1.01 GENERAL PROCEDURES

All improvements intended for public use, to be constructed within the Town must conform to these standards according to Plan Commission requirements.

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 Planning Department before consideration by the Plan Commission.

All improvements shall be constructed to conform to the current edition of the following Standards, except where deviations are hereinafter allowed or variances granted:

1. Street Standards - Town of Pendleton
2. Practices and Guidelines for Local Agency Roads – Indiana Association of County Highway Engineers and Supervisors
3. INDOT Standard Drawings
4. INDOT Standard Specifications
5. Indiana Manual of Uniform Traffic Control Devices
6. AASHTO Policy on Geometric Design of Highways and Streets

Construction Plans and Specifications shall be prepared as follows:

1. Change orders shall be initiated by the design professional that certified the plans, and subject to the written approval of the Town. All road construction plans shall be prepared on 24" x 36" plan sheets. All plans shall include the Standards issued by the Town. 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.

Construction inspection shall conform to the following items:

1. Prior to beginning construction of any roads or bridges that are to be dedicated to the Town the plans and specifications for the roads and/or bridges shall be approved by the Engineer and the Town. Three copies of the plans shall be submitted to the Town Engineer.

2. The Town shall either approve or reject, specifying the reasons for rejection. Initial review of the plans will be completed within 30 days. When the plans are approved, they shall be stamped approved by the Town. One copy shall be returned to the Developer, one copy shall be provided to the inspector and one copy shall be retained by the Town. 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 Town.

3. Upon completion of construction, or a portion of construction, the Project Engineer will certify to the Town whether the construction complies with all applicable standards, approved construction plans, and approved change orders. Where the Engineer and the Town 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 (1/2) inch. All deficient portions of pavement and sidewalks will be replaced at the developer's expense before the pavements or sidewalks are accepted.

1.02 STREET DESIGN STANDARDS

The arrangement, character, extent, width, grade, and location of all streets shall conform to all of the elements of these regulations. Street classifications are referred to as either major or minor streets in this chapter. A major street includes the rural minor arterial, the rural major collector, and the rural minor collector. A minor street includes the rural local road, subdivision road and cul-de-sac.

1. Whenever a subdivision abuts or contains an existing or proposed major street, the Town may require frontage roads, double frontage lots with screening, a nonaccess easement along the property lines, deep lots, or such other treatment as may be necessary for adequate protection of residential properties and to afford separation of through and local traffic. In those instances where a non-access easement is proposed along a state or federal highway, this easement shall be granted specifically to INDOT.

2. In order to provide a functional Town street system, the Town shall require a developer to construct access streets to adjoining vacant undeveloped properties. The coordination of streets from one (1) subdivision to another is essential to the Town in order to provide a continuation of not only vehicular access, but also for transportation and distribution lines for most utilities, such as water, sewer, gas, electricity and telephone systems. However, the dead ending of certain access streets to vacant undeveloped property may cause a windfall profit. In cases where the owner of the vacant land would receive an artificial profit because of another developer providing access, the Town may waive the requirement of constructing the

access street to the vacant land. In these cases, the developer shall be required to dedicate the necessary right-of-way, but the person who develops the adjoining vacant property will be required to construct the street. The Town shall not consider waiving the street construction requirement for any developer when the future access streets do not provide the only means of access for the vacant adjoining property. The Town shall determine the need and location of these access streets at the time of preliminary approval.

3. All streets, including those proposed to provide the continuation of streets to adjacent property, shall be constructed to the boundary lines of the subdivision and in accordance with the standards of this ordinance. If a subdivision is approved contiguous to existing right-of-way dedicated for a continuation street, but the street has not been constructed, the developer of the new subdivision must construct the entire street including the portion that is not contained within the developer's project.

4. A proposed street shall provide for the continuation of existing, planned or platted streets on adjacent property.

5. Where a subdivision borders on or contains a railroad right-of-way or limited access highway right-of-way the Town may require a street approximately parallel to and on each side of such right-of-way at a distance suitable for the appropriate use of the intervening land. Such distances shall also be determined with due regard for the requirements of the approach grade of any future grade separation structure.

