to prevent overtopping by a 100 year storm event. Storm sewers shall be reinforced concrete pipe conforming to A.S.T.M. C-76. Minimum diameter for storm sewers will be 12". Minimum diameter for culverts shall be 12" under driveways and 18" under roadways. Concrete end sections made of the same material as the pipe shall be used for culverts less than 27" diameter. Culverts shall be reinforced concrete pipe conforming to A.S.T.M. C-76 unless otherwise approved by the governing agencies. All storm pipe shall be installed at elevations to maintain a velocity of at least 2 feet per second.

Roadside ditches may be used in lieu of curbs for road drainage on roads only as approved by the Town and by the Governing Agencies as long as the following conditions are met:

1. Curbs are not required by the plan commission having jurisdiction over the project.
2. No lot shall be smaller than 2 acres in size for all lots in the same subdivision.
3. Sporadic use of curbs for lots smaller than 2 acres or where minimum flow line grade can not be obtained will not be allowed.
4. Minimum flowline grade of unpaved ditches shall be 0.50%. Maximum flowline grade of ditches shall be 7%. Ditches at greater than 3% grade shall be sodded.
5. Maximum depth of roadside ditches shall be 3'-6" from top of pavement.
6. Front and back slope of ditch shall not be steeper than a 3:1 slope.
7. The ditches shall not be filled in by the property Owner/Developer with or without installing storm sewers at any time in the future. The covenants shall specifically prohibit this.
8. Underdrains shall be installed as indicated in the Standard Drawing Details.
9. The plans for subdivisions utilizing roadside ditches shall include cross sections at 100 foot intervals and at outlet points. Profiles of all streets showing centerline and left and right ditch flowlines shall also be submitted.

2.10 BRIDGES AND LARGE CULVERTS

Plans, specifications and design calculations for bridges or culverts having clear or combined spans greater than 20' shall be reviewed separately from those of other improvements. Bridges and large culverts will be designed to meet current AASHTO criteria for HS-20-44 loadings (including a 35 psf future wearing surface). Bridge structures and plans shall be approved by Hamilton County, the Hamilton County Engineer and other Governing Agencies must be provided with copies of current letters of approval for waterway openings and structure elevations from all other agencies having jurisdiction over stream crossings, including, but not limited to, the Hamilton County Surveyor, the Indiana Department of Natural Resources, and the Army Corp. of Engineers. All structures shall be designed to accommodate a 100 year flood with freeboard as determined by the County Engineer and other governing agencies.

Bridges and large culverts shall be designed and constructed with materials, features and finishes approved by the County Engineer and other applicable agencies, prior to the beginning of construction, in order to minimize governing body's maintenance requirements and liability exposure. Aesthetic features commensurate with the proposed development are encouraged and may be required by the commission. All bridge plans shall be certified by an Engineer in the State of Indiana.

2.11 SIGNS

Street name signs shall be furnished at the developer's expense and installed by the Developer prior to the release of the performance bond or prior to the issuance of the first occupancy permit, whichever comes first. The signs shall be installed on one post at each street intersection at an appropriate spot in each northeast corner wherever possible. Decorative type signs may be installed by the developer provided the covenants of the property specify that the residents will maintain the signs through their homeowners association. The Town will give written notice notification to the Homeowners Association when maintenance of the decorative signs is required. If not completed within the 30 days, the Agency will replace the signs with standard signs at the Homeowners Association expense. Decorative posts shall not be greater than a 4" x 4" wood post or a 2 3/8" diameter galvanized steel tube unless modified to meet breakaway standards and other safety characteristics as approved by the Town. All signs shall conform to all other applicable ordinances.

Stop signs, yield signs, speed limit signs and other necessary warning signs shall be furnished and installed at the developer's expense and installed as required by the Town. Decorative signs will not be allowed for use as regulatory or warning signs. Sign requirements will be coordinated with the Cicero Street Department and Police Department prior to completion of the construction plans. A separate sheet showing only traffic controls shall be included in the construction drawings. This sheet may be submitted for initial review as soon as the primary plat is approved. One additional copy of this sheet shall be submitted to the Street Department for transmittal to the Police Department and to the Cicero Area Plan Commission for their review. The Developer

shall furnish and install the signs prior to the release of the performance bond or prior to the issuance of the first occupancy permit, whichever occurs first.

Signs and posts shall be standard sizes and colors on reflective surfaces in accordance with the Standard Drawing Details and the Hamilton County Highway Department Standard Sheets, where applicable.

2.12 MONUMENTS

Monuments shall be installed by the developer and certified by a Professional Land Surveyor in conformance with applicable ordinances and statutes. Monuments and recoverable bench marks shall be indicated and described on the construction plans.