6. A dead end street shall not be permitted except where a street is proposed to be and should logically be extended but is not yet constructed. A temporary cul-de-sac shall be constructed for any dead end street which exceeds three hundred (300) feet in length from the nearest intersection. Drainage details for the temporary cul-de-sac shall be specified by the applicant and approved by the Town. A dead end street which does not require a temporary cul-de-sac shall have adequate drainage provisions as approved by the Town.

7. A temporary cul-de-sac shall have an easement radius of not less than fifty (50) feet and shall have a driving surface radius of not less than forty (40) feet. The cross section of a temporary cul-de-sac shall be at least nine (9) inches of aggregate. If it is anticipated that the temporary cul-de-sac will be required for longer than three (3) years, an additional two (2) inches of asphalt binder shall be required. Any temporary cul-de-sac still with a stone surface at the end of the maintenance period must be paved with two (2) inches of asphalt binder prior to release of the maintenance guarantee.

8. An easement providing access to a street shall be prohibited except where its control and maintenance is defined in a manner approved by the Town.

9. Actual R/W width shall be based on engineering design and shall include the width of the through lanes, turn lane, parking lanes, shoulders, side

slope, side ditch and backslope. The street right-of-way shall be not less than the following:

TABLE 1
MINIMUM R/W WIDTH

ROAD CLASSIFICATION	RIGHT-OF-WAY WIDTH (FEET)
MAJOR STREETS	
Rural Minor Arterial	200
Rural Major Collector	150
Rural Minor Collector	100
MINOR STREETS	
Rural Local Road	80
Subdivision Road	60
Cul-de-sac	100 (Diameter)

10. The building setback line shall be regulated by the setback provisions of the Zoning Ordinance applicable to the area proposed to be subdivided. The minimum building setback line shall be measured from the street right-of-way line but in no instance shall be less than the following:

TABLE 2
MINIMUM BUILDING SETBACK DISTANCE

ROAD CLASSIFICATION	BUILDING SETBACK LINE (FEET)
Major Street	75
Rural Local Road	50
Subdivision Road	25
Cul-de-sac	25

11. The paved width of all streets shall be adequate to serve the existing and future estimated traffic load for the development. A new subdivision road shall be surfaced to a minimum width of thirty (30) feet measured back-to-back of curb. A cul-de-sac turn around shall be paved to a diameter of eighty (80) feet measured back-to-back of curb. All other roads and streets shall be surfaced to a minimum width that is determined by sound engineering design and with the concurrence of the Town. Where a proposed street is an extension of an existing paved street that exceeds the minimum dimension set forth above, the Town may require the developer to match the width of the existing paved street.

12. Where required by the Town Engineer, additional acceleration or deceleration or right turn lanes shall be added. All lanes shall be 12’-0" wide. Parking lanes shall be 10’-0”, desirable, 8’-0", minimum, in width.

13. A proposed subdivision street shall be designed to minimize through traffic movement, however, this does not waive the requirement to construct an access road to adjacent property boundary as required by Section 1.02-3 or 1.02-4.

14. Acceptable limits for visibility, curvature, and maximum grade depend on topography, functional classification, anticipated traffic volumes, number and nature of access points, etc. Road design specifications shall be based on sound engineering judgement using the design speeds outlined in Table 3. The Town must approve the design speeds selected for each project.

TABLE 3
DESIGN SPEED

ROAD CLASSIFICATION	TERRAIN	RURAL (MPH)	URBAN (MPH)
Arterial (2-lane)	Level Rolling	60-70 55-60	40-55 40-55
Collector (Major and Minor)	Level Rolling	40-60 30-50	30-50 30-50
Local	Level Rolling	40-50 30-40	30-40 30-40
Subdivision and Local w/ ADT <250	Level Rolling	30 20-30	30 20-30

15. A proposed street shall be adjusted to the contour of the land so as to provide usable lots and a reasonable street grade. The maximum allowable street grade shall be as outlined in Table 4. The minimum allowable street grade shall not be less than five tenths (0.5) percent.

TABLE 4
MAXIMUM STREET GRADE

ROAD CLASSIFICATION	DESIGN SPEED (MPH)						
	20	30	40	50	55	60	70
Rural Arterial					4.5%	4%	3%
Urban Arterial			7%	6%	5.5%		
Rural Collector		8%	7%	6%	5.5%	5%	
Urban Collector		8%	7%	6%			
Rural Local		8%	7%	6%			
Urban Local		8%	7%				
Subdivision & Local w/ ADT < 250	9%	8%					

16. Horizontal visibility of a curved street and the vertical visibility on all streets shall be maintained according to the minimum distances shown in Table 5. Sight distances shall be measured in accordance with AASHTO guidelines.

TABLE 5
SIGHT DISTANCE

SIGHT DISTANCE	DESIGN SPEED (MPH)						
	20	**30**	**40**	**50**	**55**	**60**	**70**
Stopping Sight Distance (Desirable) (Feet)	125	200	325	475	550	650	850
Stopping Sight Distance (Minimum) (Feet)	125	200	275	400	450	525	625
Intersection Sight Distance (Feet)	225	380	580	840	990	1150	1550

a. The values for desirable stopping sight distance shall be met for all street construction and at all intersections. Minimum stopping sight distances shall only be used in those cases, which, in the opinion of the Town, would suffer undue hardship by use of the desirable stopping sight distance.

b. The values for intersection sight distance shall be used at the intersection of two (2) new streets. Intersection sight distance should be used at all other intersections. No new features such as signs, embankments, walls, or landscaping, shall be constructed which reduces the sight distance below the intersection sight distance.

c. Where unusual or complex situations exist, decision sight distance (per AASHTO Standards) may be required by the Town to provide an added margin of safety.

17. Horizontal curvature measured along the centerline shall comply with the following:

TABLE 6
RADII / DEGREE OF CURVE

MAXIMUM DEGREE OF CURVE (e=0.080)	DESIGN SPEED (MPH)						
	20	**30**	**40**	**50**	**55**	**60**	**70**
Radius (Feet)	150	255	470	765	955	1210	1910
Degree of Curve	38°15’	22°45’	12°15’	7°30’	6°00’	4°45’	3°00’

18. A reverse curve on a subdivision street shall have a straight tangent between elements of said reverse curve of not less than one hundred (100) feet. A reverse curve on any other street shall allow for one of the following conditions:

a. The distance between the reverse curves shall achieve a normal tangent section for a minimum of two (2) seconds travel time, and the superelevation transition requirements shall be met for both curves; or
b. The pavement shall be continuously rotated in a plane about it's axis. The minimum distance between the curves is that which will be needed to meet the superelevation transition requirements for the two (2) curves (e.g., distribution of superelevation runoff between the tangent and curve).

19. The sections above deal with minimum requirements. Individual projects, particularly commercial and industrial subdivisions, may warrant additional requirements dictated by sound engineering design. Such additional requirements must be specified by the Town at primary approval.

20. Access roads from a proposed development onto an existing or proposed Town road may be denied or restricted. If in the sole opinion of the Town, the proposed access road presents a potential hazard to the motoring public, the Town may require the applicant to make improvements to an existing or proposed Town road as a condition of allowing access. An applicant may be required to provide deceleration, acceleration, passing blisters or other improvements to the road system based on the following criteria:

    a. Sight distance;
    b. Number of lots;
    c. Proposed use;
    d. Street classification;
    e. Traffic generation;
    f. Existing or proposed conditions; and
    g. Sound engineering design.

21. The number of access roads required into a subdivision will be based upon the number of lots, sound engineering design and continuity of the Town street system. If the Town determines that an additional access road is necessary, they will advise the applicant at the time of preliminary approval.

22. A cul-de-sac street shall not exceed one thousand (1,000) feet in length measured from the centerline of the nearest intersection to the center of the cul-de-sac. A cul-de-sac shall be provided with a turnaround radius of not less than fifty (50) feet at the right-of-way line and not less than forty (40) feet at the back of the curb line. The cul-de-sac shall be paved in accordance with Section 1.05.