2.13 INSPECTION

Prior to beginning construction of any roads or bridges which are to be dedicated to Hamilton County or the Town of Cicero, the plans and specifications for the roads and/or bridges shall be approved by the Hamilton County Engineer and/or the Town of Cicero. Three copies of the plans shall be submitted and the Hamilton County Engineer and/or the Town of Cicero shall either approve or reject, specifying the reasons for rejection. Initial review of the plans will be completed within 30 days. Any amendments to the plans shall also be submitted to the appropriate agencies in triplicate and must be approved prior to the construction of any changes. The Developer will be responsible for any inspection fees determined by the Governing Bodies.

Construction plans may be submitted for approval and construction prior to final approval of a subdivision or plat by the Board of County Commissioners of Hamilton County and/or the Cicero Area Plan Commission. However, the approval of construction plans for roads and the execution and approval of the inspection agreement shall not be deemed, nor construed, as an approval of the plat or subdivision by the Board of Commissioners of Hamilton County, the Hamilton County Plan Commission, Cicero Area Plan Commission, or any other agency having regulatory authority or jurisdiction over the property platted or divided.

Prior to starting construction of any roads and/or bridges to be dedicated to the County or Town of Cicero, the Developer shall execute an agreement with the appropriate agencies which will provide that Hamilton County and/or the Town of Cicero will supply an inspector to inspect the construction to insure that such construction meets the requirements of the approved plans and specifications. The developer shall provide a copy of the agreement to the Plan Commission having planning jurisdiction over the improvements. The developer shall reimburse the Agencies for the full cost of all inspection, laboratory, and field tests. The developer shall escrow 100% of the estimated total costs with the County Highway Department at the time the agreement is executed.

All improvements shall be constructed, inspected and certified pursuant to the executed

agreement described above.

Required tests shall be performed by an independent laboratory at the Developer's expense.

Upon completion of construction, or a portion of construction, the inspector will certify to the Governing Agency whether the construction complies with all applicable standards, approved construction plans, and approved change orders. Where the inspector and the Governing Agency agree it is necessary to confirm conformance with these standards, the pavement or sidewalk will be cored as part of the inspection process at the developer's expense. The average thickness of the cores must equal or exceed the minimum required thickness, and no single core can have a deficiency greater than one-half inch. All deficient portions of pavements and sidewalks will be replaced at the developer's expense before the pavements or sidewalks are accepted.

2.14 CONCRETE SPECIFICATIONS

Concrete Sidewalks

INDOT Class "A"

or

Minimum Compressive Strength: 4000 PSI at 28 days

Air Entrainment: 6.5% \pm 1.5%

Maximum Slump: 4"

Structural, Bridge Decks, Piers, Etc.

As per design Engineer Specifications and as approved by the applicable Governing Agencies.

Pavement and Approaches

INDOT Specifications Section 501

Curbs and Gutters

INDOT Class "A"

or

Minimum Portland Cement Content: 365 lbs./Cubic Yard

Minimum Portland Cement/Fly Ash Ratio: 3.2 by weight

(Type "F" fly ash is not allowed between October 15 and April 1)

Maximum Water Cement Ratio: 0.450

Air Entrainment: 6.5% \pm 1.5%

Minimum compressive Strength: 4000 PSI at 28 days

Coarse Aggregate: INDOT class "A"

Test Methods and Procedures

- Water/Cement Ratio INDOT General Instructions to Field Employees,
Section 46
- Air Test AASHTO T152 or ASTM C231
- Unit Weight AASHTO T121 or ASTM C138
- Making Specimens AASHTO T23 or ASTM C31
- Compressive Strength ASTM C39 and ASTM C94 Sec. 17
- Slump ASTM C143

Samples shall be obtained in accordance with applicable portions of AASHTO T141 except sampling may be done at the truck or on the grade. The entire sample may be obtained from one portion of the load.

- a. Exception to AASHTO T121 or ASTM C138, Determining the Unit Weight.
 - 1. An aluminum measure is an acceptable alternate.
 - 2. A strike-off bar may be used in lieu of a cover plate.
 - 3. Weights shall be determined to the nearest 0.01 of a pound.

- b. Exceptions to AASHTO T152 or ASTM C231, Air Tests.
 - 1. Samples shall be obtained as directed.

- c. Exception of ASTM C94 Section 17.
 - 1. The strength shall be the average of the strengths of all cylinders tested at the age specified, with a minimum of 2 cylinders, and this average shall be equal to or greater than the required strength.

 - 2. If the compressive strength of one or more cylinders in one strength test is below 75% of the required strength, the entire test is considered as failed.

 - 3. As a minimum, 7-day and 28-day compressive tests shall be conducted.

Concrete Protection

All concrete shall be properly cured and protected against loss of moisture and extreme temperature by method approved by the Governing Agencies prior to the start of construction. Concrete shall be protected from damage by rain, or replaced if damaged.

INDOT Standard and Specifications

Concrete material and placements shall meet all the requirements of the INDOT Standard Specification unless otherwise specified herein or unless otherwise directed by the Town and/or County Engineer as applicable.

End of Part 2