23. A half street shall be prohibited.

24. The applicant shall dedicate additional right-of-way width as required to meet these regulations in a subdivision that adjoins or includes an existing street that does not conform to the minimum right-of-way requirements.

1.03 INTERSECTIONS

1. Street curbs shall be rounded by radii of sufficient length to permit the smooth flow of traffic, but in no case shall the curb radii be less than twenty-five (25) feet for a minor street, or forty (40) feet for a major street or a street in a commercial or industrial development.

2. Where a proposed street with curbs intersects an existing street without curbs, the curb radius shall be designed so there is a minimum of twelve (12) feet offset between the termination of the curb and edge of the existing street pavement.

3. Street right-of-way at intersections shall be designed to provide a minimum of ten (10) feet separation between the street right-of-way and curb.

4. Intersections shall be as nearly at right angles as is possible, and no intersections shall be at an angle of less than seventy (70) degrees.

5. Intersections of more than two (2) streets at one point shall not be permitted.

6. When a street of lesser functional classification intersects with a street of greater functional classification the radii arcs at the intersection will comply with the standards for the street of greater functional classification.

7. There shall be at least one hundred (100) feet of tangent alignment before entering an intersection.

8. The placement of a driveway that is located near a street intersection shall be based on sound engineering design.

9. Street intersections shall not be closer than two hundred (200) feet centerline to centerline for minor streets and five hundred (500) feet centerline to centerline for a major street. This provision does not apply to a frontage road.

10. When a street of lesser functional classification intersects with a street of greater functional classification, the pavement thickness of all improvements within the right-of-way of the intersection shall comply with the standard for the greater street.

1.04 SIGHT DISTANCE AT INTERSECTIONS

1. Stopping Sight Distance shall be determined by measuring from a point three and one-half (3.5) feet above the roadway surface along a line of sight to a point six (6) inches above the roadway surface.

2. Intersection Sight Distance shall be determined by measuring from a point three and one-half (3.5) feet above the roadway surface along a line of sight to a point four and one quarter (4.25) feet above the roadway surface.

3. Sight distance values are included in Table 5.

4. The following items shall be required and must be noted on the final plat:

    a. No fence, wall, sign, hedge, tree or shrub planting or other similar item which obstructs sight lines shall be placed or permitted to remain on any corner lot within the triangular area formed by the street right-of-way lines and a line connecting points twenty-five (25) feet from the intersection of minor street lines and fifty (50) feet from the intersection of major street lines, or in the case of a rounded property corner, from the intersection of the street right-of-way lines extended.

    b. In the case of a driveway within ten (10) feet of an intersection of a street right-of-way or an alley, the same sight line limitation shall apply.

1.05 STREET IMPROVEMENTS

1. In general, a street shall be completed to the grade shown on the plan and profile sheet. A plan and profile sheet for each street shall be provided by the developer and prepared by a registered professional engineer or registered land surveyor.

2. The minimum requirements for street construction shall be in accordance with the latest edition of “Standard Specifications” of the Indiana Department of Transportation, in effect at the time of approval (hereinafter referred to as the Standard Specifications). A copy of the Standard Specifications is on file in the office of the Town Engineer.

    a. The subgrade shall be prepared in compliance with Section 207 of the Standard Specifications.

    b. The subbase, where required, shall be #53 crushed aggregate (or equal) and shall be prepared in compliance with Section 304 of the Standard Specifications.

    c. The street surface shall be of Portland Cement Concrete Pavement (PCCP) or Hot Mix Asphalt (HMA). Portland Cement Concrete

materials and construction shall be in compliance with Section 500 of the Standard Specifications and these regulations. HMA materials and construction shall be in compliance with Section 400 of the Standard Specifications and these regulations.

3. All utility excavations under the pavement shall be backfilled with B Borrow or flowable mortar and construction shall conform to Section 211 or Section 213 of the Standard Specifications or compacted thoroughly by other means. Any other means must be approved by the Town prior to construction.

4. Subsurface drains shall be installed parallel to the street curb at a depth of at least three (3) feet below the back of curb. Subsurface drains shall be a minimum of six (6) inch diameter perforated Polyethylene pipe. Four (4) inch laterals shall be provided for each lot, extended to the right-of-way line and capped. The ends shall be marked by extending a board or other suitable material to the surface and dimensioned on the as-built plans. No direct surface water discharges will be allowed to connect to the subsurface drain.

5. Stone aggregate base shall be placed under the curb and extended to six (6) inches beyond the outside edge of the curb. This aggregate base shall be continuous and shall match the bottom of pavement (top of subgrade) or be four (4) inches thick, whichever is more.

6. Wet spots or other unusual soil conditions may develop in streets. These streets must comply with any or all of the following requirements:

    a. Four (4) inch Polyethylene lateral underdrains which extend under the subbase and connect directly to the subsurface drains shall be placed at regular intervals through the wet areas.

    b. Four (4) inches of aggregate (#53 stone) shall be added to the street cross section in addition to the minimum base requirement.

    c. Soft spots may be over excavated and backfilled with compacted aggregate as approved by the Town Engineer.

    d. Geotextile filter fabric or lime stabilization may be used. Use of either of these methods shall not allow a reduction in street cross section.

    e. The use of lime stabilization shall be certified by a professional engineer licensed in the State of Indiana. Complete design data shall be submitted for consideration. All subgrade compaction testing is to be done by a certified and Town approved soils testing engineering company. The copies of all test reports must be submitted directly to the Town.

7. The actual design for street construction shall be based upon estimated traffic loading with an adequate growth factor included even though the minimum requirements may be exceeded.

8. The cross sections of streets are to be based on a design equation for pavement according to AASHTO standards using a combination of soil support values, total equivalent 18 – kip single axle loads, terminal serviceability index, and regional factors. The pavement depths as shown below are minimum requirements:

TABLE 7
HOT MIX ASPHALT PAVEMENT (FLEXIBLE PAVEMENT)

ROAD CLASSIFICATION	SURFACE	BINDER	BASE	AGGREGATE
Minor	1 1/4”	2 3/4”	0”	9”
	1 1/4”	0”	3”	7”
	1 1/4”	2 3/4”	4”	0”
Collector or Commercial	1 1/4”	2 3/4”	4”	6”
	1 1/4”	0”	5”	9”
	1 1/4”	2 3/4”	7”	0”
Arterial or Industrial	1 1/4”	2 3/4”	6”	8”
	1 1/4”	0”	8”	9”
	1 1/4”	2 3/4”	10”	0”

TABLE 8
PORTLAND CEMENT CONCRETE PAVEMENT (RIGID PAVEMENT)

ROAD CLASSIFICATION	PAVEMENT	AGGREGATE
Minor	6”	6”
Collector or Commercial	7”	6”
Arterial or Industrial	8”	6”

Add one (1) inch of HMA Binder or Base, or Portland Cement Concrete Pavement, to the minimums shown for truck traffic > 10% of ADT.

Add two (2) inches of HMA Binder or Base, or Portland Cement Concrete Pavement, to the minimums shown for truck traffic > 10% of ADT.

9. Commercial driveways (located within the right of way) and auxiliary lanes shall be constructed to the equivalent thickness of the pavements they are added to (as set out in Tables 7 and 8) or the entrances they are constructed to serve, whichever is greater.

10. Existing street pavements to be upgraded to applicable standards as parts of improvements to be accepted by the 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 Tables 7 and 8; or the existing pavement materials, if suitable, may be incorporated into a new pavement structure.

1.06 JOINTS

Rigid pavement shall be jointed in order to control cracking. Joints shall be constructed in accordance with the type and dimensions and at the locations required by Standard Specifications, these regulations, or as directed by the Town Engineer's office.

1. Spacing of weakened plane, transverse, or contraction joints shall not exceed twenty (20) feet. Closer spacing to average fifteen (15) feet is encouraged. A transverse contraction joint may either be formed or sawed dummy groove, ribbon or pre-molded strip type, and shall be one-fourth (1/4) the thickness of the pavement.

2. When a transverse joint is to be formed by sawing, care must be taken to saw the grooves soon after placing the concrete to prevent the formation of cracks due to contraction of the slab.

3. One of the above named joints shall be placed at every catch basin and manhole in the line of pavement. The location of manholes in the pavement shall determine the exact location of the joints.

4. All joints shall extend throughout the curb to the full width of the pavement.

5. A transverse expansion joint shall be placed at the intersections, tangent points of sharp curves, and wherever else shown on the plans.

6. Whenever the width between forms of the pavement under construction is greater than ten (10) feet, a longitudinal joint shall be constructed so as to divide the pavement into strips not to exceed ten (10) feet each. This may be accomplished by sawing or by installing a slot or groove as herein described for a contraction joint.

7. White membrane curing compound AASHTO Number 2-M-14B must be properly applied to give complete coverage immediately after finishing.

1.07 CURBS AND GUTTERS

1. A two (2) foot concrete curb and gutter shall be required for all residential subdivision streets. Streets with a design speed of 45 mph or less shall have the option of using either a mountable or barrier curb. Streets with a design sped greater than 45 mph should be designed without curbs. However, if necessary, a four (4) inch mountable curb may be used.

2. Materials, concrete specifications and construction procedure shall comply with Section 605 of the Standard Specifications.

3. 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.

4. Valley gutters which connect gutter drains across street intersections are strictly prohibited.

1.08 PRIVATE STREETS

It is the intent and purpose of this section to encourage streets and rights-of-way to be dedicated to the Town for ownership and maintenance whenever possible. It is a long range benefit to the entire Town for streets and rights-of-way to be maintained publicly rather than privately. There may be, however, a situation in which a privately owned and maintained street is a more reasonable alternative. In any development in which a private street is allowed, the street shall conform to the following requirements:

1. A private street shall meet or exceed the minimum geometrics, width, depth, and other construction standards and specifications for a similar street classification.

2. The right-of-way width of a private street shall not be less than fifty (50) feet.

3. Street classification standards and specifications greater than those in Items 1 and 2 above may be applied at the discretion of the Town if the street is of length or of design as to actually serve as a higher classified street.

4. The covenants of the final plat shall contain the following statement:

   “The streets and public rights-of-way shown hereon are to be privately owned and maintained by the homeowners’ association pursuant to the

articles of incorporation of said association. The streets and rights-of-way shown hereon may become publicly owned and maintained streets only upon the express written consent by the governmental body having jurisdiction and after having been inspected and verified that they meet all current standards."

1.09 SIDEWALKS

1. Sidewalks are required along both sides of all proposed and existing streets and along the development side of all existing Town roads in all proposed subdivisions.

2. A plan for a sidewalk system shall be prepared that will provide every lot within a subdivision, or portion thereof, with reasonable access to a sidewalk connecting with all of the community facilities, commercial enterprises and other residential subdivisions located near or adjacent to the subdivision, and in a manner that will provide safe and convenient pedestrian circulation throughout the neighborhood or area in which the subdivision is located and which will avoid pedestrian and vehicular traffic conflict.

3. Sidewalk materials and construction requirements shall conform to the Standard Specifications, Section 604, and shall meet the following requirements:

    a. Be constructed only of Portland Cement Concrete unless otherwise expressly approved by the Town.

    b. Have a minimum depth of four (4) inches.

    c. Have a minimum depth of six (6) inches, or the thickness of the driveway being crossed whichever is greater, when built in an area of proposed vehicular crossing.

    d. Have a slope of no steeper than one-quarter (1/4) inch per foot, laterally, toward the street. Any longitudinal slope greater than 1:20 shall be considered a ramp and must comply with Americans with Disabilities Act requirements.

    e. Be located at least one (1) foot inside the right-of-way lines

    f. Have consistency, slump, and mixture specifications as established by the Standard Specifications.

    g. Be jointed every four (4) feet, with expansion joints every forty (40) feet to prevent cracking and heaving.

h. Have curb ramps installed at all intersections and at all other locations where required for compliance with the Americans with Disabilities Act.

i. Have a minimum width as follows:

TABLE 9
SIDEWALK WIDTHS

LOCATION	MINIMUM SIDEWALK WIDTH (FEET)
One or two family developments	4
Multi-family developments	5
Commercial or industrial developments	5 *
Sidewalks adjacent to curb	6

* Minimum, or as approved by the Town

4. In order to facilitate pedestrian access from the street to schools, parks, playgrounds, or other nearby streets, the Town may require a perpetual unobstructed easement at least twenty (20) feet in width. This easement shall be indicated on both the preliminary and final plats. The construction details shall be shown on the construction plans and must be specifically approved by the Town.

1.10 STREET IDENTIFICATION SIGNS AND REGULATORY SIGNS

1. The developer shall install street identification signs at each street intersection within and on the perimeter of the subdivision. The sign shall be located at the northeast corner of said intersection wherever possible. The developer shall also install all appropriate regulatory signs as required by the Town.

2. Street identification signs and regulatory signs shall comply with the current issue of Indiana Manual of Uniform Traffic Control Devices regarding size, material, reflectivity and location.

3. Street identification signs for public roads shall be white letters on a green background. Street identification signs for private roads shall be white letters on a blue background.

4. Size of letters and sign dimensions shall comply with Town Highway Department requirements.

5. Regulatory signs shall be placed in accordance with the current issue of the Indiana Manual of Uniform Traffic Control Devices and as directed by the Town Engineer's office.

6. Sign locations must be shown in the development plans. Sign requirements will be coordinated with the Town prior to completion of the construction plans. A separate sheet showing only traffic controls, including signs and pavement markings, 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 County Highway Department for transmittal to the County Sheriffs Department if necessary and to the Town or local Police Department for their review. The Engineer will be responsible for drafting necessary ordinance amendments or official actions required to authorize the control signs' installations.

7. The developer may install decorative type signs provided the covenants of the property specify that the residents will maintain the signs through their homeowners association. The Town will give written notification to the Homeowners Association when maintenance of the decorative signs is required. If not completed within the 30 days, the Town 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” diameter steel tube unless notified to meet breakaway standards and other safety characteristics as approved by the Town. All signs shall conform to all other applicable ordinances.

8. Decorative signs will not be allowed for use as regulatory or warning signs.

9. The developer shall furnish the signs prior to the release of the performance bond or prior to the issuance of the first occupancy permit, whichever occurs first.

1.11 ROADSIDE DITCHES

1. Roadside ditches are required for all existing or proposed roads that will not have curbs and gutters.

2. Roadside ditches shall be located so as to provide a shoulder width as dictated by the road classification and sound engineering design. In no case shall the shoulder width be less than seven (7) feet.

3. Ditch slopes greater than or equal to 1 % and less than 3% grade shall be sodded. Ditch slopes greater than or equal to 3 % grade shall protected with riprap.

4. The ditches shall not be filled in by the property owner without installing storm sewers at any time in the future. The covenants shall specifically prohibit this.

5. General Guidelines for Ditch Cross-sections:

a. Traversable ditch cross sections are defined in Figures 10, 11, and 12. Two (2) curves are shown on each figure. The area below the lower curve represents ditch cross sections that can be traversed by a vehicle containing unrestrained occupants and, thus, has a Severity Index of 1.0.

b. The upper curve is for ditch cross sections that have a Severity Index of 1.6, and thus, vehicle occupants must be restrained in order to safely traverse the ditch. The use of Severity Index = 1.6 may be necessary because of right-of-way restrictions or to avoid nominal changes to existing ditches. In addition, the following items shall, be considered.

c. Slopes of 3:1 shall be used only where site conditions do not permit the use of flatter slopes;

d. Embankment surfaces must be uniform to permit traversability of a 3:1 slope. Vehicle rollover can be expected if the embankment is soft or rutted; and

e. Foreslopes steeper than 4:1 are not desirable because their use severely limits the range of backslopes producing a safe ditch configuration.

4. Ditches In Fill Sections On Reconstruction Projects

a. If any part of the backslope of the ditch section falls within the Clear Zone then the slopes shall be evaluated in accordance with Figures 10, 11, and 12. Existing ditch combinations that fall on or below the 1.6 Severity Index may remain. Areas with ditch slope combinations that fall above the 1.6 Severity Index curve shall be evaluated for cost and accident history before deciding to make an improvement. If improvement is warranted, the slope combination should preferably fall below the SI = 1.0 curve, but at least below the SI = 1.6 curve.

b. If the ditch falls outside the Clear Zone, traversability may not be considered.

5. Ditches In Fill Sections On New Facilities

a. If the ditch falls within the Clear Zone, the Designer shall select a front slope, backslope, and ditch width that will fall within the 1.0 Severity Index curve on Figures 10, 11, and 12.

6. Ditches In Cut Sections On Reconstruction Projects

a. Additional right-of-way shall be obtained, if practical, when the ditch cross section can be made traversable by flattening the slopes or

by moving the ditch farther from the road. Other means of making the ditch traversable, which shall be evaluated, are as follows:

1. Use of a pipe in the ditch;
2. Raising the grade of the ditch; and
3. Placing 4" rip rap in the ditch to change ditch contour, and such that the projection of any one piece of rip rap does not exceed 2" above surrounding area.

7. Ditches In Cut Sections On New Facilities

a. The desirable section is shown in Figures 10, 11, and 12. For minimum ditch sections, provide a section which falls on or below the 1.6 Severity Index curves on Figures 10, 11, and 12.

Note: This chart is applicable to all V-ditches, rounded ditches with a bottom less than 8 feet, and trapezoidal ditches with a width less than 4 feet.

PREFERRED CROSS SECTIONS FOR DITCHES
(Narrow-Width Ditches)

FIGURE 10

Note: This chart is applicable to all rounded ditches with a bottom widths of 8 feet to 12 feet, and trapezoidal ditches with bottom widths of 4 feet to 8 feet.

PREFERRED CROSS SECTIONS FOR DITCHES
(Medium-Width Ditches)

FIGURE 11

Note: This chart is applicable to all rounded ditches with a bottom widths greater than 12 feet, and trapezoidal ditches with bottom widths greater than 8 feet.

PREFERRED CROSS SECTIONS FOR DITCHES
(Wide-Width Ditches)

FIGURE 12

1.12 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. Downspouts shall not be discharged directly 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 flooding of roads by a storm in accordance with the following criteria:

1. Local Roads – Maintain one (1) lane at ten (10) foot minimum clear width for a 10 year storm. For greater storm frequencies, no greater than six (6) inch depth of flooding shall be allowed in the road.

2. Collectors and Arterials – meet INDOT spread criteria.

Culverts and storm sewers shall be designed for a ten year storm in accordance with the requirements of the Town and installed to the approved elevations shown on approved construction plans. Culverts for major roads shall be designed such that the road shall not be overtopped by a 25 year storm event. Minimum diameter for storm sewers shall be 12". Minimum diameter for culverts shall be 15" under driveways and 36" under roadways. End sections made of the same material as the pipe shall be used for culverts. All storm sewer pipes shall designed to ensure a minimum flow velocity of 3 feet per second.

1.13 BRIDGES

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.

All bridge structures shall be designed and constructed in accordance with AASHTO Standard Specifications for Highway Bridges, Current Edition. All structures shall be designed to accommodate a 100 year flood with freeboard as determined by the County Engineer and other governing agencies.

All bridges shall be designed to incorporate a crash-tested barrier rail per Indiana Department of Transportation (INDOT) specifications and adequate lengths of a crash-tested approach rail. The length of approach rail shall meet INDOT RRR requirements or better.

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 Town. An Engineer registered in the State of Indiana shall certify all bridge plans.

The 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 the stream crossings. These may include, but are not limited to, the County Surveyor, the Indiana Department of Natural Resources, and the Army Corps of Engineers.

1.14 MONUMENTS

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

1.15 CONSTRUCTION WITHIN ROAD RIGHT-OF-WAY

Whenever any construction activities occur within a public road right-of-way, traffic control devices shall be placed in accordance with INDOT Standards and the Manual on Uniform Traffic Control Devices, Part VI. The devices shall be installed prior to any construction and shall be maintained during the entire time that the special conditions exist. They shall be removed immediately thereafter.